OnlineHE project

A practical toolkit for integrating eLearning in Higher Education Curricula

Building the capacity of HE teaching staff, academics, and learning designers in integrating eLearning into their educational programmes

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Module 2: Teaching methods and approaches

Module overview

Module 2 provides examples of appropriate teaching methods and strategies you can follow to organise and design your eLearning lessons.

- Identify adequate teaching methods for eLearning
- Understand the importance of dedicated teaching methods and approaches (+TPACK) for eLearning
- Identify learning methodologies and didactics
- Select the proper teaching methods and approaches according to the learning objectives of an eLearning section
- Organise an eLearning teaching session based on dedicated teaching methods and approaches
- Create eLearning classes for HE based on dedicated teaching methods and approaches
- Design a lesson plan for eLearning – higher education level

Module 2: Teaching methods and approaches

Units overview

- Unit 1: Teaching methods and approaches in action
- Unit 2: Organising eLearning sessions

Unit 1: Teaching methods and approaches in action

Overview

In this unit, you will learn more about the teaching methods and approaches you can follow when teaching online. In each case, there is a short description of the teaching method, useful technology tools, examples of activities based on the method, tips on how to apply them effectively and further reading resources.

Unit 1: Teaching methods and approaches in action

Direct instruction

Direct instruction is a more traditional approach which is great for teaching procedures and "transferring" information to learners. Specifically, we use instruction and modeling to explain concepts, present complex processes (important for practice-oriented subjects) and show to learners how to do something: how to navigate, apply strategies, use tools and methodologies.

Some examples of direct instruction are the lectures, the interactive presentations, and the video-based learning.

Unit 1: Teaching methods and approaches in action

Direct instruction

Lectures are the most frequent way to provide learners with (theoretical) knowledge and information about a topic. They are synchronous (e.g., web conferencing) but you can also record and offer them as an asynchronous video for learners to watch asynchronously. To make them more interactive, you can complement lectures with questions (closed or open-ended), debates and discussions.

Tools: web conferencing (e.g., Webex, Zoom), whiteboard canvas (e.g., Jamboard, Mural), video recorder (e.g., Panopto).

Unit 1: Teaching methods and approaches in action

Direct instruction

(Interactive) presentations are either part of a lecture or a standalone activity. In an online context, interactivity means that the learners can interact with the technology (e.g., click a button for the next slide in a presentation) and the content (e.g., answer a question that appears within a presentation). Presentations can be synchronous or asynchronous.

Tools: interactive presentation creators (e.g., Mentimeter, Genially, Prezi, Nearpod, H5P), authoring tools (e.g., Adobe Captivate, Articulate, iSpring) that require more advanced skills.

Unit 1: Teaching methods and approaches in action

Direct instruction

Video-based activities require learners to watch and absorb information explained audio-visually. You present the information in a linear way, based on a sequence chosen. Video-based activities are mostly asynchronous. To enhance interactivity and engage learners, you can embed short questions, monitoring understanding, too. You can make your own videos by recording your screen and voice (with or without showing your face) or using animated graphics. Alternatively, you can use ready made videos and modify them. Either way, you can take the video and embed questions for your students to answer, using software for interactive video creation.

Tools: video recorder (e.g., Panopto), screen recorder (e.g., Screen-cast-o-matic), audio recorder and editor (e.g., Audacity), video editor (e.g., VSDC), animated video creator (e.g., Powtoon, Animoto), interactive video creator (e.g., EdPuzzle, H5P). Many tools combine features such as screen, audio recording and video editing.

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Direct instruction

When to use this method?

- present or review information and/or tutorial of a procedure
- track students' progress (e.g., if interactive, with quiz questions)
- self -reflect (e.g., if interactive, with quiz questions)

Unit 1: Teaching methods and approaches in action

Direct instruction

When preparing presentations and videos, try to use:

- simple language and sentences
- less text, more oral explanation
- representative graphics and pictures (showing visually what you talk about)
- reflective questions (e.g., closed-ended, open-ended)
- engaging voice and tone
- smaller content into bite-sized videos or sections within a video
- links and additional resources

Unit 1: Teaching methods and approaches in action

Direct instruction

Example of direct instruction

In the course "English in Medicine", during a synchronous session in ZOOM, the instructor presents some medical terminology (suffixes, prefixes etc.), using the Jamboard as a whiteboard. Upon completion of the session, the learners have to watch an interactive tutorial (developed in Edpuzzle) in the LMS, with the medical terminology presented, answering the embedded questions to check understanding.

