MODULE 5
DIGITAL TEACHING AND LEARNING

5.3 ONLINE-BASED LESSON PREPARATION & CONDUCTION

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Introduction

What is the CONTESSA course?

The CONTESSA course is one of the results of the "Contemporary Teaching Skills for South Asia" project co-funded by the Erasmus+ Program of the European Union. Its aim is to be a contribution to establishing successful teacher education programs for primary teachers, particularly in Cambodia and Sri Lanka, which will create a long-lasting positive impact on the overall educational systems.

It is increasingly important for successful educators to stay up-to-date with contemporary skills and methods to use inside and outside of the classroom. The CONTESSA course therefore offers five carefully selected modules, each of which contain three focuses aimed at the development of contemporary teaching skills. The modules and their focuses are as follows:

Module 1. Building Blocks of Primary Education
1. Twenty-First Century Teaching and Learning
2. Lesson Planning and Methodological Skills: Concepts, Tools and Application
3. Designing Learning Environments

Module 2. Excellence in Teaching: Profession-Specific Competences of Primary School Teachers
1. Teaching Comprehension: Roles, Tasks and Functions
2. Assessing Learning Results
3. Pedagogical Professionalization

Module 3: Learner-Centered Primary Education: Enhancing Co-Created Learning Processes
1. Individual Development and Problem-Solving Skills
2. Lifeworld-References and Future Prospect
3. Self-Determination, Empowerment and Self-Efficacy

Module 4: Embracing the Differences: Pedagogic Approaches to Diversity, Heterogeneity, Special Needs
1. Inclusive Pedagogy: Approaches and Strategies
2. Teaching and Learning in Diversity: Preparation, Realization, Assessment
3. Diversity-Sensitive Classroom Management

Module 5: Digital Teaching and Learning
1. E-Pedagogy and Digitally Enhanced Learning Environments
2. Digital Media and Technology: Tools and Formats for Educational Purposes
3. Online-Based Lesson Preparation and Conduction

Upon completion of this course, participants will be able to implement newly acquired contemporary teaching skills, engage all students in classroom activities and learn new ways to help students reach their full potential.

Who is the CONTESSA course for?

The "Contemporary Teaching Skills for South Asia" project aims at promoting contemporary teaching skills for pre-service and in-service teachers working in primary schools. The following document is specifically adapted for pre-service teachers.

Furthermore, the CONTESSA course is available for anyone interested in staying up-to-date with contemporary teaching skills.

This is the English version of the CONTESSA course. Material is also available in Khmer, Sinhala and Tamil.

What is the structure of the CONTESSA course?

As mentioned before, the CONTESSA course consists of five modules, each worth the equivalent of 3 ECTS. Ideally, the modules are all used together since individual modules refer to other modules, but they are also designed in a way that each one can be used on its own.

Each module contains three thematic focuses and documents are available for each focus. This makes a total of 15 documents available in the CONTESSA course. Each document contains a theoretical introduction to the focus, followed by practice exercises based on the theory. **STEP 1 – THEORY –** is meant as a revision of what has been read in the theoretical introduction. Practice exercises check the comprehension of the text to make sure that the underlying theory has been understood. **STEP 2 – EXPERIENCE –** offers examples of real teachers and how they practically implement the theory explained in the theoretical introduction. These examples are again connected to practice exercises which are meant to allow for the application of the previously learned theoretical knowledge. **STEP 3 – (SELF-)REFLECTION –** includes reflection questions based on each focus. **STEP 4 – PRACTICE –** is the final STEP where a teaching project is created based on what has been seen before in STEPs 1 and 2.

The practice exercises in STEPs 1 and 2 can be directly completed in this document. STEPs 3 and 4 are part of a separate portfolio document which has to be created by each individual. A template for this portfolio is available as a separate document.

TABLE OF CONTENTS

1 PREPARING A DIGITALLY ENHANCED LESSON

As seen in Module 5, Focus 1, today's children grow up in an environment which is increasingly shaped by digital technologies. They are part of the students' lives and therefore need to be considered in teaching and learning as well. There has also been a discussion on the different types of digitally enhanced learning environments: The smart classroom, or smart learning environment, has been presented as an embedded case since both the physical as well as the digital aspects of the learning environment are intertwined in a way that they complete each other and thus support the learner's learning experience. However, the embedded case is an ideal situation, which will probably not be found in the average school or classroom. It is thus more realistic to treat the average classroom as a side-by-side case, which adds digital devices to its physical environment "to support additional learning functions such as information, support, tests and feedback, but the digital devices are ignorant of the actual physical environment" (Koper, 2014, p. 3). It also has to be considered that most primary schools and their students are limited in their access to digital technologies inside or outside of the classroom, and that the way primary school children learn should in fact not solely rely on digitally enhanced practices. However, teachers can still prepare their teaching with the help of online tools such as search engines, pictures or videos, and thus globally broaden their resources to support their students' learning process.

When preparing a digitally enhanced lesson in a side-by-side case, teachers are confronted with a multitude of different online tools, which are constantly further developed and joined by new tools. Teachers therefore need guidance when choosing and using such tools in their teaching and learning. (Hamilton, Rosenberg, & Akcaoglu, 2016) The SAMR model is meant to be such a guidance. It consists of four

categories, each one of them characterized by its degree of integrating digital technology into the teaching/learning process.

Redefinition	Modification
Technology allows for the creation of NEW tasks, previously inconceivable	Technology allows for SIGNIFICANT task redesign

Assignments

Augmentation	Substitution
Technology acts as a direct tool substitute, WITH functional improvement	Technology acts as a direct tool substitute, with NO functional change
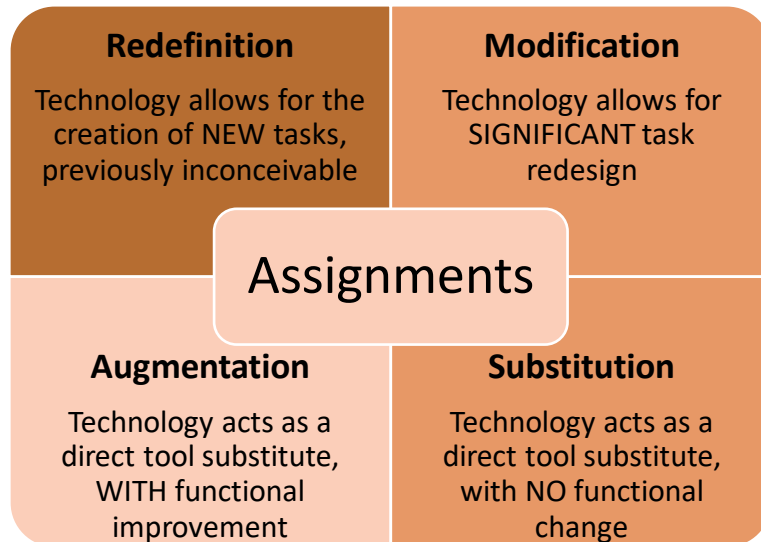
Figure 1: SAMR Model[1]

