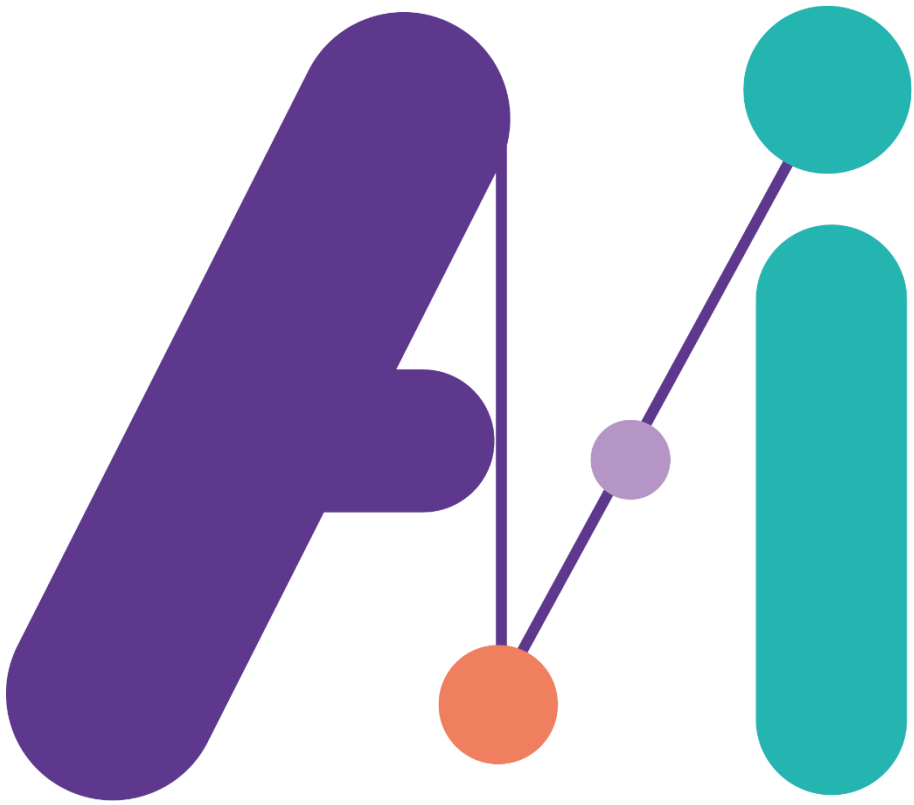

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WP3 Scenario-based training and piloting

Training Package with implementation guidelines

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Contents

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Consortium

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Partner 3. TALLIN UNIVERSITY, ESTONIA

Partner 4. CARDET, CYPRUS

Partner 5. UPIT, ROMANIA

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Project Information

Project Title	LEAarning analytics and AI for personaliseD lEaRning
Project acronym	LEADER AI
Project number	2022-1-CY01-KA220-HED-000086763
Beneficiary organisation (Project Coordinator)	EDEX - EDUCATIONAL EXCELLENCE CORPORATION LIMITED – UNIVERSITY OF NICOSIA
Project partners	• Partner 2. UAEGEAN, GREECE • Partner 3. TALLINN UNIVERSITY, ESTONIA • Partner 4. CARDET, CYPRUS • Partner 5. UPIT, ROMANIA • Partner 6. VIRTUAL CAMPUS, PORTUGAL

Document Information

Document Title	WP3 Scenario-based training and piloting_Scenarios
Document author	P2: University of the Aegean
Version	FV
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Introduction to the document

In the framework of the LEADER AI project, a Training Program (Work Package 3) has been developed to equip higher education teaching staff (e.g., academics, instructors, lectures, support staff) with the necessary skills to personalise their instruction through open source/freeware AI-based and data visualisation tools that do not require highly specialised computer skills such as programming.

The specific objectives of the training programme are to:

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- develop HE teaching staff' pedagogic and digital skills on how to use selected AI-based and data visualisation tools for personalised teaching and support
- prepare educators to adopt and adapt the project resources in their course practices
- raise awareness on the ethical implications of using AI-based and analytics tools for teaching and learning

The training aims to engage the participants with hands-on tasks for experimentation and application of skills, using real case scenarios from diverse fields/disciplines in HEIs. The current document includes all training material such as the scenarios and the detailed training plans, i.e., the indicative plan on how to deliver the scenarios, with the sequence of activities, the timing, content and resources.

Note: This document is useful to any trainer who wish to deliver the learning scenarios. Even though the target group of the scenario-based training is higher education teaching staff, you can adapt it according to the needs of adult learners of other education levels (e.g., pre-service or in-service teachers).

Guidelines and Tips

Below are some short guidelines and hints on how to deliver the training package:

- Before going in front of the trainees, read carefully the scenario that you choose to present/implement.
- Get up to date or familiarise yourself with AI-based tools, to know how to use them and to be able to explain to the participants how they should carry out the tasks.

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- Check if you have available and accessible all necessary resources and materials.
- Make sure that the Internet is active and stable.
- Make sure that the AI-based tools that you intend to use are functional.
- Implement the steps of the scenario in order (do not invert, do not skip any of them) and follow exactly the instructions.
- Rehearse one or two times, to check if you manage to implement the scenario in the allotted time.

Scenario 1: Personalizing the flipping course with learning analytics and AI chatbot

Overview of Scenario 1

Number	1
Title	Personalizing the flipping course with learning analytics and AI chatbot
Type	Instructor-led and Self-paced study
Summary	In this scenario, trainees (HEI staff) will recognize the potential of learning analytics and AI chatbots to inform more personalized learning designs in the context of a flipped laboratory-based course, when LMS is utilized at an institutional level. Moreover, they will acknowledge the important role of ethics in AI.
Description of the real-life problem	Dr. George is a new lecturer in the Department of Primary Education who teaches Introduction to Educational Technology. During his 1st year as lecturer, he followed the typical approach of teaching in the laboratory using theoretical presentations and hands-on activities. At the end of the semester, Dr. George was not satisfied with the students' performance in the final exams, neither with their overall performance in the lab during the semester. Thus, after discussing this issue with colleagues, he decided to follow the Flipped Classroom approach for his course. In this scenario the trainees will have the opportunity to identify the importance and usage of LA and AI tools for personalized blended learning.
Keywords	Learning analytics Awareness of student's online behaviour Chatbot Personalized tutor Personalized Flipped Classroom

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	Blended personalization in higher education
Duration	120’
Target group	HE in any discipline
Prerequisites	Basic skills of using LMS Basic ICT skills Learning design No previous knowledge on AI is required
Resources	ChatGPT account Access to LMS Study material (presentations, guides, webpages, video) Screen recordings
Knowledge objectives	1. Identify the role of learning analytics 2. Identify the use of learning analytics in LMS 3. Identify examples of using ChatGPT as personal tutor
Skills objectives	1. Correlate analytics with students’ performance 2. Adapt learning design based on analytics and personal AI tutors
Learning scenario (Carroll, 2000)	**1. Learning space** F2F Instructor-led mode: well-equipped group workspace + personal ICT devices Online Instructor-led mode: teleconference system + personal ICT devices Self-pace mode: Internet confection and personal ICT devices
	2. Agents and actors 2 (trained) trainers + 20 trainees (HEI staff)
	3. Learning activities ● Identify the importance of learning analytics ● Identify the use of learning analytics in LMS ● Correlate learning analytics with students performance ● Identify examples of using ChatGPT as personal tutor ● Adapt learning design based on analytics and personal AI tutors See Table 2 below for step-by-step presentation of scenario’s activities.
	4. Reflection and regulation Trainees will reflect during the last activity, brainstorming about the last question: *Which approach would you prefer for your own courses?*

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Link to Scenario	EN: https://gamma.app/docs/LEADER-AI-Scenario-1-EN-vwt8xctn1pbowkz GR: https://gamma.app/docs/LEADER-AI-Scenario-1-GR-7j2wmnbb8eot2bi EE: https://gamma.app/docs/LEADER-AI-Scenario-1-EE-7l4zgz40jyri99r RO: https://gamma.app/docs/LEADER-AI-Scenario-1-RO-40e82ebzxs2nxpy PT: https://gamma.app/docs/LEADER-AI-Scenario-1-PT-ywubnkjbccfboi7

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Training Plan of Scenario 1

Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
Min	*Describe here one objective at a time or "None"*	*Describe here the training material*	*Describe here one of Merrill's Principles*	*Describe here a specific didactic methodology*	*Describe here the types of content, platforms, LMS, AI tools, LA tools, etc.*	*Describe here how the trainees will interact with the content and/or the trainer*	*Describe here how trainees will be assessed against the specific objective or "None"*
20'	Identify the importance of learning analytics	**Real-case scenario Part A** *Dr. George is a new lecturer in the Department of Primary Education who teaches Introduction to Educational Technology. During his 1st year as lecturer, he followed the typical approach of teaching in the laboratory using theoretical presentations and hands-on*	**Task-centeredness** This is a situated-learning activity, positioning trainees against a real problem. **Activation** This activity taps into trainees' prior knowledge and experience and provides them an opportunity to demonstrate it by participating	**Active method** Group discussion with brainstorming and argumentation. **Expository method** Viewing a short presentation.	**Forum** Trainees could post their thoughts and ideas. **Presentation** Very short PowerPoint or video-based presentation explaining the role of learning analytics.	**TELL:** Trainer explains the problem and provide some insights about Flipped Classroom and Blended Learning **ASK:** Trainees based on their own experiences tries to provide some meaningful explanations	None

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		activities. At the end of the semester, Dr. George was not satisfied with the students' performance in the final exams, neither with their overall performance in the lab during the semester. Thus, after discussing this issue with colleagues, he decided to follow the Flipped Classroom approach and re-designed his course using video tutorials and supportive material upload to the LMS (Learning Management System) of the institution. Nevertheless, he didn't notice any	in a public dialogue.			about the problem. **TELL:** The trainer explains the relationship between awareness and learning analytics.	

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		significant improvement. ***1) What could have gone wrong?*** ***2) How could he improve things next year?*** ***3) How could he be aware of his students' work progress outside the lab?***					
20'	Identify the use of learning analytics in LMS	**Real-case scenario Part B** *Before the start of the new academic year, Dr. George had some discussions with the university's eLearning Support Center describing the current situation about his blended course. An instructional*	**Task-centeredness** This is a situated-learning activity, positioning trainees against a solution to a real problem. **Activation** This activity taps into trainees' prior knowledge and experience	**Active method** Group discussion with brainstorming and argumentation. **Expository method** Viewing a short presentation.	**Forum** Trainees could post their thoughts and ideas. **Presentation** Very short PowerPoint or video-based presentation explaining personalization.	**ASK:** Trainees based on their own experiences tries to provide some meaningful answers. **TELL:** The trainer explains the relationship between learning	None

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		designer suggested that he could utilize some tools of the LMS which supports reporting of learning analytics in order to acquire more awareness of his students' progress and adapt his course accordingly. ***1) Are you aware of the terms "personalization"?*** ***2) How do you think that learning analytics could personalize the course?*** ***3) How do you imagine your own courses***	and provides them an opportunity to demonstrate it by participating in a public dialogue. **Demonstration** This activity provides an example that reflects the learning outcomes.		**Screen casting** Instances of analytics reports	analytics and personalization. **SHOW:** The trainer presents various learning analytics reports of a course in LMS.	

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		using this scenario?					
20'	Correlate learning analytics with students' performance	**Real-case scenario Part C** *New semester has started and Dr. George with the help of the eLearning Center has already started to monitor his course by reading various data analytics of the LMS. After the 1st introductory F2F session, he prepared the 2nd F2F session as a flipped course, providing all the necessary material and guidelines to his students through the LMS. Students had to*	**Application** This activity provides an opportunity to think how learning so far could be applied.	**Inquiry method** Inclusion of questions to foster better understanding.	**Forum** Trainees could post their thoughts and ideas. **Screen casting** Instances of analytics reports	**DO:** Trainees, based on their own experience, tries to interpret the data, and provide an explanation about the study pattern of the students before the F2F session. **TELL:** Trainer discusses with the trainees some scenarios: 35/40 logged in *Dr. George is privately communicating with them via LMS's messaging in order to find out the problem. 3 students had a technical issue with their Internet access*	None

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		study 2 video introductions to learning theories applicable to EdTech, read some supportive articles and participate in a self-assessment activity. This year 40 students are enrolled in his course. 1 day before his F2F session, Dr. George went through the log information of the LMS. He found out the following (among other data analytics): *35/40 logged in.* *20/40 watched 2 videos.* *10/40 watched 1 video.* *5/40 watched 0 video.*				*and 2 students lost the updates from the Department. All of them said that they will try to catch up till the F2F session.* 20/40 watched 2 videos 10/40 watched 1 video 5/40 watched 0 video *Dr. George will adapt the hands-on-activities in order to provide one lesson plan per video and give the opportunity to the students to run one lesson plan at lest. He really had to adopt the F2F session, recognizing two different groups of students*	

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		30/40 read articles. *30/40 tried the assessment activity.* *10/40 had a score >50%* ***Having this information, how must Dr. George organize his F2F session?***				*based on their prior work in home. Also, he will organize a mini survey asking about the videos in terms of content, duration, characteristics, motivation, etc. Dr. George suspects that videos should be shorter and no more than 3 min each. The survey will reveal the answer… Moreover, he is privately communicating with the 5 students via LMS's messaging to find out why they didn't watch the video. They said that the guidelines were not specific if this activity was mandatory or*	

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						not. All of them said that they will try to catch up till the F2F session. 30/40 read articles. *Dr. George was surprised from this fact. Students preferred the texts than videos or they are simply used to study text material so far. He decided to initiate a debate during the F2F session about this topic.* 30/40 tried the assessment activity. *It seems that all the students who had study the*	

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						material participated in the self-assessment activity, except the 5 students who were not informed. Dr. George sends them a short notice. 10/40 had a score >50% *Dr. George was surprised with this outcome. Only 1 out of 4 students passed the self-assessment activity even thought that 3 out of 4 students, according to the data analytics, had study the material. Is seems that this was not enough. Dr. George is*	

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						going to prepare a reflection activity with his students focusing to those who failed the test.	
40’	Identify examples of using ChatGPT as personal tutor	**Real-case scenario Part D** *Dr. George was disturbed by the fact that only 25% of the students achieved a score higher than 50% in the self-assessment test. During the 2nd F2F session he managed a reflection activity with his students. The main outcome was that students were not able to fully understand some basic theoretical concepts and*	**Task-centeredness** This is a situated-learning activity, positioning trainees against a real problem. **Activation** This activity taps into trainees’ prior knowledge and experience and provides them an opportunity to demonstrate it by participating in a public dialogue. **Demonstration**	**Active method** Group discussion with brainstorming and argumentation. **Expository method** Viewing a short presentation.	**Supportive material** Toolkit, references **Forum** Trainees could post their thoughts and ideas. **Presentation** Very short PowerPoint or video-based presentation explaining Generative AI and ChatGPT. OpenAI account	**ASK:** Trainees present their own knowledge or experience about the concept of AI and its uses. **TELL:** Trainer explains very shortly the emerging field of AI in Education and especially potential uses of ChatGPT in higher education. **SHOW:** The trainer provides various examples of using ChatGPT and describes what prompting	None

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		relate them with EdTech. As they were studying in a self-paced mode, they didn't have the chance to ask questions to Dr. George for clarifications and examples. So, Dr. George discusses this issue with an instructional designer and he proposed 2 solutions: either to prepare a set of guidelines as supporting material for distance education, or to use AI tools as personal tutor. ***1) Are you aware of Generative AI and Conversational AI?***	This activity provides an example that reflects the learning outcomes.			is. Also, he shortly presents alternative bots like ChatGPT. **DO:** Trainees will make use of the Toolkit checklist in order to evaluate ChatGPT as personalized tutor. **TELL:** Trainer reflects with the trainees on their own choices	

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		2) Can you imagine some pedagogical uses of ChatGPT in higher education? ***3) How can ChatGPT help students in a personalized manner?***					
20’	Adapt learning design based on analytics and personal AI tutors	**Real-case scenario Part E** *Dr. George has decided to integrate ChatGPT as a personal tutor in his course. But it is necessary to provide some basic guidelines to his students about prompting ChatGPT. ChatGPT can be used for personalized learning in the following ways:*	**Application** This activity provides an opportunity to think how learning so far could be applied.	**Inquiry method** Inclusion of questions to foster better understanding.	**Forum** Trainees could post their thoughts and ideas. OpenAI account	**DO:** Trainees will work around some prompt examples for their own courses. **TELL:** Trainer reflects with the trainees on their own choices	None

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		1) Providing students with individualized feedback on their performance. *2) Providing students with tailored content based on their interests and preferences.* *3) Providing students with personalized instruction based on their learning style.* ***Which approach would you prefer for your own courses?***					

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Scenario 2: Empowering HE Through Nolej.io: A Personalized Learning Paradigm

