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Executive summary/abstract:

Work Package 5, entitled EU CONEXUS Teaching Academy focuses on enhancing and promoting high quality education within the universities by appropriately preparing faculty members and other staff. Its first task (T5.1) is to develop the Pedagogical Framework of the Academy. The current document provides a detailed explanation of the framework along with its elements. The document also provides the theoretical framework that was employed to develop the framework. The Blended Learning Pedagogical Framework (BLDF) will serve as the backbone for the design, development and delivery of the nine (9) professional development trainings to be offered by the EU CONEXUS Teaching Academy. The BLPF has three main parameters: 1) Learning and Teaching Spaces, 2) Learning and Teaching Components – Types of Learning Activities, and 3) Technological Tools. Each of the three parameters are explained and described. Finally, the implementation and delivery of the trainings are described (each training equals to 1ECTS, total of 25 hours, which includes: 1) synchronous face-to-face or online learning and 2) asynchronous independent and collaborative online learning), along with detailed directions and guidelines on how to address the three main components of the BLPF.

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1. Scope of the Document

The current document describes and explains the Blended Learning Pedagogical Framework (BLPF) that will serve as the backbone to guide the design of the professional development training courses of EU-CONEXUS Teachers' Training Academy.

1.1 Terminology and Glossary

Prior explaining the pedagogical framework basic terminology and literature review is provided in regards to Blended Learning.

Blended Learning (BL): (or Hybrid learning): learning as a result of a deliberate, integrated combination of online and face-to--face learning activities.

Blended Teaching (BT): (or hybrid teaching): the design and facilitation of blended learning activities.

Blended education (BE): (or hybrid education) the formal context that is determined by policies and conditions regarding the organization and support of blended learning courses and programs.

Face-to-face and online learners' attendance: Some learners are physically (face-to-face) present in the classroom and some others log in remotely (i.e., in another country, or in the building nearby, they do not have to be in another country). This is a scenario where there is no mix between the online and face-to-face students. This influences instructor's choices around team projects and group work in general. For example, how breakout groups, discussion groups, or any type of activity that requires interaction between learners is arranged.

Synchronous and asynchronous sessions:

Synchronous sessions: delivered at the same time (instructor and learners are working, interacting, collaborating at the same time). Synchronous sessions/ communication can take place face-to-face or online.

Asynchronous sessions: are not delivered at the same time. The relay information among the learners (instructor to students, learners among them) comes with a time lag.

Synchronous teaching and learning/activities: these sessions can be synchronous sessions of online simultaneous participation, with learners all logging in at the same time, and are expected to be short in time (for example, two hours long). The instructors

have various tools/approaches at their disposal: discussions, polls, Q&As, debates, breakout rooms, and other kinds of tools. The instructor should plan for variety while designing the course and planning each lesson: how do you take advantage of everybody's presence at the same moment in time?

Asynchronous teaching and learning/activities: Teaching material to be used in asynchronous teaching and learning include videos, narrated and interactive presentations and videos, reading materials, web-based resources, Open Educational Resources (OERs), assessments, quizzes, discussion forums, case studies, gamification activities. The instructor should keep them short in duration. For example, videos and narrated presentations should not be more than 12-15 mins long and readings should be kept (i.e. articles) around a five- to seven-minute read. The focus should be on keeping your learners engaged in multiple (asynchronous) activities.

2. Blended Learning @ EU-CONEXUS+

2.1 Blended Learning: theoretical approach

There has been an extensive literature review regarding Blended Learning (BL), its practices, design, delivery, implementation. At this part of the document BL is briefly described. BL is ambiguously defined in literature and there is no unified view (Graham, 2013; Graham, Woodfield, & Harrison, 2012). The term 'blended learning' is used synonymously to refer to hybrid learning (e.g. Cheung, Fong, Zhang, Kwan, Kwok, 2014; O'Byrne & Pytash, 2015; Pecot-•-Hebert, 2012; Vernadakis, Antoniou, Giannousi, Zetou, & Kioumourtzoglou, 2011). Recently BL was characterised as the future ***'major instructional movement'*** (Yen & Lee, 2011) or the **'new normal'** (Dziuban, Graham, Moskal, Norberg, & Sicilia, 2018).

BL was charactersed as the future 'major instructional movement' (Yen & Lee, 2011) or the 'new normal' (Dziuban, Graham, Moskal, Norberg, & Sicilia, 2018). BL has been given various characterizations related to the integration of the offline and online learning spaces/ resources/ materials, etc. BL integrates two worlds: offline and online. In Osguthorpe and Graham's (2003) work, BL is being referred to as providing the best of two worlds' - one should be 'using the web for what it does best and using class time for what it does best' (p. 227). Along the same lines, Watson (2008) refers to BL as the 'new, robust instructional approach that takes advantage of the best elements of both settings' (Watson, 2008, p. 4). Additionally, BL is reported as the 'convergence of online and traditional instruction' (Young, 2002) and as the 'integration of digital technologies with conventional methods of teaching and learning' (Laurillard, 2014, p. 10; Ward & LaBranche 2003, p.22).

BL is a design of teaching that combines online and face-to-face instruction (Halverson et al., 2012), where it integrates online and offline learning activities and resources or, respectively, face-to-face (F2F) learning experiences and online learning' (Gedik, Kiraz & Ozden, 2013, p. 1). A course or a program cannot be labelled 'blended' only if a certain percentage of it is conducted online (Allen, Seaman & Garrett, 2007). There are other elements involved in order to be considered blended, such as the combination of media and tools employed in class and out of class learning activities (i.e., LMS, Zoom, discussion forums, wikis, chat rooms, online quizzes, blogs, feedback tools), the facilitation of individual study and group work through the use of technological tools (either in class or out of class) (Whitelock & Jelfs, 2003). The overarching goal of BL is to integrate on-site (i.e., face-to-face) with online experiences (learning spaces and activities, tools) in order to develop effective, efficient, and flexible learning (Stein & Graham, 2014).

In a blended learning environment, learners typically have some control over the time, place, and pace of their learning. BL can take on many different forms, depending on the needs of the learners and the goals of the course. For example, a course might involve face-to-face classes once or twice a week, with the remaining coursework completed online. Alternatively, a course might be structured so that learners complete certain modules online and then come together for face-to-face discussions and activities.

Along the same lines, the online component of blended learning can take many different forms, such as video lectures, interactive activities, discussion forums, or assessments. The face-to-face component can include classroom instruction, small-group activities, or individual tutoring. BL is often seen as a way to increase student engagement, personalise learning, and provide flexibility for both learners and teachers, increased access to educational resources, and the ability to leverage technology for more effective instruction. It can also help to address issues such as access to education, as online resources can be accessed from anywhere with an internet connection.

However, implementing a successful blended learning program requires careful planning and consideration of the unique needs and learning styles of students, as well as the resources and technology available to support the program. Specifically, it can also present challenges such as the need for effective technology infrastructure, training for teachers and learners to use online tools, and the potential for unequal access to technology and resources among students.

