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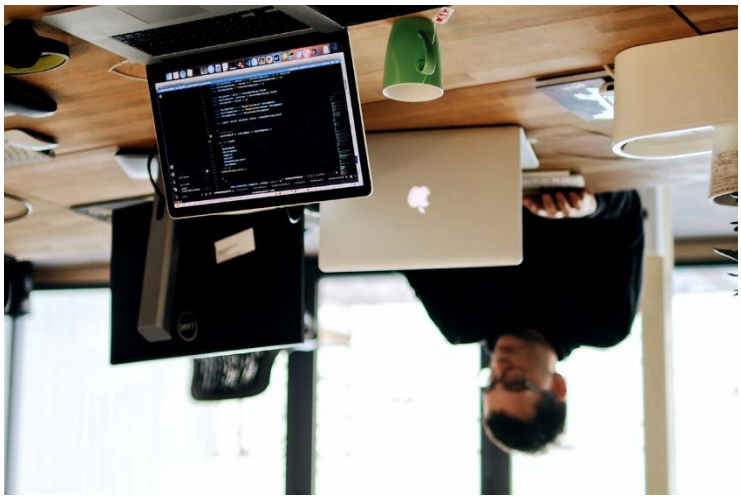
Flipped Instructional Design



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Abstract

This document describes the Instructional Design for training courses implemented using the "Flipped Learning 3.0 Framework".

Keywords

flipped learning 3.0, instructional design, active learning, adult learners

Contents

Instructional design

Instructional design refers to the systematic process of developing, planning, implementing, and evaluating teaching and learning materials and experiences. It is a discipline that aims to make learning processes more effective, efficient, and engaging by drawing on pedagogical theories, research findings, and best practices.

Instructional designers analyse the needs and goals of learners and organisations to develop tailored curricula, instructional materials, activities, and assessment methods. This can apply to traditional classroom environments and online or hybrid learning formats. The goal is to optimize learning outcomes by providing learners with the necessary knowledge and skills to be successful.

Flipped Instructional Design is built on the Flipped Learning 3.0 Framework. The developed design model defines the framework of developing Flipped Learning 3.0-based learning experiences in a general, versatile way for each course to be developed. The relevant elements of the framework (selected from the "187 Global Elements of Efficient Flipped Learning") are used.

1. Introduction

The Flipped Learning 3.0 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 Flipped Learning 3.0 model, this approach is reversed.

In this 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, collaborative 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 Flipped Learning 3.0 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 deeper discussions and collaborative activities that promote critical thinking and problem-solving skills.

The Flipped Learning 3.0 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 trainer shifts from a traditional instructor to a facilitator or coach who supports learners in their learning journey and provides individualized guidance.

Benefits of the Flipped Learning 3.0 Framework include increased learner engagement, improved understanding and retention of content, development of higher order thinking skills, and the opportunity for instructors to provide targeted support to learners based on their individual needs.

Definition for Flipped Learning 3.0

> *Flipped Learning is a framework that enables educators to reach every 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.*

Flipped Learning Standards

In order to promote a broad understanding, there are generally easy-to-understand descriptions for flipped learning, but parallel to this, so-called standards have also been defined on which these descriptions are based. To simplify readability and to

provide an overall overview, these standards are summarised with a checklist in the appendix.

Implementing a Flipped Learning Instructional Design

Flipped Learning, an innovative pedagogical approach, aims to optimise the use of classroom time by shifting traditional lecture content to be consumed outside the classroom while classroom time is dedicated to active learning and problem-solving. What is presented here is an outline of the approach for developing an instructional design based on the Flipped Learning 3.0 model. The mentioned items are discussed step by step following the classic approach to instructional design.

This document refers to the "Global Elements of Effective Flipped Learning" (GEEFL), which is a framework to guide educators in the design and implementation of flipped learning experiences. The GEEFL is based on the work of Jon Bergmann, Aaron Sams, and other educators and researchers who have contributed to the development of flipped learning. The framework encompasses several key components that can be adapted to various educational contexts. Some of the main aspects of effective flipped learning form the pillars to build the flipped instructional design.

The twelve sectors of Effective Flipped Learning

The 12 sectors of effective flipped learning were developed by the Academy of Active Learning Arts and Sciences (AALAS[1]) to provide a framework for understanding and implementing flipped learning. The sectors are intended to ensure that all aspects of flipped learning are considered, from the philosophical underpinnings of the approach to the practicalities of implementation.

These 12 sectors are (we use the original text for school education using “student” instead of “learners”:

- **Understanding Flipped Learning:** This sector ensures that everyone involved in the flipped learning process understands the philosophy and principles of flipped learning.
- **Communications and Culture:** This sector focuses on creating a shared understanding of flipped learning and building a culture of collaboration and support.

[1] AALAS is a non-profit organization founded to identify and support global standards for Flipped Learning and related active learning instruction. The Flipped Learning Global Standards Project is the first worldwide initiative to define a common framework for Flipped Learning training and practice. The standards are intended to establish some generally accepted international conventions and global best practices for voluntary adoption by schools, universities, training departments, and Flipped Learning trainers and training organizations.

- **Planning for Flipped Learning:** This sector involves developing a plan for how flipped learning will be implemented in the classroom, including identifying resources, creating learning materials, and scheduling activities.
- **Individual Space Mastery:** This sector ensures that learners have the opportunity to learn at their own pace and in their own way, with access to the resources they need.
- **Group Space Mastery:** This sector focuses on creating opportunities for learners to collaborate and learn from each other.
- **Assessment:** This sector ensures that learners are assessed in a way that is consistent with the flipped learning approach, and that feedback is provided in a timely and constructive manner.
- **K-12 Focus:** This sector ensures that flipped learning is implemented in a way that is appropriate for the needs of K-12 learners.
- **Learning Spaces:** This sector focuses on creating learning spaces that are conducive to flipped learning, such as classrooms with flexible seating and access to technology.
- **IT Infrastructure:** This sector ensures that there is adequate IT infrastructure in place to support flipped learning, such as access to high-speed internet and video streaming.
- **Learner Feedback:** This sector ensures that learners have opportunities to provide feedback on the flipped learning process, so that it can be continuously improved.
- **Evidence and Research:** This sector involves collecting evidence of the effectiveness of flipped learning, so that it can be used to inform future practice.
- **Professional Development:** This sector ensures that teachers have the opportunity to learn about flipped learning and how to implement it effectively.

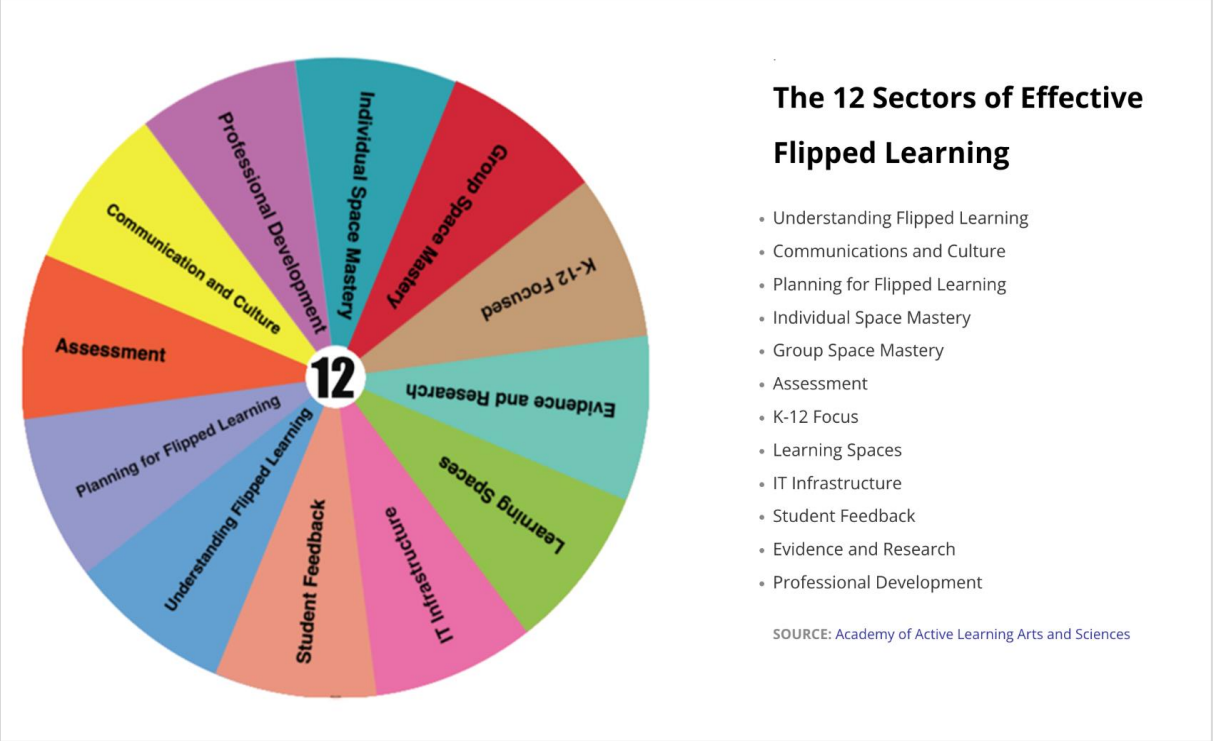

Figure 1: The Sectors Wheel

The 12 sectors can be used by teachers, administrators, and other stakeholders to plan, implement, and evaluate flipped learning programs. They can also be used to research the effectiveness of flipped learning and to develop professional development programs for teachers.

The 12 sectors of effective flipped learning are a valuable resource for anyone who is interested in implementing flipped learning in their classroom or school. The sectors provide a comprehensive framework for understanding and implementing flipped learning, and they can be used to ensure that all aspects of the approach are considered.

The "Elements Table"

The GEEFL-Elements is a set of 12 essential building blocks as described in the 12 Sectors Wheel displayed like a "Periodic System Table". The elements are organized into four families: Foundation, Planning, Active Learning, and Context.

Element Group	Symbol	Family	Description
Understanding Flipped Learning	U	Foundation	Ensures that everyone involved in the flipped learning process understands the philosophy and principles of flipped learning.

Communications and Culture	C	Foundation	Focuses on creating a shared understanding of flipped learning and building a culture of collaboration and support.
Planning for Flipped Learning	P	Planning	Involves developing a plan for how flipped learning will be implemented in the classroom, including identifying resources, creating learning materials, and scheduling activities.
Individual Space Mastery	IS	Active Learning	Ensures that s have the opportunity to learn at their own pace and in their own way, with access to the resources they need.
Group Space Mastery	GD	Active Learning	Focuses on creating opportunities for learners to collaborate and learn from each other.
Assessment	A	Assessment	Ensures that learners are assessed in a way that is consistent with the flipped learning approach, and that feedback is provided in a timely and constructive manner.
K-12 Focus	KF	Context	Ensures that flipped learning is implemented in a way that is appropriate for the needs of K-12 learners.
Learning Spaces	LS	Context	Focuses on creating learning spaces that are conducive to flipped learning, such as classrooms with flexible seating and access to technology.
IT Infrastructure	IT	Context	Ensures that there is adequate IT infrastructure in place to support flipped learning, such as access to high-speed internet and video streaming.

Learner Feedback	ST	Evaluation	Ensures that learners have opportunities to provide feedback on the flipped learning process, so that it can be continuously improved.
Evidence and Research	R	Evaluation	Involves collecting evidence of the effectiveness of flipped learning, so that it can be used to inform future practice.
Professional Development	DD	Professional Development	Ensures that teachers have the opportunity to learn about flipped learning and how to implement it effectively.

Table 1: Context between Element Group, Family, and brief description of the Element Group.

The **Foundation** elements ensure that everyone involved in the flipped learning process understands the philosophy and principles of flipped learning.

The **Planning** elements involve developing a plan for how flipped learning will be implemented in the classroom.

The **Active Learning** elements focus on creating opportunities for learners to learn actively and collaboratively.

The **Context** elements ensure that flipped learning is implemented in a way that is appropriate for the needs of the learners and the context in which it is being implemented.

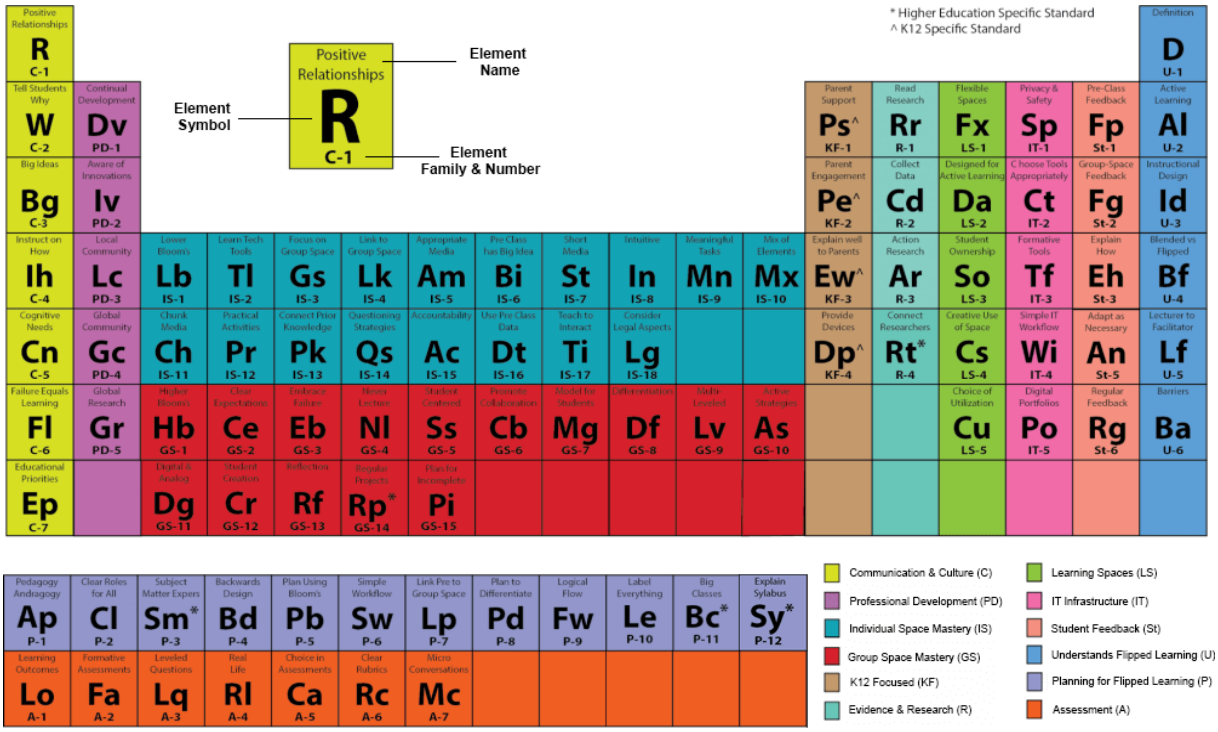

Figure 2: The GEEFL-Elements, structured like a Periodic System. This table includes all elements used in the description of this document.

Planning for Flipped Learning (P) offers 12 elements. The group "K12 Focused is relevant for school but not in adult education. A brief description of the item follows under each heading, while further description is also provided.

1.1. Pedagogy Andragogy (P-1 Ap)

Understand the principles of andragogy and pedagogy in designing courses and lessons.

	Pedagogy	Andragogy
Origin	The term "pedagogy" comes from the ancient Greek words "pais," meaning "child," and "agogos," meaning "leader." It has been the dominant approach to education for centuries.	The term "andragogy" comes from the Greek words "aner," meaning "man," and "agogos," meaning "leader." The concept was popularized by American educator Malcolm Knowles in the 20th century.