Overview of Scenario 2

Number	2
Title	Empowering HE Through Nolej.io: A Personalized Learning Paradigm
Type	Instructor-led or Self-paced study
Summary	This learning scenario is targeted to higher education teachers. Once they identify students or cohorts of students that are struggling with a specific topic, they use Nolej.io to upload material. Nolej.io automatically creates a quiz or other assessment to test the students' understanding of the material. This scenario can be used in a variety of higher education courses, such as online courses, blended courses, and traditional face-to-face courses. It can also be used with students of all levels, from first-year students to graduate students.
Description of the real-life problem	Dr. Papadopoulos teaches a higher education course on pedagogics. He notices that a group of students are struggling to understand the concept of formative assessment, especially when compared to summative assessment. The teacher has tried a variety of teaching methods, but the students are still not grasping the concept. The students have attended all the lectures and tutorials, but they are still not able to grasp the concept. The students are feeling frustrated and discouraged, and they are worried about failing the class. Moreover, they are particularly concerned because they are passionate about teaching, and they want to be able to use formative assessment effectively in their future classrooms. Note: The term “formative assessment” is used for the purposes of this scenario, which can be applied in any higher education subject students find difficult to comprehend.
Keywords	higher education academic challenges personalized learning Generative AI Nolej.ai pedagogics formative assessment
Duration	120’
Target group	HE in any discipline
Prerequisites	Basic ICT skills No previous knowledge on AI is required

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Resources	Access to https://nolej.io/ (free for basic features) Access to digital learning resources used in the scenario, like PDF files or YouTube video links
Knowledge objectives	1. Identify the different features of Nolej that can be used to personalize learning. 2. Use Nolej to create a personalized learning package. 3. Export learning package and import it to Moodle.
Skills objectives	1. Design personalised interventions based on student feedback.
Learning scenario (Carroll, 2000)	**1. Learning space** Internet confection + personal ICT devices
	2. Agents and actors 1 trainer + 20 trainees (HEI staff)
	3. Learning activities ● Identify the students who are struggling. The teacher can do this by looking at student performance on assessments, participation in class, and other relevant data. ● Choose a PDF and a YouTube video that are relevant to the students' needs. The material should cover the topics that the students are struggling with. ● Upload the PDF and provide the YouTube link to Nolej.io. Then, the teacher can create a quizzes or other assessment to test the students' understanding of the material. ● Assign the quiz or assessment to the students. The teacher can assign the quiz or assessment to individual students or to a group of students. Once the students have completed the quiz or assessment, the teacher can review their results to see how well they understood the material. ● Provide feedback to the students. The teacher can provide feedback to the students on their performance, and they can also offer additional support to the students who are still struggling. See Table below for step-by-step presentation of scenario's activities
	4. Reflection and regulation The trainees practice on creating their own microlearning packages and then exporting them and importing them in their Moodle page or their personal website.
Link to Scenario	EN:https://gamma.app/docs/LEADER-AI-Scenario-2-EN-h39128m2ubefhtc GR:https://gamma.app/docs/LEADER-AI-Scenario-2-GR-cymx75jbt9k5jct

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	EE:https://gamma.app/docs/LEADER-AI-Scenario-2-EE-g4f0lpfjn2rvc1y?mode=doc RO:https://gamma.app/docs/LEADER-AI-Scenario-2-RO-dmf03m8nd6gf40v PT: https://gamma.app/docs/LEADER-AI-Scenario-2-PT-2ypglzlvidk8969
Extra content	Annex 1

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Training Plan of Scenario 2

Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
Min	*Describe here one objective at a time or "None"*	*Describe here the training material*	*Describe here one of Merrill's Principles*	*Describe here a specific didactic methodology*	*Describe here the types of content, platforms, LMS, AI tools, LA tools, etc.*	*Describe here how the trainees will interact with the content and/or the trainer*	*Describe here how trainees will be assessed against the specific objective or "None"*

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5’	Introduction to the problem	*The trainer presents the following real-case scenario:* *<u>Scenario:</u>* *Dr. Papadopoulos teaches a higher education course on pedagogics. He notices that a group of students are struggling to understand the concept of formative assessment, especially when compared to summative assessment. The teacher has tried a variety of teaching methods, but the students are still not grasping the concept. The students have attended all the lectures and*	Activation	Lecture	A PDF or a Power Point slide that describes the real-case scenario.	**SHOW:** The trainees read the real-case scenario as presented by the trainer.	None

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		tutorials, but they are still not able to grasp the concept. The students are feeling frustrated and discouraged, and they are worried about failing the class. Moreover, they are particularly concerned because they are passionate about teaching and they want to be able to use formative assessment effectively in their future classrooms.					
10’	Trainees reflect on the subject matter.	The trainer asks the trainees if they have faced the same issue and how they have dealt with it.	Activation	Asking questions		**ASK:** Based on their experiences, the trainees offer their view on the matter.	Trainers respond to the trainee’s question
5’	Provide trainees with additional	The trainer presents a PDF	Demonstration	Multimedia learning	PDF File	**SHOW:** The trainer presents	None

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	resources and information to enhance their understanding of the concept.	file and a YouTube video that further explain the term of "formative assessment"			https://www2.wested.org/www-static/online_pubs/resource1307.pdf *Understanding Formative Assessment: Insights from Learning Theory and Measurement Theory,* by Elise Trumbull and Andrea Lash YouTube video: https://www.youtube.com/watch?v=nfAutEWaqOE *What formative assessment is and isn't*, by Dylan William	to the trainees one PDF file and one YouTube video	
30'	Introduce the trainees to the nolej website and its features.	The trainer visits the nolej website, logs in and gives a quick tour of the site to the trainees.	Demonstration	Demonstration	Nolej website https://nolej.io/	**SHOW:** The trainer presents to the trainees the website and it's abilities to turn and PDF or YouTube video	None

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		Then, the trainer creates two microlearning packages: one for the PDF file and one for the YouTube video, to create a personalized learning paths for students that include content and activities that are tailored to their specific needs. The trainer shows the variety of capabilities nolej supports.				to interactive courses. Trainer uses information from Annex 1 to introduce the trainees to the platform.	
35’	Give the trainees hands-on experience with creating their own microlearning packages.	The trainer asks the trainees to locate one PDF file and one YouTube video and then upload them to nolej for the creation of their own	Application	Demonstration-Based Learning and Active Learning.	Nolej website https://nolej.io/	**ASK:** The trainees are asked to use the internet to find a PDF file and a YouTube video. They don’t have to be relative to formative assessment. They can relate	The trainers have managed to successfully create the microlearning package.

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		microlearning packages.				to the trainees' scientific interests **DO:** Trainees use the nolej's website to upload the material they found. Trainer helps them where needed.	
35'	Trainees learn to export packages from nolej and import them to their Moodle pages	The trainer demonstrates exporting the package and importing in to Moodle. After the demonstration, the trainees export the packages they created in the previous step and import them in their own Moodle pages.	Demonstration Application	Active Learning	Nolej website https://nolej.io/ Trainee's personal website or Moodle course	**SHOW:** The trainer shows how the microlearning package can be exported to different formats. **DO:** Trainees export the package either to HTML form or to H5P. With the help of the trainer, they import the package on their personal website or their Moodle course.	The trainers have managed to successfully import the microlearning package.

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Scenario 3: Personalised writing support with AI-based tools

Overview of Scenario 3

Number	3
Title	Personalised writing support with AI-based tools
Type	Instructor-led
Summary	In this scenario, the higher education teaching staff will explore AI-based writing analysis tools, which can be used to provide their students with individualised writing support and feedback. The target group is any teaching staff, particularly those teaching writing and communication skills. The pedagogical strategies followed focused on scenario-based and inquiry-based learning.
Description of the real-life problem	The primary persona is Professor Alison, an experienced higher education instructor who teaches Communication Skills to an undergraduate population. The real-life challenge concerns offering prompt, personalised support to students in large, diverse cohorts. Students might struggle in different aspects, especially regarding language (i.e., grammar, clarity, coherence, and idea generation). AI-based tools can be used to support individual students to catch up when the skill level of students is diverse, time is limited, and the instructor is impossible to cater to everyone at the same time. Various AI tools offer individualised writing support. Based on their features, the tools can be integrated into the writing tasks or be recommended by the instructor to students when studying.
Keywords	AI-based tools for personalised writing support AI-based tools for personalised feedback Writing skills Writing support Large language models Generative AI
Duration	120 min
Target group	HE teaching staff in any field, particularly those teaching courses related to (Academic) writing and communication skills.
Prerequisites	Basic conceptual knowledge of generative AI Basic - intermediate digital skills

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	Curriculum design Instructional design principles
Resources	Presentations Handouts User accounts on ChatGPT, Grammarly, Quillbot
Knowledge objectives	1. Identify and compare at least three AI-based writing support tools based on their affordances. 2. Analyse the benefits and challenges of AI-based tools for providing personalised writing support and feedback. 3. Recognise ethical considerations related to AI integration in writing.
Skills objectives	1. Select AI-based tools to provide students with individualised feedback in writing.
Learning scenario (Carroll, 2000)	**1. Learning space** If instructor-led session: ● A seminar room designed for group work ● Whiteboard ● Personal tablets/laptops with access to the Internet and presentation device (data projector, TV or interactive whiteboard) ● Miro collaborative space for digital collaboration
	2. Agents and actors One trainer, 20 trainees (higher education staff)
	3. Learning activities See Table 6 below for a detailed presentation of the activities. Activity 1 - Identify AI-based writing support tools—**task-centeredness principle**. Activity 2 - Analyse the benefits and challenges of the identified AI-based writing support tools—**demonstration principle**. Activity 3 - Select AI-based tools to provide students with individualised feedback in writing—**application principle**.
	4. Reflection and regulation Reflection at the end of the session. The participants reflect on the following questions:

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	"How can you integrate the AI-based writing support tools you have explored in your teaching practices to offer students individualised feedback?" The reflective question aligns with the integration principle, as the participants transfer the knowledge into their real-life practice.
Link to Scenario	EN:https://gamma.app/docs/LEADER-AI-Scenario-3-EN-s3z0c2554yc8rme GR:https://gamma.app/docs/LEADER-AI-Scenario-3-GR-tq8be2akhianx7e EE:https://gamma.app/docs/LEADER-AI-Scenario-3-EE-12etizkz48lubv5?mode=doc RO:https://gamma.app/docs/LEADER-AI-Scenario-3-RO-g41z4bdq3cwwqks PT:https://gamma.app/docs/LEADER-AI-Scenario-3-PT-nqlkyrn9sr0fg6f
Extra content	Annex 2 Annex 3 Annex 4

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Training Plan of Scenario 3

Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
Min	*Describe here one objective at a time or "None."*	*Describe here the training material*	*Describe here one of Merrill's Principles*	*Describe here a specific didactic methodology*	*Describe here the types of content, platforms, LMS, AI tools, LA tools, etc.*	*Describe here how the trainees will interact with the content and/or the trainer*	*Describe here how trainees will be assessed against the specific objective or "None"*
30'	Identify AI-based writing support tools.	The participants read the following scenario. **Scenario:** "Professor Alison is an experienced higher education instructor committed to providing personalised learning to her students. She teaches the Communication Skills course in the BA in European	The first activity aligns with the task-centeredness principle as it anchors learning in a real-life context; the participants have to solve a simple problem by identifying and recommending AI-based writing support tools and researching and analysing them like they would in real life. The activity also aligns with the	Inquiry-based learning Demonstration	• LEADER AI Toolkit – Section 2, Collection of Tools. • Annex 2 • GrammarlyGo • How to get started with GrammarlyGo [video]. • Quillbot • Quillbot Review – should you try it? [video]. • Use ChatGPT as a Writing Assistant to Write Faster	**SHOW** – the trainees read LEADER AI Toolkit – Section 2, Collection of Tools. **DO**: the trainees search and identify at least 3 AI-based writing support tools. Create accounts and explore the features of the tools. The tools we suggest: • GrammarlyGO	None

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		Languages and Literature programme. The student population is diverse since learners from various semesters attend the course. Prof. Alison sees some of her students struggling with writing, as is evident throughout the course activities. The professor decides to explore current AI-based tools that might help her students in writing. Which tools do you know that might fit the needs of the professor?"	activation principle as their prior knowledge is activated (they might already know such tools to suggest).		and Better [article].	• Quillbot • ChatGPT **TELL**: the trainer explains GrammarlyGo using information from Annex 2 (instructor-led) **SHOW**: the trainer shows the video How to get started with GrammarlyGo [video]. **TELL**: the trainer explains Quillbot using information from Annex 2 (instructor-led) **SHOW**: the trainer shows the video Quillbot Review – should you try it? [video].	

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		The participants have to search and identify at least 3 AI-based writing support tools, create accounts and explore the capabilities of the tools. The tools we suggest: • GrammarlyGO • Quillbot • ChatGPT				**TELL**: the trainer explains ChatGPT using information from Annex 2 (instructor-led) **SHOW**: the trainer shows the video Use ChatGPT as a Writing Assistant to Write Faster and Better [article]. The trainees will have to create an account in the given tools with the trainer's support. The trainer needs to be familiar with the tools' interface.	

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30’	Analyse the benefits and challenges of the identified AI-based writing support tools.	**The scenario continues:** “Professor Alison has identified 3 AI-based writing support tools. To make sure that the tools will help her students, she compares them, analysing their benefits and challenges”. The participants have to analyse the tools and write down their benefits and challenges. They can use the Toolkit checklist (Section 3) and add additional criteria.	The second activity aligns with the demonstration principle as we outline the benefits and challenges of each tool.	Inquiry-based learning	• LEADER AI Toolkit – Section 3, Checklist criteria • Annex 3	**SHOW** – the trainees read the LEADER AI Toolkit – Section 3, Checklist criteria. **TELL**: the trainer presents additional criteria in Annex 3 **DO**: the trainees use the example given and compare and analyse the tools they have identified. **TELL**: the trainer presents indicative solutions (benefits and challenges) provided to them as examples: 1. GrammarlyGo: real-time feedback,	None

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						accurate corrections, various writing genres supported but not in-depth for advanced writing, contextual understanding. 2. Quillbot: effective for paraphrasing but requires careful uptake of the sentences produced for smooth writing (natural writing, personal tone conveyed) and to ensure that	

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						the original message remains the same. 3. ChatGPT: can offer contextualised recommendations (e.g., what to consider) but not specialise in writing, which might produce biases and lead to plagiarism (ethical considerations). **DO**: the participants analyse the tools and write down their benefits and challenges.	

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						The trainer needs to be familiar with the tools' capabilities.	
30'	Select AI-based tools to provide students with individualised feedback in writing.	**The scenario continues:** "Having identified the benefits and challenges of these tools, Prof. Alison decided to see which tools fit the needs of her students. The students have the following profiles: **John:** John is an undergraduate student. English is his second language, and the course is offered in English. He struggles with	This activity aligns with the application principle, as the participants have time to independently think about which tools best support learners in contexts similar to real life.	Problem-based learning, Scenario-based learning	• Annex 4	**ASK**: the trainees link the tools identified with each learner's profile based on their benefits and challenges. **DO**: the trainees solve the task to fit students' needs. **TELL:** the trainer presents indicative solutions: • John will primarily benefit from GrammarlyGo since the tool recommends	None

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		grammar, sentence structure and clarity, which hinders his overall communication. **Alexa**: Alexa is an undergraduate student and a native English speaker. She seems to excel in English, yet most of her essays repeat the exact words, lacking a wide range of English vocabulary. **Michael**: Michael is an undergraduate student and bilingual speaker. He writes primarily influential				improving grammar, punctuation, and tone in your existing writing. • Alexa will primarily benefit from GrammarlyGo and Quillbot since she can find synonyms, paraphrase her sentences to avoid repeating the exact words and expand her vocabulary. • Michael will primarily benefit from ChatGPT and GrammarlyGo. ChatGPT is	

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		academic papers, but he struggles with more creative endeavours, like engaging his audience with catching sentence-openers and figurative language. Which AI-based writing support tools best align with the profile of each student? How can you integrate it into teaching? You can consider the ones suggested: • GrammarlyGO • Quillbot • ChatGPT”				ideal for its interactive nature in offering continuous assistance. He can consult both tools for idea generation, brainstorming and recommendations on improving his creative writing. *Note that more than one answer can be correct if the participants adequately justify their options*. **TELL:** the trainer presents ways to integrate these tools (Annex 4)	

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30’	Recognise ethical considerations related to AI integration in writing	In groups, the participants brainstorm and co-design a list of ethical principles as a code conduct for students to refer to when using AI tools for writing assistance.	This task aligns with the integration principle. The aim is to encourage the participants to transfer the newly acquired knowledge to their real-life practice.	Inquiry-based, design thinking	• Harvard Generative AI guidelines • Institution’s policy for academic integrity • Ethical guidelines LEADER AI Toolkit	**ASK**: the trainees review the documents provided (Harvard generative AI guidelines, institution’s policy for academic integrity, LEADER AI Toolkit guidelines **DO**: the trainees co-design a set of principles as a code of conduct for AI tools for writing assistance **TELL:** the trainer presents indicative	

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						solutions for responsible AI use: ● Use AI suggestions for idea generation and improvement, not copy and paste or replacement of creativity, authenticity and originality ● Acknowledge the use of AI for writing improvement ● Be open about how AI was/is used ● Follow university's guidelines about the academic integrity	

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						• Read the tool's privacy policy	

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Scenario 4: Personalised teaching intervention with learning analytics

Overview of Scenario 4

Number	4
Title	Personalised teaching intervention with learning analytics.
Type	Instructor-led or Self-paced
Summary	In this scenario, the higher education teaching staff will explore ways to interpret student data from the learning management system (LMS) for informed, personalised interventions.
Description of the real-life problem	The primary persona is Professor Alison, an experienced higher education instructor who teaches Communication Skills to an undergraduate student population. The real-life challenge relates to offering personalised support to students in large, diverse cohorts. Students might struggle with engagement, time management and procrastination. The digital footprint left by students in online learning environments can help identify their studying behaviour to offer personalised support.
Keywords	Learning analytics Data-driven intervention Personalised guidance Student engagement Student time management Student studying behaviours
Duration	120 min
Target group	HE teaching staff in any field, particularly those teaching courses related to (Academic) writing and communication skills.
Prerequisites	Online learning Learning Management Systems Basic - intermediate digital skills Curriculum design Instructional design principles
Resources	Presentation Handouts

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Knowledge objectives	1. Describe types of data sources and data points commonly used in learning analytics
Skills objectives	1. Design personalised interventions based on the data from learning analytics dashboards (e.g., the Intelliboard and Edwiser Reports). 2. Select personalised teaching interventions based on students' behavioural patterns in eLearning environments. 3. Design personalised interventions for engagement with the content/learning material, using AI-powered chatbots like Kaya and AppyPie
Learning scenario (Carroll, 2000)	**1. Learning space** ● A seminar room designed for group work ● Whiteboard ● Personal tablets/laptops with access to the Internet and presentation device (data projector, TV or interactive whiteboard)
	2. Agents and actors One trainer, 20 trainees (higher education staff)
	3. Learning activities See Table below for a detailed presentation of the activities. Activity 1 – Introduction to LADs, **task-centeredness principle** Activity 2 - Design personalised interventions based on the data from learning analytics dashboards, **activation and demonstration principles** Activity 3- Select personalised teaching interventions based on students' behavioural patterns in eLearning environments, **application principle** Activity 4 - Describe types of data sources and data points commonly used in learning analytics, **integration principle**
	4. Reflection and regulation Reflection at the end of the session. The participants reflect on the following questions: Which data in an online learning environment you are using would show students' behavioural patterns to design personalised instruction? Refer to specific examples.