Substitution is the first category of the model and describes the simple replacement of an analog technology with a digital one. An example would be the use of a computer with writing software instead of a handwritten text or the substitution of a blackboard with a smart board. In the next category, Augmentation, analog technology is again replaced by digital technology, which creates additional learning opportunities and enlarged functional possibilities. Staying with the example of the smart board, it is possible to save the text written on it and send it to students (e.g., for students who missed the class due to illness). Another example is the spell checker in writing software, which automatically corrects text, or the ability to easily revise text in a writing software program on the computer (Brägger, n.d.). In the third category, Modification, "technology integration requires a significant redesign of a task" (Hamilton et al., 2016, p. 435). Students no longer have to be physically present at the same time and place when working on a project, but they can collaborate through an online-based tool such as a learning management system, for example. Finally, Redefinition is the fourth and

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[1] Adapted from Hamilton et al. (2016, p. 434) and Brägger (n.d., online).

last category of the SAMR model. It relates to the creation of new tasks with digital technology, which were previously (without the digital technology) not producible. For instance, the presentation of ideas "through individually created and edited videos" (Hamilton et al., 2016, p. 435).

The SAMR model offers teachers the opportunity to reflect on and develop their own teaching with regard to the use of digital media and technology. However, it should not be understood as a model where the teacher develops from one level to the next, leaving the previous levels behind. The SAMR model rather creates a framework for how to incorporate technology/media in the classroom. The four categories of the model therefore complement each other and represent equal opportunities that can be used depending on the teaching situation and the media skills of the learners. It is also not about assigning specific tools or applications to the individual categories, but generally about how these tools and applications are used in the classroom. One and the same tool can possibly be used in different forms in different categories. For teaching purposes, each category also means an expansion of media literacy, both on the part of the teacher and on the part of the learners. (Townsend, n.d.)

What a particular online based lesson looks like is, to a great extent, determined by the pedagogical approaches and the technological tools used by the teacher. As emerging technologies provide a teacher with a vast range of options to select from, conducting online-based lessons requires careful didactic planning. This planning should be guided by approaches that suit online teaching. In addition, primary school teachers should pay particular attention to incorporating suitable pedagogical approaches that are sensitive to the learning needs and the developmental stage of their students.

With the SAMR model in mind, teachers should plan their digitally enhanced lesson. As seen in Module 1, Focus 2, the *Tree Model* is one

possible guideline for planning an effective learning/teaching experience. In the context of the digitally enhanced classroom, additional considerations have to be taken into account on the teacher/teaching part, and digital tools are proposed for the learner/learning part.

Table 1: The Tree Model/Digital

TEACHER / TEACHING	LEARNER / LEARNING
ROOTS Ask the following questions: - What is the students' prior knowledge and competences in regard to digitally enhanced methods and learning material? - Which digital resources are available?	**ROOTS** Ideas: ☐ Digital presentation tools (e.g., PowerPoint) for communicating learning objectives (either as printouts or in its digital version) ☐ Communication tools (e.g., e-mail) for communicating learning objectives ☐ Digital brainstorming tools (e.g., Mentimeter) for brainstorming and repetition of previous lessons ☐ Videos, online images, and Internet resources for linking the lesson to the personal lives of students, illustrating the relevance of the lesson, presenting a problem (for preparation, as printouts or in its digital version in class)
GROWTH Ask the following questions: - Which digitally enhanced methods will support the students' development of essential competences? Which digital material/media will support the students' development of essential competences?	**GROWTH** Ideas: ☐ Digital presentation tools (e.g., PowerPoint) for demonstration, lecture, guest speaker, presentation, projects (either as printouts or in its digital version) ☐ Videos, online images, and Internet resources for

- How can analog tasks be expanded or redesigned through the use of digital media? Which digital tools are suitable? - How can digitally enhanced teaching offer more flexible support for students? What alternative do I have if the prepared digital material/media stops working during a lesson?	demonstration, lecture, guest speaker, presentation, projects (for preparation, as printouts or in its digital version in class) ☐ Communication tools (e.g., e-mail) for demonstration, lecture, guest speaker, presentation, projects ☐ Flipped classroom ☐ Educational games for play
BLOSSOMING • Development of digitally enhanced content • Development of flexible alternatives if digital devices stop working during the lesson • Development of digitally enhanced ways of monitoring and measuring the achievement of learning progress/set learning objectives	**BLOSSOMING** ☐ Learning Management Systems (LMS) for classroom discussions, role playing, case studies, book reports ☐ Digital presentation tools (e.g., PowerPoint) for case studies, book reports (either as printouts or in its digital version) ☐ Videos, online images, and Internet resources for case studies, book reports (for preparation, as printouts or in its digital version in class) ☐ Digital quiz tools (e.g., Quizlet) for quizzes, memory, flash cards (either as printouts or in its digital version) ☐ Communication tools (e.g., e-mail) for case studies, book reports, quizzes, memory, flash cards
RENEWAL Ask the following questions: - How effective were the digitally enhanced methods/material/media for the students' learning progress?	**RENEWAL** ☐ Digital presentation tools (e.g., PowerPoint) for lesson summaries (either as printouts or in its digital version) ☐ Digital quiz tools (e.g., Quizlet) for informal/formal

- Is there anything that needs to be changed or adapted? - Was there a particular gain for individual students by using digital methods/material/media?	quizzes (either as printouts or in its digital version) ☐ Digital brainstorming tools (e.g., Mentimeter) for lesson summaries ☐ Communication tools (e.g., e-mail) for lesson summaries ☐ Learning Management Systems (LMS) for lesson summaries, informal/formal quizzes

2 THE DIGITALLY ENHANCED LESSON

2.1 The Flipped Classroom

Flipped or inverted classrooms are a combination of traditional and digitally enhanced teaching. The students study a topic, which was introduced by the teacher, at home. They use different media, digital and non-digital, such as the Internet, textbooks, or recorded presentations (screencasts). The information thus gained will then be deepened in the physical learning environment together with the teacher and the rest of the class. The goal is not to replace the physical and teacher-guided classes with self-study, but rather to reduce the teacher-centered way of lecturing where the teacher is only an imparter of knowledge and the student a passive recipient. During the self-study periods, students can decide themselves how often they want to watch a video or listen to an audio file, what kind of text-based resource they want to consult, or on which part they want to put their study focus. The meetings in the classroom are then for practice, discussions and to deepen the previously gained knowledge. The teacher turns from a presenter of information into a guide of working and discussion groups who supports students in solving problems and finding answers. (Zickwolf & Kauffeld, 2019; Li, Zhang, Hu, 2018; Hang, 2019; Huang, 2019) On the part of the students, they learn to acquire

knowledge by themselves with the help of diverse materials. Additionally, they gain knowledge through collaboration with their peers.