Focus	Pedagogy is the method and practice of teaching children. It emphasizes the role of the teacher as an authority figure and the transfer of knowledge from the teacher to the learners.	Andragogy is the method and practice of teaching adults. It emphasizes self-directed learning, the practical application of knowledge, and the learner's prior experience and motivation.
Assumptions	Pedagogical approaches assume that children have little or no prior knowledge, need structure and guidance, and learn best when teachers are directive.	Andragogical approaches assume that adult learners are self-motivated, have accumulated life experiences, are goal-oriented, and want to apply their learning immediately. They often prefer to be involved in, and take responsibility, for their learning.
Teaching methods	Pedagogical methods often include lectures, demonstrations, memorization, and repetition. Teachers play a central role in decision-making, curriculum design, and evaluation.	Andragogical methods often include problem-based learning, group discussions, case studies, and collaborative projects. Teachers act as facilitators, encouraging learners to reflect on their experiences, share ideas, and explore new concepts.

Table 2: Pedagogy and Andragogy - similar, but not the same

In summary, pedagogy focuses on teaching children in a structured, teacher-centered environment, while andragogy focuses on facilitating adult learning in a more flexible, learner-centered environment. Both approaches have their merits and can be effective depending on the context, learner characteristics, and educational goals.

Andragogy in the Flipped Learning 3.0 Framework uses an active learning approach by emphasizing the involvement of adult learners in the learning process, fostering their intrinsic motivation, and encouraging them to apply their knowledge and

experience to solve problems or complete tasks. Active learning in andragogy aims to make the learning experience more engaging, meaningful, and relevant for adult learners, promoting deeper understanding and long-term retention of the material.

The active learning approach focuses on 6 major items:

1. **The learning process is learner-centered.**
   In an active learning environment, adult learners take responsibility for their learning. They set their own goals, identify their learning needs, and actively participate in the learning process.
2. **Learners have prior experience.**
   Active learning in andragogy acknowledges and builds upon the rich experiences that adult learners bring to the table. These experiences can be used as resources for learning, providing relatable examples, and fostering discussions.
3. **Problem-based learning increases motivation and the relevance of the learning experience.**
   Adult learners are often more motivated when they can see the relevance of their learning. Problem-based learning encourages learners to apply their knowledge and skills to real-world problems or situations, making the learning experience more meaningful and practical.
4. **The learning process (mainly in the Group Learning Space) includes collaboration and social interaction.**
   Active learning approaches in andragogy encourage adult learners to collaborate and interact with their peers. This can involve group discussions, team projects, or peer coaching, allowing learners to share their experiences, perspectives, and expertise.
5. **Self-reflection and self-assessment are a means of the learning process.**
   Active learning in andragogy promotes self-reflection and self-assessment, encouraging learners to evaluate their progress, recognize their strengths and weaknesses, and identify areas for improvement.
6. **The learning process enables flexibility and adaptability.**
   Active learning approaches in andragogy allow for flexibility and adaptability, catering to the diverse needs, interests, and learning styles of adult learners. This can involve offering a variety of learning materials, activities, and assessment methods to support different learners.

This approach supports adult learners in developing critical thinking, problem-solving, and self-directed learning skills, fostering a more engaging and meaningful learning experience.

1.2. Instructional Design (U-3 Id)

Understand the importance of instructional design when planning for Flipped Learning.

Instructional design is essential as it establishes a systematic and coherent framework for creating effective and engaging educational experiences. By aligning content, teaching strategies, and assessment methods with learners' needs and desired learning outcomes, the instructional design ensures that learning experiences are efficient, impactful, and tailored to the target audience.

Instructional design ensures effective and efficient learning experiences by systematically analysing learners' needs, designing appropriate learning objectives, and developing instructional materials and strategies that align with those objectives. It helps bridging the gap between instructional content and learners' comprehension, facilitating meaningful learning and maximizing the transfer of knowledge and skills.

1.3. Clear Roles for All (P-2 Cl)

When possible, define clear roles for everyone involved in creating Flipped Learning courses (subject specialist, instructional designer, technologist, trainer).

In a Flipped Learning course, the development process typically involves collaboration among various professionals, each contributing their unique expertise to create an effective and engaging learning experience. The key roles include subject specialists, instructional designers, technologists, and trainers:

1. Subject Specialist: The subject specialist, also known as a content expert or subject matter expert (SME), is responsible for providing knowledge and expertise in a specific domain or topic. Their role includes:
    - Ensuring the accuracy and relevance of the content.
    - Collaborating with instructional designers to develop learning objectives and align the content with these objectives.
    - Providing input on appropriate assessments and evaluation methods.
    - Reviewing and approving the course materials and resources.
2. Instructional Designer: The instructional designer is responsible for designing the learning experience and organizing the course content in a way that facilitates effective Flipped Learning. Their role includes:
    - Collaborating with subject specialists to define learning objectives and outcomes.
    - Designing the structure and sequence of learning activities, including pre-class, in-class, and post-class activities.

- Developing instructional materials, such as videos, readings, and interactive resources, that promote active learning and engagement.
- Ensuring the course is accessible, engaging, and aligned with best practices in instructional design.

3. Technologist: The technologist, also known as an educational technologist or learning technologist, is responsible for the technical aspects of the Flipped Learning course. Their role includes:

   - Selecting and implementing the appropriate technology tools and platforms for delivering the course content and facilitating collaboration and communication.
   - Assisting in the creation, editing, and hosting of multimedia content, such as videos, animations, and interactive resources.
   - Providing technical support and troubleshooting for learners and instructors.
   - Ensuring the course adheres to accessibility standards and functions smoothly across different devices and platforms.

4. Trainer: The trainer, also known as the instructor or facilitator, is responsible for delivering the Flipped Learning course and supporting learners during the learning process. Their role includes:

   - Preparing for and facilitating in-class sessions, which focus on active learning, collaboration, and application of the pre-class content.
   - Providing guidance, feedback, and support to learners, both during in-class activities and through online interactions.
   - Assessing learner performance and providing feedback to help them achieve the learning objectives.
   - Collaborating with the other team members to evaluate the effectiveness of the course and make any necessary adjustments or improvements.

In summary, developing a Flipped Learning course involves a collaborative effort among subject specialists, instructional designers, technologists, and trainers. Each professional plays a crucial role in ensuring that the course is accurate, engaging, and effective, ultimately supporting learners in achieving the desired learning outcomes.

1.4. Backwards Design (P-4 Bd)

Use Backwards Design to plan effective flipped lessons and units.

Backwards design is an instructional design approach that starts with the end in mind, focusing first on the desired learning outcomes and working backwards to develop

the learning experiences and assessments. This approach involves three main stages: identifying the desired results, determining acceptable evidence of learning, and designing learning activities and experiences.

By clearly defining the learning goals and objectives, educators can ensure that the course content and assessments are aligned with these goals. This method helps instructors to create a more targeted, cohesive, and effective learning experience for their learners.

Backwards design emphasizes the importance of assessment and evaluation, as it closely ties the learning objectives to the assessment methods. This approach ultimately promotes deeper understanding, long-term retention, and meaningful learning experiences.

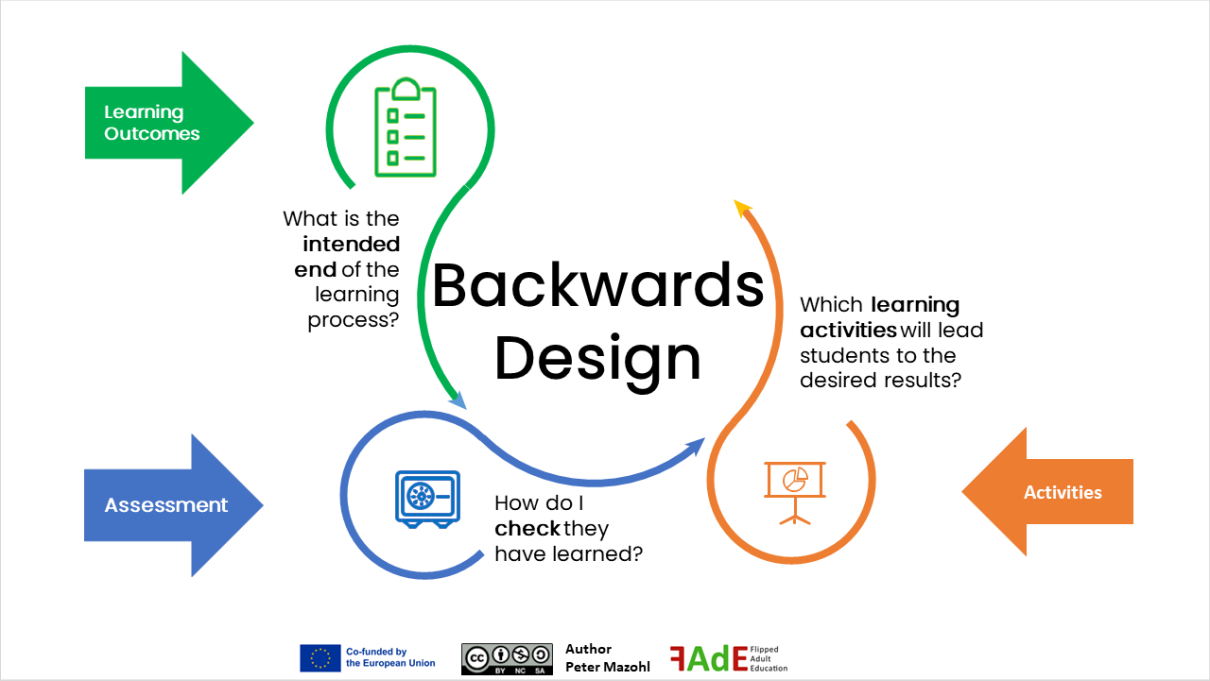

Figure 3: The three-steps path of Backwards Design.

1.5. Plan Using Bloom's Taxonomy (P-5 Pb)

Use Bloom's taxonomy to plan: lower levels of Bloom's go to the individual space, and higher levels to the group space.

In the context of flipped learning, "Lower Bloom's" refers to the lower levels of Bloom's Taxonomy of educational objectives, which are focused on foundational knowledge and understanding. This includes the first two levels of Bloom's Taxonomy: remembering and understanding.

Lower Bloom's activities in flipped learning typically involve learners acquiring basic knowledge and understanding of the material through individual activities outside of class time (Individual Learning Space), such as active videos, readings in context with

specific activities, interactive multimedia-based content, or others. These activities aim to provide learners with a foundation of knowledge and understanding that can be built upon during collaborative activities in the group space.

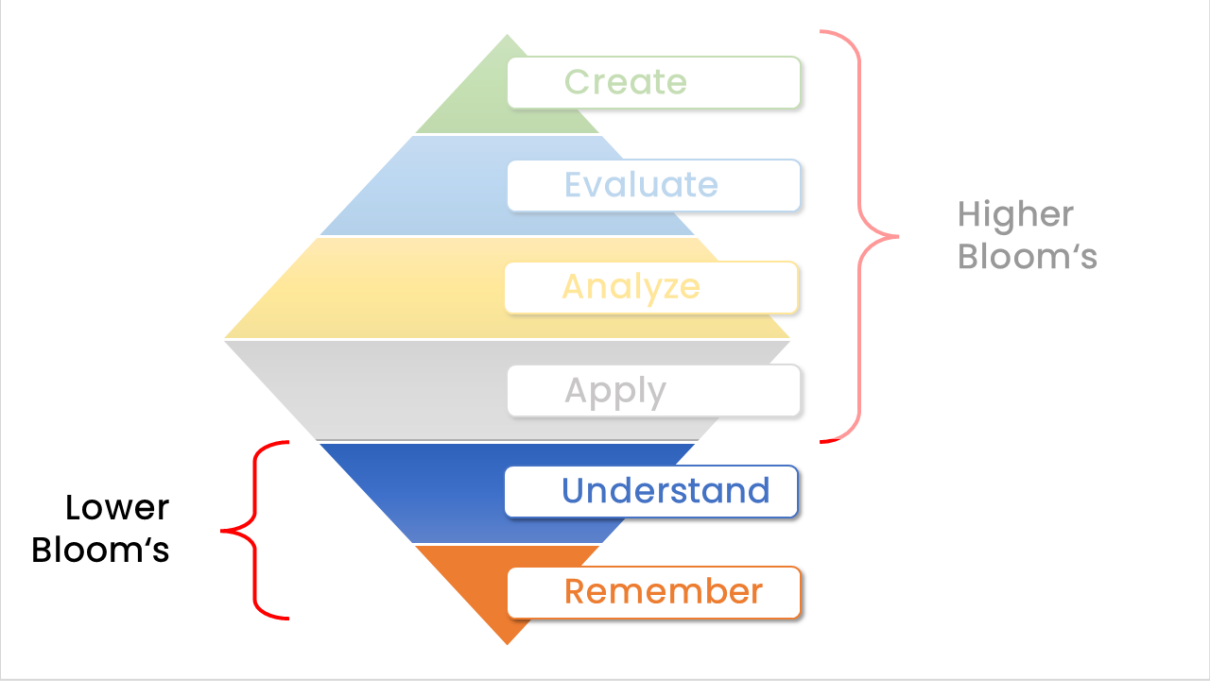

Figure 4: Lower Bloom's as the starting point in the Individual Learning Space.

1.6. Simple Workflow (P-6 Pd)

Use a simple workflow template.

This means creating a structured plan that outlines the steps and activities involved in the flipped learning process. This workflow template helps trainers to organize their materials and activities in a clear and logical manner, ensuring that learners have a consistent and effective learning experience.

Using a simple workflow template for flipped learning can help trainers to stay organized and focused on the learning objectives, while also providing learners with a consistent and effective learning experience. By following a structured plan, trainers can ensure that learners have a clear path of learning that builds upon itself in a logical and effective manner.

1.7. Link Pre to Group Space (P-7 Lp)

Ensure that pre-class media links directly to learning outcomes and group space activities.

In Flipped Learning, pre-learning activities are implemented in the Individual Space. They are designed to introduce learners to the fundamental concepts and content. This pre-knowledge is deepened in collaborative learning experiences in the group learning space.

One crucial approach is to design in-class activities that require learners to apply, analyse, or synthesize the content they learned during pre-learning. This reinforces their understanding and demonstrates the relevance of the pre-learning materials.

Another well-proven way is to begin the group learning session with a brief activity or discussion to assess learners' comprehension of the pre-learning content. This can include quizzes, polls, open-ended questions, or micro-conversations that allow instructors to gauge their understanding and address any misconceptions.

The use of real-world examples and case studies connects the pre-learning content knowledge and understanding of the pre-class to activities implemented in the group learning space. This allows learners to appreciate the practical application of the material and engages them in higher-order thinking, critical thinking, and problem-solving.

Learners should reflect on their pre-learning experiences and identify any areas where they need clarification or additional support. This can be done through group discussions, journaling, or peer feedback.

1.8. Plan to Differentiate (P-8 Pd)

Plan to differentiate in both the group and the Individual Spaces.

Differentiating in a course involves adapting the instructional approach, content, or learning environment to cater to the diverse needs, abilities, and interests of individual learners. By implementing differentiation, educators create a more inclusive and effective learning experience that supports all learners in achieving their learning objectives. This can be achieved through various strategies, such as providing multiple resources and activities that appeal to different learning styles, offering flexible pacing to accommodate varying levels of readiness, and allowing learners to choose from a range of assessment options that best demonstrate their understanding.

Grouping learners based on their abilities or interests in certain activities can also promote more personalized learning and encourage peer support. Differentiation in a course acknowledges that learners are not homogenous and that more often than not, a one-size-fits-all approach is not the most effective way to facilitate learning and growth.

1.9. Plan inclusion for all learners (enhanced P-8 Pd)

To plan for the inclusion of all learners in a training course, it is essential to consider their diverse needs, abilities, and backgrounds.