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	The reflective question aligns with the integration principle, as the participants transfer the knowledge into their real-life practice.
Link to scenario	EN: https://gamma.app/docs/LEADER-AI-Scenario-4-EN-odefbknmfd7zysi GR: https://gamma.app/docs/LEADER-AI-Scenario-4-GR-upa9hv81ovr7w8e EE: https://gamma.app/docs/LEADER-AI-Scenario-4-EE-4ppex8nkkuzfhlj RO: https://gamma.app/docs/LEADER-AI-Scenario-4-RO-r5jjce7anzm3xkd PT: https://gamma.app/docs/LEADER-AI-Scenario-4-PT-o0c0h4jeodmcch0
Extra content	Annex 5 Annex 6

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Training Plan of Scenario 4

Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
Min	*Describe here one objective at a time or "None"*	*Describe here the training material*	*Describe here one of Merrill's Principles*	*Describe here a specific didactic methodology*	*Describe here the types of content, platforms, LMS, AI tools, LA tools, etc.*	*Describe here how the trainees will interact with the content and/or the trainer*	*Describe here how trainees will be assessed against the specific objective or "None"*
30'	None	The participants read the following scenario. **Scenario:** "Professor Alison is an experienced higher education instructor who teaches Communication Skills to an undergraduate student	The first activity aligns with the task-centeredness Moreover, the activation principle encourages participants to think of their existing practices and activate their prior knowledge about a real-life context.	Discussion	• Annex 5 • Learning Analytics Data-Informed Design for Teaching and Learning (Sheridan College - Centre for Learning and Teaching)	**ASK:** trainees recall prior knowledge regarding the use of digital data for teaching and learning improvement **TELL**: the key concepts entailed (Annex 5) and **SHOW**: an example of Learning	None

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		population. The university has integrated a Learning Analytics Dashboard in all online courses hosted in Moodle Learning Management System (LMS). Prof. Alison is interested in benefitting from the data shown to help students who seem to struggle. a) Do you know what Learning Analytics is? b) Have you heard the term Learning				Analytics Dashboards	

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		Analytics Dashboard? c) Have you used such an application? d) Do you collect student data in your online courses, and in which ways?"					
50'	Design personalised interventions based on the data from learning analytics dashboards	**The scenario continues:** "Prof. Alison checks the dashboard every week. They are currently in the middle of the semester. Most activities are self-paced, and they meet	This activity aligns with the activation and demonstration principles, as the participants are encouraged to dig into their existing knowledge and think about how to solve the existing issue (what	Problem-based learning, Scenario-based learning	• Annex 6 • Edwiser Reports and Intellibord (these are indicative, as HEIs need to invest in these)	**DO:** trainees brainstorm solutions to the scenario given **TELL:** indicative solutions: **Emily** Emily seems to keep up with most of the tasks, as her overall course	None

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		online with her students via a web conferencing tool once per week. This week, her students had to participate in 2 forum discussions, engage with other students (replying and providing feedback to their classmates, and complete one quiz and one optional activity. The instructor spotted the following data regarding her students: Emily – Total Logins 10,	intervention they would think of). The indicative solutions we give also demonstrate potential practices they can follow to analyse student data for personalised interventions.			progress is 40%, and we are in the middle of the semester. She logged in quite a lot this week, completed one of the two forum posts, and replied to other classmates, scoring 85% on the quiz while submitting the optional activity. Prof Alison decides to compare these with other data; she sees that Emily has viewed all the weekly material, probably having read it. The answers in the quiz showed	

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		Forum Posts 1, Forum replies 2, Quiz score 85%, Optional activity: submitted, Course progress 40% Lisa – Total Logins 5, Forum Posts 0, Forum replies 0, Quiz score 90%, Optional activity: Not submitted. Course progress 20% David – Total Logins 2, Forum posts 2, Forum replies 4, Quiz score: 30%, Optional activity: Not submitted, Course progress 50%				that Emily did not answer correctly related to a specific theory with which students engaged in the second forum, the one Emily did not complete. It might be the case that Emily found it difficult to express her opinion on that matter. She notes to revise this theory through activities during the next synchronous session. If Emily seems to struggle in future activities related to that activity, she will	

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		The total logins show the number of times each student visited the LMS. The forum posts indicate the number of original posts created by the respective user. The forum replies indicate the number of replies the user made. The quiz score shows the overall score perceived in percentages, the activity status is either submitted or not submitted, and the overall course progress indicates the percentage of				organise 1-1 meetings to uncover Emily's needs. She also decided to make a general forum announcement post, acknowledging all students' participation efforts and reminding them that they have two forum posts (with replies) to complete to encourage participation this week. **Lisa** Lisa seems to struggle with course participation as she does not contribute to the forum	

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		completed tasks with the course. What intervention strategies could Prof. Alison follow for personalised guidance and support for each student?				discussions or optional activities, and her overall progress is behind where she should be. However, she logged in 5 times this week and scored 90% on the weekly quiz. The quiz score alone is not a strong indicator that Lisa will succeed. Data are not strong enough to show the exact issue: Lisa might be struggling with time management, procrastination, or open-ended questions. Prof. Alison decided	

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						to find additional data for comparison. She sees that Lisa has viewed all the weekly tasks and material, but she does not join the weekly sessions. To intervene appropriately, Prof. Alison reached out to Lisa, sending a personalised message, acknowledging her efforts about the completed tasks and asking her how she was progressing and if there was anything she could do to help her. Lisa replies	

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						that she has a part-time job and finds it challenging to keep up with all the tasks. Prof. Alison encourages Lisa to visit her during her office hours and find a more sustainable solution together for Lisa to pass the course (e.g., discuss time management techniques, submit some of the critical activities later on, etc.). **David** David progresses well as he	

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						contributes to the forum, reaching 50% of course completion. However, he did not score high on the latest quiz or submit the optional activity. He only logged in twice this week, probably to view and complete the tasks. Prof. Alison further analysed how much time he spent online and found that he only viewed the tasks he must do without reading the weekly reading material. Also, he answered the questions	

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						incorrectly and analysed his answers in the forum discussions. Even though he did make posts, his answers did not reflect the course content and were not supported by evidence as required. Prof. Alison decided to revise some key concepts during the subsequent synchronous sessions through problem-based activities to help David and all her students better grasp the content. She made a forum	

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						post indicating that the students should use the weekly reading material (along with other research studies they find online) to back up their answers in activities. She will keep an eye on David's responses in future activities related to the concepts he seems to struggle with, and if he still struggles, he will encourage a 1-1 meeting with him.	

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15’	Select personalised teaching interventions based on students’ behavioural patterns in eLearning environments	**The scenario continues:** “In her course, Prof. Alison has included weekly discussions where each student needs to contribute with creative answers (e.g., mini projects, assignments, etc.) and some short quizzes with closed-ended questions for reflection. The final assessment will be problem-based, targeting students’ higher-order thinking as they are more than halfway through the semester;	This activity aligns with the application principle as the participants are asked to apply the new knowledge by selecting the best option for the emerging question.	Problem-based learning, Scenario-based learning	Edwiser Reports and Intellibord (these are indicative, as HEIs need to invest in these)	**ASK**: the trainees are presented with a dilemma and make a decision in the context of a scenario **TELL**: the trainer presents the correct answer: - Maria, due to the infrequent logins and lack of discussion participation Feedback: Maria needs a more targeted intervention to increase her engagement and understanding, as she has not participated in	None

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		Prof. Alison decided to check on her students by reviewing last month's data. She finds out the following: - George logged in 20 times, participated in discussions/ weekly assignments actively, with quality contributions, and completed the quizzes with an average score of 75%. - Maria logged in 5 times, has				the weekly discussions and assignments. She might have scored high on the quizzes, but these only include closed-ended questions; the final assessment requires students to use higher-order thinking skills, which, without active participation in the creative, open-ended discussions, the students might struggle to acquire.	

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		not participated in any discussions/ weekly assignments , and scored 95% on the quizzes, on average. Based on such data, who might need a more targeted intervention to improve their learning experience? Options: - George, due to the low quiz scores. - Maria, due to the infrequent logins and					

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		lack of discussion participation					
15’	Select personalised teaching interventions based on students’ behavioural patterns in eLearning environments	**The scenario continues:** “Prof. Alison decides to create a personal AI-powered chatbot trained with key extra resources with which the students can engage for revision of the most important topics in the course. This will allow students like George and Maria to revise the material and keep up at their	This activity aligns with principles, as the participants are given potential AI tools as personal assistants to students (study buddy or personal teacher)		Screenshots from Kaya and participants’ experimentation in the website	**TELL:** the following tools are presented and explained to the trainees: Kaya or AppyPie Kaya is is a personal AI that learns from your notes, data and content. You can upload your document and store it as your “memory” to interact with it by asking questions and learning. It can help the students	None

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		own pace. She decides to use Kaya for this." Based on your exploration with tools like Kaya and AppyPie, how can personal AI chatbots support personalised learning?				interact with the studying material, uploading their notes and help the instructors prepare frequently asked questions regarding their courses or content they want students to focus on and share it with their students as a personal tutor for them to interact with it. **Note** that Kaya can be trained for free with written notes and with a premium plan with PDF and audio files.	

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						AppyPie Appy Pie is a low-code visual software development platform, used to build web and mobile applications, without any coding, quickly and efficiently. There are pre-built connectors that enable easy integration with various data sources and third-party applications. With Appy Pie, you can create and deploy mobile and web applications in the cloud or on-premises.	

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						Note that AppyPie requires a free trial – so you can show that only if the participants' organisations might invest in that. **DO:** trainees visit Kaya, sign up and experiment with creating a custom personal AI **ASK**: the trainees reflect on how AI-powered tools like Kaya or AppyPie can be used for personalised intervention:	

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						• The instructor updates the AI tool with specific notes their students can revise throughout the course • The students can create their own personal AI with notes kept throughout a course for revision whenever they want (they interact with the chat like it is a study buddy)	

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						The instructors can create personal AI chatbots based on students' struggles, as identified by LADs (e.g., see weekly or monthly their struggles and update the personal AI like Kaya with such insights, focusing on explaining topics/concepts the students struggle with).	
10'	Describe types of data sources and data points commonly used in learning analytics	"Reflect on your online lessons and/or courses. Which data would show students' behavioural patterns to design	The final activity is reflective, in line with the integration principle. The aim is to encourage the participants to transfer the	Discussion		**ASK**: the trainees reflect on which data can show them students' behavioural patterns in relation to their learning, to offer	None

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		personalised instruction? Refer to specific examples".	newly acquired knowledge to their real-life practice.			personalised interventions.	

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Scenario 5: AI-enhanced learning design to foster students' engagement

Overview of Scenario 5

Number	5
Title	AI-enhanced learning design to foster students' engagement
Type	Planning engaging lectures with ChatGPT based on the ICAP framework
Summary	In this scenario, the higher education lecturer Jane in 'Learning Sciences and Educational Technology', is participating in a training course, where academic staff will learn how to redesign their courses. Jane would like to redesign her course to address students' challenges in deeply engaging with course material and effectively using educational technology. When designing the course, Jane takes into account that learners come from different backgrounds and with different skills, so different learning trajectories need to be designed. She partners with ChatGPT to create a course based on the ICAP framework, which involves generating learning objectives and outcomes, designing engaging tasks, and formulating assessments. ChatGPT aids Jane in tailoring learning activities and technologies to foster higher levels of student engagement, ensuring the course is both informative and capable of preparing students for real-world educational settings.
Description of the real-life problem	Lecturer Jane would like to redesign her course. The need for this redesign comes from the observed challenge that students often struggle to actively engage with and deeply understand complex concepts in learning sciences and educational technology, resulting in superficial knowledge acquisition rather than meaningful, applied learning. Additionally, traditional teaching methods have failed to fully leverage the potential of educational technologies, hindering students' ability to integrate these tools effectively in real-world educational settings, thus impacting their progress and preparedness for future challenges in the field. Jane would like to find ways to merge students' deeper learning experience with the possibilities of learning technologies. At the same time, Jane is aware that the learners on her course are all different: with different levels of knowledge and skills, some with a strong knowledge of educational science, others more adept at educational technology. To enhance the support for learners'

	personalized learning experiences, Jane plans diverse learning trajectories guided by the ICAP framework, accommodating the varied backgrounds and skill levels of her students. Understanding the diverse starting points of her learners, Jane plans to begin with passive and active learning modes. This method lets students initially assimilate information at their own pace, followed by active engagement through interactive exercises and practical applications. In the later stages of the course, Jane shifts the emphasis to the constructive phase, where she introduces an element of choice and autonomy. She plans to offer a range of task options, enabling learners to select the method that best aligns with their interests. This could include options like research projects, creative multimedia presentations, or hands-on experiments. Jane integrates regular feedback loops and reflective practices within these phases. This will allow her to continuously adapt the learning experience to individual needs.
Keywords	Learning Design Planning of instruction Generative AI Cognitive engagement
Duration	45 min
Target group	HEI staff interested in designing personalized learning trajectories that promote cognitive engagement by considering elements of personalized learning, such as offering differentiated tasks catering to various skill levels and providing options for students to pursue projects or topics aligned with their personal interests
Prerequisites	Intermediate digital skills, a little previous experience in using of generative AI tools is required; some prior knowledge of students' engagement
Resources	ChatGPT Learning materials: https://altc.alt.ac.uk/blog/2023/05/from-passive-bystanders-to-active-participants-how-the-icap-framework-can-help-frame-active-learning-using-technology/#gref
Knowledge objectives	1. Gain an understanding of the capabilities and applications of ChatGPT in educational settings to design learning activities based on ICAP framework 2. Develop knowledge of instructional design principles to create personalized learning trajectories, focusing on formulating learning objectives and tasks that not only engage students in higher-order thinking and knowledge construction but also consider their individual interests and skill levels