Blended classes can offer several benefits to both learners and instructors. For example, learners can benefit from the flexibility and convenience of being able to complete coursework online, while still having the opportunity to interact with their

peers and instructors face-to-face. At the same time, instructors can use online learning tools to create engaging and interactive course content that can enhance the learning experience.

There are several Models (the Community of Inquiry Model (CoI), the SAMR Model, the Conversational Framework Model), Approaches and Course Types to Blended Learning. The Blended Learning Pedagogical Framework described below incorporates various elements of the aforementioned models. At the Appendix (See Part 1) various Models and Course Types of Blended Learning are presented.

1. Alternative Model 1 – Switch between online and face to face, either every session or every other session.
2. Alternative Model 2 – Develop a learning network between online and face to face.
3. Alternative Model 3 - Mainly focus on one learning space (development of one learning space) for a specific period of time and then conclude the course with the other learning space.
4. Alternative Model 4 - The Continuous Approach: the f2f session is an extend/ a continuity of the online session (online – face to face/ online-face to face)

2.2 The philosophy that underlies the Pedagogical Framework

The proposed framework is based on research evidence and contemporary theoretical and practical approaches to BL in higher education. It capitalizes on the expertise gained by the partners and the instructors (expert trainers). The goal is to develop, design and deliver learner-centered environments that allow learners- to experience guided independent learning through the Blended Learning Pedagogical Framework (BLPF). The BLPF aims to achieve permanent learner activity, through constant interaction, communication and collaboration of instructor-learner, learner-learner, learner-content. It also encompasses processes where they allow the development of learner-controlled meaningful learning communities (both in person and virtual) (Skill & Young, 2002) which is the key to learner engagement (Boelens et al., 2017; McGee & Reis, 2012; Park, Perry, & Edwards, 2011; Song, Singleton, Hill, & Koh, 2004). Finally, it intends to take advantage of the blend between online and face-to-face and develop online and face-to-face learning spaces and individual/collaborative learning processes- where learners take responsibility of their own learning and increase the self-perceived knowledge. Quality control and assurance mechanisms will be also developed to evaluate trainings implementation and get feedback for revision and updating purposes (Feedback surveys).

2.3 CONEXUS Blended Learning Pedagogical Framework (BLPF)

The framework consists of the following 3 main parameters:

1. Learning and Teaching Spaces
2. Learning and Teaching Components – Types of Learning Activities
3. Technological Tools

Each of the 3 parameters is further explained below:

Implementation and Delivery - Each training is expected to be equal to 1ECTS course, meaning total of 25 hours. The total hours include **1) synchronous face-to-face (in-classroom) learning and 2) asynchronous independent and collaborative online learning**, i.e. the time each learner is expected to allocate for the completion of asynchronous activities and exercises, study hours (personal study to comprehend the materials), assessment (projects, assignments) and self-assessment activities (i.e. self-assessment quizzes).

It is suggested that each unit is grouped in 3-4 subunits/ thematic areas (of course this is up to the expert trainer to decide, depending on numerous variables such as the topic of the training). The majority of the trainings will be implemented via the blended learning approach (face-to-face in-classroom time and online time for independent and collaborative learning). Depending on other parameters some trainings may take place online, where *synchronous online sessions* and *independent and collaborative online learning* (as described in the above paragraph) will take place. The online trainings will be also developed based on the Pedagogical Framework and it will be adjusted accordingly as it is explained below.

Duration (recommended)

For the trainings to be delivered via Blended Learning

- Synchronous Face-to-face In-classroom Learning = 12 hours - 2 working days (recommended consequent days due to traveling), 6 hours per day, total of 12 hours.
- Asynchronous Independent and Collaborative Online Learning = 13 hours (i.e. study hours, asynchronous collaborative activities, self-assessment and assessment).

As aforementioned, based on the different learning models and course types presented at the Appendix (See Part 1), it seems that Alternative Model 3 is the most appropriate one to use. Specifically, Alternative Model 3, mainly focuses on one learning space (development of one learning space) for a specific period of time and then conclude the course with the other learning space. The learners will meet for two consequent days, face-to-face (in-classroom, synchronous meetings) and then continue to conclude the training via independent and online (asynchronous) collaborative learning.

For the Trainings to be delivered Fully Virtually

- **Synchronous Online learning** (teleconferencing sessions) = 12 hours (i.e. in 3-4 different days of 3-4 hours each – not necessarily in consequent days) (at this point there are no traveling constraints). *Note: the online synchronous sessions are expected to address the elements that are expected to be addressed at the face-to-face (in classroom) synchronous sessions.*
- **Asynchronous Independent and collaborative Online Learning** = 13 hours (i.e. study hours, asynchronous collaborative activities, self-assessment and assessment). *Note: the independent and collaborative online (asynchronous) learning sessions are expected to address the elements that are expected to be addressed at the Blended Learning approach. However, some elements are expected to be more enhanced such as: narrative presentations, asynchronous collaborative activities.*