The first step is to design the course content and materials to be accessible and engaging for a wide range of learners, incorporating various learning styles and

cultural perspectives. This includes alternative delivery of learning content, for example, providing transcripts for videos or sound files for longer texts. Additionally, it is necessary to ensure that the learning environment, both physical and virtual, is welcoming and supports equal participation from all attendees.

Trainers should utilize a variety of teaching methods (so-called diversity of methods in teaching[2]) and activities to engage different learners and provide multiple opportunities for interaction and collaboration. Additionally, they should offer flexible assessment options that allow learners to demonstrate their understanding in various ways. Lastly, it would be valuable to seek feedback from participants in order to continually refine and improve the inclusivity of the training course, ensuring that all learners feel valued and supported throughout the learning process.

Inclusive material means

> *The inclusion plan is closely linked to inclusive didactics and a number of principles; to be inclusive, didactics must be well-thought-out and supported by certain teaching strategies.*

The main objectives of inclusive teaching are:

- Enhance different learning styles by exploiting learners' strengths.
- Encourage the participation of the whole class, as opposed to more traditional face-to-face lessons.
- Develop learners' self-esteem and confidence in their abilities
- Facilitate learning-making it interactive and engaging.
- Keep each learner's motivation high.
- Create opportunities for dialogue and collaboration.

Inclusive teaching strategies that foster respect for diversity and communication

- **Cooperative learning**
  Among the inclusive teaching strategies and methodologies, cooperative learning is the easiest to implement.

  By learning together in small groups, learners remember concepts better through interaction and develop qualities such as responsibility, positive interdependence and social skills;

- **Tutoring**
  Asking some learners to become tutors for others is one of the supportive methodologies that can foster new social contacts and interactive learning.

[2] Meyer, H. (2017). Was ist guter Unterricht? 15. Auflage. Berlin: Cornelson Verlag GmbH

In addition, it is also useful for the learner playing the role of tutor, both for memorising concepts and for his or her greater empowerment and education in diversity.

- Problem-solving
  Finding solutions to problems through knowledge already acquired arouses the learners' interest and increases their self-esteem and confidence in their own abilities.
- A case study
  it consists of a detailed description of a real problem that learners must identify and position, finding effective ways of approaching it.
- Workshop teaching
  This method is based on the practical reproduction of a previously learned theoretical concept, which allows learners to produce something through strategies they already know or learned on the spot.
- Debate
  Extremely effective methodology for developing linguistic, logical and behavioural skills useful for active citizenship.
- Trial of historical figures
  A strategy similar to that of the debate, but where a trial of a historical figure is enacted. The method encourages logical understanding of events and clear and concise expression of one's point of view supported by facts.
- Role-playing
  A form of exercise where learners play the role of actors for a limited time in front of a group of spectators. This method helps to understand better social dynamics and points of view other than one's own.
- Reality tasks
  This inclusive didactic strategy aims at solving a situation-problem similar to real life, which offers the opportunity to examine problems from different theoretical and practical perspectives, preparing learners for social interactions outside school, and also offers the opportunity to collaborate by reflecting on one's own behaviour.
- Use of technology
  The use of technology, such as educational robotics or software, facilitates learning, helps learners approach scientific and technical skills in an interactive way and bridges the digital divide.

Bearing in mind the above, and that these are aimed at adult learners, we belief that in order to be inclusive materials, they should be taken into account the following:

- Clear and Structured Content: Ensure that the learning materials provide clear and structured content that is easy for adult learners to follow.
- Accessibility Features: Consider accessibility features in the design of learning materials, for learners with hearing or visual impairments.
- Personalization and Choice: Adult learners have diverse backgrounds, interests, and learning preferences. So, learning materials have to be selected from different resources to meet learners' specific learning needs.
- Real-World Relevance: Adult learners are motivated by understanding the practical relevance and applicability of what they are learning.
- Multimedia Resources: Different media formats cater to various learning preferences and help engage adult learners in the material.
- Opportunities for Reflection and Application: Include activities and exercises that encourage adult learners to reflect on the content and apply it to their own experiences.
- Supportive Resources: Provide additional resources and references that allow adult learners to deepen their understanding of the topics.
- Ongoing Feedback and Support: Offer mechanisms for learners to receive ongoing feedback and support.

1.10. Logical Flow (P-9 FW)

Present course content in a logical and consistent fashion.

A logical flow in Flipped Learning involves creating a sequence of learning materials and activities that build upon each other to support the learners' understanding of the topic. This addresses the material created for pre-class (Individual Learning Space) or other learning materials that introduce key concepts and ideas - based on "Lower Bloom's" - followed by in-class activities that allow learners to apply and deepen their understanding of the material in a collaborative environment.

1.11. Label Everything (P-10 Le)

Label all artifacts as pre-class, in-class, and post-class.

In the training course, especially if delivered by a Learning Platform (for example, Moodle), it must be clear which content is used in which context.

In a Flipped Learning course, it is recommended for the trainer to categorize all instructional materials and resources as either pre-class, in-class, or post-class. This labelling system helps organize and identify the specific content that learners should engage with before, during, and after the class session. By clearly distinguishing these artefacts, learners can effectively prepare, actively participate, and reinforce their learning outside the classroom environment.

2. Analysis

Identifying learning needs, objectives, and target audience to define the scope and requirements of the learning programme.

In this phase, instructional designers identify the needs and goals of the learners and the organisation. They examine the target group, the context, the learning objectives and the existing knowledge or skills of the learners. This helps define the scope and requirements of the learning programme.

Various methods can be used to identify learners' needs effectively, for example:

- surveys or questionnaires,
- interviews,
- focus groups,
- pre-assessments or diagnostic tests,
- and direct observation of learners in their learning or work environments.

Through these methods, valuable information is gathered about learners' preferences, knowledge gaps, skill levels, and other relevant factors, enabling the creation of tailored and impactful learning experiences.

In some cases, an analysis is carried out by others, and the learning needs are defined by an authority, company management, school supervision, or have been defined due to job-related framework conditions. In these cases, a review of the analysis makes sense and is recommended.

Example: In the DigiComPass project, the analysis was carried out by the European Commission (as part of a research contract) and is available as a description in the form of the DigComp Framework.

3. Learning objectives

Defining the desired outcomes or competencies that learners should achieve at the end of the learning process. These are clear, specific statements defined in terms of competencies. They describe what learners are expected to know (knowledge) and be able to do (skills) by the end of a course or program and how they should apply the newly gained competencies (attitudes). They serve as a guide for curriculum development, instructional planning, and assessment.

Competencies

Learning objectives, when defined from a competency-based approach, focus on the development of specific competencies that learners should attain by the end of a learning experience. This approach emphasizes the integration of knowledge, skills, and attitudes to enable learners to perform tasks effectively in various contexts, ultimately aiming to enhance their overall competence in a given domain.

In this context, "competence" refers to the ability of an individual to apply knowledge, skills, and attitudes in a consistent and appropriate manner to achieve successful outcomes in different situations. Competence is a holistic concept that encompasses not only a theoretical understanding but also the practical application of knowledge and the capacity to adapt to new challenges.

Competence	Description
Knowledge	The theoretical understanding and awareness of a subject, including facts, concepts, and theories. Knowledge is mainly conveyed in the individual space.
Skills	The ability to apply knowledge in practical and effective ways, including physical, cognitive, and social skills. Skills based on the gained knowledge are applied in the Group space.
Attitude	The individual's disposition or outlook towards a subject, including values, beliefs, and emotional responses.

"Knowledge" relates to the theoretical understanding and factual information a learner possesses in a particular domain. It encompasses the concepts, principles, and theories that underpin a subject area and serves as the foundation upon which practical skills and attitudes are built.
In Flipped Learning 3.0, knowledge is associated with “Lower Bloom’s” items (taken from the revised Bloom's Taxonomy).

"Skills" represent the practical abilities and techniques learners develop and refine through practice and experience. These can include cognitive skills, such as problem-solving and critical thinking, and manual or physical skills, like using tools or

equipment. Skills enable learners to apply their knowledge effectively to perform tasks and achieve desired outcomes.
In Flipped Learning 3.0, skills are associated with “Higher Bloom’s” items (also taken from the revised Bloom's Taxonomy).

"Attitudes" refer to the dispositions, values, and beliefs that influence how learners approach tasks, engage with others, and perceive their learning experiences. Attitudes are essential because they affect how learners apply their knowledge and skills and can significantly impact their overall competence. By fostering positive attitudes, such as openness to feedback, adaptability, and collaboration, educators can help learners develop the mindset necessary for success in their personal and professional lives.

4. Curriculum and course structure

Planning the organisation and sequence of content, activities, and assessments to achieve the learning objectives.

4.1. Curriculum

A curriculum is a comprehensive plan that outlines the goals, learning objectives, content, instructional methods, and assessment techniques for a particular educational program or course. It encompasses the scope and sequence of knowledge, skills, and attitudes that learners are expected to acquire throughout their educational journey. The curriculum is a roadmap for educators and learners, guiding their teaching and learning experiences. It is typically developed at various levels, for example in ages of adult learners or intergenerational learning.

For this task, Backwards Design is recommended. Backwards Design is based on the learning outcomes defined for the course.

4.2. Course Structure

The course structure refers to the organization and sequence of topics, themes, and learning activities within a specific course or subject. It is a component of the broader curriculum and deals with the arrangement of content and learning experiences in a manner that facilitates the achievement of learning objectives. The course structure includes the pacing and timing of learning and training activities, the division of content into units or modules, split into "Individual Learning Space" and "Group Learning Space".

The group structure provides a "blue copy" of the outlay of the training course.

For creating the content, a "Training Content Framework" is used.

4.3. Training Content Framework

A Training Content Framework is a structured and organized system that outlines the essential components of an effective training program, ensuring that the content, instructional strategies, and assessment methods align with the learning objectives and cater to the learners' needs. This framework serves as a blueprint for designing, developing, and delivering comprehensive and cohesive training materials.

Within a Training Content Framework, several key items are included. First, the learning objectives are clearly defined in terms of competencies. This approach specifies the knowledge, skills, and attitudes learners should acquire by the end of the training. These competencies guide the development of the content and help to ensure that the training remains focused and purposeful. At this stage, the assignment of the different contents to the two learning spaces (Individual and Group Learning Space) is carried out.

According to experience, the project team recommends focusing on one competence only and creating the Training Content Framework competence by competence, based on a Backwards design.

Assessment methods are also included in the framework, based on the Backwards Design results. Assessment methods are crucial for evaluating learners' progress and the effectiveness of the training and must include Formative Assessments in a competency-based Content Training framework. Summative assessments can be added as additional elements if this is foreseen (following the Recognition Framework[3]). Assessments can take various forms, such as quizzes, tests, or practical demonstrations, and should be designed to measure the degree to which learners have achieved the learning objectives.

Next, the content itself is carefully designed and described, covering the relevant topics and concepts in a logical and coherent manner. This includes the selection and presentation of instructional materials well-fitting to the relevant learning space. This addresses multimedia resources, preparation material, hands-on activities, or group-based activities which align with the learning objectives and support the learners' engagement and understanding.

Instructional strategies and methodologies are other essential components of a Training Content Framework. These strategies encompass the pedagogical approaches and techniques employed by instructors or facilitators to deliver the content effectively and encourage active learning. This may involve the use of group discussions, case studies, simulations, or other interactive methods that promote critical thinking, problem-solving, and collaboration.

Lastly, the framework considers elements such as learner support, feedback mechanisms, and accessibility, ensuring that all learners can actively participate and benefit from the training experience. By providing adequate resources and support, the Training Content Framework promotes an inclusive and engaging learning environment. These items can be defined as general guidelines for the complete training course.

[3] A Recognition Framework for training courses is a system that validates and acknowledges the knowledge, skills, and competencies gained by learners upon completing a specific training program. It provides a standardized structure for assessing, recognizing, and accrediting Learning outcomes, which can facilitate learners' professional development and enhance their employability or career advancement opportunities.

4.4. Training Content Framework as a Table

The table consists of the Training Content Framework items and is published as a PDF. The specific items are:

1. Competency
   A clear and comprehensive competency description that outlines the specific knowledge, skills, and attitudes required for the job or task being trained for. This competency description reflects the learning objectives.

2. Assessment criteria
   A set of criteria will be used to assess the learners' understanding and mastery of the competencies. These criteria are aligned with the particular competency (learning objectives). They are split into two levels to cover the Individual and the Group Space.

   Assessments are primarily planned as formative assessments (in both learning spaces), but final assessments (at the end of each competency-based training unit) are to be foreseen as well.

3. Training content
   A description of a set of learning materials that cover the knowledge, skills, and attitudes (distributed to Individual and Group Learning Spaces) are specified. These materials should be designed to meet the needs of the learners (and prepare them for the assessments). Additionally, the material should be based on active learning, and the description of the expected activity (based on available selection) will also be added.
   The developed training content must be developed in alignment with the content guidelines.

4. Delivery methods
   The content is assigned to either Individual or Group Space. Delivery of electronically available content is always done using the learning platform.

Module Name			
Recognition Version			
Competence Description			
	Knowledge	Skills	Attitude
	Individual Space	Group Space	
Formative Assessment and Assessment Method			
Summative Assessment and Assessment Method			
Individual Learning Space	Content description	Implementation & Delivery	
Group Learning Space	Content description	Implementation & Activity	

Table 3: A model of a Training Content Framework as a base to develop a single, competency-based learning unit.

5. Training methods

Selecting and applying pedagogical theories, learning principles and best practices to support the learning process.

Basic considerations

Training methods refer to the various approaches, techniques, and activities employed by educators or trainers to facilitate learning and skill development. With a focus on active learning[4], these methods emphasize learner engagement, collaboration, and participation in the learning process. By incorporating active learning strategies, training methods encourage learners to actively construct knowledge and meaning through activities such as problem-solving, discussions, or hands-on experiences. These techniques contrast with passive learning methods, where learners primarily receive information from lectures or readings without active involvement. Active learning-centered training methods foster more in-depth understanding, improved retention, and the development of critical thinking skills, enhancing the overall learning experience.

The Flipped Instructional Design uses, and builds on, the Flipped Learning 3.0 framework. This includes further developments, like an inclusive, or green approach (in line with the green agenda of the European Commission).

The pedagogical (or andragogical[5]) approach is based on active learning.

Active learning is an instructional approach that places learners at the center of the learning process, emphasizing their active engagement and participation in educational activities. Rather than passively receiving information through lectures or reading, participants in active learning environments are encouraged to think critically, ask questions, and apply their knowledge to real-world situations. This approach fosters a more profound understanding of the subject, improved retention of information, and the development of essential problem-solving and critical thinking skills, ultimately leading to more effective and long-lasting learning outcomes.

[4] **Active learning** is an educational approach that encourages participants to actively engage in the learning process through participation, collaboration, and critical thinking, promoting a more profound understanding of the subject and improved retention of information.

[5] **Andragogy** refers to the theory and practice of adult education, with the **andragogical approach** focusing on teaching strategies and principles specifically tailored to meet the unique needs and characteristics of adult learners.

5.1. Active Training in the Individual Learning Space

- Viewing
  Videos of content hosted on YouTube or any similar platform, from where the adult will learn the necessary content to put it into practice in class.
  Videos must either be made interactive or must be connected with an additional activity, for example, writing down the given keywords in the video.

- Listening
  Podcasts, where the content to be understood and remembered can be narrated in a simple way. Listening must be combined with a meaningful assignment to become interactive.

- Reading
  Presentations with learning contents. Learners can be assigned to read relevant texts, such as articles, reports, or book chapters, to gain a more profound understanding of a subject. Reading must be combined with a meaningful assignment to become interactive.

- Communication
  Communications forum, from where doubts can be resolved, either with the classmates or with the tutor, and from where the doubts of other classmates can be shared.
  Online discussion forums can be used to encourage learners to reflect on their learning and engage in asynchronous dialogue with peers.

