DigiComPass
Trainer's Handbook
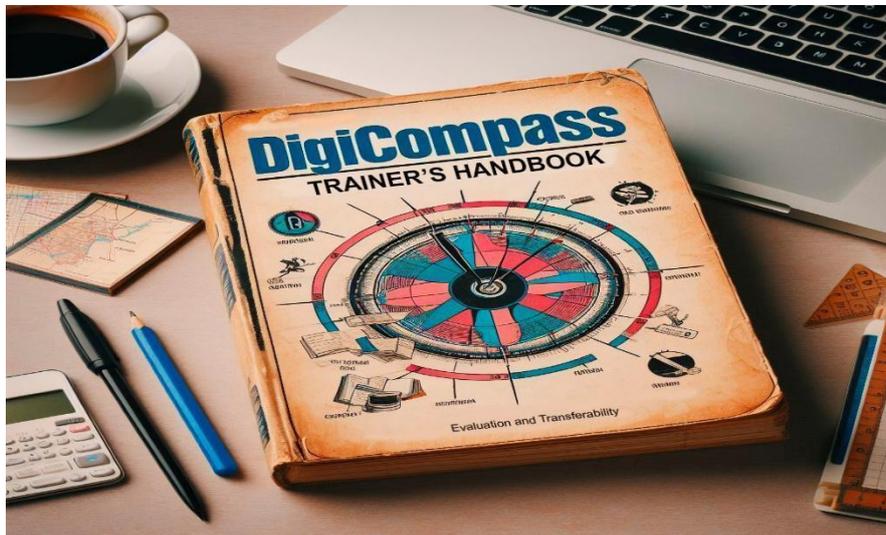
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Abstract

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CONTENTS

Abstract

The trainer's handbook for this Erasmus+ project provides a comprehensive framework for implementing Flipped Learning 3.0 (FL3) within a structured digital course environment. The initial section outlines the core concepts of FL3, which underpin the course's innovative approach, emphasizing active learner engagement and the development of digital competencies. The training content is organized into five key modules: Information & Data Literacy, Communication & Collaboration, Digital Content Creation, Safety, and Problem-Solving.

Each module focuses on specific digital skills necessary for personal and professional development in a digitally connected world. To enhance the learning experience, the handbook outlines individual and group learning spaces, offering guidance on effective practices within collaborative settings. Implementation considerations address the technical aspects of the learning platform, provide instructions for navigating various question formats, and discuss the integration of interactive videos to support the flipped learning methodology.

Additionally, the handbook emphasizes inclusivity by presenting the FID (Flipped Instructional Design) model, which includes specific strategies for designing, delivering, and evaluating inclusive content. The transferability section discusses how the course framework can be adapted to various educational contexts, including school education, vocational training, and higher education.

Finally, evaluation methods are detailed, including assessment practices and the application of a recognition framework, along with an appendix, references, and a glossary to support trainers in effectively delivering and assessing the course.

1 Introduction

This manual enables trainers who want to use the DigiComPass training course to implement it best. To this end, the experiences from the pilot training courses as well as instructions, tips and considerations shared in connection with the course are incorporated.

1.1 Course Concept

The DigiComPass Trainer Handbook and Evaluation Guide are meticulously crafted to support trainers in delivering, assessing, and adapting courses within the DigiComPass Framework. These resources aim to ensure high-quality educational experiences tailored to diverse adult learner groups.

Key Objectives:

- Effective Course Implementation
  The handbook offers comprehensive guidelines for implementing courses tailored to specific adult groups. This includes special focus areas such as intergenerational learning, inclusivity, and sustainability to ensure the courses meet the needs of all participants.
- Thorough Course Evaluation
  The evaluation guide provides robust methods and tools for assessing the implementation and learning outcomes of the courses. These tools help trainers accurately measure the effectiveness and impact of their training programs.
- Seamless Course Transferability
  The documentation includes detailed instructions on how to adapt and transfer courses to different educational settings, such as School Education and Continuing Vocational Education and Training (C-VET). It highlights the added value of such transfers and addresses potential challenges to ensure smooth adaptation.

1.2 Understanding Adult Learning

Adult learners come from diverse backgrounds, bringing a wealth of life and work experience to the classroom. They are often self-directed and motivated, seeking education for specific personal or professional goals. Due to other commitments like work and family, adult learners prefer flexible learning schedules, such as evening or weekend classes, online courses, or part-time programs. They value practical applications of knowledge that can be immediately applied to their job or daily life. However, adult learners may need help balancing work, family, and education; managing potential gaps in prior education; or coping with feeling out-of-place in traditional educational settings.

Active learning, particularly when founded on micro-learning principles, leverages the benefits of multimedia and interactive training content to significantly enhance learning outcomes, especially for adult and elderly learners. This approach breaks down complex information into manageable, bite-sized segments, which is crucial for maintaining engagement and retention among adults who may have busy schedules or cognitive constraints. Interactive multimedia content, such as videos, quizzes, and simulations, caters to diverse learning styles and promotes more profound understanding through practical application.

Additionally, learning by assessment ensures continuous feedback, enabling learners to identify and address knowledge gaps promptly. For elderly learners, this method is particularly effective as it accommodates their pace and offers a supportive environment that encourages active participation and reinforces memory through frequent, low-stakes testing. Overall, these strategies create a dynamic and adaptive learning experience that meets the unique needs of adult and elderly learners, fostering higher motivation, better retention, and improved learning outcomes.

From current research, these three findings were relevant for the development of the DigiComPass Training course. Moreover, they are well-aligned with the FL3 Framework which provides the methodological basis upon which the course is built.

Learner-Centered Approach

One of the key principles in adult learning is the emphasis on a learner-centered approach. Adults bring a wealth of life experiences and knowledge to the learning environment, which should be recognized and integrated into the educational process. Current research highlights the importance of involving learners in the planning and evaluation of their instruction, making learning relevant to their personal and professional lives. By allowing adults to take ownership of their learning, educators can enhance motivation, engagement, and the overall effectiveness of the educational experience.

Self-Directed Learning

Another critical principle in adult education is fostering self-directed learning. Adults tend to be more autonomous and self-motivated than younger learners, and they prefer to take control of their own learning journey. Research supports the idea that adults thrive when they can set their own learning goals, seek out resources, and apply new knowledge independently. Educators should, therefore, focus on facilitating rather than directing learning, providing guidance and support while allowing learners to explore topics at their own pace and according to their interests.

This is certainly a positive driver for the Individual Learning Space.

Practical and Problem-Based Learning

Adult learners are typically goal-oriented and value education that is practical and applicable to real-world situations. Current research underscores the importance of using problem-based learning approaches in adult education, where learners engage with scenarios that mirror the challenges they face in their personal or professional lives. By focusing on practical applications and problem-solving, educators can make learning more relevant and meaningful, helping adults to immediately apply what they have learned, which in turn reinforces and deepens their understanding.

This realisation is used intensively in the group learning space. Practical life tasks in the context of the learning content are therefore a central approach to collaborative learning. On the other hand, real-life case studies in the individual learning space are also a contribution.

1.3   Training Course Overview

The DigiComPass Training course is based on the DigComp Framework (for Citizens) description.

The specific objectives of Work Package 4 (Developing the training course), are as follows:

1. Develop five course modules following the DigCom Framework concept. These modules, titled "M1: Information and data literacy," "M2: Communication and collaboration," "M3: Digital content creation," "M4: Safety," and "M5: Problem-solving," will be designed, and the content will be created. The content will be implemented as multimedia-based and interactive (MM&I) training content.
2. Transfer the content from "basic content" (texts, illustrations, storyboards) to multimedia content (MM&I) suitable for implementation into the Learning Platform.
3. Structure the course content into "Individual Space" and "Group Space" elements.
4. Implement the course with pilot testing, evaluation, and amending quality circle to ensure its effectiveness and quality.

2 Implementation Guidelines for Flipped Learning 3.0

In this project, we are using the Flipped Learning framework (FL3). In our experience, this is currently the most promising and successful approach in adult education.

2.1 FL3: Core Concepts

The FL3 Framework is an instructional approach that aims to transform traditional classroom learning by flipping the traditional learning model. In a traditional classroom, learners receive instruction during class time and complete homework or assignments outside of class. However, in the FL3 model, this approach is reversed.

2.1.1 Definition and Key Principles

In the FL3 Framework, learners engage with instructional content outside of class, typically through active learning material, readings, or other online resources. This allows them to learn at their own pace and review the material as needed, in what is called the "Individual Learning Space". Class time is then used for active learning activities, such as discussions, group work, problem-solving, and hands-on projects. This is called the "Group Learning Space".

The key idea behind the FL3 Framework is to shift the focus of classroom time from passive consumption of information to active application and interaction. By providing learners with pre-lesson materials, they can come to class prepared and ready to engage in more profound discussions and collaborative activities that promote critical thinking and problem-solving skills.

The FL3 Framework also emphasizes personalized learning and learner autonomy. Learners have the flexibility to learn at their own pace and revisit concepts as necessary. The role of the instructor shifts from a traditional instructor to a facilitator or coach who supports Learners in their learning journey and provides individualized guidance.

Benefits of the FL3 Framework include increased learner engagement, improved understanding and retention of content, development of higher-order thinking skills, and the opportunity for teachers to provide targeted support to learners based on their individual needs.

Official Definition for FL3

> *Flipped Learning is a framework that enables educators to reach every learner student. The Flipped approach inverts the traditional classroom model by introducing course concepts before class, allowing educators to use class time to guide each student through active, practical, innovative applications of the course principles.*

This document outlines an instructional design based on the FL3 model, adhering to the classic instructional design approach. It references the "Global Elements of Effective Flipped Learning" (GEEFL), a guide developed from the contributions of educators like Jon Bergmann and Aaron Sams. This framework highlights key components adaptable to different educational settings, forming the foundation for flipped instructional design.
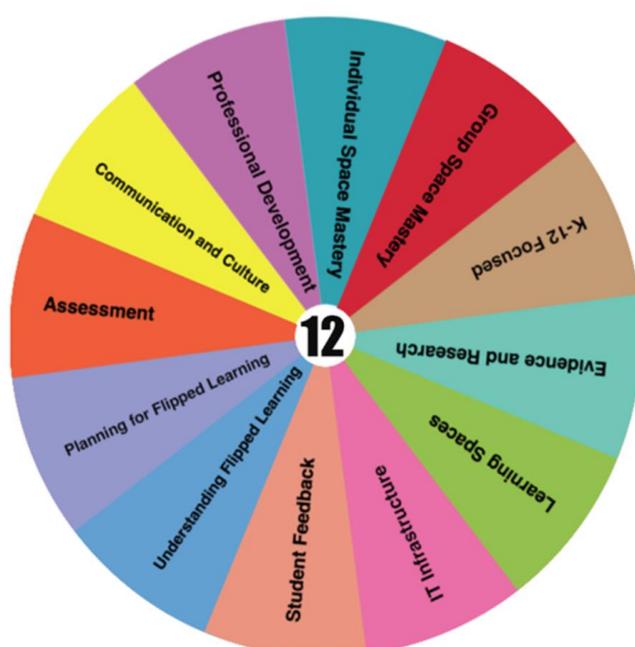
The 12 Sectors of Effective Flipped Learning

- Understanding Flipped Learning
- Communications and Culture
- Planning for Flipped Learning
- Individual Space Mastery
- Group Space Mastery
- Assessment
- K-12 Focus
- Learning Spaces
- IT Infrastructure
- Student Feedback
- Evidence and Research
- Professional Development

SOURCE: Academy of Active Learning Arts and Sciences

The Academy of Active Learning Arts and Sciences (AALAS) introduced twelve sectors to ensure comprehensive understanding and application of Flipped Learning. These sectors include understanding the philosophy of Flipped Learning, fostering a collaborative culture, planning and allocating resources, ensuring learner autonomy, promoting group collaboration, applying appropriate assessment methods, catering to K-12[1] needs, designing conducive learning environments, ensuring robust IT support, gathering learner feedback, and basing practices on evidence and research to facilitating continuous professional development for educators. A more detailed explanation of these 12 fields can be found in the appendix.

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[1] K-12 addresses the first 12 years of education in the USA. This can be compared with Primary school, and lower and upper secondary school (finished with a final exam) in Europe.

2.1.2   Essentials of a FL3 Approach

Central to Flipped Learning's efficacy are several foundational pillars, namely the distinction between Individual and Group Learning Spaces, the strategic application of Bloom's Taxonomy, and the incorporation of Backward Design to ensure competency-based outcomes.

Individual and Group Learning Spaces

In the field of FL3, the demarcation between Individual and Group Learning Spaces is of central importance. The Individual Learning Space is where learners engage with content independently, often outside the classroom. This space is characterised by self-paced learning, allowing learners to consume content, such as videos or readings, at their own rhythm. It ensures that foundational knowledge is acquired before learners enter the classroom, setting the stage for deeper exploration.

Conversely, the Group Learning Space, typically within the classroom, is where active, collaborative learning occurs. Here, learners, facilitated by their educators, delve into discussions, problem-solving sessions, and collaborative projects. It's a dynamic environment where knowledge is not just absorbed but actively applied, debated, and contextualised.

Learning Spaces in Flipped Learning 3.0

Individual Learning Space
Watching an interactive video or work on other active learning materialto prepare for the Group Learning Space.

Group Learning Space
Working on the learned content (assignment, experiments, group work, collaborative assignments, hands-on training)

Figure 2: The two characteristic Learning Spaces of FL3 visualized.

Bloom's Taxonomy in Assigning Content

Bloom's Taxonomy, a hierarchical model of classifying learning objectives, plays a pivotal role in the FL3 approach. The lower levels of the taxonomy, such as 'Remembering' and 'Understanding', are best suited for the Individual Learning Space. Here, learners can absorb foundational knowledge, rewatching or revisiting content as needed to ensure comprehension.

The higher levels of Bloom's Taxonomy, including 'Applying', 'Analysing', 'Evaluating', and 'Creating', come to the fore in the Group Learning Space. With the foundational knowledge already in place, learners can engage in activities that challenge them to

apply concepts in new contexts, analyse information critically, evaluate scenarios, or even create novel solutions or perspectives. By aligning content with Bloom's Taxonomy in this manner, FL3 ensures a progressive and structured learning journey.

Backward Design for Competency-Based Outcomes

Backward Design, a principle that starts with the end in mind, is integral to FL3. Instead of beginning with content, educators start by defining the desired learning outcomes or competencies they want learners to achieve. Once these outcomes are clear, educators design assessments to measure these competencies and only then decide on the content and instructional strategies to be employed.

This approach ensures that the learning experience is competency-based, focusing on tangible skills and knowledge that learners should possess upon completion. It aligns the entire educational process, from content delivery to assessment, with clear, predefined objectives, ensuring that every aspect of the learning journey is purposeful and directed.

2.1.3   Differences between Traditional Learning and FL3

Traditional Learning and FL3 are two different approaches. Traditional learning is a teacher-centered approach where the teacher delivers lectures to learners in a classroom setting. Conversely, FL3 is a learner-centered approach where learners learn new knowledge outside the classroom through digital learning content, such as videos, articles, and simulations. Class time is then used for in-depth learning activities, such as problem-solving, discussions, and projects.

Characteristic	Traditional Learning	FL3
Focus	Teacher-centered	Learner-centered
Learning environment	Classroom	Inside and outside of the classroom
Role of the teacher	Expert	Facilitator and expert
Role of the learner	Passive recipient of information	Active learner
Technology	Limited use of technology	Extensive use of technology
Assessment	Individual	Individual and collaborative

2.2   Benefits of FL3 for Adult Learners

Adult learners are more engaged and motivated when they have control over their own learning. FL3 allows learners to learn at their own pace and in their own learning style.

Studies have indicated that Flipped Learning can lead to improved learning outcomes for adult learners. For example, one study found that learners in Flipped Learning courses outperformed learners in traditional courses by an average of 6% on standardized tests.

Adult learners often have busy work and family schedules, so FL3 gives them the flexibility to learn when and where they want.

Implementation of FL3 as the training approach encourages collaboration and social learning through online discussion forums, group projects, and other activities. This can be especially beneficial for adult learners, who often have a wealth of life and work experience to share with their classmates.

FL3 focuses on higher-order thinking skills, such as critical thinking and problem-solving. This is because class time is spent on activities that require learners to apply what they have learned to real-world problems.

Furthermore, FL3 offers adult learners a tailored learning experience with its emphasis on digital platforms and resources, Digital platforms can provide adaptive content, adjusting based on the learner's performance and needs. For instance, if an adult learner struggles with a particular concept, supplementary resources or tutorials can be recommended. This personalised approach ensures that learning is efficient, targeted, and responsive to each individual's requirements.

FL3, with its blend of flexibility, active engagement, personalisation, and promotion of lifelong learning, emerges as a potent model for Adult Education. It respects the unique challenges faced by adult learners while offering a robust framework that maximises learning outcomes.

2.2.1   Implementing FL3 in Adult

FL3 prioritises active, in-class engagement, while the acquisition of foundational knowledge is shifted outside the classroom. For adult learners, often juggling professional commitments, personal responsibilities, and the desire for continuous learning, this approach offers flexibility, autonomy, and a tailored learning experience.

The Individual Learning Space focuses on lower levels of Bloom's Taxonomy, such as 'Remembering' and 'Understanding,' enabling learners to absorb foundational knowledge at their own pace. The Group Learning Space, on the other hand, focuses on higher levels of Bloom's Taxonomy, like 'Applying,' 'Analysing,' 'Evaluating,' and

'Creating,' encouraging learners to engage in activities that challenge them to apply concepts in new contexts. Backward Design begins with defining desired learning outcomes or competencies, followed by designing assessments to measure these competencies, and then deciding on the content and instructional strategies.

For adult learners, FL3 offers several benefits. It allows them to learn at their own pace and according to their own learning style, providing flexibility that accommodates their busy schedules. The model encourages collaboration and social learning through online discussion forums and group projects, leveraging the rich life and work experience adult learners bring to the table. It also focuses on higher-order thinking skills, such as critical thinking and problem-solving, by using class time for activities that apply learned concepts to real-world problems. Digital platforms used in FL3 can adapt content based on learners' performance and needs, offering a personalised learning experience.

2.2.2 Instructional Design

Instructional design for FL3 involves creating learning experiences that are effective, engaging, and efficient. Key components include identifying learning objectives, designing active learning activities, aligning assessment methods with learning objectives, and leveraging appropriate technologies. The framework emphasises content creation and curation that aligns with Bloom's Taxonomy and caters to both Individual and Group Learning Spaces.