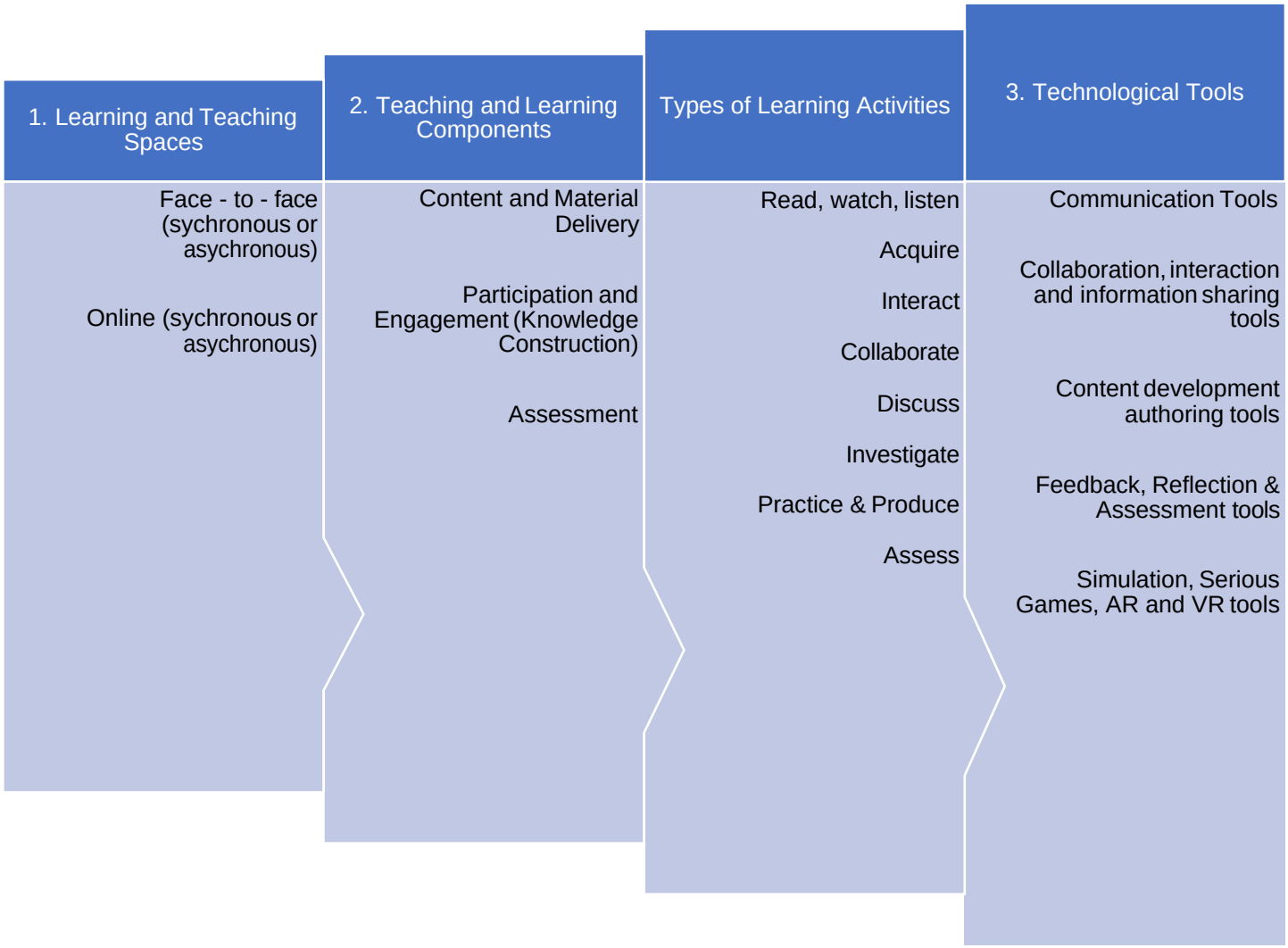


Figure 1 The Blended Learning Pedagogical Framework @EU-CONEXUS+

2.3.1 Teaching and Learning Spaces (Synchronous or Asynchronous)

The teaching and learning take place either face-to-face or online. Guidelines in regards to the allocation of time between the 2 spaces is given above (See: Implementation and Delivery, Duration). Further detailed guidelines and expectations on how to use the face-to-face in-classroom and online time is provide below (See Table 1 below). The BLPF provides flexibility, so the instructor can take advantage of the affordances of each space taking into consideration time constrains (due to traveling).

Synchronous Learning (**in-classroom/face-to-face or online**) is suggested to be oriented towards mastering learners' knowledge and skills through content material deliver, tutoring, practice, discussion, exploration, production, feedback and hands-on experience and learning. For example: explaining course content, addressing learners' questions on the content, solving exercises, conducting experiments, practicing, working on assignments, exercises, simulations, case studies, interactive educational games, interactive scenarios for problem solving, programming, providing feedback, guidance and support (See Appendix, Part 2).

Asynchronous Independent learning and Collaborative Online time includes the following three interactions: **1) student-content interaction** (i.e. readings, narrated/annotated and interactive documents, presentations and videos – study hours - (personal study to comprehend the materials), assessment (individual projects, assignments) and self-assessment activities (i.e. self-assessment quizzes), **2) student-student interaction** (online collaborative activities and discussions, i.e., asynchronous activities and exercises, asynchronous communication, interaction and collaboration with their peers, assessment (team projects, assignments) and **3) student-instructor interaction** (i.e. feedback, discussions).

2.3.2 Teaching and Learning Components and Activities

Teaching and Learning Components are grouped in three categories. Each of the components is described by a number of verbs (provided in parenthesis in blue color) that are linked to Bloom's taxonomy levels (further explained below). Each of the verbs provide guidance to the instructors to design and develop the learning environments of the trainings by employing different kind of activities (Read, Watch, Listen, Acquire, Interact, Collaborate, Discuss, Investigate, Practice, Produce, Assess) aiming to cover all Bloom's taxonomy levels (See Figure 2).

The three Teaching and Learning Components are the following:

1. Content and material delivery (Read, Watch, Listen, Acquire, Interact):
2. Engagement and Participation (Knowledge Construction) (Collaborate, Discuss, Investigate, Practice and Produce)
3. Assessment (Collaborate, Discuss, Investigate, Practice, Produce and Assess):
    - Final assessment
    - Continuous/formative assessment
    - Self Assessment

Learners will be assessed in each training in order to obtain the Certificate of Completion. Each expert trainer is responsible to decide and define the minimum requirements for successful training completion. The minimum requirements are expected to be aligned with the aforementioned assessment categories: final assessment, continuous/formative assessment and self-assessment.

- **Final assessment**
    - Each expert trainer decides upon the type/form for the final assessment. This assessment may include:
        - product development,
        - artefact development,
        - presentation,
        - (e) portfolio,
        - small-scale project, etc.
        - ...
        - ...

The final assessment has to be submitted by the end of the training.

- **Continuous/formative assessment**
    - Each expert trainer decides upon the type/form of the continuous/formative assessment. This assessment may include:
        - Online discussions (asynchronous)
        - Collaborative exercises (synchronous or asynchronous)
        - Training attendance (face-to-face & online)
        - …
        - …

The continuous/formative assessment takes place throughout the training.

- **Self-Assessment**
    - It is recommended for self-assessment purposes to develop:
        - self-evaluation quizzes and/or,
        - self-checklist and/or,
        - reflective journals, and/or,
        - …
        - …