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Further resource for direct instruction

Learn more tips and tricks in this video explaining how to create interactive presentations.

Unit 1: Teaching methods and approaches in action

Discussion and collaborative learning

Discussion and collaborative learning can be a standalone activity or part/subtask of other activities.

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Discussion and collaborative learning

Discussions include a starting-point (e.g., a controversial topic, a question) that requires engagement. Usually, the learners have to share their (personal) ideas and express their views critically, by commenting on others' points in a meaningful way (e.g., explain why they disagree and give another argument). Discussions can be synchronous or asynchronous. For a realistic turn-taking experience, establish some common rules with your learners. For example, ask them to discuss a topic first by giving their opinion (trying to offer new insights, building on the conversation) and then by commenting on two other classmates' ideas.

Tools: forum in an LMS, web conferencing tools (e.g., ZOOM, WebEx), debate tools (e.g., Kialo, Tricider)

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Discussion and collaborative learning

Collaborative tasks require learners to work together to solve or create. Collaboration differs from simple exchange of ideas; each member is valuable and needs to contribute equally with their skills. There is a shared responsibility.

Tools: any collaborative tools like (project) management (e.g., Trello), online canvas (e.g., Padlet, Mural, Canvanizer), Wikis, Google Workspace (e.g., shared drives, docs, sites) which allow learners to work either at their own time and pace or simultaneously and exchange their work for feedback. Also, all discussion-based tools seen before (synchronous meeting, asynchronous discussion) can further facilitate the team's collaboration.

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Discussion and collaborative learning

When to use this method?

- Introduce, practise, revise
- develop higher order thinking skills (analysis, synthesis, critical thinking)
- promote self-reflection
- develop collaboration and communication skills

Unit 1: Teaching methods and approaches in action

Discussion and collaborative learning

When preparing discussion and collaborative activities, try to:

- use open-ended questions with more than one answer correct
- use debating format (teams justifying two different points of views)
- assign shared tasks and monitor contribution
- assess and give feedback both to each person's and the team's work

Unit 1: Teaching methods and approaches in action

Discussion and collaborative learning

Example of discussion and collaborative learning

In English literature, the learners are studying Shakespeare's work. They engage with a debate (whether Shakespeare was a feminist or not) discussing their points of view. A collaborative project follows where the learners prepare a 10 min podcast, supporting their argument in the debate with examples of Shakespeare's work. The learners submit the podcast, the script, the bibliography (at least 3 sources) in the LMS. To record the audio, the learners can use any audio recorder (e.g., Audacity or any tool from this list) while they prepare the script and bibliography in a shared google doc or word document. You can collect and publish the podcasts on Spotify's free podcasting platform, the Anchor app.

Unit 1: Teaching methods and approaches in action

Further resource for discussion and collaborative learning

Learn more tips and tricks with this paper: Asynchronous online discussions during case-based learning: a problem-solving process.

Unit 1: Teaching methods and approaches in action

Simulation and scenarios

Simulations are more like a "Watch-Try-Do" approach. First, you give specific information to learners on how to execute an operation. Then, you give time for practice. Finally, learners will be able to do the specific task on their own. Simulations work as a fail-safe environment for learners to experiment with procedures. Tools: virtual STEAM laboratories (e.g., Virtual Labs by MERLOT/Phet interactive simulations, Virtual Labs by the Ministry of Education in India), 3D modelling/ 360 pictures creation tools (e.g., Thinglink)

Scenarios in an online context reprise a situation or environment. You can prepare scenarios activities using 3D or 360 modelling-pictures. Tools: interactive, non-linear stories creators (e.g., Twine, H5P branching scenario), mindmapping (e.g., Mindmeister), survey creators (with option to redirect to sections based on answers such as Google Forms).

Both are mostly asynchronous.

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Simulation and scenarios

When to use this method?