In implementing FL3 in adult education, organisations need robust digital learning platforms, recording and editing software for creating instructional materials, interactive tools for engaging content, and reliable IT infrastructure. Professional development for educators is crucial to effectively navigate and implement the FL3 model. Continuous feedback and iteration ensure the learning process is continuously improved.

If you need further or more detailed information, please check the "Flipped Learning Manifest", which was developed in the frame of this project.

Link: www.digicompass.eu/en/results/downloads/

3 Training Content

The training course is structured into five different modules. Each module consists of individual units, which are again divided into lessons. This structure was chosen to implement effective micro-learning. Each lesson only takes a few minutes to complete, is organised and offers self-contained learning content.

The key points of each module are presented below. The contents of the modules follow the recommendation of the European Commission as published in the DigComp Framework for Citizens.

3.1   Module 1: Information & Data Literacy

Information and data literacy are foundational to navigating the digital age. They are the compass and map guiding us through the vast and complex information landscape.

3.1.1   Basic Structure Units / Lessons

Unit 1 Browsing, Searching, and Filtering Data, Information, and Digital Content

Browsing and searching for digital content are crucial activities in today's world. This abstract explores how these processes can be simplified for everyday users. Modern search engines and browsers use user-friendly interfaces and smart algorithms to help users find relevant information quickly. Despite the abundance of online data, these tools aim to make accessing and managing information easy. The paper also addresses challenges like information overload and the need to identify credible sources. By emphasizing simplicity and usability, the study highlights the effectiveness of current technologies in making digital content accessible.

Unit 2 Evaluating data, Information and Digital Content

Ensuring the reliability, validity, and trustworthiness of digital resources is crucial. It involves systematically analysing various factors to assess content quality and suitability for a specific purpose. Evaluating data, information, and digital content is essential for informed decisions, research, and maintaining quality. This process combines human judgement with technological tools. By following simple steps, one can avoid false information, misleading news, and copyright violations.

Unit 3 Managing data, information and digital content.

This process involves the organisation, storage, retrieval and efficient use of these resources.

Nowadays, we have contact with thousands of data every day, it makes sense to know the type of data, and how best to manage it.

Some of this data takes on different forms and shapes that we need to retrieve and modify when necessary. This unit provides an overview of how to handle the mass of data and how best to store it.

3.1.2. Developing Information & Data Literacy for each Lesson

[A] – Needs

Unit 1 Browsing, Searching, and Filtering Data, Information, and Digital Content

The ability to effectively browse, search, and filter information, data, and digital content is essential in today's information-rich environment. These skills empower individuals to efficiently locate, evaluate, and utilize relevant information for various purposes, including research, education, professional development, and personal interest. By mastering these techniques, people can navigate the vast digital landscape, discern credible sources, and make informed decisions, ultimately enhancing their ability to learn, work, and engage with the world around them.

Unit 2 Evaluating data information and digital content

The overwhelming abundance of digital information necessitates a critical approach to evaluation. To ensure the reliability, accuracy, and objectivity of content, individuals must scrutinize information for quality, bias, source credibility, and potential misinformation. This process involves assessing factors such as accuracy, completeness, consistency, timeliness, and relevance of information, while also considering the author's expertise, trustworthiness, and transparency. Furthermore, ethical implications, including copyright, privacy, and societal impact, must be evaluated. By rigorously examining data and content, individuals can make informed decisions, build trust in information sources, and mitigate the risks associated with misinformation.

Unit 3 Managing data, information and digital content.

Effectively managing this overwhelming volume necessitates robust strategies to organize, store, retrieve, and maintain data integrity. Key challenges include establishing consistent data formats, creating intuitive information architectures, and implementing efficient storage and retrieval systems. Ensuring data accuracy, completeness, and security is paramount to derive meaningful insights. Addressing these needs requires a multifaceted approach combining technological advancements, well-defined processes, and skilled personnel.

[B] – Technological Response

Unit 1 Browsing, Searching, and Filtering Data, Information, and Digital Content

Technological advancements have significantly improved the ability to browse, search, and filter data, information, and digital content. Search engines, information retrieval systems, database management systems, content management systems,

web browsers, and artificial intelligence have all contributed to enhancing these capabilities. Key features include advanced search operators, semantic search, indexing, personalization, and recommendation systems. These technologies collectively empower users to efficiently discover, access, and utilize digital resources.

Unit 2 Evaluating data, Information and Digital Content

Technological advancements have provided tools and methods to evaluate the quality, reliability, and credibility of data, information, and digital content. These technologies assist in identifying biases, verifying accuracy, assessing source credibility, and detecting misinformation. They also support ethical evaluations and risk assessments, enabling users to make informed decisions based on reliable information.

Unit 3 Managing data information and digital content

Technological advancements have revolutionized data, information, and digital content management. Tools like database management systems, cloud storage, content management systems, and data analytics platforms enable efficient organization, storage, retrieval, and utilization of digital assets. These technologies facilitate data cleaning, integration, and security, while also supporting data-driven decision-making and knowledge management processes.

[C] - Competence

Unit 1 Browsing, Searching, and Filtering Data, Information, and Digital Content

Competence in browsing, searching, and filtering data, information, and digital content involves the ability to efficiently locate, retrieve, and refine digital resources to meet specific needs. This includes skills in using search engines, understanding search operators, applying filters, and critically evaluating results. It requires knowledge of different information formats, platforms, and tools, as well as the ability to adapt search strategies based on the complexity and volume of information. Ultimately, this competence empowers individuals to navigate the digital landscape effectively and extract relevant information.

Unit 2 Evaluating data, information and digital content.

Competencies for evaluating data, information, and digital content encompass the ability to critically assess the quality, reliability, and relevance of digital resources. This includes skills in identifying biases, recognizing misinformation, verifying information from multiple sources, and understanding the ethical implications of content. It requires critical thinking, analytical skills, and knowledge of evaluation criteria to determine the credibility and trustworthiness of information.

U3 - Managing data information and digital content

Competencies for managing data, information, and digital content involve the ability to organize, structure, and protect digital assets. This includes skills in data governance, information architecture, content management, and security. It requires a systematic approach to data lifecycle management, from creation to disposal, ensuring data quality, accessibility, and compliance with relevant regulations. Effective management also entails leveraging technology to optimize processes and extract value from digital information.

[D] - Assessment Keywords

U1 – Browsing, Searching, and Filtering Data, Information, and Digital Content

Information literacy involves locating, evaluating, and using information effectively. Digital literacy encompasses the ability to navigate digital environments and understand digital tools. Search strategies focus on developing effective search terms, using Boolean operators, and filtering results. Critical thinking is essential for evaluating information sources, identifying bias, and verifying information. Efficiency is demonstrated through speed and accuracy in finding information. Problem-solving involves applying search skills to address specific information needs. Technology use includes utilizing digital tools for browsing, searching, and filtering. Information evaluation requires assessing the relevance, accuracy, and credibility of information. Data management is the process of organizing and managing search results, while digital citizenship emphasizes respecting copyright and intellectual property.

U2 - Evaluating data, information and digital content.

Critical thinking involves analysing, evaluating, and synthesizing information. Information literacy encompasses recognizing reliable sources, detecting bias, and assessing credibility. Digital literacy includes understanding digital formats, evaluating online content, and recognizing misinformation. Source evaluation requires assessing the authority, accuracy, objectivity, currency, and purpose of information. Data analysis involves evaluating the quality, consistency, and relevance of data. Evidence-based reasoning entails using information to support claims and make informed decisions. Ethical considerations highlight the importance of recognizing biases, stereotypes, and ethical implications. Fact-checking focuses on verifying information from multiple sources, and problem-solving applies evaluation skills to real-world challenges.

U3 - Managing data information and digital content

Data management involves organizing, storing, retrieving, and securing information. Information architecture focuses on structuring, classifying, and organizing information. Digital asset management entails handling digital resources efficiently. Data quality is about ensuring accuracy, completeness, and consistency. Information governance establishes policies and procedures for data management. Technology

utilization includes employing tools to support data management processes. Problem-solving addresses challenges in data and content management. Decision-making relies on data to inform strategic choices, while compliance emphasizes adhering to data protection and privacy regulations.

3.2 Module 2: Communication & Collaboration

The 'Communication and Collaboration' module focuses on the ability to interact, communicate, collaborate, and participate in digital networks, as well as sharing digital resources and engaging in online citizenship. This module aims to equip learners with the skills and knowledge needed to effectively use digital tools and platforms to foster communication, teamwork, and community engagement in various digital environments.

3.2.1 Basic Structure Units / Lessons

Unit 1: Interacting and Sharing through Digital Technologies

This unit covers the foundational aspects of digital interaction platforms essential for effective communication and collaboration in the digital age. It begins with an introduction to various digital interaction tools and platforms, exploring their functionalities and applications. The unit then delves into the features and functions of these tools, providing insights on how to maximize their potential for effective digital communication. Additionally, it distinguishes between platforms suitable for public interactions and those designed for private communications, emphasizing the importance of context in digital interactions. The unit also addresses best practices for sharing digital resources, ensuring ethical and efficient use of tools like Google Drive and Dropbox, and provides guidelines on licensing and copyright for shared digital resources. Finally, it offers strategies for collaborative document creation and management, fostering a seamless and productive collaborative environment.

Unit 2: Engaging Citizenship and Collaboration through Digital Technologies

This unit focuses on the principles of digital citizenship, emphasizing the rights and responsibilities of digital citizens. It begins by defining digital citizenship and exploring its significance in today's interconnected world. The unit then delves into the specific rights and responsibilities of a digital citizen, promoting ethical behaviour and responsible participation in digital spaces. Additionally, it addresses the importance of understanding and practicing digital ethics, fostering a culture of respect and integrity in online interactions. The unit also provides insights into the dynamics of online communities, emphasizing effective participation and contribution, and offers strategies to avoid common pitfalls in online community engagement. Moreover, it highlights the importance of ethical collaboration in digital spaces, focusing on transparency and fairness, and provides strategies for identifying and addressing misinformation in digital networks.

Unit 3: Netiquette

This unit emphasizes the importance of proper etiquette in various digital communication platforms. It begins with an introduction to the principles of netiquette, providing guidelines for respectful and effective communication in emails, messaging, video calls, and other digital interactions. The unit also offers platform-specific guidelines and best practices, highlighting the unique etiquette considerations for different digital environments. Additionally, it covers professional digital communication standards, focusing on building professional relationships online, presenting oneself professionally, and addressing conflicts and misunderstandings. The unit also provides best practices for social media interaction, offering strategies for navigating major social media platforms, content sharing, and handling negative feedback and trolls.

Unit 4: Managing Digital Identity

This unit focuses on the importance of managing one's digital identity and footprint in the online world. It begins by exploring the concept of digital footprint and shadow, providing strategies for analysing and understanding one's current digital footprint. The unit then covers privacy, security, and digital identity, offering guidelines for managing privacy settings, protecting personal information, and staying updated on evolving threats and protections. Additionally, it provides strategies for curating a constructive online presence, emphasizing personal branding, content creation, and engaging with communities aligned with one's interests. The unit also addresses challenges in the digital realm, offering actions to take when facing online challenges, seeking support and resources, and recovering and learning from digital identity challenges.

3.2.2 Developing Information & Data Literacy for each Lesson
[A] – Needs

This section compiles the identified needs for the various units. It includes a description of additional identified needs related to communication and collaboration in digital environments.

Unit 1: Interacting and Sharing through Digital Technologies

Understanding and effectively using digital interaction platforms is essential for modern communication and collaboration. Users need to become proficient with various tools such as Zoom, Microsoft Teams, and Slack, learning their functionalities and applications. Familiarity with these tools' specific features and functions will allow users to maximize their productivity by using settings, integrations, and advanced features. It's crucial to distinguish between platforms designed for public interactions and those for private communications to ensure secure and effective usage. Additionally, users must grasp the principles and best practices for sharing digital

resources efficiently, using tools like Google Drive and Dropbox. Awareness of licensing and copyright issues is also vital, ensuring users share digital content legally. Collaborative document creation and management skills are necessary, utilizing tools like Google Docs and Microsoft 365 to foster seamless and productive teamwork.

Unit 2: Engaging Citizenship and Collaboration through Digital Technologies

Digital citizenship involves understanding one's rights and responsibilities in the digital realm. Users need to be aware of digital ethics and online behavior, promoting responsible participation in digital spaces. Effective participation in online communities requires knowledge of community norms, strategies for active engagement, and the ability to avoid common pitfalls. Ethical collaboration is another critical aspect, where users must practice transparency, fair participation, and proper acknowledgment of contributions. Addressing misinformation in digital networks is also essential; users should be equipped to identify and counteract misinformation using verification tools and fact-checking platforms, and to educate others on misinformation.

Unit 3: Netiquette

Proper etiquette in digital communication is paramount. Users need to understand the principles of netiquette across various platforms to ensure respectful and effective interactions. Building professional relationships online involves knowing how to present oneself professionally and address conflicts and misunderstandings constructively. Additionally, effective social media use requires an understanding of the norms of different platforms, strategies for content sharing, and methods for handling negative feedback and trolls.

Unit 4: Managing Digital Identity

Managing one's digital identity and footprint is critical in the online world. Users need to comprehend the concept of a digital footprint and how to analyse their current digital presence. Effective management of digital identity involves knowledge of privacy settings, security measures, and staying updated on evolving threats. Building a positive online presence is also essential, achieved through personal branding, content creation, and engaging with like-minded communities. Users must have strategies to handle digital identity challenges, such as doxing and hacking, seek support when needed, and recover from digital identity crises.

Additional Identified Needs

Accessibility in digital tools and platforms is crucial for inclusivity. Users need to be aware of assistive technologies like screen readers and voice recognition software that help individuals with disabilities participate fully in digital environments. Technology also supports health and wellness through tools like fitness trackers and health apps, aiding users in monitoring physical activity and setting fitness goals.

Cybersecurity is another vital area; users must understand the fundamentals of protecting their devices and personal information from threats like viruses and malware. Lastly, continuous learning is essential to keep up with technological advancements, and online learning tools can help users discover their interests and set personal goals.

[B] – Technological Response

Unit 1: Interacting and Sharing through Digital Technologies

To facilitate effective digital communication, users need to become proficient with tools such as Zoom, Microsoft Teams, and Slack. These platforms support various functionalities like video conferencing, chat, and collaborative workspaces. Implementing regular training sessions and using advanced features, such as breakout rooms and integrations with other productivity tools, can significantly enhance digital interactions. For sharing digital resources, tools like Google Drive and Dropbox are essential. These platforms offer secure storage and easy sharing capabilities. Ensuring proper permissions and using encryption for sensitive files can further enhance security and collaboration. Understanding and adhering to licensing and copyright laws are crucial; tools like Creative Commons licences help navigate these aspects. Collaborative document creation is supported by Google Docs and Microsoft 365, which offer real-time editing and version control, ensuring smooth and efficient teamwork.

Unit 2: Engaging Citizenship and Collaboration through Digital Technologies

Digital citizenship requires an understanding of online rights and responsibilities. Utilizing privacy settings and tools like VPNs can protect personal information and enhance online security. Ethical behaviour online is promoted through education on digital ethics and the use of platforms that encourage respectful interactions. Participating in online communities effectively involves using platforms like Reddit, LinkedIn, and professional forums, which facilitate active engagement and knowledge sharing. Tools that track participation and contributions can help ensure fair and transparent collaboration. To address misinformation, leveraging fact-checking tools like Snopes, FactCheck.org, and browser extensions designed to verify information can be instrumental. Educating others about misinformation can be supported through workshops and the use of educational platforms that focus on media literacy.

Unit 3: Netiquette

Understanding and practising netiquette across various platforms is crucial for effective digital communication. Tools like Grammarly can help ensure clarity and professionalism in written communication. Email etiquette can be enhanced by using features like scheduled sends and read receipts in email clients. Messaging apps like WhatsApp, Slack, and Microsoft Teams require users to understand the norms and

expectations for professional interactions. For video calls, platforms such as Zoom and Microsoft Teams offer features to improve meeting etiquette, such as virtual backgrounds and muting participants by default. Professional networking sites like LinkedIn provide guidelines and tools to help users present themselves professionally and manage their digital presence effectively. Tools to monitor and manage digital footprints are essential for maintaining a positive online reputation.

Unit 4: Managing Digital Identity

Managing digital identity involves understanding and controlling one's digital footprint. Tools like online reputation management services can help monitor and curate online presence. Utilizing privacy settings on social media platforms and implementing security measures like two-factor authentication protect personal information. Personal branding tools, such as professional websites and portfolio platforms, help create a positive online presence. Addressing challenges like doxing and hacking requires using cybersecurity tools, seeking support from online safety organizations, and implementing best practices for recovery and resilience.

Cybersecurity is crucial for protecting devices and personal information from threats like viruses and malware. Understanding and implementing cybersecurity measures is a key technological response. Continuous learning is facilitated by online learning platforms, which provide resources for ongoing skill development and staying updated with technological advancements. By addressing these needs with appropriate technological responses, users can enhance their digital literacy, engage effectively in digital environments, and maintain a secure and positive online presence.

[C] - Competence

Competence in digital communication and collaboration involves the ability to effectively use digital tools, understand digital citizenship, practice netiquette, and manage digital identity. This section outlines the key competencies required for each unit of the module.

Unit 1: Interacting and Sharing through Digital Technologies

Basics of Digital Interaction Platforms: Competence in this area involves the ability to navigate and use various digital interaction tools like Zoom, Microsoft Teams, and Slack. Learners should be able to set up and participate in video conferences, utilize chat functions, and collaborate in shared workspaces effectively. This includes understanding how to integrate these tools with other productivity applications to enhance communication and collaboration.

Features & Functions: Making the Most of Digital Tools: Learners need to develop proficiency in using the advanced features of digital tools to maximize their

effectiveness. This includes customizing settings, using integrations, and applying advanced functionalities like breakout rooms, screen sharing, and real-time collaboration features. Competence also involves troubleshooting common issues and optimizing the use of these tools for various communication scenarios.

Platforms for Public vs Private Interactions: Understanding the appropriate use of public and private platforms is crucial. Competence involves knowing when to use public platforms like social media for broad communication and private platforms like direct messaging apps for confidential interactions. Learners should be able to manage privacy settings and understand the implications of public vs private sharing.