	3. Build a solid knowledge base of various digital tools as part of the learning trajectories, including their features and benefits, to promote different level of students' engagement
Skills objectives	1. Acquire skills in designing personalized learning trajectories using ChatGPT, focusing on creating instructional activities aligned with the ICAP framework that effectively stimulate and sustain students' cognitive engagement 2. Acquire proficiency in selecting and implementing a range of digital tools to promote students' cognitive engagement
Learning scenario	1. Learning space The design of the course and related activities can happen at the university or at home; space is not relevant.
	2. Agents and actors One trainer is involved in the design phase.
	3. Design of the Learning activities **Design of the course 'Learning Sciences and Educational Technology' based on the ICAP framework.** Jane would like to redesign her course a bit because she feels that students' learning is sometimes superficial. She would like to design a course that not only transmits knowledge about the principles of learning and education but also enables students to understand the role of educational technology, all through the lens of the ICAP framework. In addition, Jane recognizes the complexity in designing her course, understanding that her **learners come from a diverse range of backgrounds**, have different skills and have interests. Jane participates in the training where they learn how to redesign your course, with the help of ChatGPT. First, Jane digs into the main advancements in learning sciences and educational technology. She provides the ChatGPT with key theories and approaches in the field of educational technology and learning sciences and based on those concepts, Jane asks ChatGPT a list of learning objectives and outcomes, which are formulated based on the ICAP framework. After reworking with the suggestions, Jane is happy with the learning objectives and outcomes. Next, Jane asks for ideas of learning activities for different learning objectives based on the ICAP framework. ChatGPT responds with a number of ideas, from which Jane selects and tailors, ensuring they resonate with her course's focus. Jane **aligns the tasks with her students' diverse backgrounds** and interests, ensuring each activity resonates deeply with the specific learning objectives of her course, but at the same time takes into consideration students' backgrounds. For

	instance, students with a background in education need less support in understanding key concepts (in the passive phase of learning) and can move more quickly to constructive learning activities than learners with a background in science and technology. Next, Jane asks ChatGPT for examples of how learning technologies could breathe life into each category of the ICAP framework in the context of this course. She is looking for inspiration on how to design individual and group level tasks that foster different levels of engagement. ChatGPT suggests different learning activities with different methods and suitable tools supporting it. **Jane tailors the input to her own needs and students' backgrounds**. Again, learners who are more tech-savvy will have more complex solutions to test compared to others. For assessment, Jane seeks ChatGPT's input to ensure a variety of evaluation methods. The tool suggests a diverse array of options—reports, projects, peer reviews, portfolios, quizzes, and reflection journals—each tailored to a facet of the ICAP framework. Jane thoughtfully analyses them and selects some of them into her course, creating a comprehensive evaluation strategy that not only aligns with her curriculum but also offers choice. For every learning activity, **she provides students with two distinct assessment options**, allowing them to select the one that best aligns with their strengths, further emphasizing the personalized nature of her course. Through the collaboration with ChatGPT, Jane enhances her ability to create tasks and learning activities that are **specifically tailored to accommodate the diverse needs and backgrounds of her students**, a key factor in fostering their engagement and participation in the learning process. 4. Reflection and regulation Jane reviews the structure of the course. She seeks ChatGPT's feedback, ensuring every element harmonizes with the ICAP framework. ChatGPT's capacity helps Jane refine her course, ensuring it's a symphony of objectives, outcomes, tasks, and assessments.
Link to Scenario	EN: https://gamma.app/docs/LEADER-AI-Scenario-5-EN-f0immmwk5a1lbyf GR: https://gamma.app/docs/LEADER-AI-Scenario-5-GR--srt91p648iarucw EE: https://gamma.app/docs/LEADER-AI-Scenario-5-EE-wvdv6qfqiptf0ec RO: https://gamma.app/docs/LEADER-AI-Scenario-5-RO-e4jfpv3d8monumq

	PT: https://gamma.app/docs/LEADER-AI-Scenario-5-PT-wdgstiq3xq0v8c7

Training Plan of Scenario 5

Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
Min	*Describe here one objective at a time or "None"*	*Describe here the training material*	*Describe here one of Merrill's Principles*	*Describe here a specific didactic methodology*	*Describe here the types of content, platforms, LMS, AI tools, LA tools, etc.*	*Describe here how the trainees will interact with the content and/or the trainer*	*Describe here how trainees will be assessed against the specific objective or "None"*
60'	Understanding how to use ChatGPT	Material on how to use ChatGPT (prompts, queries)	Activation: activating prior knowledge on AI, student engagement	Self-study	ChatGPT, H5P-based materials with tutorials and quizzes	**TELL**: Online quizzes, discussion boards	Reflective questionnaire
60'	Instructional Design Principles for personalised learning	Material on ICAP framework and principles of personalisation	Demonstration of instructional design models based on ICAP	Interactive co-design sessions	ChatGPT, joint google docs Online quizzes	**SHOW**: Collaborative design	Design of a variety of learning trajectories
60'	Knowledge of tools	Example material of different tools to operationalise ICAP FW	Application by exploring tool functionalities and mapping them with ICAP FW	Hands-on workshops.	Different EdTech solution	**DO**: Group discussions	None

30’	Proficiency of EdTech solutions to foster cognitive engagement	Example material of different tools to operationalise ICAP FW	Demonstration of tools mapped with ICAP FW	Self-study	Different EdTech solutions ChatGPT	**DO**: Joint exploration of tools	Presentation on the use of a variety of tools in a classroom scenario based on ICAP FW
90’	Designing learning trajectories	Strategies for creating learning trajectories with engaging instructional activities	"Task-Centered" learning	Hands-on workshops.	ChatGPT platform, lesson plan templates	**DO**: Peer-review of lesson plans	Develop a lesson plan in collaboration with ChatGPT.

Scenario 6: Empowering HE Through Science of Learning

Overview of Scenario 6

Number	6
Title	Empowering HE Through Science of Learning
Type	Instructor-led and Self-paced study in Blended Learning mode
Summary	In this scenario, the higher education teaching staff will explore technological tools that offer possibilities for implementing different research-based learning strategies from the Science of Learning (e.g. free recall and distributed practice), which would correspond to the individual learning needs of the students. The target group is any teaching staff, particularly those interested in enhancing students' learning skills and engagement. The pedagogical strategies involve scenario-based inquiry-learning.
Description of the real-life problem	The primary persona is junior lecturer Maria, an experienced higher education teacher who is deeply interested in innovative digital technologies. Her mission is to "infect" her students with her personal mission of becoming more effective learners. She is also a big fan of innovative pedagogical methods and use of new digital technologies in the classroom. Learning analytics and AI-based tools can be used to improve her students' learning skills based on brain research (Science of Learning strategies).
Keywords	research-based learning strategies Science of Learning free recall and distributed practice using AI and educational technology for learning
Duration	120 min
Target group	HEI staff interested in promoting students' learning skills
Prerequisites	Intermediate digital skills, no previous experience in using of generative AI tools is required; some prior knowledge of Science of Learning strategies
Resources	Presentation, access to computers, web materials on Science of Learning strategies (free recall, distributed practice) https://illumine.upf.edu/ Wisdolia.com; Quizlet; Anki

Knowledge objectives	1. Promote efficient learning through Science of Learning strategies 2. Identify the possibilities of AI tools for personalized learning through free recall and prompt feedback (using texts or videos as learning input) 3. Explore the possibilities for self-tests with personalized approach
Skills objectives	1. Design human-centred, customised learning activities integrating AI-based tools for personalised learning (generating free recall tasks) 2. Teach students about learning options with AI-based tools for personalised learning
Learning scenario	**1. Learning space** A seminar room designed for group work, whiteboard, personal tablets/laptops with access to internet and presentation device (data projector, TV or interactive whiteboard); Wisdolia.com and ForgetNot for online learning activities
	2. Agents and actors one trainer, 20 trainees
	3. Learning activities See Table 6 below for a detailed overview Activity 1 – Getting familiar with two Science of Learning strategies Activity 2 – Demonstration of Wisdolia, Quizlet and Anki Activity 3 – Exploring the tools and preparing materials for self-study
	4. Reflection and regulation joint discussion/analysis of tool benefits and challenges with regard to free recall and distributed practice for individualised learning; self-assessment and reflection after completion
Link to Scenario	EN: https://gamma.app/docs/LEADER-AI-Scenario-6-EN-lx274xze7vixxf1 GR: https://gamma.app/docs/LEADER-AI-Scenario-6-GR-9wl47bmijhqlz9l EE: https://gamma.app/docs/LEADER-AI-Scenario-6-EE-w14sp220pjjrhr3 RO: https://gamma.app/docs/LEADER-AI-Scenario-6-RO-xigx6cow4vazdum PT: https://gamma.app/docs/LEADER-AI-Scenario-6-PT-8uz1b7fg6xuo8yi
Extra Content	Annex 7

Training Plan of Scenario 6

Time	Objectives	Content	Principle	Resources	Interaction activities	Assessment
Min	*Describe here one objective at a time or "None"*	*Describe here the training material*	*Describe here one of Merrill's Principles*	*Describe here the types of content, platforms, LMS, AI tools, LA tools, etc.*	*Describe here how the trainees will interact with the content and/or the trainer*	*Describe here how trainees will be assessed against the specific objective or "None"*
30' (Prior to seminar)	Introduction and activation of prior knowledge: Getting familiar with two Science of Learning strategies	Read the scenario and suggest solutions: Maria is a junior lecturer and experienced higher education teacher who is deeply interested in innovative digital technologies. Her mission is to "infect" her students with her personal mission of becoming more	Activation	Web-pages with explanations, research examples and application videos: https://illumine.upf.edu/ https://web.htk.tlu.ee/opistrateegiad/	**SHOW**: Browse the web-pages, get familiar with the free recall and distributed practice, create three questions about these strategies and one example of their possible use	None

		effective learners. She would like her students to try free recall and distributed practice				
15’	Activation of prior knowledge	Based on your prior knowledge, what activities would you suggest Maria should use with her students?	Activation		**DO**: Explain to a partner why these strategies could support learning; share your ideas with the class	None
20’	Demonstration of Wisdolia and ForgetNot	She is also a big fan of innovative pedagogical methods and use of new digital technologies in the classroom. Learning analytics and AI-based tools can be used to improve her students’ learning skills based on brain research (Science of Learning	Demonstration	Wisdolia Quizlet; Anki	**ASK**: Follow the demonstration, ask questions, comment on the possible benefits and challenges	None

		strategies). So, she would like to find technology that could advance her students' learning skills.				
40'	Exploring the two tools and preparing materials for self-study	Maria will provide students with PDF study materials or links to youtube that the students can use to generate free recall practice tasks (self-tests) in Wisdolia.com (to check comprehension); after students have practiced recalling the material, Maria uses ForgetNot to collect fast feedback about her students' engagement (behavioral, emotional and	Application	Wisdolia Quizlet; Anki	**DO**: Individual exploration and pair work (trying out the generated tasks).	Self-assessment (free recall)

		cognitive) to better understand the effectiveness of the employed tool for personalised learning (as perceived by each learner)				
15’	Feedback on the sessions and self-study	How could Wisdolia, Quizlet and Anki enhance individualised learning?	Integration		**DO**: Share your experience with the group. Get feedback on the perceived engagement in the session activities from your group members using ForgetNot.	Self-assessment (engagement)

Scenario 7: Personalised learning with AI in HE Challenge-Based Learning

Overview of Scenario 7

Number	7
Title	Personalised learning with AI in HE Challenge-Based Learning
Type	Instructor-led and Self-paced study in Blended Learning mode
Summary	In this scenario, the HE teaching staff, based on the information obtained from LA about their students (e.g. Moodle reports on competency breakdown, insights, logs, activity report, course participation) will explore and use content generation AI-powered tools (generators of: all-in-one courses, interactive videos, assessments; study tools; research assistants) to provide students with individualised learning materials and pathways. The target group can be any teaching staff. The pedagogical strategies followed focus on Challenge-Based Learning (CBL).
Description of the real-life problem	The primary persona is the 35-year University Lecturer Dr. Dana, who teaches Sciences to undergraduate students. Based on the semestrial LA (Moodle reports) on her students' academic performance, she discovered they insufficiently accessed the course materials, they obtained low grades in assessments and the regular assignments' unfulfillment rate is quite high. Dana believes the cause is that she provided common learning resources to students having different levels of knowledge and skills for the taught subjects. She wants to resolve this situation by making her teaching more attractive, explanatory, interactive and customized to each student learning pace and capacity. The real-life challenge to her is to be able to develop teaching-learning content adapted to student's needs, providing them with individualised learning. To achieve this goal, she intends to use AI-powered tools to create adaptive learning materials and contents (e.g. WebQuests for CBL) for various learning skills levels (e.g. introductory, intermediate and advanced level).
Keywords	Generative AI for content generation Natural language processing (NLP) tools / AI-based tools for personalised writing support

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Duration	120 min
Target group	HE teaching staff in any field of science
Prerequisites	Basic conceptual knowledge of generative AI Basic conceptual knowledge of NLP Basic - intermediate digital skills Knowledge of Challenge-Based Learning (CBL)
Resources	Presentations Handouts
Knowledge objectives	1. Identify various AI-powered tools for content generation (generation of adaptive learning/study materials), for 3 learning skills levels (introductory, intermediate and advanced), based on their affordances. 2. Analyse the benefits and challenges of AI-based tools for generation of personalised learning content and pathways. 3. Recognise ethical considerations related to AI integration in HE teaching and learning.
Skills objectives	Select and use AI-powered tools for creating dynamic and adaptive learning materials and experiences, to support students' individualised learning.
Learning scenario (Carroll, 2000)	**1. Learning space** If instructor-led session: ● A seminar room designed for group work ● Interactive Whiteboard / Smartboard ● Personal tablets/laptops with access to the Internet and presentation device (data projector, Interactive Whiteboard or Smartboard)
	2. Agents and actors One trainer, 20 trainees (higher education staff)
	3. Learning activities See Table 6 below for a detailed presentation of the activities. Activity 1 - Identify AI-powered tools for content generation - **task-centeredness principle**. Activity 2 - Analyse the benefits and challenges of the identified AI-based tools - **demonstration principle**. Activity 3 - Select and use AI-powered tools to create learning

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	materials and contents customised to different learning skills levels of the students (e.g. introductory, intermediate and advanced) - **application principle**.
	4. Reflection and regulation Reflection at the end of the session. The participants reflect on the following question: *"How can you integrate the AI-based content generation tools you have explored, in your teaching practices to offer students customised learning materials and pathways?"* The reflective question aligns with the integration principle, as the participants transfer the knowledge into their real-life practice.
Link to Scenario	EN: https://gamma.app/docs/LEADER-AI-Scenario-7-EN-soh549kba6xgw30 GR: https://gamma.app/docs/LEADER-AI-Scenario-7-GR-vvte0ebteft5frm EE: https://gamma.app/docs/LEADER-AI-Scenario-7-EE-x7guwdj5fe7u50r RO: https://gamma.app/docs/LEADER-AI-Scenario-7-RO-57s42zllsej7xe7 PT: https://gamma.app/docs/LEADER-AI-Scenario-7-PT-sjrgtbq7b5pqnh8
Extra Content	Annex 8

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Training Plan of Scenario 7

Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
Min	*Describe here one objective at a time or "None."*	*Describe here the training material*	*Describe here one of Merrill's Principles*	*Describe here a specific didactic methodology*	*Describe here the types of content, platforms, LMS, AI tools, LA tools, etc.*	*Describe here how the trainees will interact with the content and/or the trainer*	*Describe here how trainees will be assessed against the specific objective or "None"*
30'	Identify various AI-powered tools for content generation (generation of adaptive learning/study materials), for 3 learning skills levels (introductory, intermediate and advanced), based on their affordances	The participants are briefly explained what Challenge-Based Learning means and what is a WebQuest. Then, they read the following scenario. **Scenario:** "The 35-year University Lecturer Dr. Dana teaches Sciences to undergraduate students. Based on the semestrial LA	The first activity aligns with the task-centeredness principle as it anchors learning in a real-life context; the participants have to solve a simple problem by identifying AI-based tools for content generation, by searching for and analysing them, like they would in real life.	Inquiry-based learning Demonstration	• LEADER AI Toolkit – Section 2, Collection of Tools. • Annex 8	**SHOW** – the trainees read LEADER AI Toolkit – Section 2, Collection of Tools. **DO**: the trainees search and identify at least 3 AI-based tools for content generation and explore the features of these tools (one tool per introductory, intermediate and advanced level).	None

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		(Moodle reports) on her students' academic performance, she discovered they insufficiently accessed the course materials, they obtained low grades in assessments and the regular assignments' unfulfillment rate is quite high. Dana believes the cause is that she provided common learning resources to students having different levels of knowledge and skills for the taught subjects. She wants to resolve this situation by making her	The activity also aligns with the activation principle as their prior knowledge is activated (they might already know such tools to suggest).			The tools we suggest are: <u>Introductory level</u>: **(1) Animated videos:** Powtoon Vyond **(2) Interactive Quizzes** Google forms Quizizz <u>Intermediate level</u>: **(3) Interactive simulations:** MATLAB SIMULINK PhET Interactive Simulations **(4) Augmented Reality apps** Zappar/ Zapworks Stdio Metaverse	

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		teaching more attractive, explanatory, interactive and customized to each student learning pace and capacity. Thus, Dana decides to develop teaching-learning content adapted to her student's needs, providing them with individualised learning contents and experiences. To this aim, she intends to use AI-powered tools to create WebQuests for introductory, intermediate and advanced level, as adaptive and customized				Advanced level: **(5) Adaptive Learning platforms:** Smart Sparrow Knewton **(6) AI assistants for research projects** WolframAlpha Scite.ai Research.rabbit **TELL**: the trainer explains Powtoon using information from Annex 7 (instructor-led) **SHOW**: the trainer shows the video Powtoon Overview **TELL**: the trainer explains ZapWorks Studio using information	

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		learning resources for her students. The WebQuests are Challenged-Based educational resources. Dana's WebQuests will be adaptive and customized both in terms of the number of the assignments (e.g. 2 assignments for the introductory level, 3 for the intermediate and 4 for the advanced level) and also through the content's difficulty/complexity: the challenge will be presented by the help of (1) **animated videos** and (2) **interactive**				from Annex 7 (instructor-led) and the video "Augmented Reality for Microlearning" from the link https://zap.works/learning-and-development/ **SHOW**: the trainer shows the videos Discover what's posible with Zapworks Studio 1 and Discover what's possible with Zapworks Studio 2 **TELL**: the trainer explains Smart Sparrow using information from Annex 8 (instructor-led) **SHOW**: the trainer shows the tutorial Getting Started	

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		quizzes at the introductory level, with (3) **interactive simulations** and (4) **Augmented Reality apps** at the intermediate level and via (5) **Adaptive Learning Platforms** and (6) **AI assistants for research projects** at the advanced level. Dana decides to explore all these types of AI-powered tools that might help her developing personalised WebQuest-based contents adapted to the three envisaged skill levels of her students." Which tools do you know that				with Smart Sparrow Additionally (if the time allows): **TELL**: the trainer explains ChatGPT using information from Annex 8(instructor-led) **SHOW**: the trainer shows the video Use ChatGPT as a Writing Assistant to Write Faster and Better [article]. The trainees will have to create an account in the given tools with the trainer's support, OR, to use the free demos. The trainer needs to be	

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		might fit the needs of University Lecturer Dr. Dana? The participants have to search and identify at least one AI-based tool per level (i.e. 3 of the 6 types tools mentioned above), and explore the capabilities of these tools. We suggest any of the following tools (or equivalent): **(1) Animated videos:** Powtoon Vyond **(2) Interactive Quizzes** Google forms Quizizz				familiar with the tools' interface.	