- practise, learn specific skills (e.g., complex processes and procedures, especially in practice-oriented courses and subjects)
- provide opportunities for experiential learning
- engage and motivate

Unit 1: Teaching methods and approaches in action

Simulation and scenarios

When preparing simulations & scenarios, try to use:

- real life problems or situations
- tools and behaviours that resemble real life
- immersive audiovisual material (e.g., graphics, audio)

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Simulation and scenarios

Examples of simulation and scenarios

1. The learners explore basic electricity relationships and build circuits from schematic drawings in an online simulation lab. After experimentation, they draw circuits using the online editor tool Chemix to share their results.
2. In medicine learners engage with a simulation on how to diagnose a patient in Thinglink
3. The learners experiment with written dialogues (communication skills) in a language-learning scenario activity

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Further resource for simulation and scenarios

See how to prepare a branching scenario in Google forms here.

Unit 1: Teaching methods and approaches in action

Inquiry-based learning

Inquiry-based learning allows learners to make real-world connections through exploration and high-level questioning. It is experiential learning since learners set their own questions which they desire to answer and develop a strategy to experiment with solutions and answers. They research information online, brainstorm ideas and combine their thoughts, collaborating in teams. This typically ends with reflection on how they approached the question and what they learned through their research.

Tools (according to the task learners engage with during the inquiry-based process): search engines (e.g., Google, DuckDuckGo), any collaborative tools like (project) management (e.g., Trello), online canvas or crowdsourcing space (e.g., Padlet, Mural, Canvanizer, Wakelet), Wikis, Google Workspace (e.g., shared drives, docs, sites), brainstorming and reflection (e.g., RetroTool)

Unit 1: Teaching methods and approaches in action

Inquiry-based learning

When to use this method?

- cultivate scholar skills
- promote experiential learning
- develop higher order thinking skills (research, analysis, synthesis, critical thinking, creativity, collaboration)
- develop communication skills
- promote self-reflection
- engage and motivate

Unit 1: Teaching methods and approaches in action

Inquiry-based learning

When preparing inquiry-based activities, try to:

- monitor and intervene only when necessary
- provide guidance and support (especially to students with low self-regulation skills)
- use tools that learners are already familiar with and then gradually start introducing new ones, in order not to overwhelm them during their inquiry process

Unit 1: Teaching methods and approaches in action

Inquiry-based learning

Example of inquiry-based learning

Learners work in groups and brainstorm potential topics using an online conceptual mapping or cloud-based conceptual mapping tool (e.g., Mindmeister, Coggle). Once they narrow down their topic, they generate questions they are about to answer using a social network or wiki tool (e.g., Elgg, Twitter). They research and explore new information which they save using social bookmarking tools (e.g., Diigo) and upload in a shared project management- note taking tool (e.g., Evernote, Trello, Mural). Once ready, they synthesise and present their findings in a selected format (e.g., presentation, article, paper, podcast) using publishing tools, accordingly (e.g., Google Sites, Weebly, Prezi). Evaluation and reflection can follow in the format of personal journal or microblogging.

Unit 1: Teaching methods and approaches in action

Further resource for inquiry-based learning

Learn more about virtual inquiry-based learning here.

Unit 1: Teaching methods and approaches in action

Problem-solving

Problem-solving is similar to inquiry-based learning with the difference that learners here solve an open-ended and “complex” problem, working with each other to find a solution. The focus is on the process learners follow and the skills they use to solve the issue at hand. In this case, you accept more than solutions as correct (e.g., the format of the final product can be the same for everyone such as a paper, but the content differs, based on the solutions they found). Like inquiry-based learning, problem-based activities end with learners' self reflection.

Tools (according to the task learners engage with during the problem-based process): web conferencing (e.g., ZOOM), presentation or document creator (e.g., Prezi), any collaborative tools like (project) management (e.g., Trello), online canvas or crowdsourcing space (e.g., Padlet, Mural, Canvanizer, Wakelet), Wikis, Google Workspace (e.g., shared drives, docs, sites), brainstorming and reflection (e.g., RetroTool)

Unit 1: Teaching methods and approaches in action

Problem-solving

Two activities that follow a problem-based approach are the webquests and digital escape rooms. Both are more "structured" rather than ill-defined. In webquests, the learners solve a task by exploring a collection of specific Internet-based resources given to them.