Sharing Digital Resources: Best Practices & Tools: Learners should be competent in using tools like Google Drive and Dropbox to share digital resources securely and efficiently. This includes setting permissions, sharing links, and ensuring the security of shared files. Understanding licensing and copyright laws is also essential, ensuring that digital resources are shared legally and ethically.

Collaborative Document Creation & Management: Competence involves using tools like Google Docs and Microsoft 365 to create and manage documents collaboratively. Learners should be able to use real-time editing, track changes, and manage version control effectively. This includes coordinating with team members and ensuring smooth and productive collaboration on shared documents.

Unit 2: Engaging Citizenship and Collaboration through Digital Technologies

Digital Citizenship: Rights & Responsibilities: Competence in digital citizenship involves understanding one's rights and responsibilities in the digital world. Learners should be able to navigate online spaces ethically, respect privacy, and practice responsible online behaviour. This includes understanding digital ethics and promoting positive digital interactions.

Online Communities: Participation and Contribution: Effective participation in online communities requires competence in engaging with community norms and actively contributing to discussions. Learners should be able to use platforms like Reddit, LinkedIn, and professional forums to share knowledge, provide support, and collaborate with others. Avoiding common pitfalls and promoting positive engagement are key aspects of this competence.

Ethical Collaboration in Digital Spaces: Competence involves practicing transparency and fairness in digital collaborations. Learners should be able to acknowledge contributions, avoid plagiarism, and ensure all team members have equal opportunities to participate. Using tools that track contributions and maintaining open communication are essential skills.

Addressing Misinformation in Digital Networks: Learners need to develop the ability to identify and counteract misinformation using verification tools and fact-checking platforms. Competence also involves educating others about misinformation and promoting critical thinking. Using tools like Snopes, FactCheck.org, and browser extensions designed to verify information are key components of this competence.

Unit 3: Netiquette

Principles of Netiquette in Various Platforms: Competence in netiquette involves understanding and practicing respectful and effective communication across different digital platforms. Learners should be able to apply the principles of netiquette in emails, messaging apps, and video calls, ensuring clarity, professionalism, and respect in all digital interactions.

Professional Digital Communication Standards: Building professional relationships online requires competence in presenting oneself professionally, addressing conflicts constructively, and managing digital interactions ethically. Learners should be able to use professional networking sites like LinkedIn effectively, adhering to platform-specific guidelines and maintaining a positive online presence.

Social Media Interaction: Best Practices: Effective use of social media involves understanding platform-specific norms and practices. Competence includes knowing how to share content responsibly, engage with others constructively, and handle negative feedback or trolls appropriately. Promoting positive interactions and contributing valuable content are key aspects of this competence.

Unit 4: Managing Digital Identity

Digital Footprint & Online Representation: Competence in managing one's digital footprint involves understanding and controlling online presence. Learners should be able to analyse their current digital footprint, use tools to monitor online activity, and curate a positive online image. This includes understanding the long-term implications of digital actions and maintaining a consistent and professional digital presence.

Privacy, Security, & Digital Identity: Managing digital identity requires competence in using privacy settings, implementing security measures, and protecting personal information online. Learners should be able to use tools like two-factor authentication, encryption, and privacy settings on social media platforms to safeguard their digital identity.

Curating a Constructive Online Presence: Building a positive online presence involves personal branding and content creation. Learners should be able to create and manage professional profiles, engage with communities aligned with their interests,

and share content that reflects their personal and professional values. Competence in this area includes using personal branding tools and platforms effectively.

Addressing Digital Identity Challenges: Competence involves knowing how to handle digital identity challenges like doxing and hacking. Learners should be able to use cybersecurity tools, seek support from online safety organizations, and implement best practices for recovery and resilience. Understanding how to respond to digital crises and rebuild a positive online presence is essential.

[D] - Assessment Keywords

digital interaction tools, video conferencing, chat functions, shared workspaces, advanced features, platform integrations, public vs private platforms, digital resource sharing, file permissions, encryption, licensing, copyright, Creative Commons, collaborative document creation, real-time editing, version control, digital citizenship, online rights, online responsibilities, digital ethics, privacy settings, VPN, community norms, online engagement, professional forums, transparency, fair participation, contribution tracking, misinformation, verification tools, browser extensions, netiquette, email etiquette, messaging etiquette, video call etiquette, professional networking, digital footprint, online reputation management, two-factor authentication, personal branding, professional profiles, portfolio platforms, doxing, hacking, cybersecurity, assistive technologies, screen readers, voice recognition software, continuous learning, media literacy, critical thinking, social media interaction, content sharing, feedback handling, digital literacy, digital communication, collaboration skills, online presence, resilience strategies.

3.3 Module 3: Digital content creation

3.3.1 Basic Structure

Unit 1: Developing Digital Content
In the context of the DigComp framework, this Unit refers to creating content in different formats, including multimedia content, editing and improving the content of one's own or others' creation, and expressing themselves creatively through digital media and technologies.

Thinking about the target group, such as adult learners, to cover this general competence, it is divided into 7 lessons which will guide the adult learner to reach the optimal level of learning within his or her level.

Unit 2: Integration and Re-elaborating Digital Content
In the context of the DigComp framework, this Unit refers to modifying, refining and integrating new information and content into an existing body of knowledge and resources to create new, original and relevant content and knowledge.

Thinking about the target group, such as adult learners, in order to cover this general competence, it is divided into 5 lessons which will guide the adult learner to reach the optimal level of learning within his or her level.

Unit 3: Copyright and Licences

Within the DigComp framework, "Copyright and Licences' refers to understanding how copyright and licences apply to digital information and content.

For adult learners, with autonomy and appropriate guidance where needed for solving straightforward problems, discuss and identify simple rules of copyright and licenses that apply to data, digital information and content.

Thinking about the target group, such as adult learners, in order to cover this general competence, it is divided into 5 lessons which will guide one to reach the optimal level of learning within his or her level.

Unit 4: Programming

In the context of the DigComp framework, this Unit refers to planning and developing a sequence of understandable instructions for a computing system to solve a given problem or to perform a specific task.

Thinking about the target group, such as adult learners, in order to cover this general competence, it is divided into 8 lessons which will guide the adult learner to reach the optimal level of learning within his or her level.

3.3.2 Developing Information & Data Literacy for each Lesson
[A] – Needs

Unit 1: Developing Digital Content

Importance of digital content in the current context: digital content is important in the current context because it captures attention, engages with the audience, builds trust and authority, attracts and retains customers, and increases business.

Applications and job opportunities in the field of digital content creation: the field of digital content creation offers a wide range of job opportunities, including content writer, social media manager, marketing coordinator, digital marketing specialist, video editor, and graphic designer.

New trends and technologies relevant to adult learners: some new trends and technologies relevant to adult learners in the field of introduction to digital content creation include social media analysis and exploration, video and photography, search engine optimization, listening, and time management.

Unit 2: Integration and Re-elaborating Digital Content

With the increasing importance of the digital world, competitiveness has sharply risen. For this very reason, it is now more necessary than ever to learn how to evaluate digital content with the aim to understand why does or doesn't content from other creators work and how can you improve your content.

Unit 3: Copyright and Licences

On the internet, whenever content creators produce a new work, it is quite common to use pre-existing material from other content creators, which often leads to copyright infringement. For this very reason, it is necessary to learn about the copyright's basis and principles, both legal and ethical, as well as the legal protection copyright offers and its duration.

Unit 4: Programming

Programming might help you create certain types of digital content, as well as enhancing content creations. For this very reason, it is necessary to understand the principles of programming, as well as the most basic concepts that programming languages share.

[B] - Technological Response

Unit 1: Developing Digital Content.

Adult learners can use several technological responses to stay up-to-date, including content creation tools, social media platforms, SEO tools, virtual and augmented reality, and artificial intelligence.

Unit 2: Integration and Re-elaborating Digital Content.

To fulfil these needs, one must learn how to analyse different types of content both from a technical and from a self-perceived point of view. Moreover, it is also paramount to keep up to date with the latest tools and technologies that help you evaluate digital content.

Unit 3: Copyright and Licences.

To appropriately apply the copyright law, one must know how to look for the copyright protection of certain works. To achieve this, SEO is paramount to find useful resources that are up to date. In addition, traditional skills to search legal information will also be useful.

Unit 4: Programming

To stay up to date with the latest programming concepts and keywords, learners might use technological responses such as official tools from different software companies or SEO tools.

[C] - Competence

These groupings by unit and keywords should help in clearly understanding and organising the competencies for each unit.

Unit 1: Developing Digital Content

Social media, news trends, and digital technologies play significant roles in today's society, and it is important to identify relevant digital tools. Content strategy and planning involve creating a strategy for digital content creation and planning its execution. Written content creation focuses on expressing oneself on the digital landscape and using techniques for organizing and structuring content effectively. Graphic and multimedia tools, along with design resources, are essential for creating digital content. Website development includes structuring a website, identifying hosting providers, and selecting website builders. Marketing strategies and personal branding focus on promoting oneself and developing a personal brand. Improving user experience in digital content creation is enhanced through effective graphic design.

Unit 2: Integration and Re-elaborating Digital Content

Content evaluation involves analysing digital content to contrast its strengths and flaws across various types. Integration and combination strategies are essential for effectively merging digital content. Improvement, fixing, reorganization, restructuring, and editing are key processes for reworking and updating digital content. Adaptation focuses on adjusting pre-existing content to fit different formats, while identifying requirements, compatibilities, and incompatibilities. Modification includes enhancing content by integrating multimedia and interactive elements into various formats.

Unit 3: Copyright and Licenses

Understanding the legal principles that affect internet content creation is essential. It is also important to acknowledge the rights and limitations associated with digital content creation, as well as regional differences. Copyright licenses have various features, and selecting and applying the most appropriate license for content is a crucial skill. Obtaining permissions from copyright holders, recognising exceptions and limitations to copyright, and citing properly are necessary practices. Protecting digital work and knowing when and how to take legal action against unauthorised use are vital for safeguarding content. Additionally, understanding alternatives to traditional copyright and knowing when to apply these alternatives can broaden content protection options.

Unit 4: Programming

Understanding the basis and principles of programming is fundamental. It also involves a solid comprehension of programming structures, languages, and language families. Knowing the different parts of a computer and how they contribute

to program execution is essential. Familiarity with key settings, software, and files on a computer, as well as when to customise, adapt, and modify programs, is important. Identifying useful tools for modifying and configuring programs supports these tasks. Recognising and fixing various errors is aided by debugging techniques and using error logs to locate and resolve bugs. Developing and running tests is necessary to verify the efficacy of modified programs. Clear and concise documentation is crucial for recording any changes made to computer programs.

[D] Assessment Keywords

Social Media, News Trends, Digital Technologies, Tools, Content Strategy, Planning, Written Content, Organization, Structure, Techniques, Graphic Tools, Multimedia Tools, Design Resources, Website Development, Hosting Providers, Website Builders, Marketing Strategies, Personal Branding, Self-Promotion, User Experience (UX), Graphic Design, SEO (Search Engine Optimization), Analytics, Audience Engagement, Content Management Systems (CMS), Branding, Digital Marketing, Visual Content, Interactive Media, Mobile Optimization, Copywriting, Content Curation, Email Marketing, Influencer Collaboration, Video Production, Data-Driven Decisions, User Feedback, E-commerce Integration.

3.4 Module 4: Safety

3.4.1 Basic Structure

The **"Safety"** module provides essential knowledge and strategies for safeguarding oneself and the environment in the digital age. It covers key areas such as device security, personal data protection, health and well-being in digital spaces, and environmental sustainability.

Unit 1: Protecting Devices

This unit focuses on safeguarding digital devices and content by emphasizing strong passwords, two-factor authentication, and encryption. It addresses threats like malware and data breaches and highlights the importance of antivirus software, firewalls, and backups. Learners explore digital threats such as phishing and best practices for cybersecurity. The unit also covers maintaining online privacy, responsible social media use, and discerning reliable sources to avoid misinformation. It aims to develop skills in implementing security measures, using privacy settings, and promoting responsible online behaviour.

Unit 2: Protecting Personal Data and Privacy

This unit covers key practices for protecting personal data and privacy online. It focuses on using strong passwords, secure connections Hypertext Transfer Protocol Secure (HTTPS), and cautious sharing of personal information. Learners will understand risks like phishing and identity theft, and learn best practices for data

protection, including encryption and secure online behaviour. The unit also addresses handling personally identifiable information (PII) and interpreting privacy policies. It aims to develop skills in secure data management and responsible online practices, promoting vigilance and ethical conduct.

Unit 3: Protecting Health and Well-being

This unit focuses on maintaining health and well-being in the digital age. It covers understanding digital environments and communication, emphasizing digital literacy, cybersecurity, and ethical behaviour. Learners gain insights into managing digital health technologies, including health apps and telemedicine, and the principles of health data privacy and security. The unit also addresses the impact of cyberbullying, teaching strategies for prevention, reporting, and maintaining mental well-being. It explores legal aspects of digital behaviour, including data privacy laws and intellectual property rights. It aims to develop skills in navigating digital health tools, protecting privacy, and fostering ethical online conduct.

Unit 4: Protecting the Environment

The final unit focuses on understanding and mitigating the environmental impact of digital technologies. It covers fundamental concepts of environmental science, including the effects of carbon footprints, e-waste, and energy consumption. Learners explore principles of sustainability and the circular economy, gaining skills to assess and improve the environmental impact of digital products and infrastructure. The unit also examines legal frameworks for environmental protection, emerging policies, and green technologies. Emphasis is placed on ethical responsibility, innovation, and advocacy for sustainable practices to minimize environmental harm.

3.4.2 Developing Information & Data Literacy for each Lesson
[A] - Needs

Understanding the needs for each unit involves identifying key areas of digital literacy and safety

Unit 1: Protecting Devices

This unit underscores the critical need to protect digital devices and their data from diverse security threats. It addresses vulnerabilities such as malware, viruses, and unauthorized access that can compromise personal and professional information. Emphasizing the importance of implementing strong security measures like antivirus software, firewalls, and encryption, the unit aims to equip learners with the knowledge to secure their devices effectively. Additionally, it highlights the necessity of regular updates and backups to safeguard against data loss and breaches.

Unit 2: Protecting Personal Data and Privacy

This unit focuses on the crucial need to protect personal information in the digital age. It delves into the importance of secure practices for handling sensitive data, including the use of strong passwords, encryption, and careful sharing of information. This unit emphasizes understanding privacy implications, such as the risks of identity theft and unauthorized data access. By fostering an awareness of data protection laws and promoting best practices for managing personal information, learners are prepared to safeguard their privacy in various digital contexts.

Unit 3: Protecting Health and Well-being

This unit addresses the need for responsible digital technology use to support health and well-being. It explores how digital tools, including health apps and telemedicine, impact personal health while stressing the importance of protecting health data privacy. The unit highlights the potential for technology to both support and jeopardize well-being, underscoring the need for ethical behaviour and cybersecurity measures. By understanding digital health tools and data protection, learners are better equipped to manage their health responsibly in a digital environment.

Unit 4: Protecting the Environment

This unit emphasizes the necessity of considering environmental impacts associated with digital technologies. It explores the carbon footprint, e-waste, and resource consumption related to tech products and services. The unit aims to raise awareness about sustainable practices, such as using energy-efficient systems and recycling electronic waste. By highlighting the importance of green technologies and regulatory frameworks, learners are encouraged to adopt eco-friendly practices and contribute positively to environmental sustainability in their digital activities.

[B] - Technological Response

The technological response involves utilizing tools and strategies to address digital challenges.

Unit 1: Protecting Devices

Addresses the need for robust security measures by utilizing antivirus software to detect and remove malware, firewalls to block unauthorized access, and encryption to protect data. Regular software updates and strong, multifactor authentication further enhance device security, creating a comprehensive approach to safeguarding against various digital threats.

Unit 2: Protecting Personal Data and Privacy

Involves implementing strong, unique passwords and utilizing secure connections (e.g., HTTPS) to protect personal information. Effective use of privacy settings across platforms, coupled with cautious data sharing practices, helps mitigate risks such as identity theft and unauthorized access to personal data.

Unit 3: Protecting Health and Well-being

Focuses on the responsible use of digital health technologies by ensuring that health apps and wearable devices are secure and comply with privacy regulations. Emphasizes the importance of informed consent and data protection in telemedicine and other digital health services to safeguard personal health information.

Unit 4: Protecting the Environment

Emphasizes the adoption of green technologies and practices to reduce the environmental impact of digital activities. This includes selecting energy-efficient hardware, managing e-waste responsibly, and promoting the use of renewable energy sources to power digital infrastructures, supporting overall sustainability efforts.

[C] - Competence

Competence in each unit involves acquiring specialized skills and knowledge essential for addressing digital challenges effectively. Mastery in these areas ensures proficiency in managing and mitigating risks associated with each topic

Unit 1: Protecting Devices
Requires developing skills in securing digital devices against threats, including effective threat management techniques. Competence involves understanding and implementing protective measures like strong passwords, antivirus software, encryption, and regular updates to ensure comprehensive device security.

Unit 2: Protecting Personal Data and Privacy
Involves gaining expertise in managing and safeguarding personal information. Competence includes mastering the use of privacy settings, creating strong passwords, and understanding data protection principles to prevent unauthorized access and ensure personal privacy.

Unit 3: Protecting Health and Well-being
Requires knowledge of digital health tools and ensuring their ethical use. Competence involves understanding how to use health apps and wearables responsibly, maintaining data privacy, and adhering to ethical practices in digital health environments.

Unit 4: Protecting the Environment
Necessitates knowledge of the environmental impacts of digital technologies and the implementation of sustainable practices. Competence includes understanding the principles of sustainability, managing e-waste, and adopting green technologies to minimize environmental harm.

[D] - Assessment Keywords

Assessment keywords are essential for evaluating comprehension and practical application of concepts in each unit.

Unit 1: Protecting Devices

Keywords include malware, encryption, firewall, antivirus, threat management, data protection, cybersecurity, digital safety, software updates, and security measures. These terms are critical for assessing understanding of methods and tools used to protect digital devices and data.

Unit 2: Protecting Personal Data and Privacy

Keywords focus on privacy settings, data protection, secure sharing, strong passwords, personal information, identity theft, encryption, privacy laws, and online safety. These terms help evaluate knowledge of safeguarding personal data and managing privacy in digital environments.

Unit 3: Protecting Health and Well-being

Terms like telehealth, data privacy, cyberbullying, health apps, digital well-being, ethical use, wearable technology, mental health, privacy regulations, and responsible use are central. These keywords assess understanding of digital health tools, privacy concerns, and the impact of online interactions on well-being.