- eLearning Plattform, where all of the above can be hosted. The platform will have a responsive design so that learners can access the content with devices they have and/or find less difficult to use, i.e. tablet, laptop, PC, or smartphone. Accessibility features will also be integrated so that learners have options to make the content more accessible according to their preferences. E.g., for reading, visual appeal and more.

- Online quizzes or tests
  Learners can take quizzes or tests to reinforce their understanding of the material and identify areas where they need more review.

- Self-assessments
  Learners can be given self-assessments to evaluate their own understanding of the material and identify areas where they need more review or clarification. E.g., Learner responses' can be automatically evaluated and incorrect answers are highlighted and correct answers displayed.

- Concept maps
  Learners can create concept maps to help them organize and connect different ideas and concepts in their learning.
- Collaborative note-taking
  Learners can collaborate on a shared document or note-taking platform to capture key ideas and concepts from the pre-recorded lectures or readings.
- Interactive images or maps with multiple information hotspots embedded, guiding learners to navigate the image and find information connected to the learning.
- Interactive chatbot to support learning
  Learners can interact with the chatbot which provides them with the learning content, i.e. it guides them and provides the content they need during the actual learning process.

5.2. Active Training in the Group Learning Space

Here are some proven examples of active training approaches and activities for the Group Learning Space. Please take into account that there are more active learning methods available. Also, keep in mind that active learning methods must always fit the training content.

- Playing
  Gamification in adult learning, design group games where they have to analyse, apply what they have learnt individually and create as a result of the practice.
- Group Practice
  Case Study, where the adults are presented with a real problem and they need to analyse it, apply their acquired knowledge and provide a solution to the problem, as a group activity.
- Discuss it
  Go to the discussion forum and write a brief description of what the group did for its training activity. Also, read your colleagues' descriptions and add a brief comment to each. Then read the comments on your group activity and see whether you can improve the quality and effectiveness of your group activity.
- Peer review
  Encouraging learners to review and provide feedback on each other's work or projects. A variant of peer review is “collegial feedback”: Collegial feedback is feedback provided by peers or colleagues in a respectful and constructive manner. In the context of presentations of material in front of a peer group,

collegial feedback involves offering specific insights and suggestions to help the presenter strengthen their skills and achieve their objectives. It is a collaborative process that can enhance the learning experience and promote professional development.

- Debate
  Assigning learners to teams and having them debate different sides of an issue or topic, with the goal of promoting critical thinking and communication skills.
- Brainstorming
  Encouraging learners to generate creative ideas or solutions to a specific problem or question.
- Group projects
  Assigning learners to work together on a larger project or assignment, such as creating a presentation, conducting research, or designing a product.
- Role-playing
  Assigning learners to act out different scenarios or roles with the goal of promoting empathy, perspective-taking, and communication skills.
- Simulations
  Using software or other tools to create simulated environments or situations for learners to practice and apply new knowledge and skills.

Remark: All the given examples are a selection of more available learning activities.

6. Training material

For this process, the developed "Training Content Framework" is used.

The following two items must be considered:

- Design learning activities
  Develop engaging learning activities that support the chosen instructional strategies and help learners to achieve the stated objectives. These activities should encourage learners to actively participate in the learning process, apply their knowledge, and receive feedback on their performance.
- Create training materials
  Develop the actual training resources, such as presentations, handouts, videos, or interactive modules, based on the content outline and chosen instructional strategies. Ensure that the materials are clear, concise, and visually appealing and that they cater to diverse learning preferences.

These considerations must consider the two Learning spaces, the Individual Learning Space and the Group Learning Space.

6.1. Individual Learning Space

For the individual space, various techniques can be implemented - if possible - in a multimedia-based and/or interactive way. Here is a (non-comprehensive) list of possible methods:

- Active videos (or activity-based videos)
  Short videos that present key concepts and ideas. Videos - as passive media - must be implemented in a way that engages learners in some activity.
- Interactive e-learning modules
  Web-based modules that provide interactive exercises and simulations.
- Online textbooks
  Digital textbooks that present information in a multimedia format, including text, images, and videos.
- Podcasts
  Audio recordings that provide an alternative way of presenting information. This content type must be implemented in an active context.
- Infographics
  Visual representations of complex information that can be easily understood.
- Online quizzes
  Quizzes that assess learners' knowledge and understanding of the material.

- Discussion forums
  Online forums that allow learners to ask questions and discuss key concepts with instructors and peers.
- Case studies
  Real-world scenarios that illustrate key concepts and provide opportunities for learners to apply their knowledge.
- Online libraries and databases
  Access to digital libraries and databases that provide a wealth of information and resources.
- Individualised follow-up programmes
  Offer the possibility of having individualised tutoring or follow-up sessions with teachers or tutors to address questions, clarify doubts and receive personalised guidance on the learning process.
- Glossary
  Enables learners to create and maintain a list of definitions, like a dictionary, for each module.
- "Temperature checks"
  For gathering data from learners to help instructors learn more about their class and reflect on their own teaching. E.g. one could be done early in the module (i.e. 1/3 into the module content) and one at the end. Some questions can be associated with the actual content, allowing learners to self-reflect on whether they understood the content and on how the instructor could possibly improve the instruction for it.
- Assignment
  Instructors can grade and give comments on uploaded files and assignments of the learners, which are created both online and offline.

Lower Blooms (IS-1 Lb)

> *Use lower levels of Bloom's Taxonomy (remembering, understanding).*

Lower Blooms" refers to the lower levels of Bloom's Taxonomy, which encompass the cognitive processes of remembering and understanding. Tasks and assignments at this level focus on recalling information, comprehending concepts, and demonstrating basic knowledge and comprehension. Here is a (non-comprehensive) list of some specific verbs that can be used in the context of Lower Blooms:

- Remembering:
  Recall, List, Identify, Define, Recognize, Name, Retrieve, Memorize, Repeat, or Label
- Understanding:
  Explain, Summarize, Describe, Compare, Contrast, Interpret, Paraphrase, Clarify, Classify, Demonstrate understanding

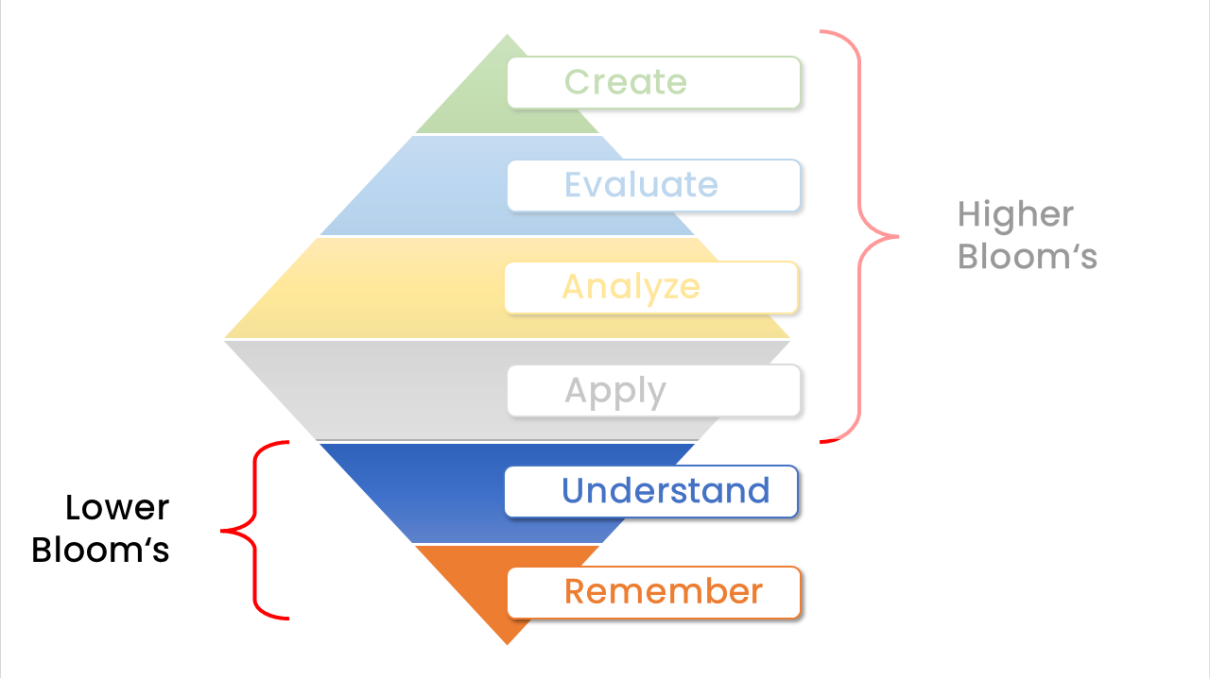

Figure 5: Lower Bloom's elements.

Focus on Group Space (IS-3 Gs)

> *Focus on what you want to achieve in the group space when creating the individual space pre-work.*

Using Backwards Design, it must be clear which challenges the learners will face in the group learning space.

By following the backward design approach, you can ensure that the individual space and the group space are closely aligned:

- Start by clearly defining the learning outcomes you want to achieve in the group space.
- Once you are clear on the learning outcomes, design the group activities that will enable learners to achieve those objectives.
- In order for learners to be able to participate effectively in group activities, it is important to identify the prior knowledge and skills needed. This may include

theoretical concepts, technical skills or specific competencies to be acquired in the individual space.

- Based on the prior knowledge and skills identified, design individual activities that will enable learners to acquire this necessary knowledge.
- Make sure to provide learners with the necessary resources and materials to carry out the individual and group activities.
- Determine clear timelines for individual and group activities, and make sure to establish a logical sequence in the learning flow.

Link to Group Space (IS-4 Lk)

Ensure there is a strong link between pre-class media and what happens in the classroom.

All activities in the Individual Learning space must be seen in some context with the Group Learning Space.

Prior to the group session, provide adult learners with individual activities that are directly related to the learning objectives of the class. These activities should prepare them for meaningful participation in group activities.

Design individual preparation activities that are relevant and directly related to the group tasks or discussions that will take place.

For example, you could ask them to watch a video, video-interactive, read materials or do a practical activity that will provide them with the necessary knowledge for the subsequent group discussions or projects.

At the beginning of the group session, be sure to make a clear connection between the individual activities and the group activities. Explain how the concepts or skills that the adult learners have acquired in their individual time will be applied during the group activity.

Appropriate Media (IS-5 AM)

Strategically choose an appropriate medium for the pre-class media (text, annotated whiteboard video, screencast, plain video)

The focus of media (in the pre-class or Individual Learning Space) should be on Interactive multimedia content. Here are some examples:

- The use of interactive multimedia content, such as interactive videos, interactive infographics or interactive presentations, allows learners to actively explore and manipulate information. They can click on interactive

elements within the content to access more details, explore ramifications, or perform specific actions.

- Visual images, such as photographs, diagrams, charts, or infographics, help illustrate concepts and enhance understanding. They can convey information quickly and effectively, especially for learners who are visual thinkers.
- Audio recordings, including lectures, interviews, or podcasts, offer an auditory learning experience. They can be used to provide explanations, storytelling, or discussions, catering to learners who prefer auditory input or have visual impairments.
- Simulations create virtual environments that replicate real-life situations, allowing learners to practice and apply their knowledge. They can be used to simulate experiments, business scenarios, or problem-solving activities, providing learners with hands-on experiences.

In any case, these items must be created as active learning content by using individual assignments in context with these media. Additionally, considerations must be made for each content element as to how the content can be conveyed in the best possible way.

Meaningful Tasks (IS-9 Mn)

Make sure pre-class tasks are meaningful and hook learner interest.

Meaningful tasks refer to activities or assignments in a learning context that have real-world relevance and purpose. These tasks are designed to engage learners by connecting the learning material to practical applications, authentic situations, or personal interests.

When meaningful tasks are incorporated into a learning experience, they can hook learners' interest in several ways:

- Care for Relevance
  Meaningful tasks relate to learners' lives, experiences, or aspirations. They are designed to address real-world challenges or scenarios that learners may encounter outside the learning environment. By demonstrating the relevance and applicability of the content, learners are more likely to be motivated and engaged.
- Give tasks a certain level of Authenticity
  Meaningful tasks mirror authentic, real-life situations or problems. They provide learners with opportunities to apply their knowledge and skills in contexts that resemble the challenges they may face in their personal or

professional lives. This authenticity enhances learners' interest as it enables them to see the direct connection between what they are learning and their real-world experiences.

- Personalization
  Meaningful tasks allow learners to connect the learning material to their own interests, goals, or experiences. By incorporating elements that resonate with learners individually, such as their hobbies, passions, or career aspirations, the tasks become personally meaningful. This personalization increases learners' investment in the learning process and maintains their interest.

- Implement Problem-Solving approaches
  Meaningful tasks often involve problem-solving and critical thinking. They present learners with authentic problems or scenarios that require them to analyse, evaluate, and apply their knowledge and skills to find solutions. Engaging learners in problem-solving tasks sparks curiosity, as they become actively involved in finding answers and overcoming challenges.

- Take care of creativity and autonomy
  Meaningful tasks encourage learners to think creatively and independently. They provide learners with the opportunity to explore different approaches, generate ideas, and make decisions. This autonomy fosters a sense of ownership and empowerment, motivating learners to actively participate and invest in the task.

Mix of Elements (IS-10 Mx)

> *Ensure that videos include an appropriate mix of text, pictures, discussions between people, short integrated films, the instructor's writing, narration.*

"Mix of Elements" is an essential item, but active learning requires extension (and modification) of the element's description. As explained in "Appropriate Media", different media should be used that best fit the tasks or requirements. This automatically results in a corresponding mix. Nevertheless, further considerations must be made as to how a "colourful mixture" is beneficial to the learning process and offers learners joy in learning.

Connect Prior Knowledge (IS-13 Pk)

Introduce pre-class media with a prior knowledge question to activate learners' thinking.

"Connect Prior Knowledge" refers to the process of linking new information or concepts to existing knowledge and experiences that learners already possess. It involves making connections between what learners already know and the new information being presented, facilitating more profound understanding and enhancing the learning process. By connecting prior knowledge, learners can build upon their existing mental frameworks, relate new information to familiar concepts, and make meaningful connections that aid in comprehension, retention, and the application of knowledge in various contexts.

"Connect Prior Knowledge" can be challenging in general adult education training because adult learners come from diverse backgrounds with varying levels of prior knowledge and experiences. It may be difficult to ascertain their existing knowledge without individual assessments or extensive surveys, which can be time-consuming and resource intensive.

To identify prior knowledge more easily, trainers can utilize strategies such as pre-course surveys or questionnaires to gauge participants' familiarity with the subject matter. These surveys can include open-ended questions or self-assessment quizzes to gauge their existing knowledge and skills. Additionally, trainers can encourage participants to share their experiences, insights, and opinions during class discussions or group activities, allowing them to tap into their prior knowledge in a more organic and natural way.

Furthermore, incorporating interactive icebreaker activities or group exercises at the beginning of the training can help uncover participants' prior knowledge. These activities can encourage individuals to share their perspectives, personal anecdotes, or relevant examples related to the training topic. By fostering a collaborative learning environment, participants will feel more comfortable expressing their prior knowledge, building connections, and engaging with the subject.

Overall, combining pre-course assessments, interactive discussions, and collaborative activities can help trainers identify participants' prior knowledge more easily, facilitating effective learning experiences tailored to the specific needs and existing expertise of adult learners.

In any case, the description of the course must contain detail of expected knowledge for the training course.

Teach to Interact (IS-17 Ti)

Teach learners how to interact with the pre-class media, including taking notes and preparing questions for class.

"Teach to Interact" refers to the instructional approach that focuses on teaching learners how to actively engage with the learning material, participate in discussions, collaborate with peers, and ask questions to enhance their understanding and learning experience.