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		(3) Interactive simulations: MATLAB SIMULINK PhET Interactive Simulations **(4) Augmented Reality apps** Zappar/ Zapworks Studio Metaverse **(5) Adaptive Learning platforms:** Smart Sparrow Knewton **(6) AI assistants for research projects** WolframAlpha Scite.ai Research.rabbit In addition to all of these, we suggest using **ChatGPT** to					

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		create the text-parts of the WebQuests.					
30’	Analyse the benefits and challenges of AI-based tools for generation of personalised learning content and pathways	**The scenario continues:** “University Lecturer Dr. Dana has identified 6 AI-based content generation tools (one per category). To make sure that the tools will help her students understand the contents that she will create and provide them, she analyses their benefits and challenges” The participants have to analyse only 3 of the identified tools	The second activity aligns with the demonstration principle as we outline the benefits and challenges of each tool.	Inquiry-based learning	• LEADER AI Toolkit – Section 3, Checklist criteria	**SHOW** – the trainees read the LEADER AI Toolkit – Section 3, Checklist criteria. **TELL**: the trainer presents additional criteria in Annex 3 **DO**: the trainees use the example given and compare and analyse the tools they have identified. **TELL**: the trainer presents participants indicative solutions (benefits and challenges / pros and cons)	None

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		(one tool for each of introductory, intermediate and advanced level at their choice) and write down their benefits and challenges. They can use the Toolkit checklist criteria (Section 3) and the criteria in Annex 3, but they can also add additional criteria.				provided to them as examples: 1. Powtoon: vast library of templates and customizable elements (images, text styles, characters, and effects); user-friendly interface and availability of free and affordable versions specifically designed for educators; limitation of 90 seconds for imported video; need for more sound effect options.	

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						2. Zapworks Studio: user friendly; the interface is straight forward and you can build all the functionality even if you don't know how to code; the support team is brilliant and you always get the help you need; maybe the documentation can be improved with more practical tutorials; the lack of dynamic lights in 3D is slightly challenging. 3. Smart Sparrow: allows users	

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						to provide constructive feedback that is unique to each student; confers upon teachers the gift of data-driven insights, thus they can modify their instruction, ensuring no student is left behind; Editing via Smart Sparrow's authoring tool can be difficult for first-time users. Additionally (if time allows it it): 4. ChatGPT: can offer	

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						contextualised recommendations (e.g., what to consider) but not specialise in writing, which might produce biases and lead to plagiarism (ethical considerations). **DO**: the participants analyse the tools and write down their benefits and challenges. The trainer needs to be familiar with the tools' capabilities.	

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30’	Select and use AI-powered tools for creating dynamic and adaptive learning materials and experiences, to support students’ individualised learning	**The scenario continues:** “Having identified the benefits and challenges of these tools, University Lecturer Dr. Dana decided to see which tools fit better the needs of her students. The students have the following profiles: **George:** George is an undergraduate student in science. According to the semestrial data obtained with Learning Analytics, he is at an introductory level of learning skills. He has	This activity aligns with the application principle, as the participants have time to independently think about which tools best support learners in contexts similar to real life.	Problem-based learning, Scenario-based learning	• Annex 8	**ASK**: the trainees link the tools identified with each learner’s profile based on their benefits and challenges. **DO**: the trainees solve the task to fit students’ needs. **TELL:** the trainer presents indicative solutions: • **George** will primarily benefit from the learning materials and pathways created with Powtoon, since the tool supports the University Lecturer Dr.	None

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		good ability to analyse information and identify key concepts, but he struggles with understanding abstract concepts and only has basic understanding of logical reasoning and argumentation. **Maria**: Maria is an undergraduate student in science. According to the semestrial data obtained with Learning Analytics, she is at an intermediate level of learning skills. She has excellent ability to gather and analyse information				Dana to develop animated videos that explain concepts in a visually engaging way, breaking down complex ideas into easily digestible segments, adequate for introductory level. Also, he will benefit from Zapworks Studio, as this tool creates AR experiences that can be used to visualize complex	

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		from various sources, think logically and make reasoned judgments. She proves solid understanding of fundamental concepts and the capability to analyse problems, but she is not so proficient in breaking down problems into manageable parts, and formulate effective solutions. **Lucy**: Lucy is an undergraduate student in science. According to the semestrial data obtained with Learning Analytics, she is				concepts and make abstract ideas more tangible. • **Maria** will primarily benefit from from the learning materials and pathways created with Zapworks Studio, since the tool supports the University Lecturer Dr. Dana to create real-world applications/ scenarios with AR, that the student engages with and boost identification or design of	

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		at an advanced level of learning skills. She owns excellent critical thinking and problem-solving skills, relevant for her study level, she is able to analyse quite complex data sets. Yet, she needs to master better the 'thinking outside the box' skills and to face more successfully the creative endeavours like generating innovative solutions to challenges. **Which AI-powered tools for content generation best align with the profile of each student? How**				efficient solutions in problem-solving. • **Lucy** will primarily benefit from from the learning materials and pathways created with Smart Sparrow, since the tool supports the University Lecturer Dr. Dana to interactive simulations and scenario-based learning experiences, with real-world challenges,	

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		can you integrate it in your teaching? You can consider the ones suggested: • Powtoon • Zapworks Studio • Smart Sparrow • ChatGPT (additionally, if the time allows it)				encouraging students to explore unconventional solutions and think creatively; also, with Smart Sparrow Dana can create personalized problem-solving exercises that require students to apply critical thinking and creative problem-solving skills. This helps develop their ability to approach challenges from different perspectives.	

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						Transversally, all students will benefit from the learning resources developed by University Lecturer Dr. Dana with ChatGPT, as she will use ChatGPT to design the challenges of the WebQuests. *Note that more than one answer can be correct if the participants adequately justify their options*. **TELL:** the trainer presents ways to integrate these tools (Annex 8)	

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30’	Recognise ethical considerations related to AI integration in HE teaching and learning	In groups, the participants brainstorm and co-design a list of ethical principles as a code conduct for teachers to refer to when using AI tools for content generation.	This task aligns with the integration principle. The aim is to encourage the participants to transfer the newly acquired knowledge to their real-life practice.	Inquiry-based, design thinking	• Harvard Generative AI guidelines • Russel Group principle on the use of generative AI tools in education • Arizona State University - Generative AI FAQs • Institution’s policy for academic integrity • Ethical guidelines LEADER AI Toolkit	**ASK**: the trainees review the documents provided (Harvard generative AI guidelines, Russel Group principle on the use of generative AI tools in education, Arizona State University – Generative AI FAQs), institution’s policy for academic integrity, LEADER AI Toolkit guidelines **DO**: the trainees co-design a set of principles as a code of conduct for AI tools for content generation	

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						TELL: the trainer presents indicative solutions for responsible AI use: • Use AI suggestions for idea generation and improvement, not copy and paste or replacement of creativity, authenticity and originality • Acknowledge the use of AI for content generation • Be open about how AI was/is used • Follow university's guidelines about the	

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						academic integrity • Read the tool's privacy policy	

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Scenario 8: Personalized research support with AI-based tools

Overview of Scenario 8

Number	8
Title	Personalized research support with AI-based tools
Type	Instructor-led
Summary	In this scenario, the higher education teaching staff will explore AI-based tools for personalized research tools that can be used to teach students to search for diverse information related to a specific topic and to provide feedback on topics covered in their scientific papers. The target group is any teaching staff. The pedagogical strategies followed focused on scenario-based and inquiry-based learning.
Description of the real-life problem	The primary persona is Anna, an experienced higher education teaching staff working with groups of about 30 undergraduate students. The real-life challenge consists in offering prompt, personalised research support to her students. Students may have problems selecting the most relevant information, processing and summarizing it. For this reason, it is important for Anna to teach them how to research, how to combine the information found on the same topic, and how to respect ethical principles of research, using AI tools. Also, AI tools for personalized research helps improve students' knowledge. A variety of AI tools provide customized research assistance. The tools can be included into research assignments based on their features, or the teacher might suggest them to the students while they study or write scientific papers.
Keywords	AI-based tools for personalised research support Research skills Generative AI
Duration	120 min
Target group	Higher education teaching staff in any field.
Prerequisites	Basic conceptual knowledge of AI tools Basic - intermediate digital skills Curriculum design Instructional design principles
Resources	Presentations User accounts on ZenoChat, BingAi and Bard

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Knowledge objectives	1. Identify and compare three AI-based tools for personalized research support based on their affordances. 2. Analyse the benefits and challenges of AI-based tools for personalized research support. 3. Recognise ethical considerations related to AI integration in research.
Skills objectives	1. Select AI-based tools to teach students to search for diverse information related to a specific topic. 2. Select AI-based tools to provide feedback on topics covered in their scientific papers
Learning scenario (Carroll, 2000)	**1. Learning space** If instructor-led session: ● A seminar room designed for group work ● Whiteboard ● Personal tablets/laptops with access to the Internet and presentation device (data projector, TV or interactive whiteboard)
	2. Agents and actors One trainer, 20 trainees (higher education staff)
	3. Learning activities See the table below for a detailed presentation of the activities. Activity 1 - Identify AI-based tools for personalized research support - **task-centeredness principle** Activity 2 - Analyse the benefits and challenges of the identified AI-based tools for personalized research support - **demonstration principle**. Activity 3 - Select AI-based tools to teach students how to search for diverse information related to a specific topic and how to write scientific papers - **application principle** Activity 4 - Recognise ethical considerations related to AI integration in research and writing scientific papers – **integration principle**
	4. Reflection and regulation Reflection at the end of the session. The participants reflect on the following questions: “How can you integrate the AI-based research tools you have explored in your teaching practices to teach students to search for diverse information regarding a specific topic?” “How can you integrate the AI-based research tools you have explored in your teaching practices to provide feedback to students on topics covered in their scientific papers?” The reflective question aligns with the integration principle, as the participants transfer the knowledge into their real-life practice.

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Link to Scenario	EN: https://gamma.app/docs/LEADER-AI-Scenario-8-EN-bmklmn475q5j3cz GR: https://gamma.app/docs/LEADER-AI-Scenario-8-GR-xeglnh3bp2hyb0e EE: https://gamma.app/docs/LEADER-AI-Scenario-8-EE-o46wxc0gc48edop RO: https://gamma.app/docs/LEADER-AI-Scenario-8-RO-3ymq8mxdjtddwvz PT: https://gamma.app/docs/LEADER-AI-Scenario-8-PT-wo920pc50njok34
Extra Content	Annex 9

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Training Plan of Scenario 8

Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
Min	*Describe here one objective at a time or "None."*	*Describe here the training material*	*Describe here one of Merrill's Principles*	*Describe here a specific didactic methodology*	*Describe here the types of content, platforms, LMS, AI tools, LA tools, etc.*	*Describe here how the trainees will interact with the content and/or the trainer*	*Describe here how trainees will be assessed against the specific objective or "None"*
40'	Identify AI-tools for personalized research support.	The participants read the following scenario. **Scenario:** "Professor Anna is an experienced higher education teaching staff. She tries to teach students about the importance of scientific research and the steps to follow to write a valuable scientific paper. Because of the rather high	Task-centeredness principle - it anchors learning in a real-life context; the participants have to solve a simple problem by identifying and recommending AI-tools foe personalized research. Activation principle - their prior knowledge is activated	Inquiry-based learning Demonstration	• LEADER AI Toolkit – Section 2, Collection of Tool • Annex 9 • ZenoChat • How To Build Knowledge Bases Using AI ZenoChat: https://www.youtube.com/watch?v=RnF9nO8MGxA • BingAI • How to use Bing AI in Microsoft Edge to get	**SHOW** – the trainees read LEADER AI Toolkit – Section 2, Collection of Tools. **DO**: the trainees search and identify at least 3 AI tools for personalized research support. Create accounts and explore the features of the tools. The tools we suggest: • ZenoChat • BingAI • Bard	Assessment through the results of the activity themselves.

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		number of students she works with and their different levels of training, it is quite difficult for Anna to introduce them to this new world of research and scientific papers. Some of the students do not know how to combine the information found on the same topic, how to summarize it or how to respect the ethical principles of research. That is why the professor decides to explore current AI-based tools that might help her students	(they might already know some tools foe personalized research to suggest).		inspired and boost creativity: https://www.youtube.com/watch?v=wKYqA1MLrXQ • Bard • How to Use Bard Ai - Google Chatbot VS. ChatGPT: https://www.youtube.com/watch?v=2M2pSADmSDs&t=125s .	**TELL**: the trainer explains ZenoChat using information from the Annex 1a. . **SHOW**: the trainer shows the video *How to Build Knowledge Bases Using AI ZenoChat.* **TELL**: the trainer explains BingAI using information from the Annex 1a. **SHOW**: the trainer shows the video How to use Bing AI in Microsoft Edge to get inspired and boost creativity. **TELL**: the trainer explains Bard using information from the Annex 1a.	

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		their research work. Which tools do you know that might fit the needs of the professor?" The participants have to search and identify at least 3 AI tools for personalized research support, create accounts and explore the capabilities of the tools. The tools we suggest: ● Zeno Chat ● BingAI ● Bard				**SHOW**: the trainer shows the video *How to Use Bard Ai - Google Chatbot VS. ChatGPT*. The trainees will have to create an account in the given tools with the trainer's support. The trainer needs to be familiar with the tools' interface.	

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25’	Analyse the benefits and challenges of the identified AI tools for personalized research support	**The scenario continues:** “Three AI tools have been discovered by Professor Anna for individualized research support. She evaluates and compares the resources to make sure her students will benefit from them.” Each participant should analyse the tools and write down their benefits and challenges. They can use the Toolkit checklist (Section 3) and add additional criteria.	Demonstration principle - we list each tool's advantages and drawbacks.	Inquiry-based learning	• LEADER AI Toolkit – Section 3, Checklist criteria	**SHOW** – the trainees read the LEADER AI Toolkit – Section 3, Checklist criteria. **DO**: the trainees use the checklist criteria from the LEADER AI Toolkit and compare and analyse the tools they have identified. **TELL**: the trainer presents indicative solutions (benefits and challenges) provided to them as examples: 1. ZenoChat – the main advantage is that it remembers past dialogues which people can continue anytime. It also	Assessment through the results of the activity themselves.

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						provides a selection of pre-made templates, rewriting tools and integrations, to make it simple to generate content. The main disadvantage is that ZenoChat does not generate longer-form content. 2. Bing AI:.one of its advantages consists in the fact that Bing Chat includes superscripts that link to reference materials in several of its responses.	