Unit 4: Protecting the Environment

Includes sustainability, e-waste, green technologies, environmental impact, resource depletion, energy consumption, carbon footprint, recycling, circular economy, and renewable energy. These terms are vital for evaluating knowledge of environmental considerations and sustainable practices related to digital technology.

3.5   Module 5: Problem-Solving

The 'Problem-Solving' module deals with a wide variety of problems that can occur when working with digital devices or content. In addition, learners are offered ideas and possible solutions for everyday activities that can be dealt with using digital devices or technologies.

3.5.1   Basic Structure

The basic structure covers 4 units, conveying problems and offering possible solutions in context with use of digital technology.

Unit 1: Technical Problems

This unit addresses identifying and resolving common technical issues that users may encounter when using digital devices. It includes discussions on hardware issues, such as devices not powering on, unexpected shutdowns, overheating, and problems with input devices like unresponsive keyboards or mice. Additionally, it covers software issues, including application crashes, unresponsiveness, and operating system errors.

The unit also tackles network issues by providing solutions for slow internet speeds, and intermittent connectivity, and troubleshooting Wi-Fi and Bluetooth problems.

Unit 2: Identifying Needs and Technological Responses

This unit focuses on recognising when a digital solution is required and finding appropriate technologies to meet these needs. It highlights the importance of personal productivity tools, such as digital task managers and calendar applications, and provides guidance on selecting the most suitable tools for specific needs. The unit also covers the implementation of these tools, emphasising how to integrate and customise them to fit personal or professional requirements, including making necessary accessibility adjustments.

Unit 3: Creatively Using Digital Technology

This unit encourages using digital tools to solve problems and create new solutions. It discusses innovative problem-solving by creatively applying digital tools to address complex issues. The unit promotes project-based learning, utilising digital technology in projects to solve real-world problems. Additionally, it focuses on enhancing teamwork and communication through digital platforms, fostering better collaboration and effective digital communication strategies.

Unit 4: Identifying Digital Competence Gaps

This unit is dedicated to assessing and improving one's digital skills. It explains various methods for self-assessment to evaluate digital competence. The unit provides resources and strategies for skill development, helping individuals enhance their digital skills. It also emphasises the importance of staying updated with technological advancements and adopting continuous learning strategies to maintain and improve digital proficiency.

3.5.2 Developing Information & Data Literacy for each Lesson

[A] – Needs

This is the compilation of the identified needs, as identified for the various units. A description of additional identified needs closes this chapter.

Unit 1 – Technical Problems

Being comfortable with technology starts with troubleshooting. Users should be familiar with resolving common issues like **hardware malfunctions** such as devices refusing to power on, overheating, or problems with keyboards and mice. **Software issues** like application crashes and operating system errors also need basic troubleshooting skills. **Network problems** can be frustrating, so understanding how to fix slow internet, intermittent connections, and Wi-Fi or Bluetooth difficulties is important.

Unit 2– Identifying Needs and Technological Responses

Technology can be a powerful tool for personal organisation. Using **digital task managers** and **calendar applications** can significantly improve **personal productivity** by efficiently managing tasks and schedules. **Software compatibility** is another key area. Knowing how to handle and convert different **file formats** ensures everyone can access the information they need. For data security and accessibility, utilising **cloud-based solutions** like cloud storage is becoming increasingly important.

Unit 3 - Creatively Using Digital Technology

Technology can be more than just solving basic problems. **Innovative problem-solving** encourages using digital tools in creative ways to tackle complex challenges. **Project-based learning** is another powerful approach that utilises technology for project-based tasks, fostering a more engaging learning experience. Digital tools can also enhance teamwork and communication through various **collaboration and communication platforms**.

Unit 4 - Identifying Digital Competence Gaps

Recognising your strengths and weaknesses is crucial for growth. By conducting a **self-assessment** of your digital skills, you can identify areas where you can improve. Technology is constantly evolving, so **continuous learning** is essential. Developing lifelong learning strategies keeps you updated with **technological advancements**.

Additional Identified Needs: Technology should be accessible to everyone. **Assistive technologies** like screen readers and voice recognition software can bridge the gap for users with disabilities. **Health and wellness** can also benefit from technology. Fitness trackers and health apps can help you monitor physical activity and set fitness goals. **Security** is paramount – protecting devices from viruses and malware requires understanding **cybersecurity fundamentals**. Finally, **online learning** tools can help you discover your learning interests and set personal goals through digital resources.

[B] - Technological Response

Unit 1 - Technical Problems

Hardware malfunctions can cause various issues, such as devices refusing to power on, overheating unexpectedly, or problems with keyboards and mice. These malfunctions can be caused by battery problems, software glitches, or hardware failures themselves. Understanding how to troubleshoot these problems effectively is important. Some **technological responses** include checking the battery, ensuring proper ventilation for the device, cleaning out dust, performing system updates, and if necessary, seeking professional repairs.

Software issues like applications crashing or becoming unresponsive can be frustrating. These issues can be caused by insufficient memory, software bugs, or conflicts between different programs. Users need to understand these causes and

know how to resolve them. Some **technological responses** include using tools like Task Manager to monitor resource usage, updating the software to the latest version, restarting the system, and maintaining sufficient storage space on the device.

Network problems can also be a source of frustration. These issues can stem from problems with network equipment like routers or from external factors like internet service provider outages. Being able to diagnose and resolve these issues is a valuable skill. Some **technological responses** include checking cables and connections, using network diagnostic tools to pinpoint the problem, updating network drivers, and considering alternative connectivity methods such as Ethernet cables or VPN services.

Unit 2 – Identifying Needs and Technological Responses

Personal productivity can be significantly improved through the use of digital tools. **Task managers** and **calendar applications** can help users manage tasks and schedules efficiently. Understanding and effectively using these tools is important. Some **technological responses** include using digital task managers to set reminders, create recurring tasks, and share calendars with colleagues or teams.

Software compatibility is another key area. Users often encounter files in various formats, and being able to convert these formats is essential to ensure accessibility. **Technological responses** include using appropriate software solutions for file conversion and addressing compatibility issues so everyone can access the needed information.

Cloud-based solutions are becoming increasingly important for data storage. Storing data securely and being able to access it from any device are crucial benefits. Understanding data security protocols and managing storage capacity are important aspects of utilising cloud storage effectively. **Technological responses** include using cloud platforms to store data securely, understanding data security protocols to protect your information, and managing storage capacity to ensure you have enough space for your needs.

Unit 3 – Creatively Using Digital Technology

Innovative problem-solving encourages users to think outside the box. Digital tools can be applied in creative ways to solve complex problems in various fields. **Project-based learning** is another powerful approach that utilises technology for project-based tasks, fostering a more engaging learning experience and helping students develop creative solutions to real-world challenges.

Collaboration and communication are essential for teamwork. Digital tools can enhance teamwork and communication significantly. **Technological responses** include utilising collaboration tools like video conferencing apps and shared digital

workspaces to improve communication and teamwork with colleagues or classmates.

Unit 4 – Identifying Digital Competence Gaps

A crucial step to improvement is recognising your strengths and weaknesses. **Self-assessment** of your digital skills helps identify areas where you can improve. **Technological responses** include using self-assessment tools to evaluate your digital competence and identify any gaps in your skill set.

Continuous learning is essential in today's ever-evolving technological landscape. Staying updated with **technological advancements** and adopting lifelong learning strategies is necessary to remain proficient. **Technological responses** include engaging with online learning platforms like Coursera or Khan Academy to continually enhance your digital skills.

[C] - Competence

The competencies as defined in the development of the content were structured by keywords and are summarised here.

Technical Skills: Troubleshoot unexpected device behaviour, organise and handle data using common tools, identify and solve technical issues, use and customise digital environments, navigate and interact with digital platforms, use digital task managers and calendar applications, understand and use assistive technologies, use spreadsheet software, use recommendation algorithms.

Information Literacy: Conduct effective online searches, evaluate the credibility of online information, and identify bias in online information.

Communication and Collaboration: Communicate effectively, collaborate with remote teams, and use digital tools for communication and collaboration.

Learning and Development: Acquire new knowledge and skills through online learning platforms, identify learning needs and select appropriate resources, manage time effectively for online learning, learn independently, apply learning to work or studies, and utilise online learning communities.

Data Analysis: Organise, analyse and visualise data, use specialised data analysis tools, be able to create and maintain data structures.

Digital Citizenship: Use online petitions and crowdfunding, use digital tools for social impact, and participate in digital citizenship activities.

Security and Privacy: Understand and use password managers, antivirus software, and firewalls, to protect digital identity and data privacy.

Digital Content Creation: Create and improve digital content, use design and printing software for 3D printing, troubleshoot 3D printer problems, make digital content accessible, understand storytelling principles and create engaging stories, create multimedia content.

Other: Set and achieve goals, use digital tools for health and wellness, develop critical thinking skills, use data visualisation tools, apply digital tools for problem-solving and decision-making, use fitness trackers and health apps, understand the impact of digital technologies, manage time efficiently, engage with peer support networks, manage projects using digital tools, develop digital literacy.

[D] – Assessment Keywords

digital tools, task manager, calendar application, set reminders, manage tasks, file formats, software solutions, file conversion, compatibility issues, cloud platforms, data security, storage capacity, innovative solutions, problem-solving, project-based learning, digital projects, collaboration, communication tools, digital platforms, digital competence, self-assessment, skill development, continuous learning, technological advancements, lifelong learning, assistive technologies, accessibility settings, screen readers, voice recognition, fitness trackers, health apps, physical activity, antivirus software, cybersecurity, safe browsing practices, online learning, goal-setting, learning resources

3.6   Individual Learning Spaces

The DigiComPass training course follows the FL3 framework, which is described in detail in the accompanying 'Manifest FL3' and the 'Flipped Instructional Design' documents.

3.6.1   Dos and Don'ts

In this section, we cover a short list of the most common issues instructors may encounter with flipped learning in the individual space and how to avoid them.

Assuming All Students Have Access to Technology

Mistake: It's easy to assume that all students have access to reliable internet and devices at home, especially in a technology-driven world. However, this assumption can create significant barriers for students who do not have access, leading to disparities in learning opportunities. Students without the necessary tools may struggle to complete pre-class assignments, falling behind their peers.

Solution: To address this issue, instructors should conduct a survey or gather information to understand students' access to technology before implementing a flipped classroom. Based on the results, provide alternatives such as printed

materials, offline resources, or designated time in the school's computer lab. This ensures that all students can participate fully in the flipped learning model.

Overloading Students with Pre-Class Work

Mistake: Assigning too much pre-class work can overwhelm students, especially when they have other responsibilities to manage. If the content is too lengthy or complex, students may not complete it, rendering in-class activities less effective. This overload can also lead to anxiety and disengagement.

Solution: Instructors should carefully curate pre-class content, focusing on essential concepts and keeping the material concise and manageable. Ideally, pre-class assignments should not exceed what students can reasonably complete in a short period, considering their overall workload. Providing clear learning objectives for the pre-class content can help students focus on the most important information.

Not Providing Clear Instructions

Mistake: A common mistake is failing to give students clear and detailed instructions on how to approach and complete pre-class assignments. Without proper guidance, students may feel lost or unsure of what is expected, leading to incomplete or incorrect work. This confusion can hinder their ability to participate effectively in class.

Solution: To avoid this, instructors should provide explicit instructions for each pre-class assignment, including how it should be completed, the expected time commitment, and how it connects to in-class activities. Additionally, using consistent formats and tools for delivering these instructions can help students develop a routine, making it easier for them to engage with the content.

Neglecting to Prepare Students for Independent Learning

Mistake: Many students are not naturally equipped with the skills needed for independent learning, such as time management, note-taking, and self-discipline. Assuming they will automatically manage these aspects can result in incomplete or low-quality pre-class work, as students may not know how to effectively engage with the material on their own.

Solution: Instructors should spend time explicitly teaching students the skills required for independent learning. This might include lessons on how to manage time, how to take effective notes, or how to use online resources. Providing scaffolding, such as structured guides or checklists, can help students gradually take on more responsibility for their learning.

Failing to Motivate Students

Mistake: In a flipped classroom, it's crucial for students to be self-motivated to complete pre-class work. However, if students will naturally see the value in doing so can be a mistake. Without clear motivation, students may skip pre-class work, making in-class activities less effective.

Solution: Instructors should take time to explain the benefits of the flipped learning model and how it will help students succeed in the course. One way to increase motivation is to tie pre-class work directly into in-class activities, making it clear that preparation is essential. Additionally, using participation points or incorporating pre-class work into assessments can provide extrinsic motivation.

Using Outdated or Irrelevant Pre-Class Content

Mistake: Providing students with outdated or irrelevant pre-class content can lead to confusion and frustration. If the material does not align with current curriculum goals or lacks relevance to the students' lives, they may find it difficult to engage with the content, leading to poor preparation for class.

Solution: Instructors should regularly review and update pre-class materials to ensure they are current and directly related to the learning objectives of the course. Choosing content that connects with students' experiences or interests can also increase engagement. Additionally, aligning pre-class content with in-class activities can help reinforce its relevance and importance.

Assuming Students Know How to Engage with Digital Content

Mistake: In a digital age, it might seem that all students are proficient in using online tools and resources, but this isn't always the case. Some students may struggle with navigating learning management systems, accessing digital content, or using specific educational apps, which can hinder their ability to complete pre-class work effectively.

Solution: Instructors should not assume digital proficiency and instead provide clear tutorials and guidance on how to access and use the required digital tools. This could include step-by-step instructions, video demonstrations, or even a walkthrough during class time. Providing a digital literacy workshop at the beginning of the course can also help ensure all students are on the same page.

Ignoring the Role of Management for Pre-Class Work

Mistake: Assuming that students will complete pre-class work without any structure or accountability can lead to inconsistent preparation and participation. Without

proper management, some students may skip pre-class assignments, diminishing the effectiveness of in-class activities.

Solution: Instructors should implement clear expectations and accountability measures for pre-class work. This might include regular check-ins, online quizzes, or requiring students to submit brief summaries of what they learned. By maintaining a structured approach, instructors can ensure that students are consistently prepared for in-class activities.

Not Providing Enough Support for Struggling Students

Mistake: In a flipped classroom, students who struggle with independent learning may find themselves falling behind, especially if they are not provided with adequate support. These students may feel overwhelmed by the demands of pre-class work, leading to frustration and disengagement.

Solution: Instructors should identify students who are struggling early on and offer additional resources or interventions to help them succeed. This might include providing extra help sessions, offering alternative explanations of the material, or pairing them with a peer tutor. By proactively supporting struggling students, instructors can help ensure that all students benefit from the flipped model.

Lack of Consistency in Flipped Learning Implementation

Mistake: Inconsistent application of the flipped learning model can confuse students and lead to uneven preparation for class. If students are unsure of when and how to complete pre-class work, they may not engage with the material consistently, reducing the effectiveness of the approach.

Solution: Instructors should be consistent in their implementation of the flipped model, clearly communicating expectations for pre-class work and following a predictable routine. This consistency helps students develop good habits and ensures that they are always prepared for in-class activities. Regularly reminding students of the importance of pre-class work and providing consistent deadlines can also help maintain engagement.

Neglecting the Importance of Assessment

Mistake: Failing to assess students' understanding of pre-class content can result in students arriving unprepared for class, unable to participate effectively in activities. Without some form of assessment, it's difficult for instructors to gauge whether students are actually engaging with the pre-class material.

Solution: Instructors should incorporate formative assessments, such as quizzes or reflection assignments, to measure students' understanding before class. These assessments should be low stakes but meaningful, providing both the teacher and students with feedback on their progress. Additionally, using these assessments to inform in-class activities can help ensure that the time spent in class is productive and focused on areas where students need the most support.

Ignoring Cultural and Socioeconomic Differences

Mistake: Failing to consider the diverse cultural and socioeconomic backgrounds of students can result in a flipped classroom that is not accessible to all. Some students may face challenges related to language barriers, or differing cultural, social or educational expectations which can affect their ability to engage with pre-class work.

Solution: Instructors should adopt a culturally responsive approach, considering the unique needs of their students when designing pre-class assignments. This might include providing content in multiple languages, offering various formats to accommodate different learning preferences, or being flexible with deadlines for students facing significant challenges. By recognizing and addressing these differences, instructors can create a more inclusive flipped classroom environment.

Not Monitoring Student Progress Regularly

Mistake: Assuming that students are keeping up with pre-class content without regularly checking their progress can lead to gaps in understanding and preparation. If students fall behind, they may struggle to participate in class, which can hinder the overall learning experience.

Solution: Instructors should use tools like learning management systems to regularly monitor student progress on pre-class assignments. This can include tracking quiz results, checking participation in online discussions, or reviewing submitted assignments. Regular monitoring allows instructors to identify students who may need additional support and to adjust pre-class content if necessary to ensure all students are adequately prepared for in-class activities.

Relying Too Much on External Content

Mistake: Using too much pre-made content from external sources without adapting it to your specific curriculum or students can lead to a lack of alignment with course objectives. This content may not fully address the specific needs or interests of your students, resulting in disengagement or confusion.

Solution: Instructors should take the time to customize or create their own pre-class content that directly aligns with their curriculum and teaching approach. This might involve modifying external resources to better fit the course objectives or creating new materials that are more relevant to the students' experiences. By tailoring content to their specific context, instructors can ensure that pre-class assignments are meaningful and effective.

Neglecting to Prepare for Technical Issues

Mistake: Assuming that technology will always work smoothly can be a significant oversight. Technical issues, such as internet outages, platform errors, or device malfunctions, can prevent students from completing pre-class work, leading to frustration and a disruption in learning.

Solution: Instructors should always have a backup plan for when technical issues arise. This might include providing printed materials, offering alternative assignments, or allowing additional time for completion if students face technical difficulties. By planning for these potential challenges, instructors can minimize their impact on students' learning and ensure that pre-class work remains accessible.

3.7   Group Learning Space

Here are some crucial considerations on the Group Learning Space, followed by a list of DOs and DON'Ts.

3.7.1   Creating a Safe Learning Environment

A **Safe Learning Environment** is a physical or virtual space where learners feel secure, respected, and supported, allowing them to engage fully in the educational process without fear of harm, discrimination, or judgment. This environment fosters open communication, encourages risk-taking in learning, and ensures that all participants can express themselves freely and learn from their mistakes without anxiety or fear of ridicule.