To teach learners how to interact with pre-class media:

- Clearly explain the purpose and benefits of engaging with pre-class media, emphasizing the importance of active learning and preparation. This refers to the fact that the act of learning is a personal and active process that individuals must undertake themselves.
- Provide explicit guidance on effective note-taking strategies, such as summarizing key points, highlighting important details, or using visual organizers.
  This might be done in handwriting. Handwriting fosters learning by engaging multiple sensory and cognitive processes, such as fine motor skills, spatial memory, and attention, which enhance comprehension, retention, and the integration of knowledge.
- Model the process of preparing questions by demonstrating how to analyse the content, identify areas of confusion or interest, and formulate thoughtful and inquiry-based questions.
- Encourage peer collaboration and discussion through online platforms, discussion boards, or small group activities, where learners can share their notes, discuss concepts, and generate questions together.
- Offer regular feedback and reinforcement on learners' note-taking skills and question preparation, providing constructive guidance to help them improve their engagement and preparation for class discussions.

By teaching learners how to interact with pre-class media, taking notes, and preparing questions, educators can enhance learner engagement, critical thinking, and active participation in class, leading to a more enriched and collaborative learning environment.

Use of Digital and Analogue Material

In general, the Individual Space should make use of digital training material as well as analogue material. Analogue methods may enhance simple digital media. Some possible approaches are:

- Use of Books
  Printed books offer a tangible and portable learning resource, allowing learners to access and reference content conveniently without relying on screens. They promote focus and concentration by minimizing digital distractions and provide a medium for personalization through annotation and highlighting. Printed books also offer historical and cultural context, fostering aesthetic appeal and emotional engagement in the learning experience.
- Note-taking
  Learners can use analogue methods like writing notes, drawing mind maps, or sketching diagrams alongside digital training material. Analogue note-taking enhances comprehension, synthesis, and personalization of the content.
  A recommended method is the Cornell-based taking notes, by extracting keywords from the multimedia material.
- The extraction of keywords from texts, images, or videos
- The development of specific questions, addressing the content of presentations, videos, or texts

6.2. Group Learning space

Higher Bloom's (GS-01 Hb)

Use higher levels of Bloom's Taxonomy (applying, analyzing, evaluating, creating)

Bloom's Taxonomy is a classification of learning objectives within education, with the higher order thinking skills requiring more complex cognitive processes.

- Applying consists of designing activities that enable adult learners to use their knowledge and skills in practical and authentic situations.
  Typical verbs: Implement, Use, Carry out, Demonstrate, Solve, Apply, Construct, Illustrate, Show, Operate.
- Analysing involves designing activities that require adult learners to examine information, break it down into its constituent parts and identify patterns or relationships.

Typical verbs: Analyse, Break down, Distinguish, Deconstruct, Dissect, Infer, Compare, Contrast, Organize, Outline.

- Evaluating involves designing activities that force adult learners to make judgements, assess the quality or effectiveness of something and provide reasoned opinions or comments.
  Typical verbs: Evaluate, Judge, Critique, Justify, Argue, Decide, Choose, Rate, Prioritize, Determine.

- Creating involves designing activities that require adult learners to generate new ideas, products or solutions by combining their skills, knowledge and creativity.
  Typical verbs: Create, Design, Invent, Develop, Formulate, Construct, Imagine, Plan, Produce, Propose.

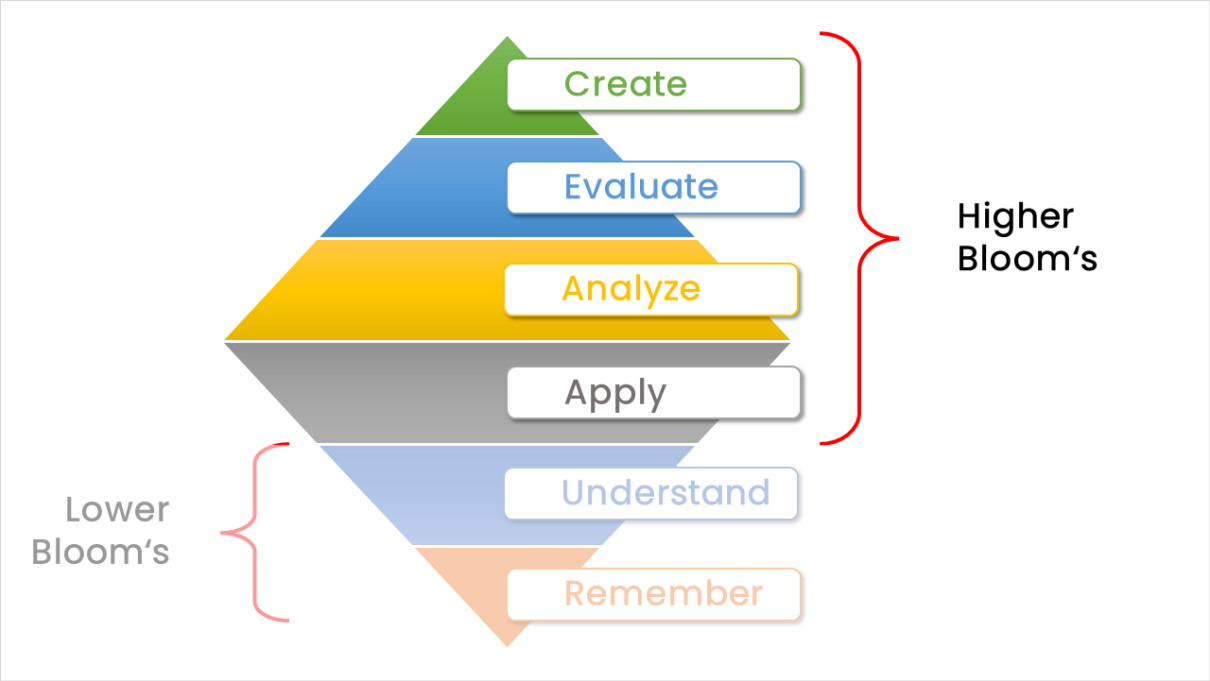

Figure 6: Higher Bloom's items, as they are essential for the Group Learning space.

Clear Expectations (GS-02 Ce)

Establish clear expectations for learner responsibilities during class time.

It is essential that these expectations be communicated in a clear and accessible way. Provide concrete examples, provide opportunities for clarification and ensure that adult learners fully understand what is expected of them in the group space.

- **Explain the purpose of the group space**
  Begin by explaining the purpose and importance of the group space in the context of flipped learning. Emphasise how collaboration, discussion and

exchange of ideas in the group are fundamental to deepening knowledge and building meaningful learning.

- List specific responsibilities
  Describe in detail the responsibilities that adult learners should assume in the group space. This may include aspects such as active participation in discussions, collaboration with peers, completion of assigned tasks, constructive feedback, etc.

- Specifies commitment to autonomous learning
  Emphasises the importance of autonomous learning in the flipped learning 3.0 model. Makes it clear that adult learners are responsible for acquiring prior knowledge by reviewing the materials provided before the group sessions. Emphasises that the group space will be primarily for deepening, applying and exchanging ideas about this knowledge.

- Establishes assessment criteria
  Describes how learners' participation and performance in the group space will be assessed. Be sure to communicate how these evaluations will affect the final course grade.

Never Lecture (GS-04 NI)

> *Never lecture or explain the videos in the classroom for those who did not do the pre-class media.*

"Never lecturing" must be seen under the viewpoint that this addresses a passive approach to sharing information. Here is a definition of both training approaches and a comparison.

A lecture is a teaching method in which an instructor presents information to a group of learners through a spoken presentation.

Definition of Active Lecturing: Active lecturing is a teaching method that combines traditional lecture techniques with interactive strategies designed to engage participants in the learning process.

In a comparison table:

	Lecture	Active Lecturing
Method	Trainer presents information through a lecture	The trainer presents information through a lecture and also uses interactive strategies.
Focus	Instructor-centered	Learner-centered
Engagement	Passive	Active
Learning	Learners are expected to absorb information	Learners are actively engaged and are encouraged to process information and think critically.
Effectiveness	It might be effective for simply transmitting the information. Hint: This should be done in the individual space!	It might be more effective for promoting understanding, retention, and engagement.

Table 4: Comparison of lecturing and the approach of "Active Lecturing".

Learner Centered (GS-05 Ss) and Promote Collaboration (GS-06 Cb)

> *Set up Learner Centered activities that encourage learners to summarize the content of the pre-class media and promote collaborative and group work.*

A learner-centered training approach is one in which the learner is placed at the center of the training experience. This means that the training is designed to meet the specific needs and preferences of the learners and that learners are encouraged to take an active role in the learning process. This approach means as well "active learning".

Promoting collaboration is an essential aspect of a learner-centered training approach. Collaboration allows participants to share their knowledge and perspectives, learn from one another, and build social connections supporting their ongoing learning. Collaboration can take many forms, such as group discussions, group projects, peer feedback, and collaborative problem-solving activities.

To promote collaboration in a learner-centered training approach, trainers can incorporate activities and assignments that require learners to work together in

groups. Trainers can also facilitate group discussions and encourage learners to share their ideas and perspectives with one another. In addition, trainers can provide opportunities for peer feedback and encourage learners to give constructive feedback to their peers.

By promoting collaboration in a learner-centered training approach, trainers can help learners to develop necessary interpersonal and communication skills, as well as critical thinking and problem-solving skills. Collaboration can also help to create a more engaging and interactive learning environment that can enhance learners' motivation and interest in the training.

Provide Differentiation (GS-08 Df)

> *Differentiation within the group space (tasks, outcomes. support, and resources)*

When implementing Flipped Learning 3.0 with adult learners, it is important to provide differentiation within the group space to cater to individual needs and promote optimal learning.

- Varied Task Options
  Offer a range of task options with varying levels of complexity, allowing adult learners to choose tasks that align with their interests and abilities. This promotes engagement and motivation by providing a sense of autonomy and ownership over their learning.
- Flexible Learning Outcomes
  Provide multiple pathways for achieving learning outcomes. Allow adult learners to demonstrate their understanding and skills through different formats such as presentations, written assignments, projects, or practical applications. This caters to diverse learning preferences and allows individuals to showcase their strengths.
- Individualized Support
  Recognize that adult learners have different needs and prior knowledge. Provide individualized support through personalized feedback, one-on-one discussions, or additional resources tailored to each learner's requirements. This targeted support fosters a supportive and inclusive learning environment.
- Resource Variety
  Offer a variety of resources to accommodate different learning styles and preferences. Provide written materials, audiovisual resources, interactive online modules, or external references. This allows adult learners to access

information in formats that resonate with their learning preferences, enhancing their understanding and engagement.

Multi-Leveled (GS-09 Lv)

Include practice activities at differing levels to ensure all learners have materials to work from that are just above their current ability.

Multi-levels in the group space for adult learners refer to the implementation of strategies and resources that encompass different levels of ability and knowledge within the same group. This means that the diverse abilities and needs of adult learners are recognised and addressed in terms of their level of mastery of a specific topic or skill.

These practices may include differentiated content tailored to the learner's abilities, heterogeneous group work in terms of the abilities of adult learners to foster collaboration among them, promoting peer-to-peer learning through mentoring among adult learners in the same group, individualised feedback based on the individual needs of each adult learner, and assessment methods tailored to adult learners where they are able to demonstrate their understanding and ability.

By implementing these multi-level strategies and practices, we seek to ensure that all adult learners, regardless of their level of ability, can have effective and meaningful learning in the group space.

Digital & Analog (GS-11 Dg)

Use both digital and analogue tools to foster learners' in-class work.

This addresses activities like the presentation of results to the group (audience) as well as the use of well-prepared analogue material presented to the learners.

It is advisable to offer a combination of both options to maximise the benefits of each and to adapt to the needs and preferences of adult learners.

The use of digital and analogue tools in the group space for adult learners is justified by their flexibility, accessibility, interaction, variety of resources, individual preferences and focus on reducing distractions, being able to convey information effectively, interacting with the material in a more practical way and adapt to different learning styles.

Digital tools for visual presentations: Digital tools, (for example, presentation software like PowerPoint or Google Slides, Canva, Visme, Apple Keynote, Swipe, ZohoShow, SlideDog...), allow adult learners to create powerful and engaging visual slides to present their results to the group, using graphics, images, videos and animations to highlight key points and make the presentation more dynamic and interesting.

Analogue material for hands-on demonstrations: Sometimes presentations may require hands-on demonstrations or the manipulation of physical objects. In these cases, the use of analogue material, such as books, printed guides, charts, diagrams, physical models, whiteboards, models, prototypes or samples, can be more effective in showing concrete and tangible results. This allows them to interact with the material in a more concrete way and to engage in practical activities that reinforce their understanding.

Learner Creation (GS-12 Cr)

Include activities that encourage learners to create their own content.

Learners should create their own content.
Incorporating activities that encourage adult learners to create their own content, a flipped learning 3.0 framework encourages active participation, deeper understanding and the development of critical thinking and communication skills. These activities deepen and reinforce a sense of ownership and autonomy in the learning process, empowering adult learners to become active participants and contributors in the group space. Activities such as:

- Group research projects
  Assign research projects to groups of adult learners, where they can research and create content based on their experience and prior knowledge. This allows them to delve deeper into topics of personal interest and share their findings with the group.
- Online discussion groups
  Organise online discussion groups where adult learners can share and discuss ideas on a specific topic. These groups can generate content from their exchanges of ideas and reflections.
  It is necessary to provide some output (presentation, fact sheet, summary) to show concrete results.
- Develop educational resources
  Ask groups of adult learners to develop educational resources, such as study guides, interactive presentations or learning activities, to share with the rest of the class. This builds their capacity to create relevant educational content tailored to the needs of the group.
- Experiential learning projects
  Design projects that allow adult learners to apply what they have learned in real-world situations. For example, they can collaborate to create proposals to solve problems in their workplaces or communities.

- Create digital portfolios
  Encourage adult learners to create digital portfolios where they can collect and showcase their own work, achievements and learning. This gives them the opportunity to reflect on their progress and share their experience with others.

- Collaboration in creating learning resources
  Encourage collaboration among adult learners to create learning resources, such as presentations, tutorials or reading materials, that benefit the whole class. This promotes active participation and knowledge sharing among learners.

- Entrepreneurship projects
  Encourage adult learners to develop entrepreneurial projects related to course content. This gives them the opportunity to apply their knowledge and skills in a practical context, as well as fostering creativity and entrepreneurship.

Reflection (GS-13 Rf)

Require reflection at the end of each lesson.

"Require reflection at the end of each lesson" means that learners are asked to review and think critically about what they have learned at the end of each lesson. This may involve summarizing key concepts, reflecting on how the lesson relates to their own experiences or interests, or identifying areas where they still have questions or uncertainties.

Reflection at the end of a lesson is important for several reasons. First, it helps learners to consolidate their learning and make connections between new concepts and their prior knowledge. By reflecting on what they have learned, learners can deepen their understanding of the material and identify areas where they may need additional support or clarification.

Second, reflection helps learners to develop metacognitive skills, such as self-awareness and self-regulation. By reflecting on their learning process, learners can gain insight into their own strengths and weaknesses, as well as their learning preferences and strategies. This can help them to become more effective and independent learners over time.

Finally, reflection can help to promote a sense of ownership and engagement in the learning process. When learners are provided with the opportunity to reflect on their learning and share their thoughts and questions with others, they can feel more connected to the material and more invested in their own learning journey.

Plan for Incomplete (GS-15 Pi)

Have a plan for learners who come to class having completed the pre-work but still don't fully grasp the concepts.