Table 2: Classroom Teaching Forms in the Flipped Classroom[2]

Classroom Teaching Forms in the Flipped Classroom	
Teacher	learning guide and accompanier
Student	explorer
Teaching Media	varying multimedia materials, Internet, textbooks…
Teaching Method	combination of multiple methods
Teaching Form	learning the basic content before class and deepening that knowledge in class
Classroom Content	problem solving, concept extension and application
Evaluation Method	multi-link and multi-way

Advantages:

- Ubiquity – The flipped classroom breaks the limitation of time and space. Students can learn wherever and whenever they want. Traditional teaching is limited to the time spent in class. Students in the flipped classroom acquire relevant information before the actual lesson. The time in class can then be used for collaboration and supporting each other with the guidance of the teacher. (Hang, 2019)

- Flexibility – Students can decide themselves how they want to acquire knowledge and competencies.

Disadvantages:

- Time – There is a higher effort of material preparation on the part of the teacher.

- Motivation –The teacher cannot influence the self-study phase. For some students, self-study is more of a challenge, which is why the teacher needs to support these students in becoming independent

[2] Adapted from Huang (2019).

learners. In some cases, teachers might not be aware of students' needs for additional support or might not be aware of the technological limitations certain students are facing. All these aspects have to be considered when planning and teaching a flipped classroom.

- Equipment – Students might not have the necessary equipment at home to access learning material and resources.

2.2 Digitally Enhanced Collaboration

As seen in Module 3, Focus 3, collaboration can empower students. Technology is able to support this collaboration in ways that would not be possible with analog technology. Technical devices can ease the flow of information and the communication between the teacher and the students but also within the individual groups.

The use of technology for collaborative learning is not limited to the students. Teachers can also collaborate with colleagues (*Collaborative Learning in Primary Schools*, n.d.). The technology in smart classes enables many possibilities. For example, another teacher could be part of class via video streaming and give the students some input on a special topic. Or two classes can work together over video streaming and learn from each other.

> Older students […] [prepare] a lesson for younger students; a group of students create a product and then present it in front of a bigger community, possibly outside their school; students take part in solving a real world problem, e.g. they virtually connect and collaborate with a group of scientists who are currently on an expedition (analyzing environment, climatic changes etc.); teachers and students work together to learn about compelling issues, propose solutions to real problems, and take action; teachers encourage students to reflect on their learning, realize the impact of their actions, and publish their solutions to a worldwide audience. Examples of regional, national or

international collaboration, e.g. videoconferencing with other schools or other partners. (UNESCO, 2014, p. 112)

Advantages:

- Ubiquity – Presentations can be prepared on tablets or smartphones, which makes it unnecessary for students to be at the same place or even work together at the same time.

- Flexibility – Presentations can be shared via the smart board, projector, or document camera. When using a smart board, it is even possible to add notes and rearrange them directly on the board. When it comes to rules for collaborative work, these can also be written and displayed on the smart board as a reminder for students.

Disadvantages:

- Handling – The use of digitally enhanced collaborative learning requires a certain amount of digital competence on the part of the teacher as well as the students. Students should be able to use the software and/or the devices they need for their work or know how to inform themselves about their functionality. This means that the students first have to have acquired the ability for reflection and self-learning. (Iglesias Rodriguez, García Riaza, & Cruz Sánchez Gómez, 2017)

- Equipment – Schools might not have the necessary equipment for digitally enhanced collaboration.

2.3 Digital Storytelling

Today's youth are acquiring sophisticated media production and distribution skills, skills which "could be useful to transition to academic achievement" (Morrel, Duenas, Garcia, & Lopez, 2013, p. 2). An example would be the digital delivery of powerful stories. Digital storytelling has thus emerged over the last few years as a powerful teaching and learning tool that engages both teachers and their students. (Robin, 2008)

Throughout the history of human and social development, storytelling has been used as a tool for the transmission and sharing of knowledge and values, because it is a natural and yet powerful technique to communicate and exchange knowledge and experiences. Its application in the classroom is also not new; and in relation to the use of storytelling in the classroom […], "Storytelling is a process where students personalise what they learn and construct their own meaning and knowledge from the stories they hear and tell" (Behmer, 2005).

Over the last two decades, however, much has changed in how stories can be planned and created; and, as a result, how multimedia can be used to facilitate the dissemination of stories. With the increased use of computers to tell stories, by using a variety of hardware and software systems, there has been a significant improvement in the way stories can be created and presented (Van Gils, 2005). […] "People have always told stories. It has been part of our tradition and heritage since the time we gathered around the fire to share our stories. Today people still tell stories, but now we have new media tools with which to share them. A digital story can hence be seen as a merger between the old storytelling tradition and the use of new technology" (Normann, 2011). To some extent, traditional storytelling and the application of computer technology in education have followed different paths to date (Banaszewski, 2005). Thus, there is a need to further increase the convergence of storytelling and the use of computers in the classroom. It has been argued that technology is more useful when it is used as part of a broader educational improvement agenda (Pitler, 2006).

Fortuitously, with the increase in computer power and associated cost reduction, computers and related technologies can play a significant role in making storytelling a more widely used pedagogical tool, given that "[d]igital storytelling provides students with a strong foundation in what are being called '21st Century Skills'" (Miller, 2009).

[…] [C]omputers, digital cameras, editing software, and other technologies are becoming more readily accessible in the classrooms, and

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Co-funded by the
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provide learners and teachers with the tools to create digital stories more easily than ever before (Armstrong, 2003). Furthermore, digital storytelling helps students to develop their creativity to solve important problems in innovative ways (Ohler, 2008). It is an effective pedagogical tool that enhances learners' motivation, and provides learners with a learning environment conducive for story construction through collaboration, reflection and interpersonal communication. Students can use multimedia software tools as well as other technology skills to create digital stories based on given educational issues.[3]

The following examples offer possibilities on how to use digital storytelling in class:

- Show already existing digital stories to the students to introduce a topic or capture their attention at the beginning of a new lesson.

- Create your own digital story to introduce a topic to the students or capture their attention at the beginning of a new lesson.

- Let students create their own digital story. This can either be an individual story or group work.

- Use digital storytelling to let your students tell personal stories.

(Robin, 2008)

- Use digital storytelling "to recount events from history. In a classroom environment, students might use historical photographs, newspaper headlines, speeches, and other available material to craft a story that adds depth and meaning to events from the past" (Robin, 2008, p. 225).

Advantages of using digital storytelling in class:

- Diversification – Digital storytelling allows you to combine written text with audio and visuals and thus reach a variety of different learning types.

- Comprehension – Digital storytelling makes "abstract or conceptual content more understandable" (Robin, 2008, p. 222).