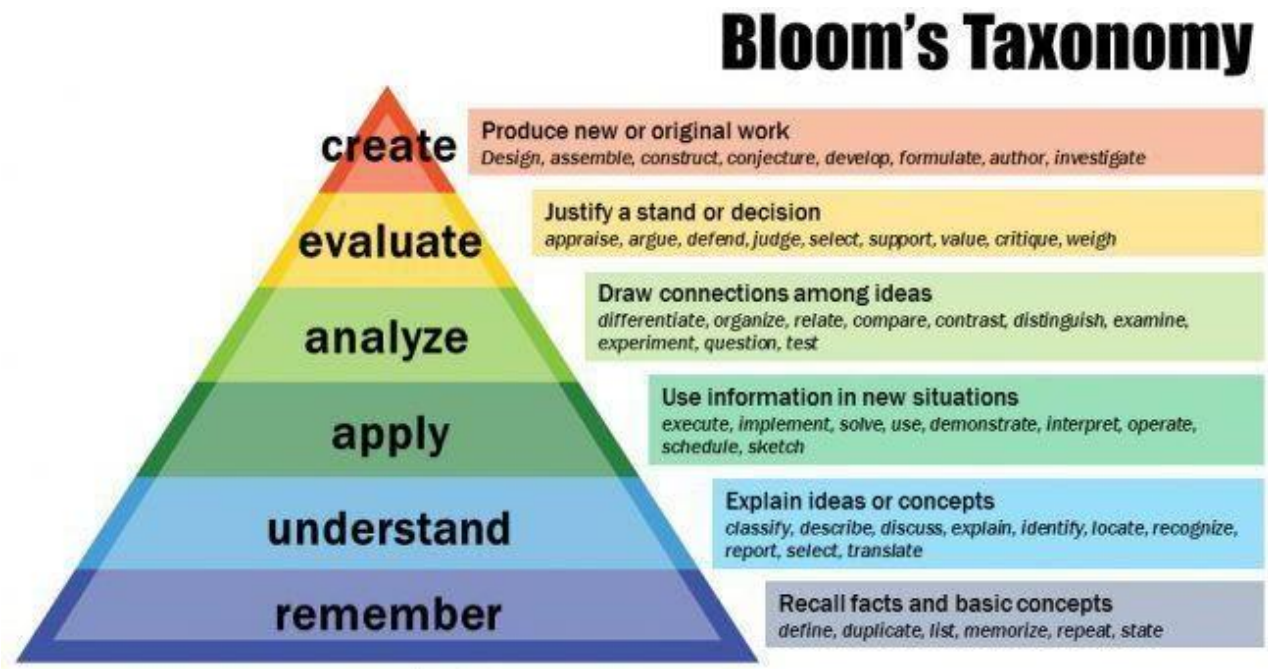


Figure 2 Bloom's Taxonomy Levels

(Source: Vanderbilt University Center for Teaching, YYYY)

The three components of BLPF are linked to Bloom's taxonomy, as shown below. The 1st component Content and Material Delivery is mainly related to Lower order thinking Skills from Bloom's Taxonomy, since the verbs that describe this 1st component (Watch, Read, Listen, Acquire, and Interact) are included in the first three levels of Blooms Taxonomy (Remembering, Understanding and Applying). The 2nd component Engagement and Participation, is linked to the Higher Order Thinking Skills of Bloom's Taxonomy since the focus is on Knowledge Construction. The verbs that describe the 2nd component are: Collaborate, Discuss, Investigate, Practice and Produce, and are included in the 3 upper levels of the Bloom's Taxonomy pyramid (Analysing, Evaluating, Creating). Finally, the 3rd component, Assessment Activities (Summative and Continuous Assessment, Self-Assessment), is linked to both the lower and higher levels of Bloom's Taxonomy since the verbs that describe it (Collaborate, Discuss, Investigate, Practice, Produce, Assess) are included in the following levels of Bloom's Taxonomy (Remembering, Understanding, Analyzing, Evaluating, Creating). Diagram 3 shows the connection between a Blended Learning Environment and Bloom's Taxonomy as well as the different approach employed when a Blended Learning Environment is designed in comparison to the Traditional classroom teaching. Additionally, Diagram 4 briefly describes the main three components of the Blended Learning Pedagogical Framework.

1. Content and Material Delivery = **Lower Order Thinking Skills – Bloom's Taxonomy**

    - Watch, Read, Listen, Acquire = **Remembering, Understanding**
    - Watch, Read, Listen, Acquire and Interact = **Remembering, Understanding, Applying**

2. Engagement and Participation (Knowledge Construction) = **Higher Order Thinking Skills**

    - Collaborate, Discuss, Investigate, Practice and Produce = **Analysing, Evaluating, Creating**

3. Assessment Activities (Summative and Continuous Assessment, Self-Assessment) = **Lower & Higher Order Thinking Skills**

    - Collaborate, Discuss, Investigate, Practice, Produce, Assess = **Remembering, Understanding, Analyzing, Evaluating, Creating**

The following two websites include important information on how to develop learning objectives based on Bloom's Taxonomy. These websites will guide and help the instructors to develop and design the trainings including various activities based on the three teaching and learning components of the BLPF. The suggested websites are the following:

- Applying Bloom's Taxonomy to the Classroom - Technology for Learners
- Using Bloom's Taxonomy to Write Effective Learning Outcomes | Teaching Innovation and Pedagogical Support (uark.edu)

Finally, one more website provides the connection to Bloom's Taxonomy to the use of Digital Tools for each level (See also Diagram 5).

- https://provost.ok.ubc.ca/initiatives/online-transition/faculty-resources/learning-design-2/step1/step1-tech-learning/

Table 1 provides in detail directions to the instructors on how to address the three main components of the Blended learning Pedagogical Framework. Finally, it is important to clarify that there are no models developed for specific disciplines (engineering, education, health, sciences, arts). The BL models, approaches and course types

employed to develop the BLPF were selected based on their uses, applications and success in various disciplines. The instructors have the flexibility to develop material and provide examples that are adjusted to the specific needs of a discipline, and/or group of learners.