If learners did not fulfil their duty by missing the pre-class and are not well-prepared in the group space, the trainer can take the following actions (as a kind of standard):

- **Address the issue with the learners**
  The trainer should speak to the learners individually or as a group and explain the importance of being prepared for the training. They should also make it clear that their lack of preparation is negatively impacting the group's ability to learn and progress.
- **Provide additional support**
  The trainer can offer additional support to help learners catch up with the material they missed in the pre-class. This may involve providing extra resources, one-on-one coaching, or additional practice exercises. The trainer should not spend time in the group space to bring learners up to date; such activities should take place in the Individual Learning Space
- **Adjust the training plan**
  If the group struggles to keep up due to a lack of preparation, the trainer may need to adjust the training plan to allow for more review and catch-up time.
- **Encourage participation**
  The trainer can encourage learners to participate in the training even if they feel unprepared. By asking questions, participating in group discussions, and engaging with the material, learners may be able to learn more effectively and feel more motivated to catch up with the rest of the group.
- **Set clear expectations**
  The trainer should set clear expectations for future classes and make it clear that learners are expected to come to class prepared and ready to participate. This may involve setting deadlines for pre-class work or providing clear guidelines for what learners should do to prepare.

Overall, the trainer should take a supportive and proactive approach to address the issue of learners who are not well-prepared. By working with the learners to find solutions and adjust the training plan as needed, the trainer can help to ensure that everyone in the group can learn and succeed together.

7. Assessment methods

Assessment is essential in all types of learning and training as it provides a measure of understanding and skill acquisition, helping to identify areas of strength and those that require improvement. Moreover, it acts as a feedback mechanism for both learners and instructors, guiding the refinement of teaching methods and learning strategies to optimize progress and ensure that educational goals are being met effectively.

General aim

Developing tools and procedures to measure learner performance and achievement of learning objectives, such as tests, presentations, projects or self-assessments.

Assessment methods must align with the defined approach given in the Backwards Design, the developed recognition model, and the general approach to active learning. Using Multimedia and Interactivity in the assessments should be considered from the beginning.

Formative assessment is an ongoing process that helps instructors gather information about participants' learning progress and understanding throughout the instructional period. It aims to provide feedback to learners and instructors to improve the learning process. Instructors can use this assessment to adjust their teaching strategies to meet the learners' needs and help them achieve their learning goals.

On the other hand, summative assessment is a comprehensive evaluation of learner learning at the end of a unit or course. Its purpose is to measure learners' understanding and knowledge after completing a unit or course. Summative assessments are used to decide grades, promotions, or certifications.

Here's a comparison table of formative and summative assessments:

Formative Assessment	Summative Assessment
Ongoing process	End of unit/course evaluation
Helps instructors adjust teaching strategies	Determines grades, promotions, or certification
Provides feedback to learners and instructors	Measures learners' knowledge and understanding

Aimed at improving the learning process	Determines what participants have learned and/or achieved

Table 5: Comparison of the major assessment approaches.

In summary, formative assessment is a continuous process of providing feedback and adjusting throughout the learning process, while summative assessment is a comprehensive evaluation of learner learning at the end of a unit or course.

Formative Assessments (A-2 Fa)

Use frequent, formative assessments.

Self-assessment can be used as a formative assessment tool when learners are provided with the opportunity to reflect on their own learning and assess their understanding of a particular topic or skill. Self-assessment encourages them to take responsibility for their own learning, helps them identify areas where they need additional support or clarification, and provides feedback to the instructor about the effectiveness of their instruction. Several different methods exist for self-assessment.

This type of formative evaluation of learning outcomes is mainly done in the Individual Group Space.

Formative assessments can also be done in a group setting addressing the group learning space, either to assess the progress of a single learner or the group as a whole. To assess a single learner in a group setting, the trainer might use observations, informal conversations, or written assessments to gather data on the learner's progress. They can then use this data to provide targeted feedback and support to the learner.

To assess the group as a whole, the instructor might use techniques such as exit tickets, class discussions, or group projects to gather data on the learners' understanding and progress. This data can be used to adjust instruction or provide additional support to struggling participants. Additionally, peer assessments can be used in group settings, where learners are asked to provide feedback to one another on their work or presentations. This allows them to practice evaluating and providing feedback while providing valuable insights to their peers and trainers. Overall, formative assessments in a group setting allow for a more comprehensive understanding of learning and can inform instructional decisions to support progress.

Levelled Questions (A-1 Lq)

Definition missing!

Bloom's Taxonomy is a framework used by educators to classify different types of learning objectives and questions. It consists of six levels of cognitive complexity, starting with lower-order thinking skills, such as remembering and understanding and progressing to higher-order thinking skills, such as analysing, evaluating, and creating.

When selecting questions according to Bloom's Taxonomy, it's important to consider the level of cognitive complexity required for the task at hand. For example, if the goal is to test a learner's ability to recall facts, a question at the lower level of Bloom's Taxonomy, such as "What is the capital of France?" would be appropriate. However, if the goal is to assess a learner's ability to analyse and interpret information, a question at a higher level of Bloom's Taxonomy, such as "What is the significance of the French Revolution for the development of democracy?" would be more appropriate.

By selecting questions that match the desired level of cognitive complexity, educators can help learners develop the critical thinking skills necessary for success in academic and professional settings.

Real Life (A-4 Rl)

Provide assessments that involve the creation of a real-life product or the use of real-life skills.

Providing assessments that involve the creation of a real-life product or using real-life skills is a way to make assessments more authentic and relevant to learners' lives. This approach allows them to apply their learning in a practical and meaningful way, as they are required to demonstrate their understanding by creating something tangible or performing a task that is relevant to the real world.

This type of assessment encourages higher order thinking skills, such as analysis, synthesis, and evaluation, as learners must use their knowledge to solve real-world problems or complete authentic tasks. Examples of assessments that involve the creation of a real-life product or using real-life skills might include designing and building a model, writing a persuasive letter to a local politician, or creating a budget plan for a hypothetical household.

By incorporating real-life applications into assessments, teachers can help learners see the relevance of their learning and promote deeper engagement and understanding of the material.

Choice in Assessments (A-5 Ca)

> *Design assessments where learners have a choice in how they will present their mastery of the concepts.*

In some cases, learners can benefit from choosing the assessment method that best suits their learning style and preferences.

To implement the issue of designing assessments where learners can choose how they will present their mastery of the concepts, educators can consider the following proposals. First, they can provide clear learning objectives and criteria for success but still allow learners to choose the format for demonstrating their understanding. Second, offering a variety of assessment options that align with different learning styles and interests can help to ensure that all learners can demonstrate their understanding in a way that works best for them. Additionally, scaffolding the assessment process by providing resources and support, such as rubrics or exemplars, can help to guide learners in planning and executing their chosen format. Encouraging collaboration and peer feedback can promote a sense of community and help learners develop critical thinking and communication skills. Finally, using the data gathered from learner assessments to inform future instruction and tailor support for individual learners or groups can help to promote more profound learning and ensure that all learners have the opportunity to succeed.

Remark: This element facilitates disadvantaged or disabled learners and is an important inclusion means.

Micro Conversations (A-7 Mc)

> *Use a large portion of instructor class time to engage in structured micro-conversations with learners.*

Micro conversations as an assessment tool are brief interactions between the instructor and learner that are designed to provide ongoing feedback and support for learning. These conversations can be informal, spontaneous, and focused on specific learning goals or objectives. For example, during a micro conversation, the trainer might ask the learner to explain a concept they learned in class or to discuss how they approached a particular problem. The trainer can then use the learner's responses to provide immediate feedback, clarify misunderstandings, and guide the learner toward more in-depth understanding.

Micro conversations can also be used to assess a learner's progress over time. By having brief conversations with learners regularly, the trainer can track their learning and identify areas where they may need additional support or challenge. For example, a trainer might use micro conversations to assess a learner's growth in

reading comprehension by having them read a short passage and then asking them to summarize the main idea or provide a personal connection to the text.

Another example of using micro conversations as an assessment tool is in the area of social-emotional learning. Trainers can use micro conversations to check in with learners on their emotional well-being and to provide support for any challenges they may be facing. For example, a trainer might have a micro conversation with a learner who is struggling with anxiety or stress and provide strategies for managing their emotions and staying focused on their learning.

Overall, micro conversations are a powerful assessment tool because they allow for ongoing feedback and support, promote learner engagement and ownership of learning, and help trainers to identify and respond to the diverse needs of their learners.

8. Implementation

Implementation means using the developed teaching materials and activities in the learning environment and working with instructors or trainers to achieve the learning objectives.

This means implementing the content (take the course structure) in the learning platform and defining the activities in the group learning space.

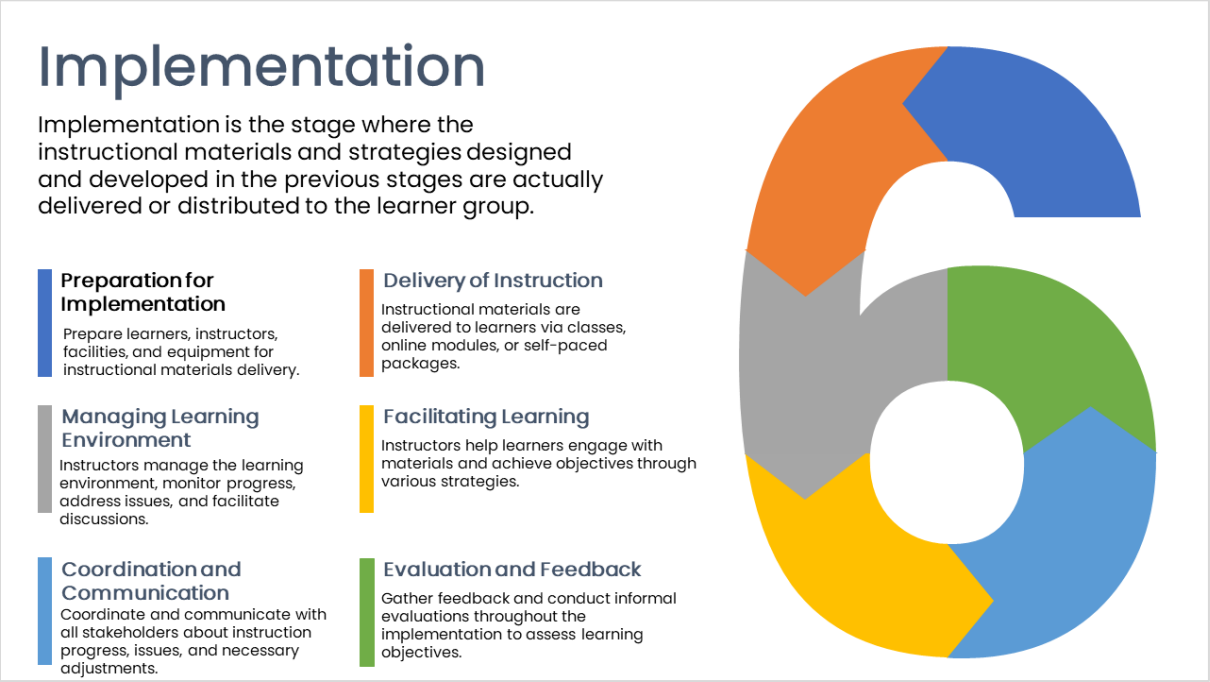

Figure 7: Six steps to care for an appropriate Implementation.

Implementation is the stage where the instructional materials and strategies designed and developed in the previous stages are actually delivered or distributed to the learner group. Here's how it typically takes place:

1. Preparation for Implementation
   The first step is to prepare for the delivery of the instructional materials. This involves preparing the learners, instructors, facilities, and equipment necessary for instruction.
2. Delivery of Instruction
   This is when the instructional materials are actually delivered to the learners. This might involve a class taught, an online learning module being made accessible to learners, or a self-paced learning package being distributed.
3. Managing Learning Environment
   During this stage, the instructor or facilitator manages the learning environment, which includes monitoring the learners' progress and addressing any issues or concerns that might arise. In an online or blended learning environment, this might also involve facilitating discussions and

group work, supporting learners' use of technology, and managing any technical issues that might arise.

4. Facilitating Learning
   The instructor or facilitator helps learners engage with the instructional materials and achieve the learning objectives. This might involve using a variety of instructional strategies, such as direct instruction, guided practice, independent practice, reflection, and feedback.
5. Coordination and Communication
   Throughout the implementation stage, it's essential to coordinate and communicate with all stakeholders, including learners, instructors, administrators, and others involved in the learning process. This might involve communicating about the progress of the instruction, any issues or concerns, and any changes or adjustments that might be needed.
6. Evaluation and Feedback
   Although formal evaluation is typically considered a separate stage (the 'E' in ADDIE), it's important to gather feedback and carry out informal evaluation throughout the implementation stage. This might involve getting feedback from learners and instructors about the instructional materials and strategies, observing the instruction and learners' engagement and progress, and assessing learners' achievement of the learning objectives.

The implementation phase is critical in ensuring that the instructional design actually leads to effective learning. It involves not just delivering the instruction, but also managing the learning environment, facilitating learning, coordinating and communicating with stakeholders, and evaluating the effectiveness of the instruction.

It is important to remember that the Learning Platform (Learning Management System LMS) is only one part of the training course.

Since the training is delivered as Blended Learning the structure of the training must be defined. A simple column structure enables the description in a timeline-based depiction.

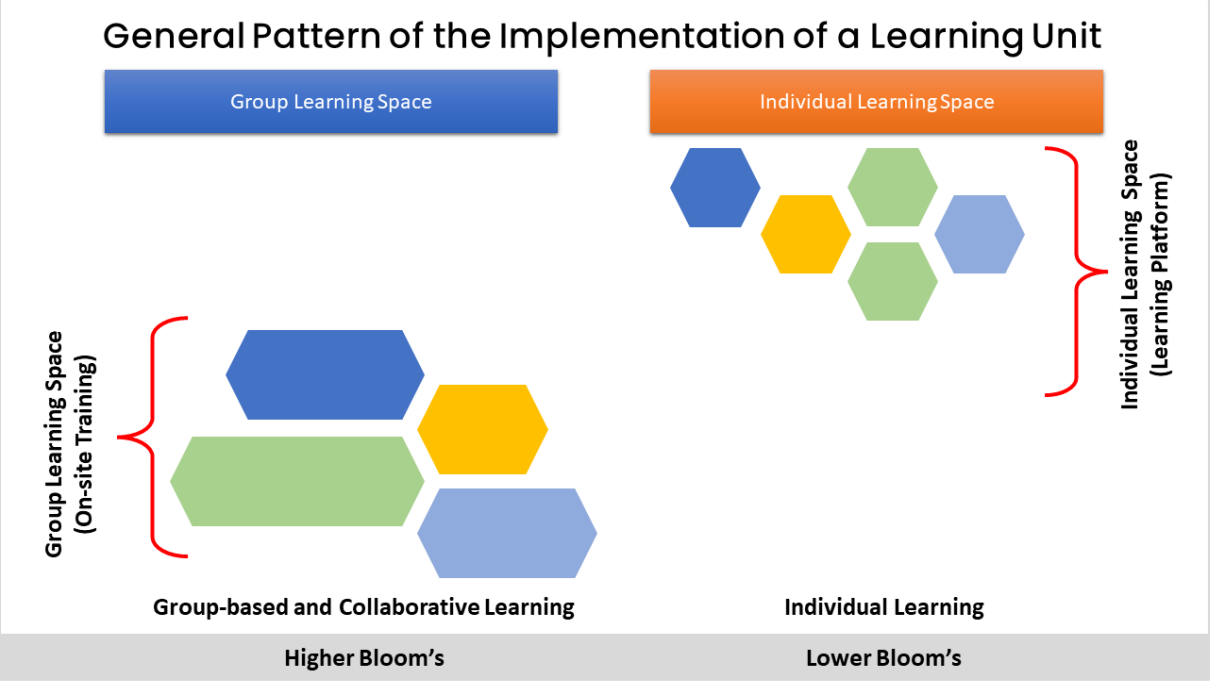

Figure 8: Structure of the Flipped Learning course. The individual Learning Space uses the Learning Platform intensively.