Importance of a Safe Learning Environment

Here are some facts and basic considerations from literature on how to implement this "Safe Environment". We added implementation and solution proposals:

1. **Emotional and Psychological Safety**

    Learners are more likely to engage, participate, and take intellectual risks when they feel emotionally and psychologically safe. This sense of safety reduces anxiety, increases confidence, and fosters a positive attitude toward learning.

Implementation/Solution: Establish clear classroom norms that promote respect and kindness, actively listen to learners' concerns, and provide regular opportunities for anonymous feedback. Incorporate activities that build self-esteem and encourage open communication, ensuring that all learners feel heard and supported.

2. **Encourages Inclusivity and Diversity**

A safe learning environment values and respects diversity, ensuring that all learners, regardless of their background, feel included and supported. This inclusivity enriches the learning experience by exposing learners to different perspectives and ideas.

Implementation/Solution: Incorporate diverse materials and perspectives into the classroom activities, use inclusive language, and celebrate cultural differences. Facilitate group work in a way that encourages collaboration among learners from diverse backgrounds and provide professional development for educators on inclusive teaching practices.

3. **Promotes Academic Success**

When learners feel safe, they are more likely to focus on their studies, leading to improved academic outcomes. A safe environment minimizes distractions related to fear or discomfort, allowing learners to concentrate on their learning goals.

Implementation/Solution: Design lessons that are challenging yet achievable, offer constructive feedback that focuses on growth, and create a supportive atmosphere where mistakes are viewed as learning opportunities. Ensure the physical environment is free from distractions and conducive to focused learning.

4. **Supports Social and Emotional Development**

Beyond academic learning, a safe environment contributes to the development of social and emotional skills, such as empathy, collaboration, and conflict resolution. These skills are essential for personal growth and future success.

Implementation/Solution: Integrate social-emotional learning (SEL) activities into the practical work in the Group Learning Space, such as role-playing scenarios, group discussions, and mindfulness practices. All this aligns with

the principle of "Active Learning". Provide learners with tools and strategies to manage emotions, resolve conflicts, and build positive relationships.

5. **Builds Trust and Respect**:

    A safe learning environment is built on mutual trust and respect between educators and learners. This trust enhances communication, fosters strong relationships, and creates a collaborative learning community where everyone feels valued.

    Implementation/Solution: Foster a culture of transparency by clearly communicating expectations, consistently following through on commitments, and being approachable. Encourage mutual respect through modelling respectful behaviour and creating opportunities for learners to voice their opinions and contribute to classroom decisions.

In summary, a safe learning environment is foundational to effective education, as it nurtures the well-being, engagement, and success of all learners. It is the bedrock upon which meaningful and lasting learning experiences are built.

3.7.2 Nurturing Positive Group Dynamics in the Group Learning Spaces

Group Dynamic refers to the way individuals in a group interact, communicate, and work together to achieve common goals. In the context of a Group Learning Space within the Flipped Learning model, effectively guiding group dynamics is essential for fostering collaboration and active learning.

In a Flipped Learning environment, the group learning space becomes a hub for engaging, interactive activities. Here, learners work together to solve problems, discuss concepts, and apply what they've learned. This collaborative approach relies heavily on positive group dynamics to ensure that each member contributes meaningfully and that the group functions effectively.

As a trainer, your role is to facilitate and guide these dynamics to create a productive learning environment.

- Begin by setting clear expectations for group work, emphasizing the importance of mutual respect, active listening, and equal participation.
- Structure activities that require collaboration and encourage a mix of perspectives, ensuring that all voices are heard.
- Monitor the groups closely, providing guidance when necessary to help resolve conflicts, keep discussions on track, and ensure that all members are engaged.
- Use open-ended questions to prompt deeper thinking and discussion and encourage groups to reflect on their process and outcomes.

Focusing on actively guiding group dynamics, you can create a supportive and effective group learning space where learners can thrive. Here are three proposals on how to care for perfect group dynamics:

Establish Clear Roles and Responsibilities

To enhance group dynamics, assign specific roles to each group member, such as a facilitator, note-taker, or timekeeper. This ensures that everyone has a clear responsibility, promoting active participation and accountability within the group.

Implementation: At the start of each group activity, briefly explain each role and allow the group to assign roles among themselves. Rotate roles in subsequent activities to ensure that all members experience different aspects of group work.

Encourage Open Communication

Foster an environment where all group members feel comfortable sharing their ideas and opinions. This openness encourages diverse perspectives, leading to richer discussions and more creative solutions.

Implementation: Set ground rules for respectful communication and actively model these behaviours. Encourage quieter members to contribute by asking for their input and reminding the group to listen actively to all voices.

Facilitate Reflective Debriefing

After group activities, guide the group through a debriefing session where they can reflect on their collaboration, discuss what worked well, and identify areas for improvement. This reflection helps reinforce positive group dynamics and continuous learning.

Implementation: Use a simple framework for debriefing, such as "What went well?" and "What could be improved?" Encourage honest feedback and emphasize that the goal is to enhance the group's effectiveness in future tasks.

3.8   Group Space Dos and Don'ts

Not Aligning Pre-Class and In-Class Activities

Mistake: A common error in flipped learning is the failure to connect pre-class materials with in-class activities. When the content students review on their own is not directly relevant to what they do in class, it can create confusion and a lack of continuity, reducing the effectiveness of the flipped model.

Solution: Instructors should carefully design in-class activities that build directly on the pre-class content. This alignment ensures that students see the relevance of their pre-class work and are better prepared to engage in deeper learning during class. For example, if the pre-class content introduces a new concept, in-class activities should focus on applying that concept through discussions, problem-solving, or hands-on tasks.

Not Using Class Time Effectively

Mistake: The primary benefit of the flipped classroom is the ability to use class time for more interactive and student-centered activities. However, if instructors do not plan in-class activities that take advantage of this time, the potential of the flipped model is wasted. Simply lecturing during class or not engaging students in meaningful tasks can undermine the purpose of flipping the classroom.

Solution: Instructors should use class time for activities that promote higher-order thinking, such as collaborative projects, discussions, or problem-solving exercises. These activities should encourage students to apply what they learned during their pre-class work, allowing them to explore concepts more deeply and in a more engaging way. Effective use of class time can also include formative assessments, peer teaching, and other interactive methods that reinforce learning.

Failing to Provide Clear Instructions for In-Class Activities

Mistake: Just as with pre-class work, in-class activities can falter if students are not given clear and detailed instructions. Ambiguity about what they are supposed to do, how they should collaborate, or what the desired outcomes are can led to confusion and ineffective use of class time.

Solution: Instructors should provide explicit instructions for each in-class activity, clearly outlining the steps students need to take, the roles they should assume, and the goals they should aim to achieve. This might include written instructions, verbal explanations, or visual aids to ensure all students understand the task at hand. Clear instructions help keep students on track and ensure that class time is used productively.

Not Addressing Students' Questions in Class

Mistake: A significant advantage of the FL3 framework is the opportunity for students to clarify their understanding during class time. However, if instructors do not actively encourage or address students' questions about pre-class content, students may leave class with lingering misunderstandings, undermining the learning process.

Solution: Instructors should begin each class with a Q&A session or a review of common questions that arose from the pre-class work. This clarifies any confusion and sets the stage for more effective in-class activities. Encouraging students to ask questions and engage in discussions about the pre-class content can deepen their understanding and foster a more interactive classroom environment.

Neglecting to Build a Community of Learners

Mistake: Flipped learning can sometimes focus too much on individual preparation, neglecting the importance of building a supportive and collaborative learning community within the classroom. Without a sense of community, students may feel isolated or less motivated to participate fully in class activities.

Solution: Instructors should facilitate group work and discussions that promote collaboration and a sense of belonging among students. Activities that require peer interaction, such as group projects, debates, or peer teaching, can help students learn from one another and build stronger connections. A positive classroom community can enhance engagement, motivation, and overall learning outcomes.

Overemphasizing Technology Over Pedagogy/Andragogy

Mistake: While technology is a key component of flipped learning, focusing too much on the tools and platforms at the expense of sound pedagogical practices can be a mistake. If the use of technology overshadows the educational goals, students may become distracted or disengaged.

Solution: Instructors should ensure that technology serves the learning objectives, not the other way around. This means selecting tools and platforms that enhance, rather than replace, effective teaching practices. For example, using technology to facilitate discussions, provide instant feedback, or create interactive simulations can enrich the learning experience. However, the primary focus should always be on how these tools support the overall pedagogical goals.

Failing to Set Clear Learning Objectives for In-Class Activities

Mistake: Conducting in-class activities without clearly defined learning objectives can lead to aimless or unproductive sessions. Without clear goals, students may not understand the purpose of the activity or how it fits into the broader course objectives.

Solution: Instructors should define and communicate clear learning objectives for each in-class activity. These objectives should align with the overall course goals and be specific enough that students know what they are expected to achieve by the end

of the class. Clear objectives help focus both the teacher and students, ensuring that class time is spent in meaningful and targeted ways.

Ignoring Classroom Management in a Flipped Classroom

Mistake: If the interactive nature of a flipped classroom will automatically manage itself can lead to chaos or off-task behaviour. Without effective classroom management strategies, students may become distracted, disengaged, or fail to participate in activities as intended.

Solution: Instructors should maintain strong classroom management practices in a flipped classroom, just as they would in a traditional setting. This includes setting clear expectations for behaviour, keeping students focused on the task at hand, and using strategies to manage transitions between activities smoothly. Effective classroom management ensures that the dynamic, student-centered environment of a flipped classroom remains productive and conducive to learning.

Not Encouraging Collaboration Among Students During Class

Mistake: In FL3, it's important to balance individual work with opportunities for collaboration. If class time is spent primarily on individual tasks, students may miss out on the benefits of peer learning, which can enhance understanding and retention.

Solution: Instructors should design in-class activities that require teamwork and peer interaction. This could include group projects, collaborative problem-solving exercises, or peer review sessions. By encouraging collaboration, instructors can help students learn from each other, develop critical thinking skills, and foster a sense of community within the classroom.

Not Providing Opportunities for Reflection During Class

Mistake: Reflection is a key component of learning, allowing students to internalize and make sense of the material. However, if instructors do not build in opportunities for reflection during class, students may miss out on this important step, leading to superficial understanding.

Solution: Instructors should incorporate structured reflection activities into the class routine. This could be through journaling, group discussions, or reflective questioning at the end of an activity. Reflection helps students connect new knowledge to prior learning, deepens their understanding, and encourages them to think critically about the material.

Failing to Differentiate In-Class Instruction

Mistake: If one-size-fits-all activities will work for all students during class can lead to disengagement or frustration, particularly for those who may need more support or those who are ready for more advanced challenges.

Solution: Instructors should differentiate in-class activities to meet diverse learning needs. This might include offering different levels of complexity in tasks, providing additional support for those who need it, or offering extension activities for students who are ready to move ahead. Differentiation ensures that all students are challenged and supported appropriately, making the classroom more inclusive and effective.

Ignoring Student Feedback on In-Class Activities

Mistake: Failing to collect or act on feedback regarding in-class activities can result in repeated issues or missed opportunities for improvement. Without feedback, instructors may not realize what is or isn't working for their students.

Solution: Instructors should regularly seek feedback from students about in-class activities, whether through surveys, informal check-ins, or class discussions. This feedback can provide valuable insights into how students are experiencing the flipped classroom and what adjustments might be needed. Acting on feedback improves the learning experience and shows students that their opinions are valued.

Underestimating the Time Required for Planning In-Class Activities

Mistake: The interactive and student-centered nature of in-class activities in a flipped classroom often requires more planning than traditional lectures. Underestimating this time can lead to poorly executed activities that do not achieve the desired learning outcomes.

Solution: Instructors should allocate sufficient time for planning and preparing in-class activities, ensuring that they are well-structured and aligned with learning objectives. This might involve creating detailed lesson plans, preparing materials in advance, and considering how to address potential challenges that might arise during the activity. Proper planning is essential for making the most of class time and ensuring that activities are engaging and effective.

Forgetting to Reflect and Iterate on In-Class Processes

Mistake: Implementing in-class activities without ongoing reflection and improvement can result in stagnation and missed opportunities for enhancement. Without reflection, instructors may continue using strategies that are less effective or fail to adapt to changing student needs.

Solution: Instructors should regularly reflect on the effectiveness of in-class activities, either through self-assessment or by seeking feedback from students and colleagues. This reflection should lead to iteration—making adjustments and improvements to the activities based on what worked well and what didn't. Continuous reflection and iteration help ensure that the flipped classroom remains dynamic, responsive, and effective in promoting student learning.

Being Unprepared for Students Who Don't Complete the Pre-class Work.

Mistake: One of the most confounding and frustrating experiences for new flipped learning instructors occurs when they are unable to get students to do the pre-classwork. The critical mistake new instructors often make is reverting to direct instruction with the whole class, to bring the unprepared students up to speed. Covering the material during class time relieves the student of the responsibility to complete the prework before class and discourages students who did the prework.

Solution: Resolve not to cover the pre-class work by direct instruction. Instead, set up a designated area in the classroom where unprepared students can quickly review the pre-class materials while others begin their group work. Provide these students with summary sheets, videos, or key questions they need to answer. Once they have caught up, they can join their group. This method minimizes disruption to the rest of the class.

4 Implementation Considerations

This chapter provides a brief summary of issues that trainers should be aware of before the course and when delivering the course.

4.1 Instructions about the Learning Platform

As a trainer, it's essential to guide your learners through the initial steps of using the learning platform. Providing a clear and concise introduction will ensure that they are comfortable navigating the platform and accessing the training materials.

4.2 Introduction to the Learning Platform

Begin your session by giving learners a brief overview of the learning platform. Explain its purpose and how it will support their learning journey. Highlight the key features they will be using, such as modules, quizzes, discussion forums, and resource libraries. Emphasize the importance of becoming familiar with the platform early on to maximize their learning experience.

4.2.1 The Login Process

Guide your learners through the login process:

- **Step 1**: Direct them to the platform's login page.
- **Step 2**: Ensure they have their login credentials (username and password). If they don't, explain how they can obtain or reset them.
- **Step 3**: Demonstrate how to log in by entering the username and password and clicking the "Login" button.
- **Step 4**: Discuss common login issues, such as forgotten passwords, and provide solutions or direct them to support resources.

Encourage learners to bookmark the login page for easy access and to log in regularly to stay updated with the course content.

4.2.2 Navigating the User Interface

Once logged in, walk your learners through the user interface:

- **Dashboard**
  Point out the main dashboard, which typically displays an overview of their courses, upcoming tasks, and notifications.
- **Course List**
  Show them where to find the list of courses they are enrolled in. Explain how to select the current course.

- **Menu Navigation**

  Explain the menu structure, highlighting key sections like "Modules," "Resources," "Assignments," and "Discussion Forums."

- **User Profile**

  Encourage learners to update their profile, including their contact information and profile picture, to personalize their experience.

Consider providing screenshots or a live demonstration to reinforce this information.

4.2.3 Structure of the Training Course

Next, explain how the training course is structured:

- **Modules**

  The DigiComPass training course is structured into modules, each module in lessons, each lesson in several learning tasks. Explain that each module typically covers a specific topic and may include videos, readings, self-evaluations, and assignments.

  Demonstrate the different types of learning tasks on selected examples.

- **Progress Tracking**

  Point out how learners can track their progress within each module, often indicated by completion checkmarks or progress bars.

- **Assignments and Self-Evaluation**

  Describe how assignments and quizzes are integrated into the modules. Explain where to submit assignments and how to review quiz results.

Remind learners to pace themselves and follow the recommended schedule to ensure they cover all materials by the end of the course.

4.3   Explanation of Different Question Formats

As a trainer, it's important to familiarize your learners with the various question formats they will encounter during their training. Understanding these formats will help them approach each type of question with confidence, ensuring they can focus on demonstrating their knowledge rather than struggling with the question mechanics.

4.3.1   Multiple Choice (Single Selection)

Description: In a multiple-choice (single selection) question, learners are presented with a list of possible answers, but only one answer is correct.

How to Identify:

- Questions will be selected by the ○ sign.
- The question will typically ask learners to "select the best answer" or "choose the correct option."

- Learners will see a list of options, each with a radio button next to it (a small circle). Only one radio button can be selected at a time.
- If they try to select a different option, the previously selected one will be deselected.

Tips for Learners:

- Carefully read all the options before selecting.
- Eliminate obviously incorrect answers to narrow down the choices.
- Ensure they select the answer that best fits the question before submitting.

4.3.2 Multiple Choice (Multiple Selections)

Description: In a multiple-choice (multiple selections) question, learners are asked to select more than one correct answer from a list of options.

How to Identify:

- Answers are selected by clicking on a ☐ symbol.
- The question will typically state something like "select all that apply" or "choose the correct answers."
- Learners will see a list of options, each with a checkbox next to it (a small square). Multiple checkboxes can be selected simultaneously.
- Learners must ensure they select all correct answers, as selecting only one or missing a correct option may result in a lower score.

Tips for Learners:

- Carefully review each option, as more than one option may be correct.
- Double-check their selections before submitting, ensuring no correct answers are missed.
- If unsure, it's often better to select more options rather than fewer, as partial credit might be given.

4.3.3 Yes-No Questions

Description: Yes-No questions are straightforward, asking learners to affirm or deny a statement.

How to Identify:

- The question will present a statement followed by two options: "Yes" or "No."
- Learners need to choose the option that correctly reflects their understanding of the statement.

Tips for Learners:

- Read the statement carefully to ensure they understand it before making a selection.
- Consider any absolutes in the statement (e.g., "always," "never"), as they often guide whether the answer should be "Yes" or "No."

4.3.4 Fill in the Words by Drag & Drop

Description: In this format, learners are asked to complete a sentence or a series of sentences by dragging the correct words or phrases into the appropriate blanks.

How to Identify:

- Learners will see a sentence with one or more blanks.
- Below the sentence, there will be a list of words or phrases that need to be dragged into the blanks to complete the sentence correctly.
- The words or phrases can be clicked and dragged into the correct blank space.

Tips for Learners:

- Read the entire sentence before attempting to fill in the blanks to understand the context.
- Consider grammatical cues (like verb tense or singular/plural agreement) when choosing the correct words.
- Once all blanks are filled, review the completed sentence to ensure it makes sense both grammatically and contextually.

4.3.5 Games (e.g., Memory Game)

Description: Games like memory games are interactive and designed to make learning fun. They often require learners to match pairs or find related items within a set of cards or tiles.

How to Identify:

- Learners will be presented with a grid of cards or tiles, usually face down.
- The objective is to click on a card to reveal it and then find its matching pair by remembering the positions of the previously revealed cards.