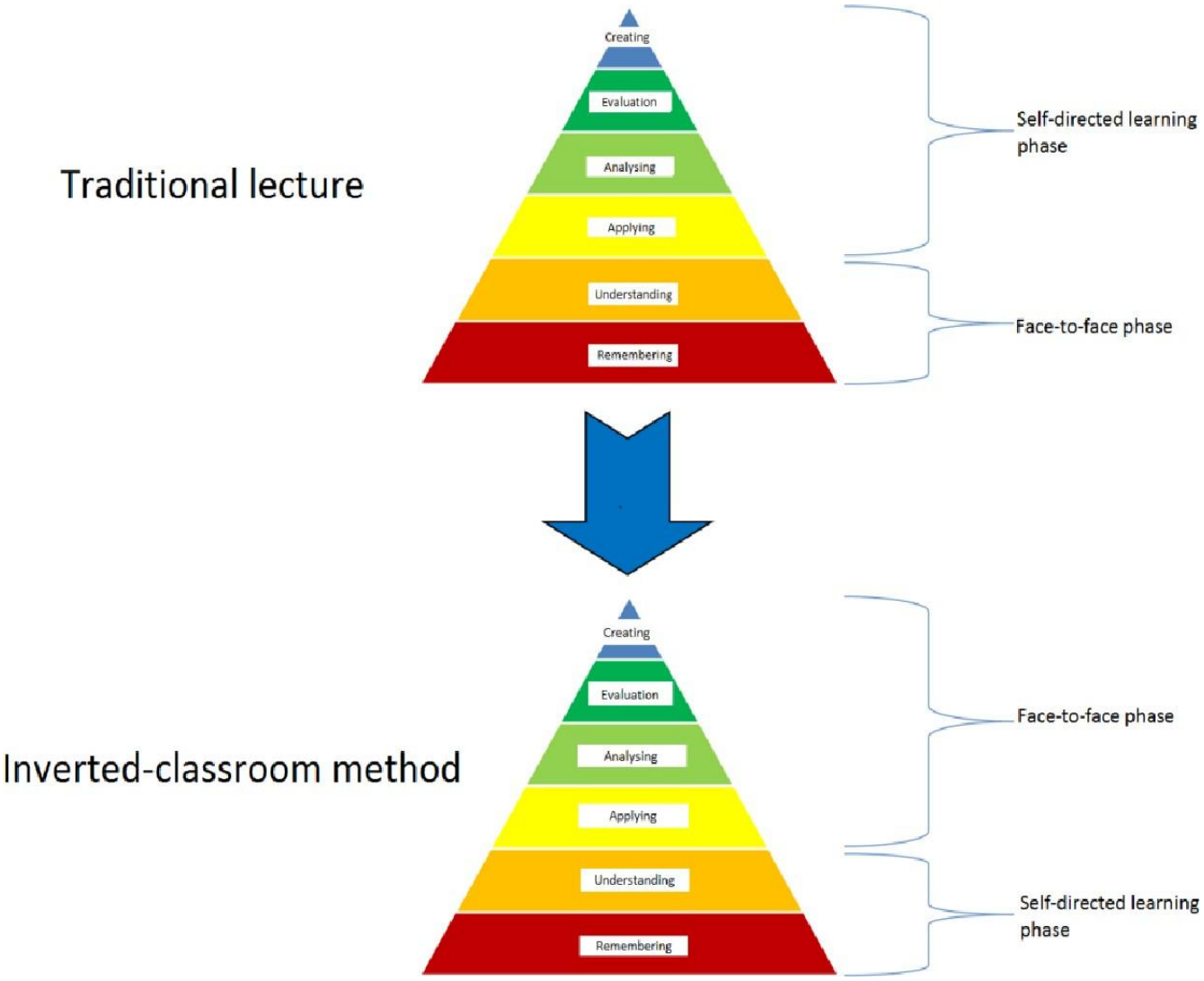


Figure 3 Blended Learning Approach and the connection to Bloom's Taxonomy (Tolks et al, 2016)

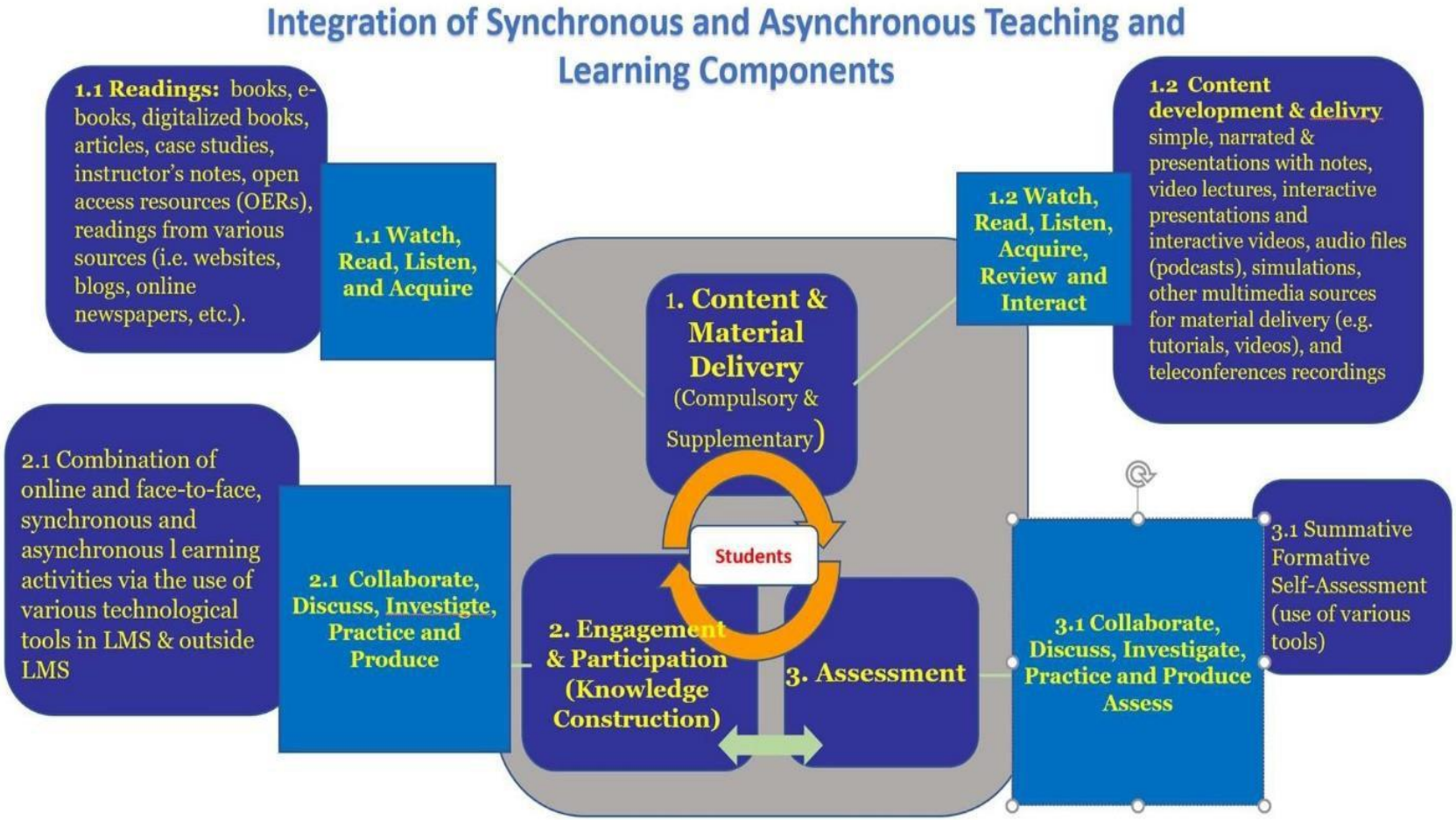


Figure 4 The main three Components of the Blended Learning Pedagogical Framework

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2.3.3 Technological Tools

Instructors are expected to select and integrate a mix of tools to deliver and scaffold learning activities. Strong and extensive use of the Conexus Learning Management System Moodle platform is required. The instructors are encouraged to use build-in platform tools (i.e. for teleconferencing sessions, discussion forums, chat rooms, wikis) as well as tools outside the platform (i.e. online documents, online collaborative boards, live engagement tools, simulations, blogs, online documents, wikis).

The technological tools are grouped in the following categories:

- Communication Tools
- Collaboration, Interaction and Information Sharing Tools
- Content Development Authoring tools
- Assessment and Feedback Tools
- Simulation Tools, Serious Games, Virtual and Augmented Reality Tools.