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[3] Taken from Smeda, Dakich, & Sharda (2014, p. 2ff.). CC BY 4.0. Changes made to all CC BY texts in this document are indicated in italics or square brackets.

- Skills – Students, as well as teachers, develop digital literacy skills. (Robin, 2008)

- Engagement – Digital storytelling allows students to engage more with what they are learning since it is "customised to their needs and challenges, which makes it more realistic" (Smeda, Dakich, & Sharda, 2014, p. 12).

- Collaboration – Students collaborate and communicate when creating their own digital story since they have to share resources online and help each other using those resources.

- Independence – After initial instruction by the teachers, students work on their own. The teacher becomes a facilitator, while students can use their own ideas for creating their digital story.

- Creativity – Students can use their creativity when creating their digital stories.

(Smeda et al., 2014)

Disadvantages of using digital storytelling in class:

- Know-How – Teachers need to have the necessary technical know-how in order to support students in creating their digital stories. (Smeda et al., 2014)

- Limits – Primary school students might not have the necessary competencies to work with technology to create their digital story. (Smeda et al., 2014)

- Equipment – The school might not have the necessary equipment to create or show digital stories. For classes where there are no smart boards or computers to show digital stories, teachers could use a television screen and connect their smartphone or project the smartphone's screen with the help of a document camera. Alternatively, the stories can be retold, and accompanying pictures can be printed, and audio can be played on the teacher's smartphone.

- Equipment – Students might not have the necessary equipment at home to work on their digital story.

2.4   Open Educational Resources

Open educational resources (OER) are teaching and learning materials that can be freely accessed, used, modified, and distributed by anyone without charge. […] Any material that can be used for the purpose of teaching or learning is an educational resource, whether in printed or digital format. This typically includes various types of texts (essays, handouts, books…) and teaching materials (presentation slides, worksheets, syllabi…) as well as pictures, music, videos, podcasts, blogs, apps, and websites. Even entire online courses can be provided as OER. […] The creators of these materials make use of specific licensing models that were designed to regulate the continued use of free resources. […] Creative Commons is the most widely used licensing system for the facilitation of a less restricted use of copyright protected works. To achieve this, the non-profit organization Creative Commons provides a selection of licenses in plain language that stipulate various simple conditions for the free use of materials. This makes it a lot easier to use other people's resources – anyone can use materials that are available under a Creative Commons license, and there are fewer aspects to consider in comparison to the complex rules and far more restricted use under copyright law. The approach of the Creative Commons licensing system thus follows a completely opposite rule: Anything is allowed except that which is expressly forbidden. The Creative Commons licenses are valid internationally and without any geographical limitation. If, say, a teacher decides to make their educational materials available to the public, all they have to do is select an appropriate license and apply it to their own work.[4]

The table below offers an oversight of the Creative Commons licenses and their possibilities. These licenses can also be used to share one's own teaching material, online as well as offline.

Table 3: Creative Commons Licenses[5]

	CC BY	**Attribution:** This license allows reusers to distribute, remix, adapt, and build upon the material in any medium or format, so

		long as attribution is given to the creator. The license allows for commercial use.
	CC BY-SA	**Attribution – ShareAlike:** This license allows reusers to distribute, remix, adapt, and build upon the material in any medium or format, so long as attribution is given to the creator. The license allows for commercial use. If you remix, adapt, or build upon the material, you must license the modified material under identical terms.
	CC BY-NC	**Attribution – NonCommercial:** This license allows reusers to distribute, remix, adapt, and build upon the material in any medium or format for noncommercial purposes only, and only so long as attribution is given to the creator.
	CC BY-NC-SA	**Attribution – NonCommercial – ShareAlike:** This license allows reusers to distribute, remix, adapt, and build upon the material in any medium or format for noncommercial purposes only, and only so long as attribution is given to the creator. If you remix, adapt, or build upon the material, you must license the modified material under identical terms.
	CC BY-ND	**Attribution – NoDerivatives:** This license allows reusers to copy and distribute the material in any medium or format in unadapted form only, and only so long as attribution is given to the creator. The license allows for commercial use.
	CC BY-NC-ND	**Attribution – NonCommercial – NoDerivatives:** This license allows reusers to copy and distribute the material in any medium or format in unadapted form only, for noncommercial purposes only, and only so long as attribution is given to the creator.
	CC0	**Universal:** A public dedication tool, which allows creators to give up their copyright and put their works into the worldwide public domain. CC0 allows reusers to distribute, remix, adapt, and build upon the material in any medium or format, with no conditions.

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[4] Taken from Zimmermann (2018, p. 2ff.). CC BY 4.0.
[5] Adapted from *About CC Licenses* (n.d., online).

Benefits of OER:

- Free access to free education - When learning materials are released as OER, a larger group of users can access them for free. This means that a higher number of people can benefit from the educational content, which is a good thing for both learners and teachers – because ultimately everyone profits from the strengthening of an open exchange of educationally relevant resources.

- Quality improvement - When users are allowed to not only access but also modify educational resources, it is easy to keep the contents up to date or to improve and enhance them. There is little reason to believe that freely available material indicates a lower standard of quality. In fact, the reverse appears to be true: when someone decides to make their own creations available to the public, they tend to focus even more strongly on aspects of quality.

- Expansion of didactic opportunities - The modifiability of OER also implicates that they can be readily adapted to fit the conditions of different learning settings. They also facilitate the inclusion of students in these adaptation processes. Since the overwhelming majority of OER is produced in digital formats and distributed online, their use […] often fosters the implementation of open and innovative learning scenarios (based on concepts such as blended learning, flipped classroom, etc.).

- More visibility for quality teaching - Teachers who create their own learning materials and distribute them as OER can expect to reach more people with their contents – other *teachers* and students as well as anybody who is interested in the subject matter. As a consequence, the efforts and achievements of teaching staff can be seen and appreciated beyond the classroom, which can be a useful development in an age of increasing digitalization […].[6]

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[6] Taken from Zimmermann (2018, p. 3). CC BY 4.0.

Challenges of OER:

- Limited amount of available materials - The OER movement began in the early 2000s, and since then the number of existing resources has increased considerably. However, it may happen that a search for materials covering a specific topic turns up no results […]. Hence, there is a great need for the creation of new materials, but not much that can be used in return. Still, if more people contribute their work, more resources will become available, and the situation will soon improve.

- Decentralized OER collections - When looking for useful educational resources online, one quickly discovers that there are many collections at different locations (so-called repositories). It is necessary to develop some experience and familiarity with OER websites in order to find the desired contents in a successful and efficient manner, which takes a little time and practice. Keep in mind, though, that the OER landscape is constantly changing […].

- No standardized criteria for quality - Educational materials that are released as OER usually do not undergo any formal kind of quality control. As a consequence, the final assessment of all quality issues is the responsibility of the user. Nevertheless, it is safe to assume that there will be new developments regarding the establishment and assertion of quality standards in the near future (for example the implementation of rating options for OER, facilities for giving and receiving feedback, or the awarding of "badges" to the creators of high quality OER).