Tips for Learners:

- Encourage them to take their time and focus on remembering the positions of the cards they've revealed.
- Remind them that these games are often about more than just the content; they also help build memory skills and reinforce learning through repetition.

- Advise learners to stay patient, as these games can be challenging but are designed to enhance their retention of the material.

4.4   Learner's needs in context with question formats

By understanding these different question formats, your learners will be better equipped to navigate the assessments and activities within their training. Encourage them to practise these formats whenever possible and remind them that familiarity with the question types will lead to greater confidence and success in their learning journey.

4.5   Interactive Videos

Interactive videos are an engaging and dynamic learning tool designed to enhance the training experience. Unlike traditional videos where learners passively watch content, interactive videos require active participation, making the learning process more immersive and effective.

4.5.1   What Are Interactive Videos?

Interactive videos are multimedia content that includes embedded elements such as questions, quizzes, clickable links, and other interactive features. As learners watch these videos, they will be prompted to interact with the content at various points. This interaction might involve answering questions, making decisions, or exploring additional information by clicking on specific areas of the video.

4.5.2   How Do They Work?

During the training course, learners will encounter videos that pause at specific moments to ask questions or require input. These questions are designed using the formats you've already learned about, such as:

- Multiple Choice (Single Selection)
  The video may pause and present a single multiple-choice question, where learners must select the correct answer from a list.
- Multiple Choice (Multiple Selections)
  Some pauses may ask learners to select all correct answers from a set of options, similar to a traditional quiz.
- Yes-No Questions
  The video might ask a simple yes or no question based on the content just viewed.
- Fill in the Words by Drag & Drop
  In some cases, learners may be required to drag and drop the correct word or phrase into a blank space within the video.

These interactions serve two purposes: they reinforce key concepts from the video and ensure that learners are actively engaged with the material, rather than passively watching.

4.5.3 Benefits of Interactive Videos

- **Enhanced Engagement:** By requiring input, interactive videos keep learners engaged and focused on the material, reducing the likelihood of distractions.
- **Immediate Feedback:** Interactive videos often provide immediate feedback on the questions, helping learners to understand the material better and correct any misconceptions right away.
- **Active Learning:** This format promotes active learning, where learners are not just consuming information but also applying it in real-time, which aids in retention and comprehension.
- **Tailored Learning Experience:** Some interactive videos might adapt based on the learner's responses, offering a more personalized learning journey.

4.6 Understanding Flipped Learning: The How and Why

As a trainer, it's important to explain to your learners the concept of flipped learning, which is central to their success in the course. Flipped learning involves two interconnected spaces: the **Individual Learning Space** and the **Group Learning Space**. Understanding how these spaces work together is key to maximizing the benefits of the training.

4.6.1 The How: Two Learning Spaces

Individual Learning Space:

- This is where learners first encounter new material, typically through videos, readings, or interactive activities.
- Learners engage with content at their own pace, allowing them to absorb and reflect on the information before coming to the group.
- The goal is to build a foundational understanding that they will bring into group discussions and activities.

Group Learning Space:

- Here, learners apply what they've learned through collaborative activities, discussions, and problem-solving tasks.
- This space is designed for deeper exploration of the material, where learners can test their understanding, ask questions, and learn from each other.
- The interaction in this space relies heavily on the preparation done in the Individual Learning Space.

4.6.2 The Why: The Interconnection

Flipped learning flips the traditional model by moving the initial learning to the individual space and using group time for interactive, high-level learning. This approach:

- **Maximizes Group Time**
  Instead of using group sessions for lectures, they are used for applying knowledge, which is more engaging and effective.
- **Encourages Active Learning**
  Learners are active participants in their education, taking responsibility for their initial learning and then actively engaging in group sessions.
- **Enhances Understanding**
  The process of first learning individually and then discussing and applying that knowledge in a group helps solidify concepts and promotes a deeper understanding.

4.6.3 Final Thoughts

By understanding and participating fully in both learning spaces, learners can make the most of the flipped learning model, ensuring they absorb the material and know how to apply it effectively. Encourage your learners to see these two spaces as complementary parts of their learning journey, each playing a crucial role in their overall success.

4.7   Emphasizing the Importance of Completing Assignments and Acquiring Knowledge

As a trainer, it's crucial to stress to your learners the importance of fully engaging with the course materials and completing all assignments. This isn't just about ticking boxes or meeting requirements—it's about equipping themselves with the knowledge they need to succeed, particularly in collaborative learning environments.

4.7.1   The Role of Assignments in Learning

Assignments are not just tasks to be completed; they are designed to reinforce and apply the knowledge presented in the course. Through assignments, learners can deepen their understanding of key concepts, practice new skills, and identify areas where they may need further review.

By completing assignments, learners are actively engaging with the material, which enhances retention and comprehension. This engagement is especially important as it prepares them for more advanced discussions and activities in the Group Learning Space.

4.7.2 The Group Learning Space: Why Preparation Matters

The Group Learning Space is a key component of the training program where learners collaborate, share insights, and solve problems together. To participate effectively, learners need to come prepared with a solid understanding of the course content.

When learners enter this space without having completed their assignments or fully grasped the material, several challenges can arise:

- **Hindered Group Progress:** Unprepared learners may struggle to keep up with discussions or activities, slowing down the group's overall progress.
- **Increased Frustration:** Both the unprepared learner and their peers may experience frustration. The group relies on each member's contribution, and when someone lacks the necessary knowledge, it can create gaps in the learning process.
- **Missed Opportunities:** The Group Learning Space is where learners can apply their knowledge in real-world scenarios, discuss complex concepts, and learn from each other. Missing foundational knowledge means missing out on these valuable learning opportunities.

4.7.3 Encouraging Learners to Stay on Track

As a trainer, you play a vital role in encouraging learners to stay on top of their assignments and fully engage with the material. Here are some strategies you can use:

- **Set Clear Expectations:** From the outset, make it clear that completing assignments is not optional but essential for their success in the course.
- **Connect Assignments to Real-World Applications:** Show learners how the knowledge they gain from assignments will directly impact their ability to participate in group activities and succeed in their professional lives.
- **Offer Support:** Provide resources or additional help for learners who may be struggling with the material. Early intervention can prevent them from falling behind.
- **Create Accountability:** Encourage learners to hold themselves accountable for their learning. This could include setting personal goals or checking in with you regularly on their progress.

4.7.4 Final Thoughts

Ensuring that learners complete their assignments and acquire the offered knowledge is not just about course completion—it's about preparing them for meaningful and productive collaboration in the Group Learning Space. By emphasizing the

importance of these tasks and offering the necessary support, you help set your learners up for success, both in the course and beyond.

4.8 Assessment Backgrounds

Assessment plays a crucial role in understanding learners' progress and identifying areas for improvement. It provides both instructors and learners with valuable insights into the effectiveness of the learning process. One important aspect of assessment is **self-assessment**, which empowers learners to reflect on their own progress, recognize their strengths and weaknesses, and take control of their learning journey. This form of assessment encourages a more profound understanding of the material and promotes lifelong learning skills.

In addition to self-assessment, **final assessments** are conducted to evaluate learners' overall performance and award badges reflecting their level of achievement. These badges are colour-coded to indicate varying degrees of success: Red signifies that the learner has passed the training; Yellow indicates passing with a certain percentage of success; Green represents a high level of success, granting the learner a Digital Competences Passport. This system recognizes achievement and motivates learners to aim higher.

However, it is essential to acknowledge that not all adult learners are motivated by certificates or badges. Many participate in training simply out of a desire to acquire new knowledge or skills, without any need for formal recognition. For these learners, the value lies in the learning experience itself, rather than in external validation.

Another important consideration in assessment is the diversity of assessment formats, which cater to different learning styles and objectives. These formats, explained in detail in the previous chapter, ensure that assessments are not only fair and comprehensive but also aligned with the goals of the training program. By offering a range of assessment methods, educators can better support the varied needs of their learners, fostering a more inclusive and effective learning environment.

5 Inclusive support

Inclusivity is an ongoing process that requires constant commitment from everyone. A good practice is to listen to the needs of the participants, be open to feedback and adapt the course accordingly.

Inclusivity is a key aspect to consider when designing any course, especially when it comes to digital skills that can create an even wider gap between those who are already familiar with the technology and those who are less knowledgeable. To facilitate the learning of skills, it would be useful for the trainer to keep in mind some steps to make the flipped learning course more inclusive:

5.1 Design phase

- **Needs analysis:** Conduct an in-depth analysis of participants' needs, considering their different experiences with technology, their learning styles, and any disabilities.
- **Accessible materials:** Make sure that all training materials are accessible to everyone, using formats that are compatible with different devices and assistive software.
- **Subtitles and transcripts:** Provide subtitles and transcripts for videos and audio to help people with hearing impairments or different language skills understand them.
- **Clear and simple language:** Avoid language that is too technical or jargon, and use clear and simple language that is suitable for all levels of expertise.
- **Inclusive design:** Design materials and activities so that they are visually appealing and easy for everyone to understand.

5.2 Delivery phase:

- **Flexibility:** Give attendees the ability to work at their own pace and access materials at different times.
- **Personalized** support: Provide personalized support to participants who need it, through one-on-one mentoring or support groups.
- **Different learning modalities:** It offers various activities that allow participants to learn through different sensory channels (visual, auditory, kinesthetic).
- **Collaboration:** Foster collaboration among participants to create an inclusive and supportive learning environment.
- **Accessible collaborative tools:** Use online collaborative tools that are accessible to everyone, regardless of the device or software used.

5.3   Evaluation:

- **Formative assessment:** Use formative assessment tools to continuously monitor participants' progress and provide personalized feedback.
- **Different assessment methods:** Offer participants different assessment methods (written, oral, practical) to allow everyone to demonstrate their skills.
- **Self-assessment:** Encourages participants to reflect on their progress and set new learning goals.

5.4   Examples of tools and strategies:

- **Screen Reader Software:** For people with visual impairments.
- **Machine translation:** To overcome language barriers.
- **Accessible LMS platforms:** Such as Moodle or Google Classroom.
- **Online Study Groups:** To foster collaboration and mutual support.
- **Concept maps and flowcharts:** To visualize information clearly and easily.

This phase-based approach is dynamic, which means that it is possible to intervene and change, personalize, implement differently where critical issues are encountered by the learner, when, for example, we receive negative feedback or notice some learning difficulties. Although it is useful to follow a procedural scale, the trainer must be ready to carry out all the operations with maximum flexibility in relation to the learning objective that he has set at the beginning of the educational design.

In addition to the technical aspect that includes the preparatory phases for learning skills, it is also good to consider a hidden but important aspect, namely the "sentiment" related to the learning activity: understanding that each learner is a unique and unrepeatable individuality can strengthen the level of inclusiveness linked to the course you intend to design.

5.5   Defining Inclusivity within the Context of a Training Course

"We imagine a training course where everyone feels valued for who they are, where differences become an enrichment and not an obstacle". This is the goal of inclusivity.

When we talk about inclusivity in a training course, we are not just referring to ensuring access for all, but to creating an environment where everyone can express themselves freely, learn at their own pace and in their own way, and feel part of a group.

We think about all the nuances that make each of us unique: **age, gender, culture, skills, background...** Each of us has a different way of learning and interacting with others. An inclusive course recognizes and values these differences, offering everyone the same opportunities for growth.

5.6 Importance of the above made considerations

Simply because when we feel welcome and valued, we are more motivated to learn. An inclusive course not only increases participation, but also improves the quality of learning, promoting collaboration and mutual respect.

The learning environment, whether physical or virtual, plays a crucial role in the success of a flipped learning course. When we reverse the traditional classroom-home dynamic, it is precisely during the face-to-face sessions that the real relationship with students is built, discussion is stimulated, and active learning is facilitated.

6 Transferability

In the context of a training course on digital competencies, the transferability of these skills to various educational fields—including school education, vocational education and training (VET), and higher education—is paramount. Digital competencies are increasingly essential across all levels of education, providing learners with critical skills for the modern world.

6.1 School Education

Here is a list of topics that must be addressed for school education

6.1.1 Pupils' and students' instructions

Pupils and students must be prepared (and instructed) to the different learning processes. They must learn that the initial learning phase is the Individual Learning Space, where students engage with new content at home (based on multimedia and interactive learning content, addressing the lower Bloom's). This self-paced learning must be practised until the pupils and students understand the approach and the added value of this approach.

In the same way, they must be accustomed to the Group Learning Space. They must learn to work in groups in an active learning environment to deepen their understanding and apply their knowledge.

In contrast to most adults, pupils (may) exhibit non-adolescent behaviour, such as a lack of self-discipline and distraction, in the individual learning space. Therefore, some control and guidance are needed to ensure they stay focused and effectively engage with the educational content. A well-proven method is to check the self-evaluations: They are visible to the teacher in the Moodle platform and enable instructors to find out if the pupils have completed their assignments. This is enabled by the questions in the presentations as well, since their results are also visible on the Moodle platforms to teachers as well.

Appropriate information must be given to the parents as well. This enables them to understand the new approach and helps them to support their children.

Remark: The best way to spread out all this information to the mentioned stakeholders is to explain everything with an added value. For students (as an example) better learning results, for parents the implementation of modern training materials to strengthen the motivation of their kids.

6.1.2 Adaptation of Educational Content

Age appropriateness is crucial when transferring a training course from adult education to school education. Learning materials should be tailored to cognitive and emotional development levels of different age groups, ensuring content is engaging

and understandable for younger students. Additionally, digital competencies must be introduced progressively, with age-appropriate tools and tasks that build on students' existing skills and knowledge.

Curriculum integration involves aligning the digital competencies framework with the existing school curricula to ensure that new skills are relevant and applicable to students' education. This alignment helps teachers seamlessly incorporate digital skills into their subject areas, making learning more cohesive and meaningful. Educators can enhance students' engagement and understanding by integrating digital competencies with curriculum goals, preparing them for future academic and professional success.

Cognitive considerations require adapting the complexity of content to align with the cognitive development stages of school-aged learners. This means presenting information in a way that is appropriate for their age, ensuring it is neither too simplistic nor too advanced. By matching content complexity with students' cognitive abilities, educators can promote better understanding, retention, and application of knowledge, fostering effective learning experiences.

Not all **created content** (for adults) is well-fitting and appropriate for pupils. **Content selection** for school education must be meticulously considered, ensuring it meets several key criteria. It should be developmentally appropriate, matching the age and cognitive level of the students to facilitate effective learning. Additionally, the content must be culturally relevant, reflecting the diverse backgrounds of students and promoting inclusivity. Lastly, it should align with educational standards and goals, ensuring it supports the curriculum and contributes to the overall educational objectives.

6.1.3   Teacher Training and Professional Development

Training Needs: Firstly, assessing schoolteachers' current digital literacy and pedagogical skills, as well as identifying gaps, are all necessary. Teachers must possess a fundamental understanding of the thought content to implement the training course successfully in school education. They also need essential experience in implementing FL3 (FL3) training, which requires prior training and cooperative efforts among teachers to share strategies and insights. Additionally, supervision during the initial implementation phase, particularly in the first year, is essential to provide guidance and support and ensure the effectiveness of the new approach.

Assessing schoolteachers' current digital literacy and pedagogical skills is crucial to identifying gaps, allowing for targeted training and professional development to prepare   them   effectively   for   this   transition.

All identified gaps must be filled by tailored training and investing in the Personal Development of the involved teachers.

Customised Professional Development:: Develop tailored training programs that address schoolteachers' digital and pedagogical needs, focusing on interactive and student-entered teaching methods.

Ongoing Support: The school must establish a system for continuous professional development and real-time support for teachers transitioning to digital teaching methods. This includes supervision and various feedback methods (Feedback students ↔ teachers, Feedback teachers ↔ teachers, and School ↔ parents as well).

6.1.4   Incorporation of Innovative Teaching Methods

FL3 Implementation

Consider the logistical and technical aspects of implementing FL3 in schools, such as classroom management, student engagement, and technology availability. Implementing FL3 in schools requires careful consideration of logistical and technical aspects, including effective classroom management, to facilitate active learning and collaboration. Ensuring technology availability, such as reliable internet access and sufficient devices for all students, is crucial for the success of this approach. Additionally, strategies to maintain high student engagement in individual learning spaces and during interactive classroom activities are essential to maximize the benefits of flipped learning.

Interactive Technologies

Explain the use of interactive digital tools that engage younger students more effectively and level up their learning motivation.

Assessment Methods

In schools using FL3, the approach to assessment shifts from traditional tests and exams to more dynamic and ongoing evaluation methods. Classic assessments are supplemented or replaced by self-evaluation, where students reflect on their learning progress and identify areas for improvement. Teachers also observe students during group learning activities, assessing their participation, collaboration, and problem-solving skills in real-time. Evaluation of group outcomes, such as projects or presentations, becomes a key component of the assessment process. This shift must be carefully aligned with existing state guidelines for pupil assessment and grading, which may vary across different European countries, to ensure that new methods are recognised and integrated into official evaluation frameworks.

6.1.5   Infrastructure and Resource Allocation

Technology Access

Ensure equitable access to digital devices and reliable internet connectivity for all

students. The DigiComPass content can be used on Smartphones (as the lowest level of access) and is created to be supported by currently available types of digital devices (Tablets, laptops, Chromebooks, Apple-based devices, and Personal computers).

Adaptive Technologies

Incorporate accessible and assistive technologies to support pupils and students with special needs. The DigiComPass Training platform, used in the individual learning space, inherently incorporates accessible and assistive technologies to support students with special needs. This ensures that all students can effectively engage with the digital content, regardless of their challenges. In the group learning space, teachers must provide additional support methods and means tailored to the specific needs of their special needs pupils, ensuring an inclusive and supportive environment where all students can participate and succeed.

Effective resource management involves carefully planning the logistical aspects of deploying technology in schools. This includes scheduling regular maintenance to ensure all devices and systems function correctly, planning for timely upgrades to keep technology current and secure, and providing comprehensive training for teachers and students to utilise new tools effectively. Proper resource management ensures that technology enhances the learning experience without causing unnecessary disruptions or technical issues.

6.1.6   Engagement with Stakeholders

Parental involvement is crucial in the digital learning process, requiring strategies to keep parents engaged and informed. Regular communication through newsletters, emails, and meetings can update parents on new teaching methods and technologies. Additionally, offering workshops and resources for parents can help them understand and support their children's digital learning, fostering a collaborative educational environment.