- To create a webquest, you prepare step-by-step guidelines that include a description of the task (what the learners have to answer, produce), the process (the steps they have to take), the resources (links to online, multiple media resources), the evaluation (assessment of their performance) and a conclusion (reflection and further steps). **Tools**: website creator (e.g., Google Sites, Weebly). Find here a Webquest example.
- In digital escape rooms, learners have to find a solution to puzzle tasks. Choose the topic and end goal (the big problem to solve) and then set the scene (background, information, etc.). After that, decide on topics of the small puzzles that learners will solve and create these small puzzles. You can then develop the answer sheets or keys. **Tools**: survey creator (e.g., Google forms), website creator (e.g., Google Sites). Learn more about digital escape rooms here and see some examples created with Google forms here.

Unit 1: Teaching methods and approaches in action

Problem-solving

When to use this method?

- promote experiential learning
- develop higher order thinking skills (research, analysis, synthesis, critical thinking, creativity, collaboration)
- develop communication skills
- promote self-reflection
- engage and motivate

Unit 1: Teaching methods and approaches in action

Problem-solving

When preparing problem-based activities, try to:

- monitor and intervene only when necessary
- provide guidance and support (especially to students with low self-regulation skills)
- use tools that learners are already familiar with and then gradually start introducing new ones, in order not to overwhelm them during their inquiry process

Unit 1: Teaching methods and approaches in action

Problem-solving

Example of problem-solving

In an Education Sciences course, the undergraduate learners (pre-service teachers) have to create a lesson plan for their subject matter and/or intended audience (age group, characteristics of students etc.). Certain problems appear such as restrictions to the budget, technology tools which their students can use or timing. The learners have to work in teams and prepare a lesson plan with solutions to these challenges. The problem is given in a PDF document, the learners will work in a shared collaborative canvas (e.g., Canvanizer) to brainstorm ideas and then, co-write the lesson plan in a Wiki or Google Doc.

Unit 1: Teaching methods and approaches in action

Case-based learning

Case-based learning refers to the presentation of a case, a story with characters that raise concerns or dilemmas that the learners will investigate, discuss, research and find conclusions about. It looks like problem-based approach but the focus here is on the presentation of a specific case, with detailed information. The learners collaborate in teams. Your role is to guide them with reflective questions, helping them distinguish their thoughts.

Tools (according to the task learners engage with during the case-based process): web conferencing (e.g., ZOOM), presentation or document creator (e.g., Prezi), any collaborative tools like (project) management (e.g., Trello), online canvas or crowdsourcing space (e.g., Padlet, Mural, Canvanizer, Wakelet), Wikis, Google Workspace (e.g., shared drives, google docs, google sites), brainstorming and reflection (e.g., RetroTool)

Unit 1: Teaching methods and approaches in action

Case-based learning

When to use this method?

- develop higher order thinking skills (research, analysis, synthesis, critical thinking, creativity, collaboration)
- develop communication skills (whole class case or group case discussions)
- promote self-reflection
- engage and motivate

Unit 1: Teaching methods and approaches in action

Case-based learning

When preparing case studies, try to:

- use detailed information for the specific case presented
- use real life cases that will be beneficial to the students
- present the case audio-visually and if done from scratch, create engaging storyline and characters
- monitor and facilitate learning, redirecting the learners as necessary
- use whole case discussions or group discussions
- provide guidance and support (especially to students with low self-regulation skills)

Unit 1: Teaching methods and approaches in action

Case-based learning

Example of case-based learning

In a Business administration course, learners have to develop a business plan for a local company. They receive all the information about the business in a presentation (asynchronous and/or synchronous) and collaborate (in break-out rooms or forums) to discuss the case. Once finished, they present their results (orally or submit their work online). You can assign learners to different groups to rethink the solutions or see other points of view.