- Full legal certainty is hardly ever achievable - Even when utmost care is taken to correctly apply and utilize appropriate licenses in the use and creation of OER, copyright infringements might still occur due to one's own or other people's (unknowing) misjudgments. Full legal security is not a very likely achievement due to several other reasons: imprecise and inconclusive phrasing in the legal code of licenses, national differences in the application of these legal texts, and

unresolved questions with regard to the use of some elements (for example citations) in the production of OER.[7]

2.4.1 THE SITUATION IN SRI LANKA

In Sri Lanka, the Ministry of Education (MoE) is the Line Ministry […] and there are nine Provincial Ministries of Education (PMoEs) representing the nine Provinces of the country – Central, Eastern, Northern, North-Eastern, North-Western, Sabaragamuwa, Southern, Uwa, and Western. While MoE is responsible in preparing the national strategic plans of the education sector based on national education policy, the PMoEs can adopt policies to suit the needs of each province, based on national education policy and current reforms (MoE Website, 2013).

With the objective of providing direction in the use of Open Educational Resources (OER) to increase access to and support quality teaching and learning in the general school education system in Sri Lanka, an advocacy program was planned by COL [Commonwealth of Learning], leading to the development of draft OER policies for the nine PMoEs in Sri Lanka, with the consent and support from the MoE in Sri Lanka.[8]

3 TEACHERS' COMPETENCES FOR DIGITALLY ENHANCED TEACHING

A teacher who uses digital media and technology in his/her classroom needs to have additional competences compared to non-digitally enhanced teaching (Karunanayaka, 2006). The following chart illustrates these competences and the possible degrees to which they can be achieved.

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[7] Taken from Zimmermann (2018, p. 4). CC BY 4.0.
[8] Taken from Commonwealth of Learning (2016, p. 4). CC BY 4.0.

Table 4: Digital Competence Framework[9]

Competence areas	Competences
Information & Media Literacy	1.1 Browsing, searching and filtering information and digital media
	1.2 Evaluating information and digital media
	1.3 Managing information and digital media
Communication & Collaboration	2.1 Interacting through digital media and technologies
	2.2 Sharing through digital media and technologies
	2.3 Engaging in citizenship through digital media and technologies
	2.4 Collaborating through digital media and technologies
	2.5 Netiquette
	2.6 Managing digital identity
Digital Content Creation	3.1 Developing digital content
	3.2 Integrating and re-elaborating digital content
	3.3 Copyright and licenses
	3.4 Programming
Safety	4.1 Protecting devices
	4.2 Protecting personal data and privacy
	4.3 Protecting health and well-being
	4.4 Protecting the environment
Problem Solving	5.1 Solving technical problems
	5.2 Identifying needs and technological responses
	5.3 Creatively using digital media and technology
	5.4 Identifying digital competence gaps

3.1 Information and Media Literacy

In order for teachers to offer digitally enhanced teaching and learning, they need to have the core skills of digital media and technology. Once these core skills are mastered, teachers need to have an understanding of how to use these tools in a pedagogical purposeful manner. This includes

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[9] Adapted from EACEA (2019, p. 38).

the understanding of how digitally enhanced methods can help in contributing to the achievement of set learning objectives instead of considering their use isolated from the rest of the teaching/learning process.

3.2   Communication and Collaboration

Teachers are capable of planning and designing digitally enhanced learning environments which put the student into the focus of the teaching/learning experience and use digital media and technology in a way that supports the learners' individual needs. They are especially adopted for communication and collaboration between students and between the teacher and their students.

Teachers should also use digital media and technology for communication and collaboration with colleagues and parents to further support their students in their learning process.

3.3   Digital Content Creation

The core skills of digitally enhanced teaching and learning paired with the pedagogically necessary reflections are meant to support teachers' capability to create digitally enhanced learning material and learning opportunities. Teachers are capable of identifying, locating and choosing digital media and technology and evaluating them according to their accuracy and appropriateness for the specific subject and age group.

When creating digital media, teachers need to have an awareness of copyright issues. They have to be able to differentiate between digital media which can be used for informing oneself but is not appropriate in the classroom and digital media which can be freely used inside and outside of the classroom. The latter are published with appropriate copyright licenses. Widespread copyright licenses for different forms of open access material are provided by Creative Commons.

3.4 Problem Solving

To guarantee a continuingly successful digitally enhanced teaching/learning experience, teachers need to maintain a topical condition of their knowledge and skills. In order to do so, they need an awareness of their digital competences. (EACEA, 2019) Additionally, they have to continuously reflect on the application and the effectiveness of the tools used as well as how the technology changes the nature of teaching and learning.

Teachers should use digital media and technology to educate themselves on subject-specific content, professional pedagogical development as well as on technical advancements.

4 CONSIDERATIONS FOR A DIGITALLY ENHANCED LESSON

Teaching in a digitally enhanced classroom is different to teaching in the traditional classroom and bears the risk of various difficulties and challenges. It is therefore necessary to be prepared for these difficulties and challenges and react accordingly to them.

- Always be prepared for the chance of a non-functional device. If you use digital technology, there is always the possibility that the device stops working when you need it. You should always check the necessary devices and technology before class to know which equipment is in working condition. If the devices and technology become unavailable during class, you need a plan B. For instance, if you let your students work on an online quiz and suddenly you have a shortage of electricity or the Internet connection is cut, you should carry a printed version of the quiz with you. This way, the students can continue working on the quiz in its paper-version. Also remember that

you have to print the quiz before class, because during a power blackout the printers would not work either.

- Another point is the differing quality of hardware. Schools do not always have the latest technology, for this reason the interfaces of your personal devices may not match the local ones. In this case, you will need to organize an adapter in advance. If you have prepared a task with an online tool which is not available on the school devices or the devices of the students, you also have to be prepared or have checked in advance if this tool is usable.

- Seating in a digitally enhanced classroom might look different than in a traditional classroom. Seating should be flexible. Tables and chairs should be rearranged depending on the need for the day: For group work, separate tables can be placed together for students to face each other. Students either have tablets or smartphones to work with, or they are arranged around a shared computer. Also, the concept of having a teacher in the front is changed when the podium itself can be rolled around the classroom or even be rolled to the side of the classroom or out of sight altogether. If more than one teacher is present in the classroom, the group could be split up and use different rooms for learning. Above all, technology allows the teacher to be more flexible with his/her movement in the room. S/he does not have to be in front of the class and write on the blackboard. They can be part of groups sitting at their desks and provide new information by projecting it on the wall directly from the teacher's tablet.

Whether a digitally enhanced classroom is useful or not depends on the willingness of the teacher to use the technology for his/her classroom, if it is appropriate for the students and if the students are motivated to use the technology and are willing to complete the tasks which are given by the teacher.