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						Moreover, it generates images from text-based instructions from users. But it also has some disadvantages: to avoid overloading the system, a user is only allowed a certain number of conversations and session per day. Also, the chat responses are shorter than the ones provided by similar AI tools. 3. Bard – the main advantage is that this	

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						tool is fast. It can respond in under 30 seconds to an answer. Moreover, it has the capacity of producing text in diverse styles and formats like articles, letters, blog posts, essays, and creative writing. As for the disadvantages, it does not mention the source and provides inaccurate information. **DO**: the participants analyse the tools and write down	

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						their benefits and challenges. The trainer needs to be familiar with the tools' capabilities.	
30'	Select AI-based tools to teach students how to search for diverse informatio n related to a specific topic and how to write scientific papers	**The scenario continues:** "Prof. Anna made the decision to determine which tools would best serve her students' requirements after weighing the advantages and drawbacks of each. The profiles of the students are as follows: **Emma** is passionate about research and writing in general. She not only writes scientific articles that she	Application principle - individually, participants have to think about which of these AI tools for personalized research support fit real-life situations.	Problem-based learning, Scenario-based learning	• Checklist with criteria for AI and LA tools integration - Leader AI Toolkit	**ASK**: The trainees establish a connection between the tools and each learner's profile by analysing their advantages and disadvantages. **DO**: the trainees solve the task to fit students' needs. **TELL:** The trainees present the solutions: • Emma will primarily benefit from Bard, because one of the advantages of this tool is to help design	Assessment through the results of the activity themselves.

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		publishes in various magazines, but also has a blog where she posts about student life. She is currently working on a scientific paper about the psychological impact that choosing a job has on a young student, which she also wants to post on her blog. **Stuart**: is passionate about the economic development of the European Union. He wants to write an article in which he presents the economic development and its impact on the lives of the citizens. He				texts in different styles. • Stuart will primarily benefit from BingAI, because he wants to generate some images and graphics, in order to support the text written in the scientific paper. • Claire will primarily benefit from ZenoChat, because she needs to save the progress she made in writing the scientific paper and also she wants to save as much time as possible.	

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		wants to include a multitude of graphics and images to support his research. **Claire** is the most familiar student with writing scientific papers and using AI tools. But she works, so she doesn't have enough time to devote to research. For this reason, she prefers to use templates and to periodically work on her research. Which AI tool for personalized research support best align with the profile of each student? How can you				*Note that more than one answer can be correct if the participants adequately justify their options*. **TELL:** the trainer presents ways to integrate these tools in the teaching process: • Learning the students how to create a bibliography using AI tools for personalized research. • Learning the students how to make automate citation using AI tools for personalized research. • Learning the students	

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		integrate it into teaching? You can consider the ones suggested: • Zeno Chat • BingAI • Bard				how to select the most suitable information using AI tools for personalized research.	
25’	Recognise ethical considerations related to AI integration in research and writing scientific papers	The trainer divides the trainees into groups of 4 and asks them to establish a list of ethical principles for the students to follow when using AI tools for personalized research support.	Integration principle - encourage the trainees to transfer the newly acquired knowledge to their everyday work.	Inquiry-based, design thinking	• Ethics of Artificial Intelligence: https://www.unesco.org/en/artificial-intelligence/recommendation-ethics • Ethical guidelines LEADER AI Toolkit	**ASK**: the trainees review the article Ethics of Artificial Intelligence and LEADER AI Toolkit guidelines **DO**: the trainees write a set of principles as a code of conduct for AI tools for personalized research support. **TELL:** the trainer presents indicative solutions for responsible AI use:	Assessment through the results of the activity themselves.

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						• Checking the authenticity of received scientific information by consulting other sources. • Citing AI tools for personalized research support. • Students need to understand that AI tools help them in research and writing a scientific paper, but it does not replace classical research methods.	

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Scenario 9: Unleashing Creativity: WebQuests Elevated with Plaito AI

Overview of Scenario 9

Number	9
Title	Unleashing Creativity: WebQuests Elevated with Plaito AI
Type	Instructor-led in Blended Learning mode
Summary	This scenario specifically highlights the capabilities of Plaito AI, offering a unique and creative perspective on integrating AI into WebQuests within the Higher Education setting. Plaito AI, in collaboration with WebQuest, presents an innovative solution that empowers teachers to cultivate and elevate **personalized learning experiences** for their students in a distinctly effective manner. This dynamic synergy harnesses cutting-edge technologies to revolutionize the educational landscape. This scenario is in line with Merrill's Demonstration and Activation principles.
Description of the real-life problem	In the vibrant halls of Higher Education (HE), John, a visionary teacher, takes the lead in a professional development session to showcase the synergy between WebQuests and the powerful AI tool, Plaito. His goal is to inspire his colleagues and illustrate the transformative potential of this unique fusion.
Keywords	WebQuest, AI tools
Duration	120 min
Target group	HE Teachers on different subject
Prerequisites	Internet browsing and basic user computer skills
Resources	• Projector or screen for presentations • Computers with internet access for each participant/group • Whiteboard and markers • Access to AI tools
Knowledge objectives	1. Understand the WebQuest methodology 2. Understand the role of AI in education and how to use an AI tool in WebQuest session
Skills objectives	1. Critically analyse and solve real-world problems using AI instruments.

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Learning scenario (Carroll, 2000)	**1. Learning space** A room designed for group work, whiteboard, personal tablets/laptops with access to the internet and AI tools; data projector;
	2. Agents and actors One trainer, one technical assistant, and 20 trainees
	3. Learning activities • Introduction (10 minutes): • WebQuest Methodology Unveiled (20 minutes) • Introduction to Plaito (15 minutes) • Example AI-Infused WebQuest with Plaito (20 minutes) • Benefits Amplified (15 minutes) • Interactive Exploration Time (20 minutes) • Discussion and Collaborative Planning (20 minutes)
	4. Reflection and regulation Concludes the session by emphasizing the transformative potential of WebQuests with AI integration using Plaito tool. He commits to ongoing support, sharing resources, and fostering a collaborative environment for those eager to embark on this magical journey of educational innovation.
Link to Scenario	EN: https://gamma.app/docs/LEADER-AI-Scenario-9-EN-nx2jr24xrzjebrk GR: https://gamma.app/docs/LEADER-AI-Scenario-9-GR-r6m4r9aypc0zvye EE: https://gamma.app/docs/LEADER-AI-Scenario-9-EE-0whj0os4v3wcg6j RO: https://gamma.app/docs/LEADER-AI-Scenario-9-RO-qc1x5v36sq1p0jj PT: https://gamma.app/docs/LEADER-AI-Scenario-9-PT-lhmiuui9cq7si6g
Extra Content	Annex 10

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Training Plan of Scenario 9

Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
Min	*Describe here one objective at a time or "None"*	*Describe here the training material*	*Describe here one of Merrill's Principles*	*Describe here a specific didactic methodology*	*Describe here the types of content, platforms, LMS, AI tools, LA tools, etc.*	*Describe here how the trainees will interact with the content and/or the trainer*	*Describe here how trainees will be assessed against the specific objective or "None"*
30'	Identify various AI-powered tools for content generation (generation of adaptive learning/study materials), for 3 learning skills levels (introductory, intermediate and advanced), based on their affordances	The participants are briefly explained what Challenge-Based Learning means and what is a WebQuest. Then, they read the following scenario. **Scenario:** "The 35-year University Lecturer Dr. Dana teaches Sciences to undergraduate students. Based	The first activity aligns with the task-centeredness principle as it anchors learning in a real-life context; the participants have to solve a simple problem by identifying AI-based tools for content generation, by searching for and analysing them, like they would in real life.	Inquiry-based learning Demonstration	• LEADER AI Toolkit – Section 2, Collection of Tools. • Annex 1a	**SHOW** – the trainees read LEADER AI Toolkit – Section 2, Collection of Tools. **DO**: the trainees search and identify at least 3 AI-based tools for content generation and explore the features of these tools (one tool per introductory, intermediate and advanced level).	30'

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		on the semestrial LA (Moodle reports) on her students' academic performance, she discovered they insufficiently accessed the course materials, they obtained low grades in assessments and the regular assignments' unfulfillment rate is quite high. Dana believes the cause is that she provided common learning resources to students having different levels of knowledge and skills for the	The activity also aligns with the activation principle as their prior knowledge is activated (they might already know such tools to suggest).			The tools we suggest are: Introductory level: **(1) Animated videos:** Powtoon Vyond **(2) Interactive Quizzes** Google forms Quizizz Intermediate level: **(3) Interactive simulations:** MATLAB SIMULINK PhET Interactive Simulations **(4) Augmented Reality apps** Zappar/ Zapworks Studio	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		taught subjects. She wants to resolve this situation by making her teaching more attractive, explanatory, interactive and customized to each student learning pace and capacity. Thus, Dana decides to develop teaching-learning content adapted to her student's needs, providing them with individualised learning contents and experiences. To this aim, she intends to use AI-powered tools to create				Metaverse Advanced level: **(5) Adaptive Learning platforms:** Smart Sparrow Knewton **(6) AI assistants for research projects** WolframAlpha Scite.ai Research.rabbit **TELL**: the trainer explains Powtoon using information from Annex 1a (instructor-led) **SHOW**: the trainer shows the video Powtoon Overview	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		WebQuests for introductory, intermediate and advanced level, as adaptive and customized learning resources for her students. The WebQuests are Challenged-Based educational resources. Dana's WebQuests will be adaptive and customized both in terms of the number of the assignments (e.g. 2 assignments for the introductory level, 3 for the intermediate and 4 for the advanced level) and also through the content's				**TELL**: the trainer explains ZapWorks Studio using information from Annex 1a (instructor-led) and the video "Augmented Reality for Microlearning" from the link https://zap.works/learning-and-development/ **SHOW**: the trainer shows the videos Discover what's posible with Zapworks Studio 1 and Discover what's possible with Zapworks Studio 2 **TELL**: the trainer explains Smart Sparrow using information	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		difficulty/complexity: the challenge will be presented by the help of (1) **animated videos** and (2) **interactive quizzes** at the introductory level, with (3) **interactive simulations** and (4) **Augmented Reality apps** at the intermediate level and via (5) **Adaptive Learning Platforms** and (6) **AI assistants for research projects** at the advanced level. Dana decides to explore all these types of AI-powered tools that might help her developing				from Annex 1a (instructor-led) **SHOW**: the trainer shows the tutorial Getting Started with Smart Sparrow Additionally (if the time allows): **TELL**: the trainer explains ChatGPT using information from Annex 1a (instructor-led) **SHOW**: the trainer shows the video Use ChatGPT as a Writing Assistant to Write Faster and Better [article]. The trainees will have to create an account in the given tools	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		personalised WebQuest-based contents adapted to the three envisaged skill levels of her students." Which tools do you know that might fit the needs of University Lecturer Dr. Dana? The participants have to search and identify at least one AI-based tool per level (i.e. 3 of the 6 types tools mentioned above), and explore the capabilities of these tools. We suggest any of the following				with the trainer's support, OR, to use the free demos. The trainer needs to be familiar with the tools' interface.	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		tools (or equivalent): **(1) Animated videos** Powtoon Vyond **(2) Interactive Quizzes** Google forms Quizizz **(3) Interactive simulations:** MATLAB SIMULINK PhET Interactive Simulations **(4) Augmented Reality apps** Zappar/ Zapworks Studio Metaverse **(5) Adaptive Learning platforms:**					

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		Smart Sparrow Knewton **(6) AI assistants for research projects** WolframAlpha Scite.ai Research.rabbit In addition to all of these, we suggest using **ChatGPT** to create the text-parts of the WebQuests					
30'	Analyse the benefits and challenges of AI-based tools for generation of personalised learning content and pathways	**The scenario continues:** "University Lecturer Dr. Dana has identified 6 AI-based content generation tools (one per category). To make sure that	The second activity aligns with the demonstration principle as we outline the benefits and challenges of each tool.	Inquiry-based learning	• LEADER AI Toolkit – Section 3, Checklist criteria	**SHOW** – the trainees read the LEADER AI Toolkit – Section 3, Checklist criteria. **TELL**: the trainer presents additional criteria in Annex 1	30'

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		the tools will help her students understand the contents that she will create and provide them, she analyses their benefits and challenges" The participants have to analyse only 3 of the identified tools (one tool for each of introductory, intermediate and advanced level at their choice) and write down their benefits and challenges. They can use the Toolkit checklist criteria (Section 3) and the				**DO**: the trainees use the example given and compare and analyse the tools they have identified. **TELL**: the trainer presents participants indicative solutions (benefits and challenges / pros and cons) provided to them as examples: 1. Powtoon: vast library of templates and customizable elements (images, text styles, characters, and effects); user-friendly	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		criteria in Annex 1b, but they can also add additional criteria.				interface and availability of free and affordable versions specifically designed for educators; limitation of 90 seconds for imported video; need for more sound effect options. 2. Zapworks Studio: user friendly; the interface is straight forward and you can build all the functionality even if you don't know how to code; the support team is	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
						brilliant and you always get the help you need; maybe the documentation can be improved with more practical tutorials; the lack of dynamic lights in 3D is slightly challenging. 3. Smart Sparrow: allows users to provide constructive feedback that is unique to each student; confers upon teachers the gift of data-	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
						driven insights, thus they can modify their instruction, ensuring no student is left behind; Editing via Smart Sparrow's authoring tool can be difficult for first-time users. <u>Additionally</u> (if time allows it it): 4. ChatGPT: can offer contextualised recommendations (e.g., what to consider) but not specialise in	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
						writing, which might produce biases and lead to plagiarism (ethical considerations). **DO**: the participants analyse the tools and write down their benefits and challenges. The trainer needs to be familiar with the tools' capabilities.	
30'	Select and use AI-powered tools for creating dynamic and adaptive learning materials and experiences, to	**The scenario continues:** "Having identified the benefits and challenges of these tools,	This activity aligns with the application principle, as the participants have time to independently think about	Problem-based learning, Scenario-based learning	Annex 1c	**ASK**: the trainees link the tools identified with each learner's profile based on their	30'

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
	support students' individualised learning	University Lecturer Dr. Dana decided to see which tools fit better the needs of her students. The students have the following profiles: **George:** George is an undergraduate student in science. According to the semestrial data obtained with Learning Analytics, he is at an introductory level of learning skills. He has good ability to analyze information and identify key concepts, but he struggles with	which tools best support learners in contexts similar to real life.			benefits and challenges. **DO**: the trainees solve the task to fit students' needs. **TELL:** the trainer presents indicative solutions: • **George** will primarily benefit from the learning materials and pathways created with Powtoon, since the tool supports the University Lecturer Dr. Dana to develop animated	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		understanding abstract concepts and only has basic understanding of logical reasoning and argumentation. **Maria**: Maria is an undergraduate student in science. According to the semestrial data obtained with Learning Analytics, she is at an intermediate level of learning skills. She has excellent ability to gather and analyze information from various sources, think logically and				videos that explain concepts in a visually engaging way, breaking down complex ideas into easily digestible segments, adequate for introductory level. Also, he will benefit from Zapworks Studio, as this tool creates AR experiences that can be used to visualize complex concepts	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		make reasoned judgments. She proves solid understanding of fundamental concepts and the capability to analyze problems, but she is not so proficient in breaking down problems into manageable parts, and formulate effective solutions. **Lucy**: Lucy is an undergraduate student in science. According to the semestrial data obtained with Learning Analytics, she is at an advanced				and make abstract ideas more tangible. • **Maria** will primarily benefit from from the learning materials and pathways created with Zapworks Studio, since the tool supports the University Lecturer Dr. Dana to create real-world applications/ scenarios with AR, that the student engages with and boost identification	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		level of learning skills. She owns excellent critical thinking and problem-solving skills, relevant for her study level, she is able to analyze quite complex data sets. Yet, she needs to master better the 'thinking outside the box' skills and to face more successfully the creative endeavours like generating innovative solutions to challenges. **Which AI-powered tools for content generation best align with the profile of each student? How**				or design of efficient solutions in problem-solving. • **Lucy** will primarily benefit from from the learning materials and pathways created with Smart Sparrow, since the tool supports the University Lecturer Dr. Dana to interactive simulations and scenario-based learning experiences,	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		can you integrate it in your teaching? You can consider the ones suggested: • Powtoon • Zapworks Studio • Smart Sparrow • ChatGPT (additionally, if the time allows it)				with real-world challenges, encouraging students to explore unconventional solutions and think creatively; also, with Smart Sparrow Dana can create personalized problem-solving exercises that require students to apply critical thinking and creative problem-solving skills. This helps develop their ability to approach	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
						challenges from different perspectives. Transversally, all students will benefit from the learning resources developed by University Lecturer Dr. Dana with ChatGPT, as she will use ChatGPT to design the challenges of the WebQuests. *Note that more than one answer can be correct if the participants adequately justify their options*.	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
						TELL: the trainer presents ways to integrate these tools (Annex 1c)	
30’	Recognise ethical considerations related to AI integration in HE teaching and learning	In groups, the participants brainstorm and co-design a list of ethical principles as a code conduct for teachers to refer to when using AI tools for content generation.	This task aligns with the integration principle. The aim is to encourage the participants to transfer the newly acquired knowledge to their real-life practice.	Inquiry-based, design thinking	• Harvard Generative AI guidelines • Russel Group principle on the use of generative AI tools in education • Arizona State University - Generative AI FAQs • Institution’s policy for academic integrity • Ethical guidelines LEADER AI Toolkit	**ASK**: the trainees review the documents provided (Harvard generative AI guidelines, Russel Group principle on the use of generative AI tools in education, Arizona State University – Generative AI FAQs), institution’s policy for academic integrity, LEADER AI Toolkit guidelines **DO**: the trainees co-design a set	30’