Unit 1: Teaching methods and approaches in action

Authentic assessment

Any of the methods presented above can be or include assessment, formative or summative. Formative assessment is typically part of all learning activities since you monitor learners' progress. If the focus is on promoting the transfer of knowledge to the real world, then it is authentic. We present here authentic assessment because it is effective in teaching skills and leading to learners' improved academic performance. You can improve the degree of “authenticity” of all the assessment methods you choose to follow. Even a multiple-choice quiz can include questions that require students to solve a problem using higher order thinking skills than rote memorisation. The tools you will use depend on the type of assessment task (see previous slides).

Unit 1: Teaching methods and approaches in action

Authentic assessment

When to use this method?

- link learning with learners' needs (e.g., post-university performance tasks)
- develop higher order thinking skills (research, analysis, synthesis, critical thinking, creativity, collaboration)
- develop communication skills
- promote self-reflection
- engage and motivate

Unit 1: Teaching methods and approaches in action

Authentic assessment

When preparing case studies, try to:

- make it realistic, resembling the contexts where the learners will actually use the new knowledge, skills, attitudes learned throughout an instruction
- ask learners to apply higher order thinking skills (e.g., judgement, critical thinking, innovation/creativity)
- include “complex” tasks, meaning that the learners will not solve them on the spot or with minimum effort but with multiple skills
- gives the learners time and space for reflection and improvement through feedback
- allow collaboration and group work (assessing individual contribution and group work)

Unit 1: Teaching methods and approaches in action

Authentic assessment

Examples of authentic assessment

E-portfolios: each learner prepares a digital space that acts as a repertoire and exhibition of their creations. Specifically, the learners gather all their works produced throughout a course and an academic year (e.g., a research paper, project, presentation) and include them into an online space for anyone interested. The online space can be a site or a simple google folder.

Tools: b-learning (CANVAS) has an e-portfolio tool, any type of blogging and/or site creation tools (e.g., Wordpress, Wix, Edublog, Google Sites).

Find more about E-Portfolios in Education-An ideal way to assess online

Unit 1: Teaching methods and approaches in action

Authentic assessment

Examples of authentic assessment

Self- assessment: such tasks focus on letting students monitor and reflect on their progress. Self-assessment can have the format of a quiz, a game-based activity, a checklist, a survey, or a mind map-concept mapping (drawing connections between concepts learned). Even though it is beneficial to access such information to help your learners, self-assessment is not about grading.

Tools: mindmapping or reflection canvas and checklists (e.g., Mindmeister, RetroTool, Checkli)

Unit 1: Teaching methods and approaches in action

Further resource for authentic assessment

Read more about authentic assessment in online environments here.

Unit 2: Organising eLearning sessions

Overview

In this unit, you will see practical strategies on how to bring all these together and set up an eLearning lesson or sequence of teaching and learning sessions, with effective teaching methods. You will learn more about the process you can follow to plan sessions, get a template for eLearning lessons and see a guidance framework in action.

Unit 2: Organising eLearning sessions

Planning sessions: the know-how

There are some important elements to consider when you organise eLearning sessions.

1. What are the topics or themes you are about to teach online? What is the focus of the week(s) you are planning? For example, you are teaching learners how to write important research questions. Defining the topic is important since this is one of the factors affecting the teaching methods you will use.

2. What is your learners' background (e.g., age, culture, language, race, abilities etc.)? Individual characteristics are the learners' preferences, views, strengths, needs which will guide your choices for the learning design, learning content, etc. We typically gather such data at the beginning of the school year (through interviews, discussions) and update them throughout the course based on feedback from observations, discussions and/or questionnaires.

Unit 2: Organising eLearning sessions

Planning sessions: the know-how

3. What are the learning outcomes of the session you design? Whereas the learning goal is the general educational aim you will cover through teaching, the learning outcomes are the specific skills the learners will acquire, upon completion of a lesson. For the outcomes, you need to be specific and use measurable verbs. To achieve this. you can follow the ABCD method:

   - Audience: who
   - Behaviour: what
   - Conditions: under which conditions/how
   - Degree: how well

   Example: By the time the learners finish this lesson, they should be able to successfully use the [x] method to solve [z], on their own.

Unit 2: Organising eLearning sessions

Planning sessions: the know-how

3. What are the appropriate teaching methods you can use to design the eLearning activities? (see unit 1). The teaching methods can vary from being teacher-oriented (e.g., traditional explanations) to more student-oriented (e.g., inquiry-based). Regardless, it is important you promote a student-centered approach.