Establishing clear feedback mechanisms is essential for adapting and improving the digital transformation process in schools. Create multiple channels, such as surveys, suggestion boxes, and regular meetings, to gather feedback from students, parents, and teachers. Actively review and respond to this feedback to make necessary adjustments, ensuring the digital learning environment meets the needs and expectations of all stakeholders.

Community collaboration involves actively engaging local resources and stakeholders to support educational initiatives and enhance learning outcomes. By fostering strong community ties, schools can create a supportive network that contributes to a richer, more diverse educational experience for all students.

6.1.7   Policy and Compliance

Addressing data privacy is crucial to maintaining a safe learning environment for pupils. Schools must implement robust policies and technologies to protect student data.

Ensuring data privacy and creating a safe learning environment also help prevent issues such as bullying or students feeling ashamed in the group. When pupils trust that their personal information is protected, they are less likely to experience online harassment or embarrassment, fostering a more inclusive and supportive educational atmosphere.

Ethical Considerations
Ensure that digital tools and content are ethically sound and culturally sensitive.

Sustainability
To ensure the long-term sustainability of digital transformation in education, it is essential to develop comprehensive policies that address funding, staffing, and ongoing policy support. Secure stable and continuous funding sources to maintain and upgrade technology and invest in professional development to equip teachers with the necessary skills. Additionally, establish policies that prioritize data privacy and create a safe learning environment, minimizing issues like bullying and shame, to build a trustworthy and inclusive educational atmosphere that supports sustained digital growth.

6.1.8   Monitoring and Evaluation

Impact Assessment
Implementing a robust impact assessment system is crucial for evaluating the effectiveness of digital learning initiatives in improving educational outcomes. This system should include regular data collection and analysis to track student progress, engagement, and overall performance. By continuously monitoring these metrics, schools can further develop successful strategies, address any issues promptly, and ensure that transformation efforts to FL3 are genuinely enhancing the educational experience. Additionally, this ongoing evaluation supports sustainability by providing evidence-based insights that inform funding, staffing, and policy decisions, ensuring long-term success and improvement.

Scalability
Consider the scalability of successful practices and the potential for broader implementation across the educational system.

Continuous Improvement
Use the data collected from monitoring efforts to make informed decisions about program adjustments and enhancements.

6.2 Vocational Education and Training

Vocational Education and Training (VET) differs from School Education and Adult Education in its focus, target audience, and instructional approach. VET primarily aims to provide learners with specific job-related skills and practical training, preparing them directly for the workforce or enhancing employability. It is often tailored to the needs of industries and emphasizes hands-on, competency-based learning. In contrast, School Education generally focuses on foundational academic knowledge and personal development, while Adult Education typically addresses lifelong learning needs, offering flexible opportunities for skills enhancement, literacy, or personal enrichment. Both School and Adult Education may cover broader, non-vocational subjects, unlike the highly targeted and skill-specific nature of VET.

6.2.1 Background

Both Adult Education and VET contexts develop key digital competencies, use FL3 to promote active participation and autonomous learning, and dedicate class time to practical and collaborative activities, but Professional training focuses on technical skills for the job market, while adult education adapts content for accessibility and daily relevance.

Therefore, we start with an analysis of coincidences and differences to identify what is relevant and important for an efficient approach to programme transferability.

6.2.2 Coincidences:

- **Focus on Digital Competencies**: In both contexts, the primary goal of the DigiComPass program is to develop key digital competencies. These skills are essential for effectively participating in a digitised society and focus on areas such as digital literacy, online communication and collaboration, digital content creation, safety, and problem-solving in a technological context.
- **Flipped Learning Methodology:** The FL3 approach is common in both contexts. This approach promotes active participation, autonomous learning, and the use of digital technologies to prepare outside the classroom and apply knowledge in practical activities during class time.
- **Interaction and Collaboration:** In both cases, class time is dedicated to practical and collaborative activities. This interaction is crucial for applying and consolidating the digital competencies acquired through the Digicompass program.

6.2.3 Differences:

- **The level of content adaptation** refers to the degree to which educational materials and teaching methods are modified to meet the specific needs,

backgrounds, and learning objectives of diverse learners within various educational settings.

- o Professional Training: The digital content is adapted to meet specific labour market demands, focusing on advanced technical skills and professional applications. Class activities are designed to simulate workplace environments and real-world scenarios.
- o Adult Education: The content is adjusted to be accessible and relevant for older adults, focusing on practical skills for daily life and participation in the digital society. Activities might include using digital tools for communication, managing daily life, and entertainment.

- **Context and Specific Needs:**
  - o **Professional Training:** Students are typically young adults looking to enhance their skills to enter or advance in the labour market. The methodology focuses on preparing them for specific job-related challenges, including the use of specialised software and professional technological platforms.
  - o **Adult Education:** It primarily includes individuals over 65 years old who seek to stay active and connected in the digital age. The methodology must be flexible and accommodate the varied capacities and learning paces of older adults, ensuring that digital competencies are presented comprehensively and practically.

6.2.4 Alignment of Educational Content

Relevance and Applicability: Adapt the DigiComPass content to be relevant and applicable to professional training contexts. Include modules covering the use of sector-specific software, online collaboration tools, and project management platforms.

Skill Assessment: Conducting initial assessments to determine the current digital skill levels of the students. This will help in customising the starting point of the training, ensuring that it is neither too basic nor too advanced.

Difficulty Level: Adjust the difficulty level to align with the technical skills required in the labour market. Ensure that the activities are challenging yet achievable.

Feedback and Iteration: Providing regular feedback on student performance and iterating on the difficulty based on their progress. This adaptive learning approach allows instructors to modify the complexity of tasks and exercises in real-time, ensuring optimal challenge levels.

Professional Digital Tools: Include specific digital tools used in the professional sector, such as graphic design software, project management tools, data analysis platforms, and online collaboration tools.

Real Projects: Integrate projects based on real-world workplace situations, allowing students to apply their digital competencies in practical and relevant contexts.

6.2.5 Implementation of FL3:

Guidance on Self-Directed Learning: Begin the course with an orientation session that explains the flipped learning model, its benefits, and what is expected of students. Provide tips and strategies for effective self-study, including time management, setting learning goals, and utilising online resources effectively. Encourage students to take responsibility for their learning and to seek help when needed.

Preparatory Materials: Provide advanced digital resources that students can study outside the classroom. These resources should include interactive tutorials, instructional videos, and practical exercises relevant to the workplace.

In-Class Activities: Design in-class activities that allow students to apply their knowledge in real-world scenarios, such as work simulations, collaborative projects, and technical problem-solving.

Ongoing Support: Establish a support system for students as they adapt to the flipped learning model. This can include:

Discussion Forums: Online forums where students can ask questions, share experiences, and provide peer support.

Regular Check-ins: Schedule periodic check-ins to discuss progress, address any challenges, and provide additional guidance or resources as needed.

Feedback Mechanisms: Create channels for students to provide feedback on the flipped learning approach, allowing for adjustments and improvements to be made throughout the course.

Personalised Resources: Provide digital resources tailored to the skill levels and needs of professional training students. Use examples and case studies relevant to the sector.

Practical Evaluation: Implement evaluation methods that include creating digital portfolios, presenting projects, and conducting simulations in work environments.

6.2.6 Training and Professional Development of Instructors:

Continuous Training: Offer ongoing training to instructors in advanced digital competencies and the use of Flipped Learning methodologies. This ensures that instructors can effectively guide students in developing their digital skills.

Support Networks: Create support networks and communities of practice among instructors to share experiences and effective teaching strategies.

Advanced Competencies: Develop training programs addressing advanced digital competencies and their application in professional training. Ensure instructors stay current with the latest technologies and teaching methodologies.

6.2.7 Infrastructures and Technical Support:

Technological Resources: Ensure that students have access to necessary technological tools for advanced digital learning. This may include specialised software, online collaboration platforms, and well-equipped computer labs.

Continuous Support: Provide ongoing technical support to quickly resolve any issues students or instructors might encounter, keeping the focus on learning.

Comprehensive Support: Establish a comprehensive support system that includes user guides, online tutorials, and real-time technical assistance.

6.2.8 Monitoring and Evaluation:

Formative and Summative Assessments: Implement assessments that continuously measure students' progress in digital competencies. These assessments should be clear, measurable, and aligned with professional training standards.

Continuous Feedback: Collect and analyse feedback from students and instructors to make necessary adjustments to the content and methodologies.

Progress Indicators: Use clear and specific progress indicators to monitor students' development of digital competencies.

Constant Updating: Keep the content and methodologies updated with the latest trends and advancements in digital technology and labour market needs, ensuring the program remains relevant and effective.

6.3 Higher Education

Below, you may find several considerations regarding the transferability of Digicompass in Higher Education.

6.3.1 Alignment of Educational Content·

Content and level appropriateness: Adapt the course content to match the academic standards expected and meet student needs in a comprehensive manner.

Content adjustment: Ensure that activities are interactive, collaborative, challenging and achievable for this level, to maintain student motivation. Consider implementing gamification in a way that is suitable for this age group.

Curriculum integration: Ensure that the content and competencies taught align with the academic curriculum and related learning outcomes. Due to the implementation of Flipped Learning, specific adaptations in the curriculum will be necessary.·

Course piloting: Apply a pilot testing phase. This can be beneficial for implementing this course and its methodological framework in HE. It will also help in refining the course as and when needed and pave the way for wider implementation.

6.3.2 Implementation of FL3

Methodological adaptations: Prepare students for Flipped Learning through a practical, hands-on approach and help them adapt their learning styles to maximize methodological effectiveness.

Assessment: Adapt assessment to align with HE settings. The suggested accreditation system should be consistent with HE standards and criteria should be clear and measurable. Grading needs to reflect student achievement and be able to translate itself into the institutions' existing credit systems.

Portfolio development: Encourage students to showcase the badges or other accreditation they receive via such courses, to further advance their career prospects. This can happen by way of building a portfolio for example.

Student support: Consider the creation of discussion forums, FAQ databases and other means to further support student learning.

6.3.3 Training and Professional Development of Instructors

Training Needs: Assess the current digital literacy and pedagogical skills of HE instructors. This will help in mapping current knowledge and assisting them advancing it as a next step.

Further professional development: Provide training for instructors to help them facilitate and support student learning via the use of the Flipped Learning model. Additionally, create networking opportunities for instructors to support each other and share good practices, to further improve their teaching methods.

6.3.4 Infrastructures

Technological requirements: Ensure that the available technology tools can cater to the needs of implementing FL3 with regard to management inside and outside the classroom. Also, integrate the content into the institutions' existing LMS and apply inclusive and adaptive practices for all students, including those with special needs. Should additional resources be needed, efforts should be made to acquire the necessary funding.

Technical support: Provide support for students and instructors, via troubleshooting guides or real-time support, with regard to the LMS platform, materials or course management.

6.3.5 Monitoring and Evaluation

Feedback and review cycles: Implement a mechanism to collect and review instructor and student feedback.

Keeping the course updated: Ensure that the content stays current, especially keeping pace with evolving digital competencies and other technological advancements.

7 Evaluation

The **Recognition and Accreditation Framework** is a structured system based on **FL3**, designed to support the delivery of the **DigiComPass** course through blended learning. It functions as a quality enhancement tool for course creation, implementation, and evaluation, ensuring the recognition of competencies, skills, and knowledge learners acquire. The framework uses an **open digital Badges system** to assess and certify learners' achievements across the course's modules, with badges awarded at three performance levels: "Pass", "Pass with Success", and "Pass with Excellence". Upon completion of all five modules, learners receive certification, and those who excel in all modules are awarded the **DigiComPass Passport**.

The framework emphasizes both **formative and summative assessments** to measure progress and outcomes, ensuring assessments are aligned with real-world applications and pre-defined learning objectives.

7.1 Recognition and accreditation framework – structure and application

The framework is based on FL3 and supports the blended learning delivery of the DigiComPass course content. It also acts as a quality enhancement framework for course creation, implementation, and evaluation and can be used in other training courses.   More specifically, it systematically validates and acknowledges the competencies, skills and knowledge that learners acquire. By and large, such a framework employs various assessment methods to assess, recognize and accredit learning outcomes.

The framework makes use of an open, digital Badges system. Completing each Module in this course leads to a badge. There are three success levels for learners to achieve in every Module, and badges can be issued in three colours, showing the success level:

1. **Red** = Pass (overall score of 0-30%)

2. **Yellow** = Pass with success (overall score of 31-60%)

3. **Green** = Pass with excellence (overall score of 61-100%)

Upon awarding of all five badges (one for each of the five Modules consisting of DigiComPass, regardless of scores), a Certification is issued, recognizing completion of the course.   For learners who achieve a Green badge in all Modules, the DigiComPass Passport is awarded, signifying a high level of achievement across the course.

7.2 Assessment

Assessment measures learner performance and competencies against pre-defined learning outcomes. Both formative and summative assessment means are used separately for each Module of the course.

Formative assessment measures learner progress and understanding and can take place throughout the module in a frequent, diverse manner. Learners can take advantage of its diagnostic nature and test their knowledge, identify strengths and weaknesses and target specific areas for improvement, until they are happy with the progress they have made. Formative assessment also aids trainers and instructors in helping them adjust their teaching and meet the learning objectives better. In addition, providing feedback is crucial in helping learners improve.

Summative assessment takes place at the completion of a Module and measures learner performance and knowledge amassed from the Module. It can take the form of an exam, a presentation, a project or any other assignment that could yield a nominal result, hence placing the learner into one of the three badge categories, as mentioned above. It is imperative that, aligning with the clearly specified learning outcomes, detailed rubrics are also created and shared, so that instructors/trainers and learners are clear about the assessment criteria.

Overall, to maintain high standards of quality, both types of assessment need to be valid and accurate, reliable and replicable, fair, clear, and relevant to the real-world applications of the skills and knowledge being taught.

Summative assessment suggestion for DigiComPass

Our summative assessment suggestion for each Module of the DigiComPass course would be a questionnaire comprising 20 questions. Those questions would need to comprehensively cover what is taught in the Module and test learners' understanding and any acquired competencies in an objective, unambiguous way. It might be preferable to use standardized assessment means across the course, to ensure reliability and fairness in measuring learner performance.

The table below illustrates a sample assessment plan for one of the Modules in this course.

	Formative assessment	Summative assessment
Individual Space	2 quizzes (self-evaluation): - unexpected shutdown - basic troubleshooting techniques - questions in an interactive presentation Simulation of a real-life scenario Questionnaire (self-assessment, feedback)	Multiple-choice self-evaluation
Group Space	Action-research-based observation of group activities Group project (presentation)	No summative evaluation

Trainers and instructors are invited to use other means of assessment that cater to the specific needs of the course(s) and group (s) they teach. The table below lists several different formative and summative assessments.

	Formative assessment	Summative assessment
Individual Space	Self-assessment (written assessment or informal conversation)

Real-life task/Simulation (interactive, mirroring a real-world scenario or case study)

Online poll or survey

Micro-conversation

Questionnaire at intervals

Interviews

Role play

Quiz or test | Reflective learning diary outlining progress throughout training course

Case study report or analysis (analysing a real-world case study)

Problem-solving exercise

Portfolio (samples of reflections, projects, other artefacts)

Final exam (multiple choice and open-ended questions)

Interactive quiz or simulation

Capstone project (comprehensive project addressing a real-world problem) |
| Group Space | Self-assessment (group project or focus group)

Peer-assessment

External observation | Virtual group presentation (interactive/live webinar)

Online collaborative project

Case study analysis

Group discussion or debate

Virtual symposium |

Assessment quality

The following are only some of the numerous ways available to ensure that assessment meets the quality criteria suggested elsewhere in this Guide.

1. **Quality assurance**
   This can take the form of (a) reviews by colleagues of experts and/or (b) pilot

testing, both of which could lead to feedback addressing any issues with content, level and time.

2. **Validity and reliability testing**

   This is a more longitudinal strategy and checks for consistency of results over time or across different learner groups. It also entails mapping the course content and ensures that all aspects are covered by the chosen assessment methods.

3. **Alignment with learning objectives**

   Experts can cross-check each learning objective against what is tested in the assessment to confirm alignment.

4. **External validation**

   Cross-check your chosen assessment methods against benchmark assessments in similar courses. A further step would be to have the assessment accredited by a professional body.

It is vital that assessment is regularly reviewed and amended as and if necessary, as per the collected feedback or any other quality review mechanism, so that high standards are maintained, both in teaching quality and in learner satisfaction.

7.3   Course evaluation

In pursuing sustained excellence and improvement, it should be considered good practice that the recognition criteria and the outlining framework are regularly reviewed through appropriate review mechanisms, and necessary revisions are applied. This should keep these updated and aligned with industry standards, emerging trends and changing needs. Suggested means for the DigiComPass course would be the administration of a digital questionnaire (via Google Forms) at the end of each Module. This would provide invaluable learner feedback and could center upon:

- learner experiences (e.g. with flip learning)
- module clarity, comprehensibility, cohesion and structure
- correspondence of course content to learning outcomes
- assessment methods (relevance to content, alignment with learning outcomes)
- trainer expertise and performance
- quality and level of activities and other materials
- recognition framework (badges, certificates)

As is the case with assessment, questionnaires or other course reviewing means should undergo rigorous testing, targeting high levels of reliability, credibility, validity and fairness. Completion of content review could also be a prerequisite for learners to receive their badges.

Further to an end-of-the-Module evaluation, interim evaluations could also take place, in the form of short questionnaires including open-ended questions, focus groups (even though more time-consuming) or external observations, which could possibly lead to adjustments in module design, materials and assessment. Anonymous online polls and discussion boards or quizzes, aiming at collecting learner insights and feedback, could be employed for this purpose.

7.4 Value and limitations of applying the Recognition Framework to other courses

As part of this framework, the aim is to develop a recognition model for Europe, defining the curriculum, training environment, evaluation and grading, and ensuring consistent certification (which could be used internationally as well) and, equally important, be practicable globally.

There are obvious benefits in potentially transferring the DigiComPass recognition framework to other courses. First and foremost, given the innovation behind this framework in relation to Adult Education in particular, applying it in similar courses could establish benchmarks and could go some way into standardizing how achievements are measured in such settings. Secondly, it renders it possible for learners who acquire skills across different courses using the same framework, to acquire certain skills and track their progress in a more efficient, consistent way, all in a flexible, more relaxed environment than your typical learning setting. Mapping out one's skills and targeting areas for enriching their portfolio, while having such achievements readily certified, could enhance employment opportunities. It also promotes lifelong learning and further motivates people to grow professionally, helping them to keep pace with current industry trends.