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
						of principles as a code of conduct for AI tools for content generation **TELL:** the trainer presents indicative solutions for responsible AI use: • Use AI suggestions for idea generation and improvement, not copy and paste or replacement of creativity, authenticity and originality • Acknowledge the use of AI for content generation	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
						• Be open about how AI was/is used • Follow university's guidelines about the academic integrity • Read the tool's privacy policy	
30'	Identify various AI-powered tools for content generation (generation of adaptive learning/study materials), for 3 learning skills levels (introductory, intermediate and advanced),	The participants are briefly explained what Challenge-Based Learning means and what is a WebQuest. Then, they read the following scenario. **Scenario:** "The 35-year University	The first activity aligns with the task-centeredness principle as it anchors learning in a real-life context; the participants have to solve a simple problem by identifying AI-based tools for content	Inquiry-based learning Demonstration	• LEADER AI Toolkit – Section 2, Collection of Tools. • Annex 1a	**SHOW** – the trainees read LEADER AI Toolkit – Section 2, Collection of Tools. **DO**: the trainees search and identify at least 3 AI-based tools for content generation and explore the	30'

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
	based on their affordances	Lecturer Dr. Dana teaches Sciences to undergraduate students. Based on the semestrial LA (Moodle reports) on her students' academic performance, she discovered they insufficiently accessed the course materials, they obtained low grades in assessments and the regular assignments' unfulfillment rate is quite high. Dana believes the cause is that she provided common learning	generation, by searching for and analysing them, like they would in real life. The activity also aligns with the activation principle as their prior knowledge is activated (they might already know such tools to suggest).			features of these tools (one tool per introductory, intermediate and advanced level). The tools we suggest are: Introductory level: **(1) Animated videos:** Powtoon Vyond **(2) Interactive Quizzes** Google forms Quizizz Intermediate level: **(3) Interactive simulations:** MATLAB SIMULINK	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		resources to students having different levels of knowledge and skills for the taught subjects. She wants to resolve this situation by making her teaching more attractive, explanatory, interactive and customized to each student learning pace and capacity. Thus, Dana decides to develop teaching-learning content adapted to her student's needs, providing them with individualised learning contents and				PhET Interactive Simulations **(4) Augmented Reality apps** Zappar/ Zapworks Studio Metaverse <u>Advanced level:</u> **(5) Adaptive Learning platforms:** Smart Sparrow Knewton **(6) AI assistants for research projects** WolframAlpha Scite.ai Research.rabbit **TELL**: the trainer explains	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		experiences. To this aim, she intends to use AI-powered tools to create WebQuests for introductory, intermediate and advanced level, as adaptive and customized learning resources for her students. The WebQuests are Challenged-Based educational resources. Dana's WebQuests will be adaptive and customized both in terms of the number of the assignments (e.g. 2 assignments for the introductory level, 3 for the				Powtoon using information from Annex 1a (instructor-led) **SHOW**: the trainer shows the video Powtoon Overview **TELL**: the trainer explains ZapWorks Studio using information from Annex 1a (instructor-led) and the video "Augmented Reality for Microlearning" from the link https://zap.works/learning-and-development/ **SHOW**: the trainer shows the videos	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		intermediate and 4 for the advanced level) and also through the content's difficulty/complexity: the challenge will be presented by the help of (1) **animated videos** and (2) **interactive quizzes** at the introductory level, with (3) **interactive simulations** and (4) **Augmented Reality apps** at the intermediate level and via (5) **Adaptive Learning Platforms** and (6) **AI assistants for research projects** at the advanced level.				Discover what's posible with Zapworks Studio 1 and Discover what's possible with Zapworks Studio 2 **TELL**: the trainer explains Smart Sparrow using information from Annex 1a (instructor-led) **SHOW**: the trainer shows the tutorial Getting Started with Smart Sparrow Additionally (if the time allows): **TELL**: the trainer explains ChatGPT using information from Annex 1a (instructor-led)	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		Dana decides to explore all these types of AI-powered tools that might help her developing personalised WebQuest-based contents adapted to the three envisaged skill levels of her students." Which tools do you know that might fit the needs of University Lecturer Dr. Dana? The participants have to search and identify at least one AI-based tool per level (i.e. 3 of the 6 types tools mentioned above), and				**SHOW**: the trainer shows the video Use ChatGPT as a Writing Assistant to Write Faster and Better [article]. The trainees will have to create an account in the given tools with the trainer's support, OR, to use the free demos. The trainer needs to be familiar with the tools' interface.	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		explore the capabilities of these tools. We suggest any of the following tools (or equivalent): **(1) Animated videos** Powtoon Vyond **(2) Interactive Quizzes** Google forms Quizizz **(3) Interactive simulations:** MATLAB SIMULINK PhET Interactive Simulations **(4) Augmented Reality apps**					

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		Zappar/ Zapworks Studio Metaverse **(5) Adaptive Learning platforms:** Smart Sparrow Knewton **(6) AI assistants for research projects** WolframAlpha Scite.ai Research.rabbit In addition to all of these, we suggest using **ChatGPT** to create the text-parts of the WebQuests.					

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
30’	Analyse the benefits and challenges of AI-based tools for generation of personalised learning content and pathways	**The scenario continues:** “University Lecturer Dr. Dana has identified 6 AI-based content generation tools (one per category). To make sure that the tools will help her students understand the contents that she will create and provide them, she analyses their benefits and challenges” The participants have to analyse only 3 of the identified tools (one tool for each of introductory,	The second activity aligns with the demonstration principle as we outline the benefits and challenges of each tool.	Inquiry-based learning	• LEADER AI Toolkit – Section 3, Checklist criteria	**SHOW** – the trainees read the LEADER AI Toolkit – Section 3, Checklist criteria. **TELL**: the trainer presents additional criteria in Annex 1b **DO**: the trainees use the example given and compare and analyse the tools they have identified. **TELL**: the trainer presents participants indicative solutions (benefits and challenges / pros and cons) provided to	30’

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		intermediate and advanced level at their choice) and write down their benefits and challenges. They can use the Toolkit checklist criteria (Section 3) and the criteria in Annex 1b, but they can also add additional criteria.				them as examples: 5. Powtoon: vast library of templates and customizable elements (images, text styles, characters, and effects); user-friendly interface and availability of free and affordable versions specifically designed for educators; limitation of 90 seconds for imported video; need for more sound effect options.	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
						6. Zapworks Studio: user friendly; the interface is straight forward and you can build all the functionality even if you don't know how to code; the support team is brilliant and you always get the help you need; maybe the documentation can be improved with more practical tutorials; the lack of dynamic lights in 3D is slightly challenging.	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
						7. Smart Sparrow: allows users to provide constructive feedback that is unique to each student; confers upon teachers the gift of data-driven insights, thus they can modify their instruction, ensuring no student is left behind; Editing via Smart Sparrow's authoring tool can be difficult for first-time users.	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
						Additionally (if time allows it it): 8. ChatGPT: can offer contextualised recommendations (e.g., what to consider) but not specialise in writing, which might produce biases and lead to plagiarism (ethical considerations). **DO**: the participants analyse the tools and write down their benefits and challenges.	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
						The trainer needs to be familiar with the tools' capabilities.	
30'	Select and use AI-powered tools for creating dynamic and adaptive learning materials and experiences, to support students' individualised learning	**The scenario continues:** "Having identified the benefits and challenges of these tools, University Lecturer Dr. Dana decided to see which tools fit better the needs of her students. The students have the following profiles: **George:** George is an undergraduate student in science. According to the	This activity aligns with the application principle, as the participants have time to independently think about which tools best support learners in contexts similar to real life.	Problem-based learning, Scenario-based learning	Annex 1c	**ASK**: the trainees link the tools identified with each learner's profile based on their benefits and challenges. **DO**: the trainees solve the task to fit students' needs. **TELL:** the trainer presents indicative solutions: • **George** will primarily benefit from the learning materials and pathways	30'

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		semestrial data obtained with Learning Analytics, he is at an introductory level of learning skills. He has good ability to analyze information and identify key concepts, but he struggles with understanding abstract concepts and only has basic understanding of logical reasoning and argumentation. **Maria**: Maria is an undergraduate student in science. According to the semestrial data obtained with				created with Powtoon, since the tool supports the University Lecturer Dr. Dana to develop animated videos that explain concepts in a visually engaging way, breaking down complex ideas into easily digestible segments, adequate for introductory level. Also, he will benefit from	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		Learning Analytics, she is at an intermediate level of learning skills. She has excellent ability to gather and analyze information from various sources, think logically and make reasoned judgments. She proves solid understanding of fundamental concepts and the capability to analyze problems, but she is not so proficient in breaking down problems into manageable parts, and formulate				Zapworks Studio, as this tool creates AR experiences that can be used to visualize complex concepts and make abstract ideas more tangible. • **Maria** will primarily benefit from from the learning materials and pathways created with Zapworks Studio, since the tool supports the University	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		effective solutions. **Lucy**: Lucy is an undergraduate student in science. According to the semestrial data obtained with Learning Analytics, she is at an advanced level of learning skills. She owns excellent critical thinking and problem-solving skills, relevant for her study level, she is able to analyze quite complex data sets. Yet, she needs to master better the 'thinking outside				Lecturer Dr. Dana to create real-world applications/ scenarios with AR, that the student engages with and boost identification or design of efficient solutions in problem-solving. • **Lucy** will primarily benefit from from the learning materials and pathways created with Smart Sparrow, since the tool	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		the box' skills and to face more successfully the creative endeavours like generating innovative solutions to challenges. **Which AI-powered tools for content generation best align with the profile of each student? How can you integrate it in your teaching?** You can consider the ones suggested: • Powtoon • Zapworks Studio • Smart Sparrow				supports the University Lecturer Dr. Dana to interactive simulations and scenario-based learning experiences, with real-world challenges, encouraging students to explore unconventional solutions and think creatively; also, with Smart Sparrow Dana can create personalized problem-solving exercises	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
		• ChatGPT (additionally, if the time allows it)				that require students to apply critical thinking and creative problem-solving skills. This helps develop their ability to approach challenges from different perspectives. Transversally, all students will benefit from the learning resources developed by University Lecturer Dr. Dana with ChatGPT, as she will use ChatGPT to design the	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
						challenges of the WebQuests. *Note that more than one answer can be correct if the participants adequately justify their options*. **TELL:** the trainer presents ways to integrate these tools (Annex 1c)	
30’	Recognise ethical considerations related to AI integration in HE teaching and learning	In groups, the participants brainstorm and co-design a list of ethical principles as a code conduct for teachers to refer to when using AI tools for content generation.	This task aligns with the integration principle. The aim is to encourage the participants to transfer the newly acquired knowledge to their real-life practice.	Inquiry-based, design thinking	• Harvard Generative AI guidelines • Russel Group principle on the use of generative AI tools in education • Arizona State University - Generative AI FAQs	**ASK**: the trainees review the documents provided (Harvard generative AI guidelines, Russel Group principle on the use of generative AI tools in education, Arizona State University –	30’

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
					• Institution's policy for academic integrity • Ethical guidelines LEADER AI Toolkit	Generative AI FAQs), institution's policy for academic integrity, LEADER AI Toolkit guidelines **DO**: the trainees co-design a set of principles as a code of conduct for AI tools for content generation **TELL:** the trainer presents indicative solutions for responsible AI use: • Use AI suggestions for idea generation and improvement, not copy and paste or	

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Time	Objectives	Content	Principle	Methodology	Resources	Interaction activities	Assessment
						replacement of creativity, authenticity and originality • Acknowledge the use of AI for content generation • Be open about how AI was/is used • Follow university's guidelines about the academic integrity • Read the tool's privacy policy	

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ANNEXES

Annex 1

Nolej.io is a personalized learning platform that can be used to create interactive learning experiences for students. It offers a variety of features that make it ideal for use in higher education, such as the ability to create custom assessments, track student progress, and provide feedback.

One way to use Nolej.io to personalize learning is to create different learning paths for students based on their individual needs and interests. This can be done by using Nolej.io's assessment feature to create a diagnostic test that identifies each student's strengths and weaknesses. Once the student's assessment results are available, the teacher can create a personalized learning path for the student that includes content and activities that are tailored to their specific needs.

Nolej.io also offers a variety of features that can be used to make learning more engaging and interactive. For example, teachers can use Nolej.io to create branching scenarios, simulations, and games. These activities can help students to learn in a more active and engaging way.

In addition to providing personalized learning experiences, Nolej.io can also be used to track student progress and provide feedback. Nolej.io's tracking feature provides teachers with detailed insights into how students are performing on each assessment and activity. This information can be used to identify students who are struggling and provide them with additional support.

Overall, Nolej.io is a powerful tool that can be used to personalize learning in higher education. It offers a variety of features that can be used to create interactive learning experiences, track student progress, and provide feedback.

Annex 2

The AI-powered tools tools we suggest:

- GrammarlyGO
- Quillbot
- ChatGPT

GrammarlyGo is an AI-powered tool which provides personalised feedback to improve grammar, spelling, punctuation, and style in student writing. It offers real-time suggestions for corrections and provides personalised feedback to help students enhance their writing clarity and coherence. GrammarlyGo can be used separately (see desktop app) or be integrated into other writing platforms (e.g., separate app and Word document), supporting various writing styles (e.g., academic, informal, etc.)

Quillbot is an AI-powered paraphrasing tool that helps students rephrase sentences and paragraphs while retaining the original meaning. It assists in avoiding plagiarism and encourages students to express ideas in their own words. Quillbot offers different writing modes and levels of creativity to suit various writing tasks.

TELL: ChatGPT is an AI-powered large language model that can provide contextual writing suggestions and assistance. Students can interact with ChatGPT to seek personalised feedback

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and guidance on their writing projects. The tool adapts to individual writing styles, making it a valuable resource for students seeking individualised support and writing recommendations.

Annex 3

Additional criteria to evaluate the AI tools:

- **Accuracy and Precisions**: How accurate are these tools regarding the recommendations they provide for grammar, punctuation and spelling?
- **Personalised feedback**: How personalised is the feedback given to students? Does the feedback respond to the individual student's writing?
- **Plagiarism Detection**: Can the tool detect and address potential plagiarism issues to promote academic integrity?
- **Support Resources**: Does the tool offer additional resources, such as writing guides or tutorials, to support students' writing improvement?
- **Integration**: Can the tool be integrated into existing applications?
- **Support of styles**: Does the tool recommend different genres/writing styles?

Annex 4

The AI-powered writing assistants can be integrated in the following ways:

- Encourage students to use them independently for their practice.
- Organise additional exercises where the students offer peer feedback on each other's writing; they can share their original and revised text after using the tools, indicating the differences spotted.
- Teach students how to evaluate the content they receive by double-checking it with evidence-based resources. Ask students to support their writing with the latest, evidence-based sources.
- Encourage the use of AI-based tools for the improvement of writing rather than content generation. Show counterexamples of false content produced by generative AI chatbots (like ChatGPT) to increase students' awareness.

Annex 5

Learning analytics

Learning Analytics is "the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimising learning and the environments in which it occurs" (Siemens & Baker, 2012, p. 253).

A typical application used in learning analytics is the Learning Analytics Dashboard. These tools visualise digital data quantitatively, such as percentages, numbers, graphs, and pies. This visualisation enhanced awareness, reflection and interpretation, making sense of information such as students' learning progress (Verbert et al., 2014; Klerkx et al., 2017).

Using this data can provide insights into students' engagement, participation and, as a result, potentially, the likelihood of finishing the course, their preferences, and the support they might need (Klerkx et al., 2017).

The data collected can be (Verbert et al., 2014):

- Students' work (posts, documents, assignments, etc.)

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- Social interaction (posts, comments, group work participation, etc.)
- Resource use (viewing, editing of resources, etc.)
- Time (log-in frequency, time spent – duration, etc.)
- Assessment results (grades, etc.).

There are various sources from which you can draw data:

- Learning Management Systems (LMS) or Virtual Learning Environments (VLE) include, among others, records about the forums, wikis, such as the discussions started, the posts and replies), assignments such as grades, login frequency online presence duration and actions such as time taken to view, and watch resources such as pages, videos, etc., learners' demographic information (age, experience, success score etc.). The latter can be found in digital questionnaires and digital profiles in other systems (e.g., a system used to record students' profiles across the university).
- Research methods, for example, surveys, focus groups, interviews, and observation, offer insights into students' profiles (opinions, needs, skills, attitudes, etc.).
- Digital tools offer insights into users' activity; they provide records and reports similar to those of an LMS.
- Social networking and social media include messaging, sending friend requests, and accepting people using the system.

Based on information from the Sheridan College - Centre for Learning and Teaching, the data we can draw information from can be:

Checkpoints analytics

- Students' access and downloading of resources
- Students' work submission (if and when, for instance, within deadlines)

Process analytics

- Students' progress through the course materials
- Students' paths
- Students' view/reading of material before submitting assignments/completing activities

Network analytics

- Students' social connections, such as chatting
- Students' participation in forum/discussions
- Student-student interaction
- Student's use of collaborative tools

Content analytics

- Students' content (such as posts, replies, and work submitted)
- Patterns (common themes, topics, words).