4. What is the content of the learning activities? (e.g., the concept or process you will teach). The content of the topic you will teach can come from various sources. You may have it ready, from previous online lessons or f2f instruction, you may collect it from digital resources (e.g., OERs) or physical books and papers, or you may build it from scratch. This depends on the HE curricula you follow. It is your task to teach the content and adapt it to fit the online environment.

Unit 2: Organising eLearning sessions

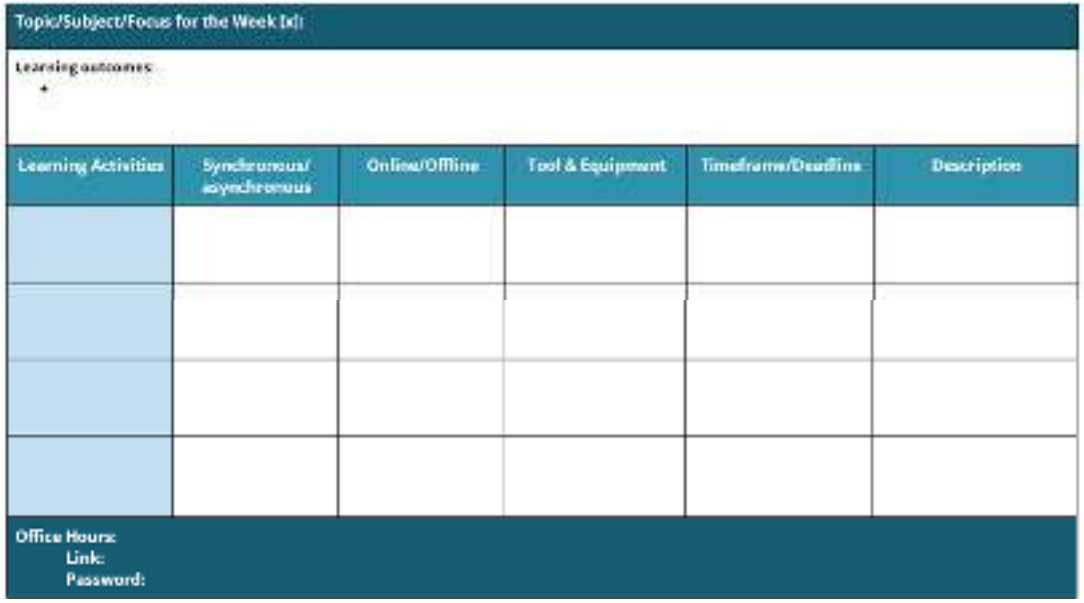
Planning sessions: the know-how

3. How can you bring all these together and structure the lesson(s)? For cohesion, you need to structure the learning activities logically. You need to decide on the sequence both for the synchronous and asynchronous activities, considering also the timeframe for implementation and completion along with the required equipment. Make sure that all have the necessary access.

Unit 2: Organising eLearning sessions

Planning sessions: template and example

You can adapt the planning templates you already use for the f2f instruction, based on the online context and the needs that emerge. We have developed a planning template you can use to prepare eLearning sessions (screenshot below). Download the template from here.



Topic/Subject/Focus for the Week (s):					
Learning outcomes:					
Learning Activities	Synchronous/ asynchronous	Online/Offline	Tool & Equipment	Timeframe/Deadline	Description
Office Hours: Link: Password:					

Unit 2: Organising eLearning sessions

Planning sessions: template and example

First page of the template

At the top of the document, you state the topic or focus for the week and the specific learning outcomes. In line with these, you prepare a sequence of the learning activities based on teaching methods. The activities can be synchronous or asynchronous, online or offline, requiring tech tools and equipment. Usually, there is a timeframe and deadline (e.g., weekly task or 10' in a live web session) for each activity. Finally, you describe what the learners do during the activity, what is your role as an instructor and the way the learners will get feedback.