Table 2 presents suggested Technological Tools to be employed in order to design, develop and deliver teaching and learning in a Blended Environment. The last category of tools (Simulation Tools, Serious Games, Virtual and Augmented Reality Tools) is not presented in the Table. These tools cannot be found within Moodle-LMS and will be employed according to the topic of the training, the cost and if considered extremely necessary. The tools are also categorised in those found in Moodle-LMS and those outside Moodle-LMS. Diagram 5 connects the use of digital tools to Bloom's Taxonomy level, aiming to guide the instructors to use the appropriate digital tools for each level. Finally, a list of indicative tools is given at the Appendix (See Part 3) and the following two websites provide useful information on digital online tools that can be used in the teaching and learning process:

- https://elearningindustry.com/321-free-tools-for-teachers-free-educational-technology
- http://www.c4lpt.co.uk/

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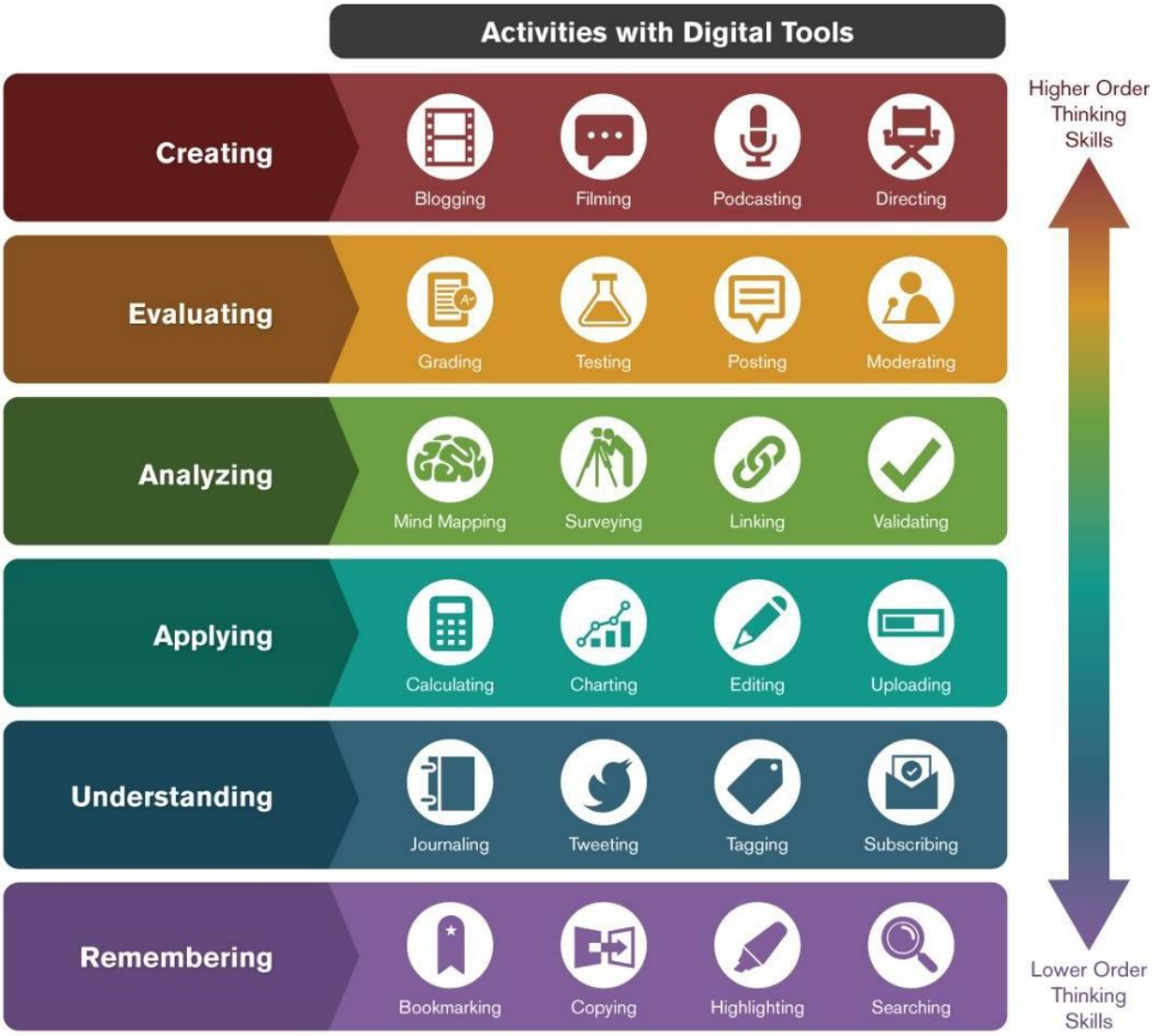


Figure 5 Bloom's Digital Taxonomy

(Source:https://provost.ok.ubc.ca/initiatives/online-transition/faculty-resources/learning-design-2/step1/step1-tech-learning/)

Table 1 Guidelines on the Design, Development and Delivery of the Three Main Components of the BLPF.

The three main components of the BLPF (Directions)	Parameters	Directions (for the Parameters)	Type of activity	Synchronous or Asynchronous AND face-to-face or online	Technological Tools
Content and Material Delivery Directed Learning – Readings & Sources (Complete the list of readings and sources accordingly)	Directions can be further completed by the Instructor Digital Books (chapters, pages)	If necessary	Directions: (at least 5 different types of activities across all 3 main components – check Diagrams 1 and 3 above) Target: variety of activities i.e. Read, Acquire	Target: at least one asynchronous activity **Example:** Asynchronous / online	Directions: at least 3 different types of digital tools – check Table 3 below, report the tool, its type and if inside or outside LMS Target: variety of technological tools and means **Example:** Information sharing tools resource, file, folder or book in Moodle LMS, …
	Articles	At least one per unit or overall of 3-4		**Example*:*** Asynchronous/ online	**Example:** Information sharing tools resource, file, folder or book in Moodle LMS, …
	Open Educational Resources (OERs)	At least one		**Example*:***	**Example:**

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The three main components of the BLPF (Directions)	Parameters	Directions (for the Parameters)	Type of activity	Synchronous or Asynchronous AND face-to-face or online	Technological Tools
				Asynchronous/ online	Information sharing tools link in Moodle LMS, …
	Websites	At least one		**Example*:*** Asynchronous/ online	**Example:** Information sharing tools website in Moodle LMS, …
	…	…		…	…
Content and Material Delivery **Digital-Multimedia Educational Material** (Complete the list of digital educational material accordingly)	Simple presentations	At least one per unit or overall of 3-4	Read, acquire	**Example:** Synchronous/ face-to-face or online via a teleconferencing meeting	**Example:** Content development authoring tools Outside Moodle-LMS - power point, Prezi, Emaze, …
	Annotated presentations	At least one	Read, acquire	**Example:** Asynchronous/ online	**Example:** Content development authoring tools Outside Moodle-LMS - power point, word…

The three main components of the BLPF (Directions)	Parameters	Directions (for the Parameters)	Type of activity	Synchronous or Asynchronous AND face-to-face or online	Technological Tools
	Narrated presentations	At least one	Read, acquire, watch and listen	**Example:** Asynchronous/ online	**Example:** Content development authoring tools Outside Moodle-LMS - Camtasia, youtube channel, power point and audacity, canva, voice thread, flipgrid, …
	Interactive presentations and videos	At least one	Read, acquire, interact	**Example:** Asynchronous/ face-to-face or online	**Example:** Content development authoring tools Inside / Outside Moodle-LM S- power point, H5P, canva, voicethread …
	Recorded lectures	If necessary	Read, acquire, watch and listen	**Example:** Asynchronous/online	**Example:** Communication tools Inside / Outside Moodle-LMS ZOOM, teams, …
	Podcasts	At least one	Read, acquire, listen	**Example:** Asynchronous/ face-to-face or online	**Example:** Content development authoring tools