9. Evaluation

Evaluation is collecting and analysing data to assess the effectiveness of the learning program and to improve future instructional design projects.

To evaluate a course or a course concept, which can help determine the effectiveness of the instructional design, content, and delivery, you may use:

- Formative evaluation
  This type of evaluation takes place during course development and implementation. It involves gathering feedback from learners, instructors, or subject-matter experts to identify areas for improvement and make necessary adjustments. Techniques for formative evaluation may include pilot testing, observations, or focus groups.
- Summative evaluation
  Conducted at the end of a course, summative evaluation aims to measure the overall effectiveness and outcomes of the course. It usually involves assessing learner performance through exams, projects, presentations, or other assignments. Learner satisfaction surveys can also be used to gather feedback on course content, instructional methods, and learning environment.
- Self-evaluation
  Encouraging learners to reflect on their learning experiences and progress can provide valuable insights into the effectiveness of the course. Self-assessment tools, such as reflective journals, self-rating scales, or learning logs, can be used to facilitate this process.
- Peer evaluation
  Involving peers in the evaluation process allows for additional perspectives on the course's strengths and weaknesses. This method may include peer review of assignments, group project evaluations, or peer feedback on teaching strategies and course content.
- Pre- and post-assessments
  Comparing learners' knowledge and skills before and after the course can help measure the impact of the course on their learning. This method involves administering assessments at the beginning and end of the course, and then analysing the differences in performance to determine the extent of learning gains.
- Course analytics
  Analysing data collected from learning management systems (LMS) or other

digital platforms can provide insights into learner engagement, progress, and performance. Metrics such as time spent on course materials, completion rates, and quiz scores can be used to evaluate the effectiveness of the course design and content.

- Instructor evaluation
  Gathering feedback from instructors who have taught the course or reviewed the course concept can provide valuable insights into the course's strengths, weaknesses, and areas for improvement. Instructor evaluations may include surveys, interviews, or informal discussions.

By using a combination of these methods, you can gain a comprehensive understanding of the course's effectiveness, identify areas for improvement, and ensure that the course meets the desired learning objectives and outcomes.

9.1. Quality Enhancement

The term "Quality Control" or "Quality Check" has traditionally been used in the context of inspecting products or services to ensure they meet specified standards. It focuses on identifying defects after a process has been completed, with the goal of maintaining a certain level of quality. However, in the context of modern training and education, this approach may be limiting. It doesn't inherently encourage improvement or innovation but rather focuses on maintaining a minimum standard.

"Quality Enhancement," on the other hand, takes a proactive approach. It emphasizes continual improvement, aiming to not only maintain standards but also to consistently enhance the quality of the training program or educational experience. It is a forward-thinking concept that allows for innovative practices and focuses on excellence rather than mere compliance.

Implementing Quality Enhancement involves establishing a culture of continuous improvement, where feedback is welcome, and changes are made with the aim of bettering the learning experience. It's an ongoing process, wherein every aspect of the course or program is continually reviewed, assessed, and improved upon.

One method of implementing Quality Enhancement is the use of PDCA (Plan-Do-Check-Act) Quality Circles. The team begins by Planning, where they identify potential areas for improvement and define goals. They then Do, implementing the planned changes on a small scale. The Check phase involves measuring the impact of these changes and comparing it to the defined objectives to ascertain if the improvements have been successful. The final step, Act, involves either implementing successful changes on a larger scale or revising the plan if the changes were not successful.

This cycle is repeated continually, encouraging ongoing improvement and enhancement of the training course. By shifting from a mindset of Quality Control to Quality Enhancement, organizations can foster a more engaging, effective, and innovative learning environment.

9.2. Implementation of "Quality Circles"

A quality circle is a group of employees or participants who meet regularly to identify, analyse, and solve work-related problems, using various quality management and problem-solving techniques. This model can also be applied to enhance the quality of a training course, following the Deming Cycle or PDCA (Plan-Do-Check-Act) method:

1. Plan
   In this stage, instructors and course designers identify areas for potential improvement in the training course. This may be based on learner feedback, course evaluations, or performance metrics. Clear objectives and measurable goals for improvement should be defined. For instance, the team might aim to increase learner engagement, improve assessment scores, or decrease dropout rates. The team then develops a plan of action to achieve these goals, which might involve revising the curriculum, incorporating new instructional strategies, or improving the learning environment.
2. Do
   The next step involves implementing the planned changes on a small scale, such as in a single module or with a particular group of learners. The changes might involve delivering the content in different ways, utilizing new learning technologies, modifying assessment methods, or providing additional support for learners.
3. Check
   After the changes have been implemented, the team then measures the impact of these changes. This might involve gathering feedback from learners, analysing assessment results, or examining other performance metrics. The data collected should be analysed in comparison to the defined objectives to determine if the changes led to the desired improvements.
4. Act
   If the changes were successful in achieving the desired improvements, the team can then decide to implement the changes on a larger scale, such as in all modules or with all learner groups. If the changes were not successful, the team will need to re-evaluate the situation, consider potential reasons why the changes didn't lead to the desired improvements, and revise their plan. This might involve making further changes to the training course, trying

different instructional strategies, or addressing other potential issues that might be affecting the quality of the course.

The PDCA cycle is a continuous process, and the team should be continually monitoring the quality of the training course and seeking ways to improve it. Through this iterative process, the team can ensure that the training course continually improves in quality and better meets the needs of the learners.

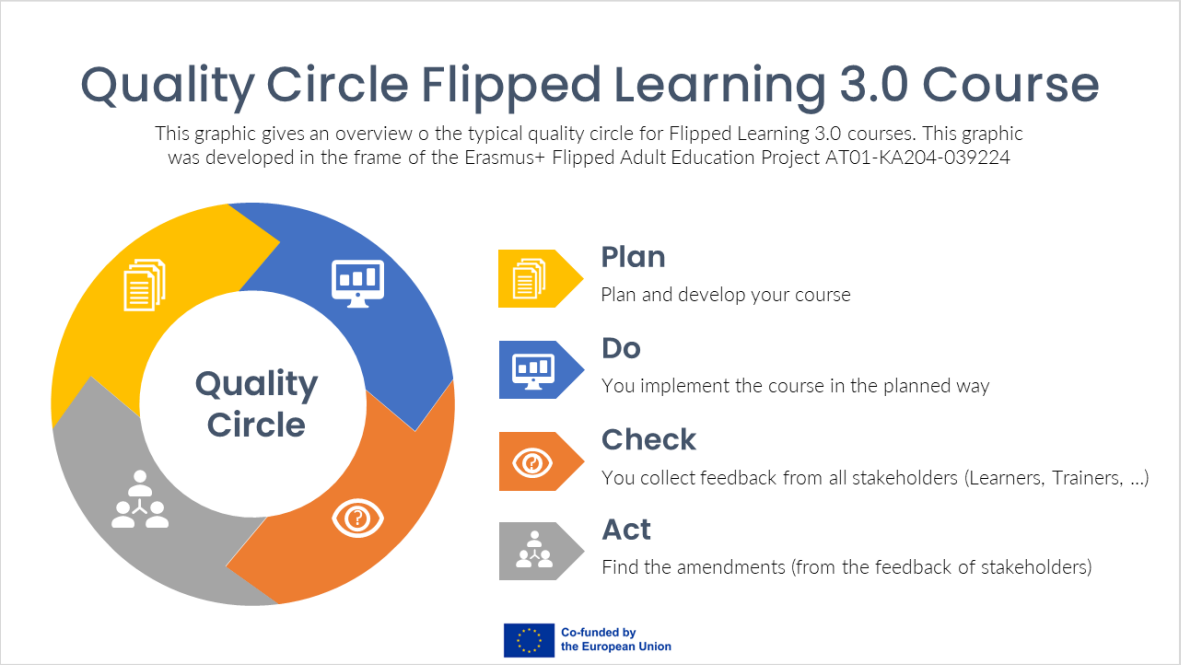

Figure 9: Principle of Quality Circles

10. Learners' support

Learners' support must be given in

- Pre-class material (technical support, feedback)
- In-class facilitation (missing understanding)
- Study aids and supplementary resources
- Peer support

10.1. Inclusive support

Here is a list of proposals for inclusive support.

- Universal Design for Learning (UDL)
  Implement UDL principles to provide multiple means of representation, expression, and engagement. This approach ensures that learning materials and activities cater to diverse learning preferences and abilities, making content accessible to all learners.
- Differentiated instruction
  Adapt teaching strategies, materials, and assessment methods to meet the varying needs, abilities, and interests of learners. This may include providing additional support, alternative assignments, or flexible pacing to accommodate individual learning styles and capabilities.
  Example: Transcripts for videos, sound files with spoken text
- Cultural responsiveness
  Acknowledge and value the diverse cultural backgrounds of learners by incorporating culturally relevant content, examples, and perspectives in the learning materials and activities. Encourage open discussions and understanding of different cultural experiences to promote inclusivity.
- Language support
  Offer language assistance for learners who speak a different primary language or have limited language proficiency. This may include translations, subtitles, glossaries, or additional language instruction.
- Assistive technology
  Provide access to assistive technology devices and tools that support learners with disabilities or special needs. This may include screen readers, text-to-speech software, or adaptive equipment that enables learners to fully engage with the learning materials and activities.
- Emotional and social support
  Foster a positive and inclusive learning environment where learners feel safe, supported, and valued. Establish clear expectations for behaviour and communication and encourage peer support and collaboration.
  Example: Care in general for a “safe learning space”.

- Accommodations and modifications
  Make appropriate accommodations and modifications for learners with disabilities or special needs, such as extended time on assessments, note-taking assistance, or alternative formats for learning materials.
- Accessible learning spaces
  Ensure that physical and digital learning spaces are accessible to all learners, including those with mobility impairments or sensory disabilities. This may involve creating barrier-free environments, providing alternative seating arrangements, or ensuring compatibility with assistive technology devices.
- Ongoing feedback and communication
  Maintain open lines of communication with learners and encourage them to share their needs, concerns, or suggestions for improvement. Provide timely and constructive feedback to support their learning progress and address any challenges they may face.

10.2. Technical support

As Flipped Learning 3.0 relies heavily on technology, the need exists to provide learners with the necessary tools, resources, and support to navigate digital platforms and content. Consider offering tutorials, troubleshooting guides, or helpdesk services to address any technology-related challenges.

1. Access to devices and software
   Ensuring that learners have the necessary hardware (e.g., computers, tablets, smartphones) and software (e.g., learning management systems, video conferencing tools, collaborative platforms) to participate in the course.
2. Connectivity
   Helping learners maintain a stable and reliable internet connection to access course materials, engage in online discussions, and attend virtual meetings.
3. Technical troubleshooting
   Providing assistance to resolve any issues learners may encounter with software, hardware, or connectivity, either through a dedicated help desk, FAQs, or user guide.
4. Digital literacy
   Offering (pre-)training or resources to help learners develop essential digital skills, such as navigating online platforms, using communication tools, and managing digital files. Depending on the identified target group, the following measures are recommended and can be taken if necessary.
   - Introduction to the learning platform
     Training sessions: Organise online or face-to-face training sessions,

where learners can learn interactively how to use the different functions and tools of the platform.

- **Provision of short video tutorials**
  that visually demonstrate how to use the platform's key features and functionalities.

5. **Identify the necessary communication tools**.
   Determine which online communication tools are necessary for the course or training programme. This may include email tools, video conferencing, instant messaging (WhatsApp), and discussion forums, among others.
6. **Accessibility**
   Ensuring that course materials and platforms are accessible to all learners, including those with disabilities, by implementing features such as closed captions, screen readers, and keyboard navigation.

By addressing these aspects of technical support, learners in a blended learning course can effectively engage with the digital components of their education and maximize their learning experience.

10.3. Study aids and supplementary resources

Offer learners alternative sources and resources for their learning process. This might be

- (Serious) resources on the Internet (provides as links to webpages). An example is Curated Internet Resources: This provides a carefully curated list of reputable and scholarly websites, databases, and digital libraries where learners can find additional information and resources related to the course content.
- Alternative documents for reading (book recommendations, PDF files).
- Offer a variety of reading materials such as book recommendations, academic articles, white papers, and downloadable PDF files that offer diverse perspectives or delve deeper into course topics.
- Open Educational Resources (OERs), these are websites like OER Commons, Merlot, or OpenStax provide free educational materials, including textbooks, courses, and multimedia content.
- Links to useful videos on (trustable) platforms, like Vimeo or YouTube.

It is necessary to label these lists of additional material: Explain the added value, the appropriate use of the resources, and the expected impact to the learning process.

10.4. Peer Support

Suggested means to offer peer support are:

- Study Groups
  Encourage learners to form study groups. These can be in-person if feasible or virtual through platforms like Zoom or Google Meet. Study groups can meet regularly to review course content, solve problems, and prepare for assessments.
- Discussion Forums
  If the course is run online, create a discussion forum or chat room where learners can ask questions, share resources, and discuss topics related to the course. This promotes continuous learning and allows participants to learn from one another.
- Peer Tutoring
  Implement a peer tutoring program where learners can help one another understand difficult concepts. This can be beneficial for both the tutor, who gets to reinforce their understanding, and the tutored person, who receives personalized help.
- Peer Review
  Implement a peer review process where learners can critique each other's work. This can be a powerful tool for learning, as it provides learners with different perspectives and constructive feedback.

11. Glossary & Appendix

This glossary and appendix help to make the document more accessible and informative. They provide additional information that is needed to understand the document, and they help to make the document more comprehensive.

11.1. Interactive Video

An interactive video refers to a multimedia presentation that allows viewers to actively engage with the content, making choices or taking actions that influence the progression of the video. Unlike traditional videos that are passive and linear, interactive videos offer an immersive and participatory experience.

In an interactive video, viewers can interact with the video elements through various means such as clickable hotspots, buttons, menus, or overlays. These interactions can trigger different outcomes, such as branching storylines, alternative scenes, additional information, quizzes, or interactive elements within the video itself.

11.2. Universal Design for Learning

Universal Design for Learning (UDL) is an educational approach that aims to create learning environments that are accessible and inclusive for all learners, regardless of their diverse needs, backgrounds, or abilities. UDL recognizes that learners have unique strengths, preferences, and ways of learning.

In UDL, educators strive to provide multiple ways for learners to access and engage with information. This means offering different formats and modalities of presenting content, such as text, visuals, audio, or interactive elements. By providing diverse representations, learners can choose the mode that best suits their learning style and preferences.

Additionally, UDL emphasizes allowing learners to express their understanding and knowledge in various ways. Rather than focusing on a single mode of assessment, educators provide options for learners to demonstrate their learning through writing, speaking, creating multimedia projects, or using assistive technologies. This flexibility enables learners to showcase their strengths and abilities.

Moreover, UDL promotes engagement and motivation by providing learners with choices and opportunities for active participation. Educators can incorporate real-world applications, promote collaboration, and foster a positive and inclusive learning environment. By offering multiple avenues for engagement, learners can find meaning and relevance in their learning experiences.

The fundamental idea behind UDL is to design instruction and learning materials in a way that removes barriers and addresses the variability of learners. It acknowledges that learners have different backgrounds, abilities, and preferences and that the

responsibility for creating accessible and inclusive learning environments lies with the instructional design and delivery.

11.3. Backwards Design

The "Backwards Design" approach in developing the structure of a training course with competency-based and defined learning outcomes involves starting with the end in mind. It begins by clearly identifying the desired learning outcomes or competencies that participants should achieve by the end of the course.

Once the learning outcomes are defined, the next step is to determine the evidence or assessment methods that will demonstrate the attainment of those outcomes. This may include tests, projects, presentations, or any other means of evaluating learners' knowledge and skills.

With the learning outcomes and assessment methods in place, instructional designers can then focus on designing the learning experiences and activities that will help learners acquire the necessary knowledge and skills to meet the desired outcomes. This involves developing instructional materials, selecting appropriate teaching strategies, and structuring the course content in a logical and coherent manner.