Unit 2: Organising eLearning sessions

Planning sessions: template and example

Second page of the template

On the second page, you will see examples of eLearning sessions for a specific unit. The topic is: how to conduct a focus group. This could be part of an introductory course on qualitative research. Even though this is an abstract lesson (thus sections such as the timeframe, deadline, office hours remain empty), we hope to provide you with ideas regarding the way you can make eLearning more authentic, interactive, and student-centred, focusing on skills rather than simple theoretical knowledge.

Unit 2: Organising eLearning sessions

Planning sessions: template and example

In the examples on the second page of the template, see how the activities complement each other, to support the learning outcomes:

- Instead of starting with direct instruction, we start with a scenario activity to motivate the learners and activate their prior knowledge since they are (young) adults with experience and established opinions.
- Direct instruction comes next, in the form of independent learning and instructor-led session to facilitate understanding. Even during instructor-led session, collaborative tasks further enhance the effectiveness of instructors' presentation.
- Instead of a quiz for practice or to check understanding, we choose a case study where the learners apply what they have learned to solve the issue at hand.
- We finish with an individual activity where the learners synthesise knowledge and create.

Unit 2: Organising eLearning sessions

Planning sessions: template and example

- As you can see, there are various opportunities for feedback throughout: the tools, the instructor, the other learners, and the learners themselves (self-reflection). Such opportunities aim at improving learners' skills on an ongoing basis.
- The activities that are both online and offline mean that the learners have to access the material online but they can finish studying or working offline.
- The tools are indicative, and you can replace them with the ones you or your institution have chosen carefully.

Unit 2: Organising eLearning sessions

Inquiry-based learning plan

To plan an inquiry-based session (e.g., activity), you can use the 5e model.

The model shows 5 stages to go through during an inquiry-based learning process (see next slide).

Using the lesson plan template, you can also prepare an eLearning session that integrates these five stages. You prepare activities for each stage, describing whether they will be synchronous or asynchronous.

Unit 2: Organising eLearning sessions

Inquiry-based learning plan

Engagement

- start by assessing your learners' past skills, and/or attitudes which relate to the concept or topic they are about to learn. This way you also motivate the learners, so that they want to learn more.

Exploration

- encourage your learners to explore. For example, observe, question, investigate, test predictions, hypothesise, and communicate with their classmates.

Explanation

- focusing again on the learners, give them the opportunity to explain what they have understood. After that, you can introduce the scientific and technical information needed, more directly.

Elaboration

- now encourage your learners to apply their new understanding of concepts, reinforcing new skills. The goal is to dive deeper into what they have already explored, carrying out additional investigation, creating new products, sharing new information and ideas or even transferring the acquired knowledge to other subject areas.

Evaluation

- even though it appears here, in the end, evaluation is part of all other stages. Aim at more authentic practices. For example, self- or peer-assessment, e-portfolios, performance-based assessment, concept maps, journaling, blogging. Assessment is ongoing and requires that you observe the learners' progress.

Unit 2: Organising eLearning sessions

A TPACK lesson plan

Have you ever used a teaching method which was not effective for a specific subject? Or a digital tool without added value?

To teach effectively with digital technologies, you need to have technological, pedagogical and content knowledge. The TPACK (Technological Pedagogical Content Knowledge) model focuses on the complex relationship between the content, pedagogy and technology knowledge. This type of knowledge, though, is crucial for the effective use of digital technologies in the classroom.

The model prompts self-reflection on your teaching, i.e., whether the combination of the methods, content, and technology is appropriate.

It leaves space for creativity and innovation in the future planning of eLearning sessions and units.

Let's see how you can use the TPACK framework when designing your eLearning lessons.

Unit 2: Organising eLearning sessions

A TPACK lesson plan

Imagine that you are about to finalise the lesson plan given (below the lesson plan template here) where topic is how to conduct a focus group. Think of the following:

- Content Knowledge (CK)—what is your subject knowledge? You need a solid understanding of the focus group research method.
- Pedagogical Knowledge (PK)—what is the pedagogy, the teaching methods/approaches required to effectively teach the learners? In this case, for example, a more inquiry-based approach will consolidate learners' understanding (real-life tasks where they might have to use their skills).
- Technological Knowledge (TK)—what digital tools are available to you, and which would be the most appropriate for the specific activities? In this case, for example, we need collaborative, web conferencing, presentation, and document creator tools, among others.