The three main components of the BLPF (Directions)	**Parameters**	**Directions (for the Parameters)**	**Type of activity**	**Synchronous or Asynchronous AND face-to-face or online**	**Technological Tools**
					Outside Moodle-LMS audacity, audio recorder, mp3 files, …
	Videos	At least one	Read, acquire, listen	**Example:** Asynchronous/ face-to-face or online	**Example:** Information sharing tools Outside Moodle-LMS youtube videos, …
	Tutorials	If necessary	Read, acquire, listen	**Example:** Asynchronous/ face-to-face or online	**Example:** Information sharing tools Outside Moodle-LMS youtube videos, through application website, …
	…	…	…	…	…
Engagement and Participation – activities (Complete the list of activities accordingly)	Collaborative group activities	At least one per unit or overall of 3-4	Discuss, Collaborate, Interact	**Synchronous:** face-to-face or via zoom break out rooms **Asynchronous:** anywhere, anytime via an online tool	***Example*:** *For Synchronous:* Information sharing tools

The three main components of the BLPF (Directions)	Parameters	Directions (for the Parameters)	Type of activity	Synchronous or Asynchronous AND face-to-face or online	Technological Tools
					Through synchronous activities – via printed material, … *For Asynchronous online:* Content development tools and Collaboration tools – google docs, wikis, digital boards, blogs, …
	Learning Scenarios	If necessary	Discuss, Interact	**Synchronous:** face-to-face or via zoom break out rooms **Asynchronous:** via an online tool	***Example*:** *For Synchronous:* Content development tools Through synchronous activities – via printed material, … *For Asynchronous online:* Content development and Collaboration tools – google docs, wikis, digital boards, blogs, Powtoon, …
	Case studies	If necessary	Discuss, Collaborate	**Synchronous:** face-to-face or via zoom break out rooms	***Example*:** Content development tools

The three main components of the BLPF (Directions)	Parameters	Directions (for the Parameters)	Type of activity	Synchronous or Asynchronous AND face-to-face or online	Technological Tools
				Asynchronous: via an online tool	*For Synchronous:* Through synchronous activities – via printed material, … *For Asynchronous online:* Collaboration tools to discuss about case studies – google docs, wikis, digital boards, blogs, …
	Discussions	At least one	Discuss, Interact	**Synchronous:** face-to-face or via zoom break out rooms **Asynchronous:** via an online tool	***Example*:** *For Synchronous:* Live in classroom discussion *For Asynchronous online:* Collaborative tools such as wikis, digital boards, blogs, padlet, forum …
	Debate	At least one	Collaborate, Discuss, Interact	**Synchronous:** face-to-face or via zoom break out rooms **Asynchronous:** via an online tool	***Example*:** *For Synchronous:* Live debate *For Asynchronous online:* Collaborative tools such as

The three main components of the BLPF (Directions)	Parameters	Directions (for the Parameters)	Type of activity	Synchronous or Asynchronous AND face-to-face or online	Technological Tools
					wikis, digital boards, blogs, padlet, forum …
	Role Playing	If necessary	Collaborate, Discuss, Interact	**Synchronous:** face-to-face or via zoom break out rooms **Asynchronous:** via an online tool	***Example*:** *For Synchronous:* Live activity *For Asynchronous online:* Collaborative tools to create avatars such as voki, …
	Simulations/ Serious games / VR or AR experience	If necessary	Interact, Practice	**Synchronous:** face-to-face or via zoom break out rooms **Asynchronous:** via an online tool	***Example*:** *For Synchronous or/ and Asynchronous online:* link or plugin in Moodle LMS, …
	…				
Assessment	Formative	If necessary	Assess	**Synchronous:** face-to-face or via zoom break out rooms **Asynchronous:** via an online tool	***Example*:** *For Synchronous or/ and Asynchronous online:* midterms, quizzes, (quizziz, quizlet, …) …

The three main components of the BLPF (Directions)	**Parameters**	**Directions (for the Parameters)**	**Type of activity**	**Synchronous or Asynchronous AND face-to-face or online**	**Technological Tools**
	Summative	At least one	Assess	**Synchronous:** face-to-face or via zoom break out rooms **Asynchronous:** via an online tool	***Example*:** *For Synchronous or/ and Asynchronous online:* discussion, activities, participation, …
	Self-Evaluation	At least two Or By the end of each unit	Assess	**Asynchronous:** via an online tool	***Example*:** *For Asynchronous online:* quizzes (quizziz, quizlet, …), reflecting calendar (blog, …), …

Table 2 Technological Tools to Design and Deliver a Blended Learning Environment

	Communication Tools	Collaboration, Interaction & Information Sharing Tools	Content Development Authoring Tools	Assessment & Feedback Tools
Within the Learning Management System - Moodle:	Send message, Email Announcement Teleconferencing tool: it is up to each University to decide: i.e. ZOOM, teams, Big Blue Button Chat rooms for text conferencing and instant messaging)	Collaboration/Interaction Discussion forums Blogs Wikis Information/ Documents sharing Upload file / folder Insert Page Label URL for external sources, OERs, digital free books, articles, videos and pictures sharing	Annotated presentations and notes: M.S. Word & M.S. Power Point Narrated presentations and notes: M.S. Power Point (Add Ins: Insert> Screen Recording) & H5P Interactive presentations and notes: H5P	Online quizzes Assignment resource Feedback (text, video and audio) via the Assignment resource Feedback Resource
Outside Moodle:	Synchronous classes on Teams, Zoom, etc.	Collaboration/Interaction Blogs (i.e. Blogger, Wordpress) Wikis (i.e. Wikispace) Collaborative documents, collaborative online boards, live engagement tools, mind mapping tools	Narrated presentations and notes Adobe Presenter, Camtasia, Snag it, Jing Podcasts Audacity Learning Scenarios	Kahoot Quizziz Quizzlet Question pools

	Communication Tools	Collaboration, Interaction & Information Sharing Tools	Content Development Authoring Tools	Assessment & Feedback Tools
		Information/ Documents sharing – Next Cloud		

3. Discussion/content:

The development and implementation of the EU-CONEXUS Teaching Academy represented a complex, multi-stage process involving the implementation of a common pedagogical framework into nine professional development programmes, their delivery through a train-the-trainers model and their subsequent replication across partner universities (local implementation). The pedagogical framework successfully provided a shared foundation for this process for a successful coordination, scheduling, standardisation, local adaptation and implementation, participant recruitment, monitoring and the sustainability of the training outcomes.