In targeting other courses, several limitations may also arise, potentially affecting the framework's effectiveness, applicability, and overall success. Significant content adjustments may be needed, in terms of complexity and detail. Also, adult learners differ compared to younger learners and there could even be differences across adult learner groups. In terms of learning contexts, formal and informal educational settings may differ greatly, posing different demands on instructors/trainers and learners, hence calling for differences in the courses taught. In terms of assessment, as this tests specific competencies and needs to align with specific learning objectives, the same assessment methods cannot easily be used for different courses. The recognition/accreditation model itself may also pose some trouble. For one, open badges might not carry the same value across different educational settings. Also, the accreditation model employed in DigiComPass might not be optimal for other courses. Additionally, using the model with learning management systems other than Moodle may prove problematic. Finally, the framework requires

resources (e.g. technological infrastructures, staff knowledge) that might not be available in other contexts, hence severely affecting its applicability.

8 Appendix

The twelve sectors of flipped learning - explained simply and briefly.

Understanding Flipped Learning

This sector ensures that all stakeholders—students, educators, and administrators—grasp the core principles, methodology, and benefits of flipped learning, ensuring a unified and informed approach to its implementation.

Communications and Culture

This sector focuses on fostering open dialogue and collaboration among educators, students, and parents to build a supportive environment, promoting a culture where flipped learning is embraced as part of the broader educational practice.

Planning for Flipped Learning

This sector involves a comprehensive strategy for implementing flipped learning, including the careful selection of digital tools, development of interactive learning materials, and thoughtful scheduling to maximize in-class engagement and out-of-class preparation.

Individual Space Mastery

This sector emphasizes personalized learning, allowing students to control the pace and style of their individual learning journeys while accessing diverse resources to meet their unique needs, ultimately supporting mastery of the content.

Group Space Mastery

This sector ensures that classroom time is utilized for collaborative activities, peer learning, and interactive experiences that encourage students to apply their knowledge in group settings, enhancing understanding through social learning.

Assessment

This sector integrates formative and summative assessments aligned with flipped learning objectives, ensuring that feedback is prompt, meaningful, and aimed at reinforcing learning while helping students track their progress toward mastery.

K-12 Focus

This sector ensures that flipped learning strategies are tailored to suit the developmental, cognitive, and emotional needs of K-12 students, adapting content and activities to be age-appropriate and engaging for younger learners.

Learning Spaces

This sector addresses the design of physical and virtual learning environments, advocating for flexible, tech-enabled spaces that facilitate both independent and group learning in alignment with flipped learning goals.

IT Infrastructure

This sector ensures that the technological backbone—such as reliable internet, learning management systems, and access to devices—supports the seamless delivery of flipped learning, allowing for smooth integration of digital resources.

Learner Feedback

This sector establishes mechanisms for students to provide feedback on the flipped learning experience, using their input to continuously refine the approach, materials, and in-class activities for optimal learning outcomes.

Evidence and Research

This sector focuses on collecting, analysing, and utilizing data on the effectiveness of flipped learning, ensuring that evidence-based practices guide future refinements and validate the model's success in improving student outcomes.

Professional Development

This sector ensures that educators receive ongoing training and support to effectively implement flipped learning, including pedagogical strategies, technological fluency, and classroom management techniques tailored to flipped environments.

9 References

Assistive Technologies

Assistive technologies are tools that enable individuals with disabilities to access, interact with, and fully participate in digital environments, promoting digital inclusivity and equal opportunities.

- European Commission. (2019). European Accessibility Act. Available at: https://ec.europa.eu/social/main.jsp?catId=1202&intPageId=5581&langId=en
- National Center on Disability Services (NCDS). (2023). Assistive Technology. https://ncdae.org/

Backward Design

Instructional framework that starts with learning outcomes and works backward to design content and assessments.

- Wiggins, G., & McTighe, J. (2005). Understanding by Design. ASCD.
- https://tll.mit.edu/teaching-resources/course-design/backward-design/

Bloom's Taxonomy

Hierarchical model for classifying learning objectives based on complexity.

- Bloom, B. S., et al. (1956). Taxonomy of Educational Objectives: Handbook I: Cognitive Domain. Longmans, Green.
- Anderson, L. W., & Krathwohl, D. R. (2001).[1] A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives.[2,3] New York: Longman.[3]

Competency-Based Learning

Personalized learning approach focused on mastering skills.

- DuFour, R., & DuFour, R. (2016). Learning by Design: A Guide to Creating Schools Where Every Student Can Succeed. Corwin Press.
- Yalçınkaya, E. (2023). Mastering skills with competency-based learning. Sertifier. https://sertifier.com/blog/mastering-skills-with-competency-based-learning/

Cybersecurity

Protecting computers, networks, and data from unauthorized access.

- **Reference:** Cybersecurity & Infrastructure Security Agency (CISA). (2023). Cybersecurity Basics. https://www.cisa.gov/

Digital Citizenship

Understanding rights and responsibilities in online spaces.

- **Reference:** Common Sense Education. (2023). Digital Citizenship. https://www.commonsense.org/education/digital-citizenship

Digital Identity

Online representation of an individual's personal and professional information.

- **Reference:** Federal Trade Commission (FTC). (2023). Online Identity Theft. https://consumer.ftc.gov/features/identity-theft

Digital Literacy

Skills required to navigate, evaluate, and create information using digital technologies.

- : Partnership for 21st Century Skills. (2023). Digital Literacy. https://www.marietta.edu/sites/default/files/documents/21st_century_skills_standards_book_2.pdf
- **UNESCO:** http://tcg.uis.unesco.org/wp-content/uploads/sites/4/2021/08/Metadata-4.4.2.pdf

Digital Safety

Protecting digital devices, data, and personal privacy.

- National Cybersecurity Alliance. (2023). Stay Safe Online. https://staysafeonline.org/
- Husain, O. (2023, March 16). Digital privacy definition: What is digital privacy & digital safety. Enzuzo. https://www.enzuzo.com/blog/digital-privacy-definition
- Vigderman, A., & Turner, G. (2024). *A 2024 guide to personal digital security & online safety.* Security.org. https://www.security.org/digital-safety/

Digital Tools

Software and applications for communication, collaboration, content creation, and problem-solving.

Reference: Techopedia. (2023). Digital Tools. https://www.techopedia.com/

E-waste

Discarded electronic devices contributing to environmental pollution.

Reference: Environmental Protection Agency (EPA). (2023). Electronic Waste (E-Waste). https://www.epa.gov/international-cooperation/cleaning-electronic-waste-e-waste

Information and Data Literacy
Ability to browse, search, evaluate, and manage digital information effectively.

Reference: American Library Association (ALA). (2023). Information Literacy. https://literacy.ala.org/information-literacy/

Klippert's Method Change Approach
Teaching strategy that accommodates different learning styles and paces.

- Klippert, D. (2007). The Method Change Approach. https://www.linkedin.com/in/justinreppert
- Caceres, C. (2024). *How to adapt teaching methods to diverse learning styles*. T4 Education. https://t4.education/blog/how-to-adapt-teaching-methods-to-diverse-learning-styles/

Learning by Assessment
Educational approach emphasizing regular assessments for reinforcement and feedback.

- Black, P. J., & Wiliam, D. (1998). Inside the Black Box: Raising Standards Through Classroom Assessment. Phi Delta Kappan.
- Mentz, E., & Lubbe, A. (Eds.). (2021). *Learning through assessment: An approach towards self-directed learning* (1st ed.). AOSIS. https://doi.org/10.4102/aosis.2021.BK280
- Alt, D., Naamati-Schneider, L., & Weishut, D. J. N. (2023). Competency-based learning and formative assessment feedback as precursors of college students' soft skills acquisition. *Studies in Higher Education, 48*(12), 1901–1917. https://doi.org/10.1080/03075079.2023.2217203

Microlearning
Learning approach that breaks down complex topics into short, focused units.

- Hill, S. (n.d.). *Microlearning: The benefits and opportunities of small learning units*. Knowledgeworker. https://www.knowledgeworker.com/en/blog/microlearning-the-benefits-and-opportunities-of-small-learning-units
- Main, P. (2024, July 1). *Discover the benefits of microlearning for enhanced knowledge retention: Explore effective microlearning content for efficient and*

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- Campell, R. (2023). *15 microlearning strategies: High School in 2024*. Richard Campbell. https://richardccampbell.com/15-ways-to-incorporate-microlearning-in-high-school-teaching/

Moodle
Open-source learning platform for managing, delivering, and tracking digital courses.

Reference: Moodle. (2023). Moodle. https://moodle.org/

Multimedia-Based Interactive (MM&I) Content
Educational materials that combine text, audio, video, and interactive elements.

- Zhang, D. (2005). Interactive Multimedia-Based E-Learning: A Study of Effectiveness. *American Journal of Distance Education*, *19*(3), 149–162. https://doi.org/10.1207/s15389286ajde1903_3

- Kumar, S. N., Fred, A. L., Padmanabhan, P., & Gulyas, B. (2021). Multimedia-based learning tools and its scope, applications for virtual learning environment. In *Computational Intelligence in Digital Pedagogy* (pp. 47-63). Springer. https://doi.org/10.1007/978-981-15-8744-3_3

Self-Directed Learning

Process where learners take initiative in their learning.

- Pemberton, R., Cooker, L. (2012). Self-directed Learning: Concepts, Practice, and a Novel Research Methodology. In: Mercer, S., Ryan, S., Williams, M. (eds) Psychology for Language Learning. Palgrave Macmillan, London. https://doi.org/10.1057/9781137032829_14

Sustainability in Technology

Practices aimed at reducing the environmental impact of digital technology use.

- **Reference:** Environmental Protection Agency (EPA). (2023). Electronic Waste (E-Waste). https://www.epa.gov/international-cooperation/cleaning-electronic-waste-e-waste

10 Glossary

The glossary serves as a reference tool that provides clear definitions of key terms and concepts, ensuring consistent understanding and effective communication throughout the training course.

10.1 Assistive Technologies

Assistive Technologies are tools designed to help individuals with disabilities fully engage in digital environments. These can include screen readers, voice recognition software, and other adaptive technologies that make digital content accessible. They promote inclusivity and equal participation in learning.

10.2 Backward Design

Backward Design is an instructional framework that starts by defining the desired learning outcomes or competencies. This ensures that every part of the educational process, including instructional content and assessments, is aligned with achieving clear objectives. It focuses on competency-based outcomes and structured learning paths.

10.3 Bloom's Taxonomy

Bloom's Taxonomy is a hierarchical model used to classify learning objectives based on complexity and depth of learning. The levels range from basic skills like "Remembering" and "Understanding" to more advanced stages like "Evaluating" and "Creating." It is used to structure educational goals and activities.

10.4 Competency-Based Learning

Competency-Based Learning is an educational approach where learners advance based on their ability to demonstrate specific skills or competencies. This ensures that learning is personalized, with students progressing at their own pace until they achieve mastery. This method focuses on measurable outcomes.

10.5 Communication and Collaboration

Communication and Collaboration skills are related to effectively using digital tools to interact, share information, and work together in digital environments. These include using platforms for messaging, video conferencing, and collaborative document creation. These skills are essential in professional and educational settings.

10.6 Copyright and Licenses

Copyright and Licenses are legal frameworks that protect digital content creators by granting exclusive rights to use, share, or modify their work. Licenses specify the terms under which others can use a creator's content, including rules about citation and permission. Understanding copyright helps prevent infringement and encourages responsible content sharing.

10.7 Cybersecurity

Cybersecurity is the practice of protecting computers, networks, and data from unauthorized access, cyberattacks, or theft. This involves using encryption, firewalls, antivirus software, and secure passwords to safeguard digital resources. It's crucial for maintaining privacy and protecting sensitive information.

10.8 DigiComPass

DigiComPass is a digital competencies framework for adult learners, based on the European Union's DigComp Framework. It aims to build digital literacy skills in areas like data literacy, content creation, communication, and safety. Learners earn a DigiComPass Passport upon successful completion of the course modules.

10.9 DigComp

The **Digital Competence Framework for Citizens** (commonly referred to as **DigComp**) is a framework developed by the **European Commission** to define the key digital competencies that citizens need to thrive in a digitally oriented world. It serves as a guide for individuals, educators, and policymakers to understand, assess, and improve digital literacy and competencies.

10.9.1 Versions of DigComp:

- **DigComp 2.0** (2016): This version updated the original 2013 framework to reflect emerging trends in digital competencies. It maintained the five areas of competence but added clearer definitions and updated examples for each competence. The focus was on ensuring that citizens could navigate an increasingly digital society and economy.
- **DigComp 2.1** (2017): The primary update in this version was the introduction of **proficiency levels**. The framework now included eight proficiency levels (from Foundation to Highly Specialized) across the five competence areas, providing a more nuanced and flexible way to assess and develop digital competencies.
- **DigComp 2.2** (2022): The latest version further refined the descriptions of the competencies, particularly in response to new digital challenges, such as the use of artificial intelligence and data privacy concerns. It added additional examples and case studies to make the framework more applicable across various contexts, from education to the workplace. It also incorporated newer technological developments and their impact on digital literacy.

10.9.2 Key Differences

- **DigComp 2.0** focused on providing updated content and clearer definitions compared to the original.
- **DigComp 2.1** introduced **proficiency levels**, making the framework more practical for assessment and development of digital skills.

- **DigComp 2.2** brought a more detailed and current approach, addressing emerging digital challenges like AI and privacy.

The DigComp framework is a valuable tool for fostering digital literacy, which is essential for active participation in modern digital societies.

Reference:
European Commission. (2022). *The Digital Competence Framework for Citizens (DigComp)*. Available at: https://joint-research-centre.ec.europa.eu

10.10 Digital Content Creation
Digital Content Creation is the process of creating multimedia materials such as text, video, graphics, and audio. This skill includes using digital tools to edit, integrate, and enhance content to communicate effectively or create engaging materials for various platforms. It is key in personal branding and professional communication.

10.11 Digital Identity
Digital Identity is the online representation of an individual's personal and professional information. Managing digital identity includes protecting personal data and privacy, curating online content, and ensuring that one's digital presence reflects their values and goals. It involves awareness of privacy settings and personal branding.

10.12 Digital Literacy
Digital Literacy is the skills required to navigate, evaluate, and create information using digital technologies. This includes browsing the web, managing digital content, evaluating online resources for credibility, and using digital tools effectively. It is a fundamental competence in the modern information society.

10.13 Digital Safety

Digital Safety practices and measures for protecting digital devices, data, and personal privacy. This includes using strong passwords, encryption, antivirus software, and avoiding risks like phishing attacks. Maintaining digital safety helps prevent cyberattacks and protect sensitive information.

10.14 Digital Tools
Digital Tools are software and applications that facilitate activities such as communication, collaboration, content creation, and problem-solving in digital environments. Examples include video conferencing platforms, word processors, and digital task managers. Digital tools enhance productivity and learning efficiency.

10.15 E-waste

E-waste is discarded electronic devices and equipment that contribute to environmental pollution. E-waste is a growing issue due to the short lifespan of modern electronic devices and their improper disposal. Managing e-waste responsibly is key to reducing the environmental impact of digital technologies.

10.16 Flipped Learning 3.0 (FL3)

FL3 (FL 3.0) is an instructional model that inverts traditional classroom teaching by having learners engage with course content before class. Class time is then used for discussions, problem-solving, and collaborative activities. This model emphasizes active learning and personalized education.

10.17 Information and Data Literacy

Information and Data Literacy is the ability to browse, search, evaluate, and manage digital information effectively. These skills enable individuals to discern credible sources, avoid misinformation, and use data for research or decision-making. It's crucial for academic, professional, and personal digital engagement.

10.18 Individual Learning Space

An Individual Learning Space is a self-paced learning environment where learners engage with instructional content independently, often through multimedia materials. It allows learners to absorb foundational knowledge at their own pace before applying it in collaborative settings. This concept is key in the FL3 model.

10.19 Klippert's Method Change Approach

Klippert's Method Change Approach is a teaching strategy that integrates varied content and flexible methods to accommodate different learning styles and paces. It promotes active engagement, collaboration, and iterative learning to help adult learners succeed. This method encourages adapting instruction based on learner needs.

10.20 Learning by Assessment

Learning by Assessment is an educational approach that emphasizes regular assessments as a way to reinforce learning. Continuous feedback from assessments helps learners identify knowledge gaps and improve their understanding over time. This method is especially effective for adult learners in maintaining engagement and retention.

10.21 Learning Management System (LMS)

A Learning Management System (LMS) is software used to deliver, track, and manage educational courses. LMS platforms, such as Moodle, provide a centralized space for

course materials, assessments, and communication between instructors and learners. They are key tools in online and blended learning environments.

10.22 Microlearning

Microlearning is a learning approach that breaks down complex topics into short, focused learning units or lessons. Each unit typically takes only a few minutes to complete, making learning more accessible and engaging, particularly for busy adult learners. Microlearning is effective for retaining knowledge and maintaining attention.

10.23 Moodle

Moodle is an open-source learning platform used for managing, delivering, and tracking digital courses. It supports various educational tools such as quizzes, multimedia content, and discussion forums. Moodle is widely used in higher education and corporate training.

10.24 Multimedia-Based Interactive (MM&I) Content

Multimedia-Based Interactive (MM&I) Content is educational materials that combine text, audio, video, and interactive elements to engage learners. This approach caters to different learning styles and helps reinforce key concepts through diverse media. MM&I content is used to enhance learning outcomes.

10.25 Problem-Solving

Problem-Solving is the ability to identify and resolve issues using digital tools and resources. In the context of the DigiComPass course, problem-solving skills are applied to both technical and everyday challenges using digital technologies. It is a critical competence for thriving in a digital world.

10.26 Self-Directed Learning

Self-Directed Learning is a process where learners take initiative in identifying their learning needs, setting goals, and pursuing educational resources independently. This method encourages autonomy and personal responsibility for learning outcomes, which is essential for adult education and lifelong learning.

10.27 Sustainability in Technology

Sustainability in Technology practices aimed at reducing the environmental impact of digital technology use. This includes promoting energy-efficient devices, reducing e-waste, and adopting green technologies. Sustainable technology use contributes to the broader goals of environmental responsibility and conservation.

10.28 Technical Problems

Technical Problems are issues that arise from using digital devices or software, such as connectivity issues, hardware malfunctions, or application crashes. Knowing how

to troubleshoot these problems is essential for maintaining productivity and ensuring that digital tools function effectively.