5 KEY POINTS

✓ According to the SAMR model, there are various degrees to which digital technology can be integrated into the teaching/learning process: Technology can act as substitution without adding functional change (Substitution); technology can act as substitution with adding functional change (Augmentation); technology can modify tasks significantly (Modification); and technology can redefine tasks in a way that was inconceivable before (Redefinition).

✓ In the flipped classroom, students acquire knowledge at home with the help of various sources and deepen this knowledge together with the teacher in the classroom.

✓ Technology can be used to enable collaboration, such as videoconferencing to work together with other schools.

✓ Digital storytelling enhances the opportunity to tell powerful stories with the help of not only written text but also audio and visuals.

✓ Open educational resources are teaching and learning materials freely accessible to everyone. Licenses give information on how this material can be reused, adapted or distributed.

✓ Besides possessing information and media literacy, teachers in a digitally enhanced classroom always have to be prepared for the chance of a non-functional device or differing quality of hardware. They also need to consider the differing physical layout of the learning environment in contrast to a non-digitally enhanced classroom.

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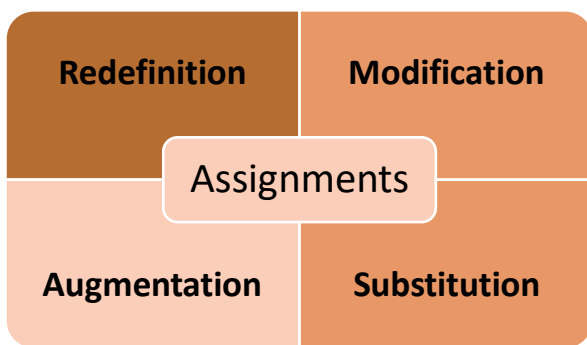
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MODULE 5
DIGITAL TEACHING AND LEARNING
5.3 ONLINE-BASED LESSON PREPARATION & CONDUCTION

Co-funded by the
Erasmus+ Programme
of the European Union

STEP 1 PRACTICE EXERCISES

A   Drag and drop the following explanations into the appropriate category of the *SAMR Model*:

Technology allows for the creation of NEW tasks, previously inconceivable –Technology acts as a direct tool substitute, WITH functional improvement – Technology allows for SIGNIFICANT task redesign – Technology acts as a direct tool substitute, with NO functional change

Redefinition	Modification
Augmentation	Substitution

Assignments

B   Answer the following multiple-choice questions. There can be MULTIPLE correct answers:

1.   What is an example of the SAMR Model's *Substitution* category?

   a)   Using a computer with writing software instead of a handwritten text.

   b)   Saving a text written on the smart board and sending it to the students.

   c)   Writing on a smart board instead of a blackboard.

2.   What is an example of the SAMR Model's *Augmentation* category?

   a)   Using a computer with writing software instead of a handwritten text.

   b)   Using the spell checker in a writing software.

   c)   Saving a text written on the smart board and sending it to the students.

3.   What is an example of the SAMR Model's *Modification* category?

   a)   Collaborating through an online-based tool.

   b)   Writing on a smart board instead of a blackboard.

   c)   Using the spell checker in a writing software.

4. What is an example of the SAMR Model's *Redefinition* category?

    a) Using a computer with writing software instead of a handwritten text.

    b) Collaborating through an online-based tool.

    c) Creating and editing individual videos.

C **Drag and drop the following characteristics of a Flipped Classroom into the appropriate category of the following chart:**

Learning the basic content before class and deepening that knowledge in class – Explorer – Problem solving, concept extension and application – Combination of multiple methods – Learning guide and accompanier – Varying multimedia materials, Internet, textbooks… – Multi-link and multi-way

Classroom Teaching Forms in the Flipped Classroom	
Teacher	
Student	
Teaching Media	
Teaching Method	
Teaching Form	
Classroom Content	
Evaluation Method	

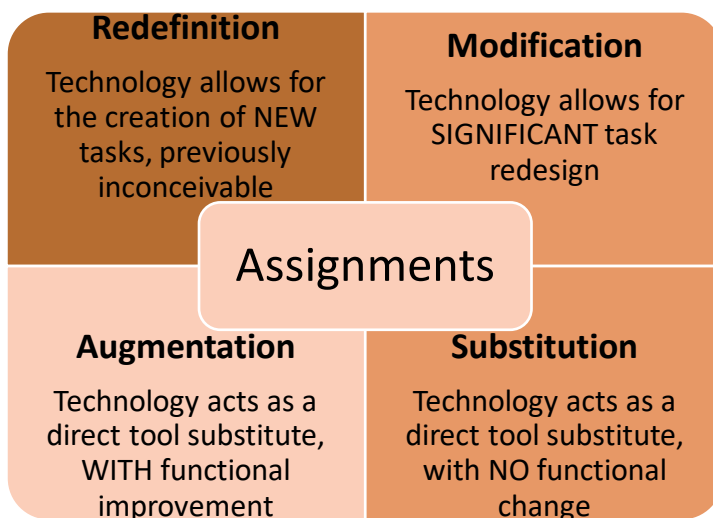**D Assign the appropriate explanation to its matching license:**

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STEP 1 PRACTICE EXERCISES - SOLUTIONS

A Drag and drop the following explanations into the appropriate category of the *SAMR Model*:

Technology allows for the creation of NEW tasks, previously inconceivable –Technology acts as a direct tool substitute, WITH functional improvement – Technology allows for SIGNIFICANT task redesign – Technology acts as a direct tool substitute, with NO functional change

Redefinition	Modification
Technology allows for the creation of NEW tasks, previously inconceivable	Technology allows for SIGNIFICANT task redesign
Assignments	
Augmentation	Substitution
Technology acts as a direct tool substitute, WITH functional improvement	Technology acts as a direct tool substitute, with NO functional change

B Answer the following multiple-choice questions. There can be MULTIPLE correct answers:

1. What is an example of the SAMR Model's *Substitution* category?

    a) Using a computer with writing software instead of a handwritten text.

    b) Saving a text written on the smart board and sending it to the students.

    c) Writing on a smart board instead of a blackboard.

2. What is an example of the SAMR Model's *Augmentation* category?

    a) Using a computer with writing software instead of a handwritten text.

    b) Using the spell checker in a writing software.

    c) Saving a text written on the smart board and sending it to the students.

3. What is an example of the SAMR Model's *Modification* category?

    a) Collaborating through an online-based tool.

b) Writing on a smart board instead of a blackboard.

c) Using the spell checker in a writing software.

4. What is an example of the SAMR Model's *Redifinition* category?

   a) Using a computer with writing software instead of a handwritten text.

   b) Collaborating through an online-based tool.

   c) Creating and editing individual videos.