Annex 6

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You can use data from individual users (students) and the whole class to draw relevant conclusions and offer targeted support. You can review data and focus on the following:

a) **Engagement**.
Data: individual login frequency, trends and gaps in attendance.
Examples of intervention strategies to increase participation: targeted messages, 1-1 meetings, differentiation in resources and activities designed.

b) **Assessment**.
Data: grades in assessment, work submitted.
Examples of intervention strategies to increase performance include revision of critical concepts and differentiation in resources and activities.

c) **Support.**
Data: individual login frequency, gaps in work submitted and resources accessed.
Examples of intervention strategies to enhance support targeted messages, 1-1 meetings, differentiation in resources and activities designed, and studying tips and resources (e.g., on time management).

d) **Well-being**.
Data: individual login frequency, participation in social connection tasks like discussions, gaps in work submitted and resources accessed.
Intervention strategies to support well-being include targeted messages, 1-1 meetings, non-academic counselling, and studying tips and resources (e.g., time management tips).

Verbert et al. (2013) suggest learning analytics process model consisting of the following stages:

1. Awareness (seeing the data)

Be aware of the data sources you can access (e.g., data from eLearning environments, student questionnaires, etc.). In dashboards, this stage refers to being aware of the visualised data.

2. Reflection (reflecting on the data)

Simply seeing the data does not help in any way. It is key to reflect on the data you see by asking questions such as:

- What did the student(s) access/see?
- How much time did the student(s) spend on the [x] task or overall?
- How many forum posts did the student(s) make (compared to the class average or other students)?
- How much time did the student(s) spend on the assessment or assignment?
- What additional information can I gather before designing the intervention (remember, data alone are not strong indicators)?

3. Sensemaking (findings answers)

Remember that interpreting the data only quantitatively and relying solely on a few sources (e.g., logins, etc.) does not always lead to the correct interpretation. You always have to:

- Cross-check with your students to identify the issue at hand (e.g., not understanding or not having the time)

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- Compare different data and use assessment results to investigate the issue (e.g., students' behaviour observation, quality of engagement and participation).

There are external and internal conditions that may affect the final interpretation and meaning making of data (Gašević et al., 2015):

- External conditions include instructional design, social and cultural context, digital skills, and course changes.
- Internal conditions include cognitive load, achievement goal orientation, and epistemic beliefs.

4. Impact (changing behaviours, intervening).

The end goal of learning analytics is to make changes and improvements. The final stage targets this.

Annex 7

Wisdolia.com is a platform that offers unique affordances for personalized learning through its innovative use of AI-powered flashcards. Here are some key features and benefits of Wisdolia:

1) AI-Powered Flashcards: Wisdolia enables the generation of custom flashcards from various learning materials, such as YouTube videos, articles, or PDF documents. This feature allows students to quickly create study aids from the content they are learning, significantly reducing the time and effort involved in traditional flashcard creation.
2) Personalized Feedback: One of the standout features of Wisdolia is its ability to provide personalized feedback to learners. As users interact with the flashcards, the platform analyzes their responses and offers nuanced feedback on what they got right, what they got wrong, and what they might have missed. This tailored feedback helps learners focus on areas where they need improvement, thereby enhancing their understanding and retention of the material.
3) Multi-Platform Support: Wisdolia supports a wide range of materials, including PDFs, study guides, textbooks, and slide decks. This versatility ensures that learners can use the platform regardless of the format of their study materials.
4) Language Versatility: Another advantage of Wisdolia is its ability to work in multiple languages, making it a versatile tool for a diverse range of learners. This feature broadens the platform's appeal and usability across different linguistic backgrounds.
5) Efficiency in Learning: By automating the process of flashcard creation and offering targeted feedback, Wisdolia helps students focus more on learning and less on the preparation of study materials. This efficiency can lead to better time management and more effective studying habits.

Overall, Wisdolia's combination of AI technology, personalized feedback, and content versatility makes it a powerful tool for personalized learning, catering to the individual needs and learning styles of its users.
While Quizlet is primarily known for flashcards, it offers several features that can be leveraged to enhance personalized learning in different ways:

Learner-driven content creation:

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- Personalized sets: Users can create custom study sets tailored to their specific needs and learning goals, focusing on what they need most and learning in a preferred way.
- Variety of formats: Beyond flashcards, Quizlet offers Learn mode (adaptive practice), diagrams, games, and other formats, catering to different learning styles and preferences.
- Collaboration features: Collaborating on sets and quizzes with peers allows knowledge sharing and learning from each other, promoting social interaction and diverse perspectives.

Adaptive learning and feedback:

- Learn mode: This intelligent feature uses spaced repetition and adapts to the learner's pace, focusing on challenging concepts and avoiding wasted time on mastered material.
- Performance insights: Tracking progress on individual terms and sets helps identify areas needing attention and celebrates achievements, fostering self-awareness and motivation.
- Quiz analytics: Detailed feedback on quizzes highlights strengths and weaknesses, allowing learners to understand their mistakes and refine study strategies.

Catering to diverse learning styles:

- Multiple question types: Multiple choice, true/false, fill-in-the-blank, matching, and written response questions cater to different learning styles and assessment preferences.
- Text-to-speech and audio recordings: Converting text to audio or recording personal audio for terms and definitions facilitates auditory learning and memorization, especially for visual learners.
- Accessibility features: Text magnification, high contrast themes, and keyboard navigation make Quizlet accessible to learners with diverse needs, promoting inclusivity.

Integration with other tools:

- Learning management systems (LMS): Integration with various LMS platforms allows instructors to assign and track student progress on specific study sets, streamlining personalized learning within existing structures.
- Third-party apps: Integrations with external tools like Evernote and Google Drive expand learning materials and potential uses, connecting to broader knowledge sources.

Additionally:

- Gamification: Quizzes and games can make learning more enjoyable and engaging, potentially motivating learners who struggle with traditional study methods.
- Offline access: The mobile app allows for study even without internet access, increasing flexibility and convenience for personalized learning on the go.

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Anki supports learning in several ways, primarily through its use of spaced repetition. Here's how it helps:

1. Spaced Repetition:

- Optimizes retrieval practice: Unlike traditional rote memorization, Anki shows you cards at increasingly longer intervals based on your difficulty recalling them. This optimizes the timing of practice, strengthening memories at the precise moment they're about to fade, leading to long-term retention.
- Reduces forgetting: Studies show spaced repetition can significantly reduce forgetting compared to simple rereading or cramming. Anki leverages this research to help you retain information efficiently.
- Personalizes learning: Anki uses your responses to adjust the difficulty and frequency of each card, tailoring the practice to your individual needs. This ensures you focus on what you need to remember most.

2. Flexibility and customization:

- Supports various content: Create flashcards with text, images, audio, code, and even equations. This caters to different learning styles and information types.
- Multiple question formats: Go beyond simple question-answer flashcards. Use cloze deletions, matching, image occlusion, and more to deepen understanding and recall.
- Community resources: Access thousands of pre-made decks on various subjects, saving you time and effort creating your own.

3. Active recall:

- Requires active effort: Unlike passive reading, Anki forces you to recall information from memory, which is crucial for deeper learning and understanding.
- Identifies knowledge gaps: By answering cards, you uncover areas where your understanding is shaky, allowing you to target your studying more effectively.
- Promotes self-reflection: As you explain concepts to yourself while answering cards, you solidify your understanding and identify areas for further exploration.

4. Additional benefits:

- Gamification: Anki offers features like streaks and badges, adding a fun element to the learning process, especially for visual learners.
- Offline access: Study anytime, anywhere without an internet connection.
- Open-source and free (with paid options): Access core features for free, making it accessible to a wide range of learners.

Annex 8

The AI-powered tools tools that we suggest are:

- Powtoon
- Zappar/ Zapworks Studio
- Smart Sparrow

Powtoon is an AI-powered tool (a video and visual communication platform) allowing creating animated presentations and videos. Powtoon gives anyone the ability to create professional

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videos and presentations. You can select from royalty-free libraries of animation, live-action video, images, designed backgrounds, soundtracks, and moving graphics, or you can use your own visual content and voiceover. Teachers can create their own Powtoons as an alternative approach to teaching topics. Students can also create quality animated video presentations to showcase their understanding of a specific topic. With Powtoon you can create professional-looking, engaging videos and presentations in 20 minutes or less. Powtoon Connect makes it even easier to make videos by letting you add mobile media directly to the Powtoon Studio, and view and share your completed videos with your audience — straight from your phone. The slide-based format allows presenters some control over how they present their information. Turn writing instruction on its head by teaching students with expository or persuasive videos. Bring science to life by creating animations of famous scientific discoveries.

Zappar/ Zapworks Studio is a powerful and versatile AR content creation tool. It allows you to create fully customizable augmented reality experiences. With support for image-, face-, and world tracking, 3D models, and custom animations. Zapworks Studio also provides built-in project templates, which allow you to quickly create experiences by swapping in your own assets to an existing project. Zapworks Studio's powerful feature and cloud-based authoring system can help transform your education institution using the creative tools of the future to empower your learners, further enhance your learning programmes and drive recruitment.

Smart Sparrow: is a platform that allows you to easily create visually rich online courseware. Decide your lesson structure and the platform enables the rest. Drag and drop elements like images and videos, even import your own interactive components, pick a theme and screen template…

Smar Sparrow:

- Is an intuitive authoring tool: powerful authoring makes it easy to create impactful and stunning experiences.
- Harnesses the power of real-time data: detailed analytics dashboard and reports provide actionable insights, beyond grades.
- Provides complete pedagogical ownership: you can shape the way the courseware adapts to the needs of each learner.
- Offers interactive learning components: you can choose from hundreds of widgets, simulations, and games to engage your learners.

Additionally (if the time allows): ChatGPT

ChatGPT is an AI-powered large language model that can provide contextual writing suggestions and assistance. Students can interact with ChatGPT to seek personalised feedback and guidance on their writing projects. The tool adapts to individual writing styles, making it a valuable resource for students seeking individualised support and writing recommendations.

Annex 9

How to use AI tools for personalized research support

1. ZenoChat

https://textcortex.com/post/the-ultimate-guide-to-zenochat-the-best-chatgpt-alternative

About Zeno Chat

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ZenoChat interprets user input and provides intelligent responses by utilizing machine learning and natural language processing (NLP). Utilizing a sophisticated deep learning algorithm, Zeno Chat is able to comprehend the context of a conversation and generate pertinent responses depending on previous statements or questions. In addition, Zeno can take into account the unique interests and preferences of each user while presenting solutions to problems, resulting in a customized experience for each chatter.

Key Features of ZenoChat

- Web Search: Zeno will search the Internet for information pertinent to our needs when we write requests or instructions, sort through the results, arrange the information, and present it in an organized manner with matching references.
- Multiple Data Sources: we have the ability to add custom URLs, navigate between data sources including News sources, Google Scholar, Twitter, and Reddit, and add our own data sources.
- Customizations & AI Personas: we can set our character to mimic any individual you desire. We can add three text samples to your persona to give it more context once you've filled in all the initial fields. This is crucial because your AI will mimic the tone, style, and overall structure of the input to conform to our persona's expectations.
- Knowledge Bases: With the help of this enhancement, we will be able to upload our own papers and access data straight from ZenoChat.
- Custom Templates: when using ZenoChat, we won't have to repeatedly respond to the same AI prompts, which will make content generation much more streamlined and customized.
- Text Related: we can create creative songs and speeches, summarize and identify keywords, and even ask Zeno to add a touch of elegance to anything you've already written.
- Explanations: ZenoChat can also provide definitions for terms and subjects as well as analyses of the content we post.

2. BingAI

https://www.microsoft.com/en-us/bing/do-more-with-ai/bing-ai-features?form=MA13KP

Key features of BingAi

- Bing Chat
- Bing Image Creator
- Bing Compose
- Knowledge Cards 2.0
- Stories

Tips for using Bing AI

- Lean into the details
- Ask follow-up questions to keep the conversation going
- Frame an answer
- Ask for a summary
- Compare things
- Get real-time results

Information about Bing AI Chat

Bing AI Chat uses an OpenAI language model specifically designed for searching.

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- Within the Bing AI Chat interface, we can choose our preferred conversational style. Three discussion modes are available in Bing AI Chat: "more creative" for inventive and original responses, "more balanced" for educational and conversational responses, and "more precise" for succinct and factual responses.

- There are three ways to pose a question in Bing AI Chat: by typing straight into the prompt box, by using the microphone, or by using an image. The prompt box is the most widely used tool for posing questions.

- One feature of Bing AI Chat is its ability to provide results by using the photos we provide as a basis for suggested queries.

- We can ask more questions regarding your topic searches using Bing AI Chat's suggested follow-up questions once it responds to our initial query. We need to keep going until we find the solution we need.

- The output of Bing AI Chat can be exported as Text, PDF, Word, or Word online. Our findings will be instantly downloaded in the format of our choice.

- If we ask a question about a different topic, it's preferable to use and select New topic for better results, as Bing AI Chat tends to relate its responses to your previous prompts.

- Instead of providing results in a list like a standard search engine, BingAI obtains its data from the internet. It will provide links to the original sources of the information after responding to our query.

3. Bard

https://blog.google/products/bard/how-to-use-google-bard/
https://www.techrepublic.com/article/how-to-use-google-bard/

Google Bard is an artificial intelligence chatbot that responds to entered texts.

How to use Bard

Any desktop or mobile web browser that is connected to a Google account can be used to access Bard.

- Launch a browser and go to bard.google.com.
- Type in a prompt, click the microphone icon and speak, upload an image, or both. Enter (or return) to send Bard the prompt.
- Examine Bard's answer.
- The system presents a wide range of possible options after Bard responds.

We could:

- To attempt a different prompt, edit the prompt wording.
- Examine more drafts to assess reactions with varying structures.
- Rewrite drafts to get different answers.
- To compare the generated text with the content of a Google search, double-check the response.

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- Export the answer to a new Google Doc or Gmail account, or share the chat.
- To paste the content into another app, copy it.
- Report a legal matter to indicate that the content is seriously problematic.
- Give our comments by selecting a button that reads "good response" or "bad response."
- To carry on the conversation, enter another prompt.

What can we use Bard for?

- Examine photos and produce relevant articles;
- Discover something new;
- Write a draft;
- Examine new alternatives;
- Just talk;
- Launch a project;
- Produce code;
- Arrange a journey;
- Brainstorm a list of original thoughts;
- More effectively communicate our ideas and emotions.

Annex 10

WebQuest Title: The Creative Chronicles

Objective:

To harness the power of AI creativity, utilizing Plaito to enhance storytelling and persuasive writing skills in students.

Duration:

Two class sessions (approximately 120 minutes).

Introduction (15 minutes):

Tom sets the stage by introducing the concept of AI-assisted creative writing. He explains the potential of Plaito in generating creative content and how it can be seamlessly integrated into the storytelling and persuasive writing process.

Task Definition (20 minutes):

Students are briefed on the task. They are asked to choose between two creative writing paths:

Storytelling Odyssey: Craft an imaginative short story where Plaito generates unique plot twists and character developments.

Persuasive Prodigy: Develop a persuasive essay on a chosen topic, leveraging Plaito to enhance arguments and generate compelling content.

Tool Introduction and Tutorial (15 minutes):

Tom provides a brief tutorial on using Plaito for creative writing. Students learn how to input prompts effectively, explore different writing styles, and refine the generated content to suit their narrative or persuasive goals.

Individual Exploration (30 minutes):

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Students begin their exploration of Plaito by experimenting with different prompts. They can refine and adjust their prompts to guide Plaito's creative output. John and his teaching assistants circulate to offer guidance and support.

Group Brainstorming (20 minutes):

Students form small groups based on their chosen paths (Storytelling Odyssey or Persuasive Prodigy). They share their initial Plaito-generated content, discuss ideas, and collaboratively refine their narratives or arguments.

Plaito Integration (20 minutes):

Students actively integrate Plaito into their creative writing process. They use the tool to generate specific elements of their stories or essays, incorporating AI-generated content seamlessly into their own writing styles.

Drafting and Refinement (30 minutes):

Students work individually or in groups to draft their creative writing pieces. They refine and polish their work, ensuring a harmonious blend of human creativity and AI-generated elements.

Peer Review and Feedback (15 minutes):

Students exchange their stories or essays within their groups for peer review. They provide constructive feedback on both the human-written and AI-enhanced aspects, fostering collaborative learning and critical analysis.

Final Edits and Presentations (15 minutes):

Students make final edits to their creative writing pieces, ensuring coherence and fluency. Each group presents their work to the class, highlighting the unique elements generated by Plaito and discussing the collaborative writing process.

Reflection and Discussion (10 minutes):

The class engages in a reflective discussion on the integration of AI into the creative writing process. Students share their experiences, discussing the benefits and challenges of leveraging Plaito for storytelling and persuasive writing.

Conclusion (5 minutes):

Tom concludes the WebQuest by emphasizing the value of AI as a creative tool and encouraging students to explore new possibilities in their writing endeavours. He expresses his excitement about their innovative creations and the unique blend of human and AI creativity showcased during the WebQuest.

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