Unit 2: Organising eLearning sessions

A TPACK lesson plan

The knowledge areas blend with each other as follows:

- Pedagogical Content Knowledge (PCK) —which methods can best support the teaching of the selected content?
- Technological Content Knowledge (TCK)—how can the digital tools enhance the content?
- Technological Pedagogical Knowledge (TPK)—how can the digital tools serve the pedagogy chosen, allowing learners to achieve their learning outcomes?

Unit 2: Organising eLearning sessions

Self-paced activity

Use the given template and prepare a plan for an eLearning lesson or session. Make sure that you fill in all the sections, setting learning outcomes and selecting appropriate teaching methods. Use the TPACK framework as a reflection in terms of how to improve the overall design. You can upload your plans in this Padlet here [Password: OnlineHE].

Summary

Key takeaways

- For effective online teaching, try to integrate student-centred teaching methods based on the learning outcomes set
- Plan your lesson with activities based on sound teaching methods that complement each other
- Use the TPACK to reflect on the lesson plan you have created

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Assessment

Question 1: One of the learning outcomes states that learners should be able to plan and develop an independent research project. Which of the following would be an appropriate teaching method?

- case-based learning
- **inquiry-based learning**
- problem-based learning

Feedback: In inquiry-based activities, the learners set their own questions which they desire to answer and develop a strategy to experiment with solutions and answers to those questions. In problem- and case-based learning, learners try to solve and approach a given issue.

Assessment

Question 2: One of the learning outcomes states that learners should be able to solve electrical engineering problems. Which of the following would be an appropriate teaching method?

- scenarios
- discussion
- direct instruction

Feedback: Scenarios are ideal for learners to experiment and solve issues. With direct instruction and discussion, it is not clear with learners are able to apply skills.

Assessment

Question 3: One of the learning outcomes states that learners should be able to critically analyse disparate sources of information about WWII. Which of the following would be the most appropriate eLearning activity to achieve the learning outcome?

- watch a video explaining the contradicting results from 4 sources
- summarise 3 resources and debate on their varied propositions
- read a presentation on how other researchers have analysed two well-known sources

Feedback: To critically analyse something, learners need to practise. Instead of direct instruction (video, reading of known facts), learners need to engage with the content.

Assessment

Question 4: When it comes to planning eLearning sessions, we prefer:

- using more student-centred methods, regardless of the teaching subject
- selecting familiar digital tools, regardless of whether they enhance content
- selecting available digital tools, regardless of whether they promote learning

Feedback: Regardless of the subject, it is crucial to follow student-centred methods. We prefer tools that are available to us but always integrating them purposefully, to enhance the learning content and help learners achieve the learning outcomes.

Assessment

Question 5: One of the first steps when planning eLearning sessions is to:

- select the digital tools
- design teaching and learning activities
- **analyse the learners' needs**

Feedback: We analyse students' needs before anything else. Based on those needs, we design learning activities and choose the tools to support them.

Assessment

Question 6: When planning eLearning sessions, a good practice is to:

- select direct instruction as the first activity
- design mainly synchronous activities
- **select the timeframe for the activities' completion**

Feedback: We need to decide on the sequence of both synchronous and asynchronous activities. Teaching methods other than direct instruction can be the starting point (see 5e model that starts with assessing learners' past skills). It is crucial to set the timeframe for all the activities to be conducted.

Additional Resources

- A collection of lesson plan templates and examples from the University of Washington, for synchronous online classes: https://www.education.uw.edu/technologycenter/student-engagement-synchronous-online-learning/engaging-synchronous-session-templates/
- Case study of how the Loyola Law School created a meaningful online learning experience for students amid campus closures: https://universityservices.wiley.com/summer-intensive-program-loyola-law-school/
- Online activity examples by the University of North Carolina at Charlotte: https://teaching.charlotte.edu/teaching-guides/online-learning/online-activity-examples
- A collection of case studies with digital teaching and assessment ideas from different Faculties of the University of Bristol: https://www.bristol.ac.uk/digital-education/case-studies/
- An online teaching toolkit by ACUE (Association Of College And University Educators): https://acue.org/online-teaching-toolkit/