C Drag and drop the following characteristics of a Flipped Classroom into the appropriate category of the following chart:

Learning the basic content before class and deepening that knowledge in class – Explorer – Problem solving, concept extension and application – Combination of multiple methods – Learning guide and accompanier – Varying multimedia materials, Internet, textbooks… – Multi-link and multi-way

Classroom Teaching Forms in the Flipped Classroom	
Teacher	learning guide and accompanier
Student	explorer
Teaching Media	varying multimedia materials, Internet, textbooks…
Teaching Method	combination of multiple methods
Teaching Form	learning the basic content before class and deepening that knowledge in class
Classroom Content	problem solving, concept extension and application
Evaluation Method	multi-link and multi-way

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STEP 2 PRACTICE EXERCISES

A   Read the following case studies and fill in the table below:

Case Study 1

Teacher A teaches her students about geography and different places in the world by showing them the places on Google Maps with the help of the classroom's smart board. Students are put into small groups and are assigned different places to present to the rest of the class. They prepare the presentation online with the help of their LMS. They then show the presentation on the smart board; they interact with Google Maps by tapping on their place directly on the smart board and thus showing them to the other students.

Case Study 2

Teacher B has prepared a PowerPoint presentation to teach her students about geography and different places in the world. This presentation includes a map and text and pictures of different places. To show this presentation, the teacher uses the classroom computer and projector. Students then go to the school's computer room, where they use e-books to research a specific place online.

Case Study 3

Teacher C uses Google Earth to show the students different places in the world. She has created a digital story with the help of Google Earth, which leads the students to specific places. The voyage is enhanced by the teacher's narrative and pictures and videos. She then lets them create their own digital travel brochure about their assigned place. These digital travel brochures include pictures and text but also student-created videos and other multimedia formats.

Case Study 4

Teacher D teaches his students about geography and different places in the world by showing them a physical map. He hangs up the map in the front of the classroom, where every student can come and look at it. Additionally, he has prepared posters on different places with text and pictures cut out from magazines to illustrate what these places look like. Students then research a specific place with the help of their textbooks and additional material their teacher has brought to the classroom.

Case Study 5

Teacher E teaches her students about geography and different places in the world by showing them the places on Google Maps, with the help of the classroom computer and projector. She zooms in and out of the map to show the students the location of each place. Like teacher B, she uses a PowerPoint presentation about different places in the world. However, her presentation is not limited to text and pictures. In her presentation, she has included videos of the places as well as audio recordings from people living there and talking about their hometown. She has also included hyperlinks which lead to the homepages of the tourist offices of the places she is talking about. After the lesson, she sends out the presentation to her students who were absent that day. Students then go to the school's computer room to research a specific place online.

Level of Technology	Case Study
Non-Digitally Enhanced	
Substitution	
Augmentation	
Modification	
Redefinition	

B Read the following case studies and fill in the table below:

Case Study 1

Teacher A has created material for the self-study of her students: a video and tasks based on this video. The students watch the video at home and also do the related tasks on their own at home. The students are supervised by their parents, who have received instructions from the teacher beforehand. Students also have the option of e-mailing their teacher in case their parents cannot support them with a task. In their next lesson at school, the teacher discusses what they have learned with the help of the video. They compare their understanding; they talk about unsolved questions and the results of their self-study; and the teacher fills in potential knowledge gaps. At the end, students do another practical task, which the teacher reviews and then gives individual feedback to every student via e-mail, online meeting, LMS or personal meeting.

Case Study 2

Teacher B lets students create their own digital stories with text, images, sound and voice recordings as a part of the languages curriculum. Students from Primary 1 to 3 create their own digital stories in their language classes (i.e., English and mother tongue languages – Sinhala and Tamil). Students create digital stories by recounting their experiences on their learning journeys, such as the zoo. These digital stories involve photos taken by students and narration recorded by the students as they recount their experience and share their reflections. Music is then inserted into the digital story to reflect the mood of their personal recount.[10]

Case Study 3

For case Study 3 please watch the following video (audio transcription can be found in the appendix of this document): https://www.youtube.com/watch?v=9vn8QXF2Kfs

	Form of Digitally Enhanced Lesson
Case Study 1	

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[10] Adapted from UNESCO (2014, p. 112f.). CC BY-SA 3.0.

Case Study 2	
Case Study 3	

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D **Listen to this teacher talk about preparing a lesson online (Audio File 5.3.1; audio transcription can be found in the appendix of this document). Answer the following questions. There can be MULTIPLE correct answers:**

1. Which of the following aspects that have to be considered when preparing a lesson online does the teacher mention?

   a) Content needs to be as clear as possible.

   b) Media files need to be checked to see if students are able to open them on different devices.

   c) All tasks have to be written down in advance.

   d) Teachers need to be able to work with different technologies.

   e) A format for evaluating students needs to be found.

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STEP 2 PRACTICE EXERCISES - SOLUTIONS

A   Read the following case studies and fill in the table below:

Case Study 1

Teacher A teaches her students about geography and different places in the world by showing them the places on Google Maps with the help of the classroom's smart board. Students are put into small groups and are assigned different places to present to the rest of the class. They prepare the presentation online with the help of their LMS. They then show the presentation on the smart board; they interact with Google Maps by tapping on their place directly on the smart board and thus showing them to the other students.

Case Study 2

Teacher B has prepared a PowerPoint presentation to teach her students about geography and different places in the world. This presentation includes a map and text and pictures of different places. To show this presentation, the teacher uses the classroom computer and projector. Students then go to the school's computer room where they use e-books to research a specific place online.

Case Study 3

Teacher C uses Google Earth to show the students different places in the world. She has created a digital story with the help of Google Earth, which leads the students to specific places. The voyage is enhanced by the teacher's narrative and pictures and videos. She then lets them create their own digital travel brochure about their assigned place. These digital travel brochures include pictures and text but also student-created videos and other multimedia formats.

Case Study 4

Teacher D teaches his students about geography and different places in the world by showing them a physical map. He hangs up the map in the front of the classroom, where every student can come and look at it. Additionally, he has prepared posters on different places with text and pictures cut out from magazines to illustrate what these places look like. Students then research a specific place with the help of their textbooks and additional material their teacher has brought to the classroom.

Case Study 5

Teacher E teaches her students about geography and different places in the world by showing them the places on Google Maps, with the help of the classroom computer and projector. She zooms in and out of the map to show the students the location of each place. Like teacher B, she uses a PowerPoint presentation about different places in the world. However, her presentation is not limited to text and pictures. In her presentation, she has included videos of the places as well as audio recordings from people living there and talking about their hometown. She has also included hyperlinks which lead to the homepages of the tourist offices of the places she is talking about. After

the lesson, she sends out the presentation to her students who were absent that day. Students then go to the school's computer room to research a specific place online.