The Backwards Design approach emphasizes the importance of aligning the entire instructional process with the desired outcomes. By starting with the end in mind and working backward, it ensures that the training course is purposeful, focused, and effectively prepares learners to demonstrate the desired competencies.

11.4. Standards in Flipped Learning

The term "standards" refers to a set of guidelines, criteria, or benchmarks that define expectations, requirements, or best practices in a particular context. Standards are established to ensure consistency, quality, and interoperability across various industries, sectors, or disciplines.

Flipped Learning 3.0 standards define specifications, procedures, guidelines, performance benchmarks, directives, and behavioural patterns for learners, trainers, and institutions. **These standards** are developed and maintained by experts in the field. In the case of Flipped Learning, the standards were developed in the frame of the “Global Standards Project” by practitioners from over 49 countries, under the auspices of six distinguished international co-chairs, vice chairs, and the AALAS Global Council of Peers. The purpose of standards is to provide a common framework that enables uniformity, interoperability, and compatibility. They establish a baseline for quality, safety, efficiency, and effectiveness, ensuring that products, services, processes, or systems meet certain established criteria.

Standards serve as a reference point, a common language, and a framework for achieving desired outcomes, quality, and compatibility. They provide a foundation for consistency, interoperability, and improvement across various domains, ultimately benefiting industries, consumers, professionals, and society as a whole.

Difference between guidelines and standards

Guidelines are recommendations or suggestions that provide flexibility and best practices, but they are not typically enforceable. They offer general guidance without specific requirements or detailed specifications. Standards, on the other hand, are enforceable and often legally binding. They provide explicit requirements, specifications, and criteria that must be met to ensure compliance, consistency, and quality.

Standards and Checklists

Checklists can be developed to ensure that specific requirements or criteria outlined in the standards are met. By breaking down the standards into actionable items or tasks, a checklist helps users systematically review and verify compliance with each requirement. Checklists provide a structured approach for monitoring and documenting adherence to the standards, aiding in quality assurance and regulatory compliance efforts.

AALAS General Standards for Flipped learning 3.0

The AALAS general standards address several fields of the Flipped Learning 3.0 Framework.

Understanding Flipped Learning

- Know and be able to explain the definition of Flipped Learning
- Understand that Flipped Learning is a framework that supports all other active learning strategies.
- Understand the importance of instructional design when planning for Flipped Learning
- Understand the distinction between Flipped Learning and Blended Learning
- Understand how the role of an educator moves from lecturer to facilitator.
- Understand priorities and barriers to progress.

Planning for Flipped Learning

- Understand the principles of andragogy and pedagogy in designing courses and lessons.
- When possible, define clear roles for everyone involved in creating Flipped Learning courses (subject specialist, instructional designer, technologist)

- Ensure courses are designed with input from subject-matter experts and instructional designers.
- Use Backwards Design to plan effective flipped lessons and units.
- Use Bloom's taxonomy to plan: lower levels of Bloom's go to the individual space, and higher levels to the group space
- Plan to differentiate in both the group and the individual spaces.
- Ensure that pre-class media link directly to learning outcomes and group space activities.
- Use a simple workflow template.
- Present course content in a logical and consistent fashion
- Label all artifacts as pre-class, in-class, and post-class.
- Adapt flipped instructional techniques to make them effective with large groups.

Assessment

- Use frequent, formative assessments.
- Use a large portion of teacher class time to engage in structured micro-conversations with learners.
- Select different types of questions according to Bloom's Taxonomy
- Design assessments where learners have a choice in how they will present their mastery of the concepts.
- Have a plan for learners who come to class having completed the pre-work but still don't fully grasp the concepts.
- Align all assessments with learning outcomes.
- Provide assessments with clear rubrics.
- Provide assessments that involve the creation of a real-life product or the use of real-life skills.

Learning spaces

- Design your physical space for an active classroom.
- Create active-learning spaces where learners own and drive their own learning.
- Creatively use the physical space you have to maximize active learning.
- To the extent possible, make the physical space flexible to accommodate a variety of deeper learning strategies.
- Allow learners flexibility and autonomy in how they use the physical space.

Individual space mastery

- Make sure pre-class media are short.
- Make sure pre-class media are intuitive.

- Make sure pre-class media contain the big idea.
- Hold learners accountable for pre-class work.
- Use lower levels of Bloom's Taxonomy (remembering, understanding)
- Strategically choose an appropriate medium for the pre-class media (text, annotated whiteboard video, screencast, plain video)
- Focus on what you want to achieve in the group space when creating the individual space pre-work.
- Ensure there is a strong link between pre-class media and what happens in the classroom.
- Learn how to create flipped videos and other flipped media using the tools at your disposal.
- Ensure that videos include an appropriate mix of text, pictures, discussions between people, short integrated films, the instructor's writing, narration.
- Make sure longer pre-class media are chunked into smaller pieces.
- Teach learners how to interact with the pre-class media including taking notes and preparing questions for class.
- Introduce pre-class media with a prior knowledge question to activate learner thinking.
- Include practical concrete activities that learners can engage in during or after the pre-class media and tasks.
- Make sure pre-class tasks are meaningful and hook learner interest.
- Ensure there are questions to test understanding of concepts in the pre-class media.
- Use information from learners' completion of pre-class tasks to inform instruction!
- Consider legal aspects in relation to the learner's right to privacy and personal data in accordance with the laws of each country.

Group space mastery

- Use higher levels of Bloom´s Taxonomy (applying, analysing, evaluating, creating)
- Establish clear expectations for learner responsibilities during class time.
- Include practice activities at differing levels to ensure all learners have materials to work from that are just above their current ability.
- Use a variety of active learning strategies in the group space such as Project Based Learning, Inquiry, Mastery, Genius Hour, and Peer Instruction
- Model group space activities for learners before starting the activity.
- Never lecture or explain the videos in the classroom for those who did not do the pre-class media.

- Set up learner-centred activities that encourage learners to summarize the content of the pre-class media.
- Include activities that encourage learners to create their own content.
- Require reflection at the end of each lesson.
- Be willing to fail at new group space activities and try again.
- Provide differentiation within the group space (tasks, outcomes, support, and resources)
- Promote collaborative and group work.
- Use both digital and analogue tools to foster learners' in-class work.

Learner involvement

- Constantly monitor learners' attitudes and achievement and adapt as necessary.
- Plan regular times during a semester/year to get feedback from learners.
- Get feedback from learners on pre-class media.
- Get feedback from learners on group-space activities.
- Explain to learners how they can become effective Flipped Learners

Communication and Culture

- Build positive relationships with learners.
- Help learners understand why they are learning the concepts.
- Help learners to see the big ideas.
- Instruct learners on how to operate in a Flipped class.
- Understand each learner's cognitive needs.
- Encourage learners to see that failure is a learning opportunity.
- Make sure the Flipped Learning vision supports established educational priorities.

Professional development

- Be aware of current innovations in Flipped Learning
- Base practice on the most current global research
- Be active in a local community of Flipped Learning educators.
- Be active in a global community of Flipped Learning educators.
- Continue to develop your Flipped Learning skills and knowledge.

Evidence and research

- Collect data on the efficacy of your Flipped class.
- Conduct action research on your class and share it with the global community.
- Stay abreast of the latest research on Flipped Learning

- Build bridges between researchers and practitioners.

IT infrastructure

- Plan simple workflows for video creation that work within your existing IT infrastructure.
- Choose technology tools which work both in your school and on learners' devices.
- Carefully select tools that protect learner privacy and safety.
- Choose tools which have the capability for formative and diagnostic assessment.
- Use a digital portfolio for both teachers and learners.

11.5. Checklists for the standards

This checklist has been derived directly from the standards and is designed as a set of questions addressed to the trainer. When a development team or organization utilizes the standards to evaluate a learning unit or course, the pronoun "I" can be replaced with "we" to reflect collective engagement.

Purpose of the Checklist

The purpose of this checklist is to serve as a tool for course developers to ensure alignment with the goals and framework of the Flipped Learning 3.0 Framework. It is important to note that there exists a direct correlation between the standards and the guidelines derived from them, known as the Global Elements for Effective Flipped Learning. While the checklist provides a static structure for reviewing the standards, the elements referenced and described in the accompanying text offer guidance and support for implementing a flipped learning course.

Remark: The checklist is built out of the AALAS standards that are defined for School Education and Higher Education. We replaced the term "Students" by "Learners". We also personalized the questions so that a trainer who created the course or will deliver the course is addressed from their point of view.

Understanding Flipped Learning

- ☐ I can explain the definition of Flipped Learning.
- ☐ I have recognized that Flipped Learning is a framework supporting other active learning strategies.
- ☐ I acknowledge the significance of instructional design in planning for Flipped Learning.
- ☐ I can differentiate between Flipped Learning and Blended Learning.
- ☐ I understand the transition of the educator's role from lecturer to facilitator.

- ☐ I can identify priorities and barriers to progress in implementing Flipped Learning.

Planning for Flipped Learning

- ☐ I understand the principles of andragogy and pedagogy in the course and lesson design.
- ☐ I can define clear roles for all contributors (subject specialist, instructional designer, technologist) involved in creating Flipped Learning courses.
- ☐ I involve subject-matter experts and instructional designers in the course design process.
- ☐ In the planning of effective flipped lessons and units Backwards Design is used.
- ☐ I apply Bloom's taxonomy to plan appropriate activities for individual and group spaces.
- ☐ I incorporate differentiation strategies for both group and individual spaces.
- ☐ I can ensure pre-class media aligns directly with learning outcomes and group space activities.
- ☐ I use a simple workflow template for course organization.
- ☐ I present course content in a logical and consistent manner.
- ☐ I label artefacts as pre-class, in-class, and post-class for easy reference always.
- ☐ I adapt flipped instructional techniques for effective implementation with large groups.
  Remark: This is not relevant in Adult Education

Assessment

- ☐ I incorporate frequent, formative assessments.
- ☐ I allocate a significant portion of teacher class time for structured micro-conversations with learners.
- ☐ I use different types of questions aligned with Bloom's Taxonomy for both the individual and the group space.
- ☐ I design assessments that offer learner choice in presenting mastery of concepts.
- ☐ I develop a plan to support learners who have completed pre-work but still require additional assistance.
- ☐ I ensure alignment of all assessments with learning outcomes.
- ☐ I provide clear rubrics for assessments.
- ☐ I include assessments that involve the creation of real-life products or the application of real-life skills.

Learning spaces

- ☐ I design the physical space to facilitate an active classroom environment.
- ☐ I create active-learning spaces that empower learners to take ownership of their learning.
- ☐ I maximize active learning by creatively utilizing the available physical space.
- ☐ I make the physical space flexible to accommodate a variety of deeper learning strategies, whenever possible.
- ☐ I provide learners with flexibility and autonomy in how they utilize the physical space.

Individual space mastery

- ☐ I keep the pre-class media short and concise.
- ☐ I ensure that pre-class media are intuitive and easy to understand.
- ☐ I include the key concept or big idea in the pre-class media.
- ☐ I hold learners accountable for completing pre-class work.
- ☐ I focus on lower levels of Bloom's Taxonomy (remembering, understanding) in the pre-class media.
- ☐ I choose an appropriate medium for the pre-class media (text, annotated whiteboard video, screencast, plain video).
- ☐ I align the content of the pre-class media with the desired learning outcomes in the group space.
- ☐ I establish a strong link between the pre-class media and in-class activities.
- ☐ I familiarize myself with tools and techniques for creating flipped videos and other media (for training material creators only).
- ☐ I ensure that videos include a mix of text, visuals, discussions, instructor input, and narration.
- ☐ I chunk longer pre-class media into smaller, digestible segments.
- ☐ I teach learners how to interact with pre-class media, including note-taking and preparing questions.
- ☐ I begin pre-class media with a prior knowledge question to activate learner thinking.
- ☐ I include practical activities for learners to engage in during or after the pre-class media.
- ☐ I make pre-class tasks meaningful and intriguing to capture learner interest.
- ☐ I incorporate questions in the pre-class media to assess understanding of concepts.
- ☐ I use the feedback from learner completion of pre-class tasks to inform instruction.

- ☐ I consider legal aspects and adhere to learner privacy and data protection laws.

Group space mastery

- ☐ I incorporate higher levels of Bloom's Taxonomy (applying, analysing, evaluating, creating) in group space activities.
- ☐ I clearly communicate expectations for learner responsibilities during class time.
- ☐ I include practice activities at varying difficulty levels to cater to learners' individual abilities.
- ☐ I use a range of active learning strategies (e.g., Project Based Learning, Inquiry, Mastery, Genius Hour, Peer Instruction) in the group space.
- ☐ I model group space activities for learners before they engage in the tasks.
- ☐ I avoid lecturing or re-explaining pre-class media for learners who did not complete the pre-work.
- ☐ I design learner-centered activities that prompt learners to summarize the content of the pre-class media.
- ☐ I include activities that encourage learners to generate their own content or ideas.
- ☐ I incorporate reflection exercises at the end of each lesson to promote metacognition and deeper understanding.
- ☐ I embrace the willingness to experiment, learn from failures, and iterate with new group space activities.
- ☐ I provide differentiation within the group space, considering variations in tasks, outcomes, support, and resources.
- ☐ I foster collaborative and group work among learners.
- ☐ I use a combination of digital and analogue tools to support learners' in-class work.

Learner involvement

- ☐ I constantly monitor learners' attitudes and achievement, adjusting instructional approaches as needed.
- ☐ I schedule regular times throughout the training to solicit feedback from learners.
- ☐ I seek feedback from learners specifically on their experience with pre-class media.
- ☐ I gather feedback from learners regarding their engagement and experience with group-space activities.
- ☐ I provide clear explanations to learners on how they can become effective Flipped Learners.

Communication and culture

- ☐ I foster positive relationships with learners to create a supportive learning environment.
- ☐ I help learners understand the relevance and purpose of the concepts they are learning.
- ☐ I facilitate learners' understanding of the big ideas and overarching concepts.
- ☐ I provide explicit instruction on how to navigate and succeed in a Flipped class.
- ☐ I recognize and accommodate each learner's unique cognitive needs and learning styles.
- ☐ I encourage learners to embrace failure as an opportunity for growth and learning.
- ☐ I ensure that the Flipped Learning vision aligns with established educational priorities.

Professional development

- ☐ I keep myself informed about current innovations in Flipped Learning.
- ☐ I build my practice on the latest global research in Flipped Learning.
- ☐ I engage myself actively in a local community of Flipped Learning educators for collaboration and sharing of best practices.
- ☐ I participate actively in a global community of Flipped Learning educators to broaden perspectives and gain insights.
- ☐ I continuously care for the further development of my Flipped Learning skills and knowledge through professional development opportunities.

Evidence and research

- ☐ I collect data on the efficacy of my Flipped class to assess its impact on learner learning and engagement.
- ☐ I conduct action research on my class, systematically investigating and documenting the outcomes and practices, and share findings with the global Flipped Learning community.
- ☐ I try to be updated on the latest research on Flipped Learning to stay informed about new insights and evidence-based practices.
  Remark: These address less the adult educator's community.
- ☐ Foster collaboration and knowledge exchange between researchers and practitioners in the field of Flipped Learning to bridge the gap between research and classroom implementation.

IT infrastructure

- ☐ I (and my organisation) plan simple workflows for video creation that are compatible with your existing IT infrastructure.
- ☐ I select technology tools that are compatible with both our training organisation's technology resources and learners' devices.
- ☐ I prioritize the selection of tools that prioritize learner privacy and safety.
- ☐ I select tools that have the capability for formative and diagnostic assessment to support ongoing learner learning and progress monitoring.
- ☐ I use a digital portfolio for both trainer and learners to document and showcase learning outcomes and progress.