The pedagogical framework was position as the backbone, the means of promoting consistency, homogeneity, accountability and quality control while remaining adaptable and customisable. The framework provided a common structure for the study guides, syllabi, Moodle courses, learning activities and assessment processes without imposing a uniform approach that ignored disciplinary or institutional differences.

The pedagogical framework established minimum quality requirements while allowing expert trainers to adjust the content, learning sequence, digital tools, examples and assessment activities. Common templates helped maintain alignment across the Academy, but the expert trainers were provided sufficient autonomy to adapt materials to the topic, mode of delivery and participants' professional contexts.

4. Conclusions

Each instructor (in other words expert trainers) is responsible to design, develop and deliver the training to the learners (the trainees - participants from each EU-CONEXUS partner country). The train-the-trainers approach is employed. Thus, the trainees will use the material developed for each training in order to deliver the same training to their universities. The instructors (expert trainers) are expected to develop study guides for each training as well as to set up the training at the EU-CONEXUS Moodle LMS Platform. The Study Guide template is expected to be used (as per the template document uploaded in the collaborative platform). The template is developed and is aligned to the BLFP. Finally, each training website on Moodle is expected to follow the structure provided below (See Appendix Part 4). The structure is aligned to the BLPF and the Study Guide. FU, the leader of WP5 will supervise and guide the process of the study guide development as well as be responsible for the design elements of the platform to appropriate represent each of the topics' elements.

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5. APPENDIX

5.1 Part 1. Alternative BL Models and Course Types

Alternative Model 1: Switch between online and face to face, either every session or every other session.

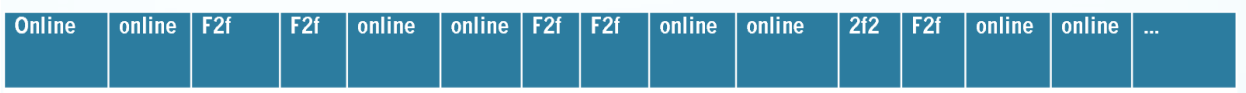
- Example 1:

  (a) online, f2f, online, f2f, online, f2f, …, …., online, f2f,….



- Example 2:

  (a) online, online, f2f, f2f, online, online, f2f, f2f, online, online, f2f, f2f,…, …., online, online, f2f, f2f, ….



Note: other combinations of online and f2f sessions may apply

Alternative Model 2: Develop a learning network between online and face to face

- Example 1:

(a) a number of f2f sessions at the beginning (for example, ¼ of the course sessions), then continuous online sessions (for example, 2/4 of the course sessions) and then the rest of the sessions to be delivered f2f (1/4 of the course sessions).



(b) a number of online sessions at the beginning (for example, ¼), then continuous f2f sessions (2/4) and then the rest of the sessions to be delivered online (¼ of the course sessions).



Alternative Model 3: Mainly focus on one learning space (development of one learning space) for a specific period of time and then conclude the course with the other learning space

- Example 1:

(a) The majority of the courses to be continuously delivered online (for example, ¾ of the course sessions) and the remaining to be delivered f2f



(b) A small proportion of the sessions to be delivered online (for example, ¼ of the sessions) and the majority of the sessions to be delivered f2f (for example, ¾ of the sessions to be delivered f2f)



Note: other combinations of online and f2f sessions may apply

- Example 2:

(a) The majority of the courses to be continuously delivered face to face online (for example, ¾ of the course sessions) and the remaining to be delivered online.



(b) A small proportion of the sessions to be delivered f2f (for example, ¼ of the sessions) and the majority of the sessions to be delivered online (for example, ¾ of the sessions to be delivered online)



Note: other combinations of online and f2f sessions may apply

Alternative Model 4: The Continuous Approach: the f2f session is an extend/ a continuity of the online session (online – face to face/ online-face to face)

- Example 1:

  (a) All of the sessions are delivered online **OR**

  (b) the majority is delivered online and the rest are delivered f2f



Note: other combinations of online and f2f sessions may apply

5.2 Part 2. Suggested Teaching and Learning Activities

(1) Face-to-face (in-classroom) synchronous time and Online synchronous time

- Content delivery
- Lecturing
- Group and individual exercises and activities (i.e. break out rooms for the online synchronous sessions), i.e.:
  - Research on specific subject
  - Presentations
  - Case studies work
  - Role playing
  - Problem solving scenarios
  - Simulations
  - interactive educational games,
  - interactive scenarios for problem solving

(2) Collaborative Online sessions (asynchronous)

- Mini--lecture video reviews, or screencasts,
- Narrated/ annotated/ interactive documents, presentations and videos

- Online interactive collaborative asynchronous activities (i.e. using collaborative boards and documents)
- Q & A sessions on the content delivered and assignments
- Group online discussions (i.e. forums)
- Artefacts development
- Focus on exercises (i.e. practicing and solving exercises).
- Feedback (i.e. via emails, discussion forums)

5.3 Part 3. Indicative List of Tools

1. Pixton - https://www.pixton.com/?classic
2. Flipgrid - https://info.flipgrid.com/
3. Peardeck - https://www.peardeck.com/
4. Mindmeister - https://www.mindmeister.com/
5. Popplet - https://www.popplet.com/
6. Bubbl.us - https://bubbl.us/
7. Poster my wall - https://www.postermywall.com/
8. Powtoon – https://www.powtoon.com/
9. Canva - https://www.canva.com/create/comic-strips/
10. Quizizz - https://quizizz.com
11. Miro – https://miro.com
12. Quizlet - https://quizlet.com/
13. Animoto - https://animoto.com/
14. Kami - https://www.kamiapp.com/
15. Powerpoint templates για διαδραστικά παιχνίδια: - https://www.lifewire.com/free-powerpoint-games-for-teachers-1358169

16. WorldWalll - https://wordwall.net/
17. Speechnotes - https://speechnotes.co/
18. Lino - https://en.linoit.com/
19. Jamboard - https://jamboard.google.com
20. Infogram - https://infogram.com/

5.4 Part 4. Template – Suggested Elements for the Course - Training Website

Label 1: Getting started (Introduction/ Preparation for the training)

- Welcome message from the instructors
- Biographical notes of the instructors – maybe videos or page
- Let's get to know each other forum
- Q&A forum
- Syllabus of the Training (Template Developed)
- Contact details of the instructors (email)

Label 2: Title of the unit

Short Description of the Unit (from the Study Guide – short description, main aim and research objectives)

Readings (digital books, articles, websites,…)

Educational Material (simple presentation, annotated presentation, interactive presentation & videos,…)

Activities (Collaborative group activities, Discussions, Debate,…)

Assessment (if necessary) & Self – Assessment (if necessary)

Label 2: Title of the unit

Title of the unit

Short Description of the Unit (from the Study Guide – short description, main aim and research objectives)

Readings (digital books, articles, websites,…)

Educational Material (simple presentation, annotated presentation, interactive presentation & videos,…)

Activities (Collaborative group activities, Discussions, Debate,…)

Assessment (if necessary) & Self – Assessment (if necessary)