Level of Technology	Case Study
Non-Digitally Enhanced	Case Study 4
Substitution	Case Study 2
Augmentation	Case Study 5
Modification	Case Study 1
Redefinition	Case Study 3

B   Read the following case studies and fill in the table below:

Case Study 1

Teacher A has created material for the self-study of her students: a video and tasks based on this video. The students watch the video at home and also do the related tasks on their own at home. The students are supervised by their parents, who have received instructions from the teacher beforehand. Students also have the option of e-mailing their teacher in case their parents cannot support them with a task. In their next lesson at school, the teacher discusses what they have learned with the help of the video. They compare their understanding; they talk about unsolved questions and the results of their self-study; and the teacher fills in potential knowledge gaps. At the end, students do another practical task, which the teacher reviews and then gives individual feedback to every student via e-mail, online meeting, LMS or personal meeting.

Case Study 2

Teacher B lets students create their own digital stories with text, images, sound voice recordings as a part of the languages curriculum. Students from Primary 1 to 3 create their own digital stories in their language classes (i.e., English and mother tongue languages – Sinhala and Tamil). Students create digital stories by recounting their experiences on their learning journeys, such as the zoo. These digital stories involve photos taken by students and narration recorded by the students as they recount their experience and share their reflections. Music is then inserted into the digital story to reflect the mood of their personal recount.[10]

Case Study 3

For case Study 3 please watch the following video (audio transcription can be found in the appendix of this document): https://www.youtube.com/watch?v=9vn8QXF2Kfs

	Form of Digitally Enhanced Lesson

Case Study 1	Flipped Classroom
Case Study 2	Digital Storytelling
Case Study 3	Flipped Classroom

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D **Listen to this teacher talk about preparing a lesson online (Audio File 5.3.1; audio transcription can be found in the appendix of this document). Answer the following questions. There can be MULTIPLE correct answers:**

1. Which of the following aspects that have to be considered when preparing a lesson online does the teacher mention?
   a) Content needs to be as clear as possible.
   b) Media files need to be checked to see if students are able to open them on different devices.
   c) All tasks have to be written down in advance.
   d) Teachers need to be able to work with different technologies.
   e) A format for evaluating students needs to be found.

STEP 3 PORTFOLIO TASK – SELF-REFLECTION QUESTIONS

Write an essay answer to the following self-reflection question. Your answer should be approximately 300-500 words long and answered in a coherent text with full sentences. THIS ESSAY ANSWER GOES INTO YOUR PERSONAL PORTFOLIO!

1. What would you say are the advantages of teaching with a conferencing tool such as ZOOM (i.e., synchronous communication) in comparison to teaching with an LMS (i.e., asynchronous communication)?

STEP 4 PORTFOLIO TASK – TEACHING PROJECT

Create your own personal teaching project. Incorporate possibilities of digital teaching and learning design into your teaching project (e.g., flipped classroom or digital storytelling). If you do not use digital formats in your concept, you should still deal with this topic explicitly in your work and explain in a pedagogically sound manner (with reference to the module contents) what speaks against digital learning opportunities. This portfolio task should be approximately 800-1000 words long. THE TEACHING PROJECT GOES INTO YOUR PERSONAL PORTFOLIO!

APPENDIX

Transcript: Video File

My name is Janet, and I have been an elementary school teacher for 20 years. And let me tell you, when they asked me to come and talk to them about making videos of the lessons I love to teach every day, I was apprehensive, but let me tell you the reality. It's very simple and it's a simply magnificent way to impact the world. We can connect with teachers everywhere, and share our ideas and create a global community for educators. All It takes is three simple steps. Choose your setting, set up, and record. And then your genius is being shared all over the world.

The first step in your video process is choosing your setting. Almost any setting will work. It could be your classroom, it could be a room at your school, it could be a room in your house. It can be anywhere you are the most comfortable working. Also, the rooms should be quiet with good lighting, so that we can see and hear the wonderful lessons you are sharing.

The second step in the process of creating fabulous videos is your set up. Any digital camera will work. Any device that you can video on will be perfect. But we will be honest, the ones that most of us use here that we have made the videos on are on our cell phones. We know how to use them, and they take fabulous videos. Make sure the camera is steady. You can use a tripod, if you have one. You can stack up some books, and lean it against a coffee cup. If you are using props, you want to make sure all of your props are in the frame.

The final step in the process of making a video to share our ideas with others is the recording piece. And guess what? That might be the easiest piece there. I'm not kidding! It's not that hard. But, the main point I want you to understand is that we are not actors and actresses. We're teachers and your video does not... NOT have to be perfect. We do have a few tips for you while recording. Make sure you speak loudly and use a clear, comfortable pace. Not too fast, but not too slow. Think of your children in your classroom. Just talk to them. Once you have your setting framed, and you're ready to go, sit down, take a deep breath, reach over, push the record button, compose yourself, and teach us your magnificent lesson. Once the lesson is over, pause for a moment, smile, reach over, and stop the recording.

That's it! That's all it takes to share your wonderful lessons that you are teaching every day. All your video needs to do is be uploaded, and you are on your way to sharing your ideas with the world. Enjoy making your video! Have fun with it. You are helping millions of teachers and children around the world. Welcome to the Teach for Life movement.

Transcript: Audio File 5.3.1

Interviewer: How does the lesson preparation in a smart class differ from one in a non-smart class.

Teacher: So, when you make a lesson online, online lesson or smart class you have to think of all different ways students would understand what you're doing, I mean it needs to be as clear as possible. You have to check everything you post, will students be able to open this file, will students be able to watch this video, will students be able to listen to this audio file because there are so many different phones, so many different devices. They need to be able to open it on any of the devices that they use, whether Internet on the computer or on the phone. Because of that, teachers have to think of all those things, of all those factors. When they prepare the lesson, they have to, of course it takes much longer when you think of what you're going to teach in the classroom tomorrow you just have it in your head, but when you do it online you have to actually type everything you want to say, you have to record an audio, then you have to convert it into the proper format and upload it online, at least for our system. In the Zoom class it would be much easier. You just have to use a board, there is an option to use a board, you can write on your phone or on a tablet, whatever you have and show it to the students. Preparation in a Zoom class would not take as much time as preparation for the schoology class that we had in our school. Yes, it takes longer to make it. As teachers need to work with many different technologies to be able to make the lesson very motivating, very colorful, very interesting to students. They need to think of ways to test their understanding, they need to come up with some questions, how will they evaluate students' understanding. They need to think of all those factors.

The digital age has provided a wealth of new educational tools for the classroom and successful educators understand the importance of incorporating them into their teaching. In this module, you will see how to effectively use information and communications technology (ICT) so that it aligns with learning objectives, subject matter and assessment in the classroom. Through concrete applications of technology, the opportunities provided by digital media will be shown to support and enrich the design and implementation of teaching and learning processes and a set of key digital skills will be developed so that you can better use digital media in pedagogical contexts

Enjoy!