AI4VET4AI

AI-powered next generation of VET

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AI-powered Next Generation of VET

AI in Education

CVET Teacher Training Materials

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Purpose of the document

This document supports CVET teachers, trainers, and instructors in delivering the MOOC effectively in adult learning, professional training, and lifelong learning contexts.

It is designed to:

- Help trainers understand AI-related concepts in a practical, non-technical way
- Support the facilitation of **MOOC-based learning (self-paced and blended)**
- Provide **ready-to-use teaching materials, examples, and activities**
- Enable trainers to connect MOOC content to **real workplace applications**

This document is **not intended to replace institutional teaching or assessment systems**, but rather to **complement and support them flexibly**.

Format:
Self-study friendly, practical, and implementation-oriented.

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1. Introduction to the MOOC and Its Relevance for CVET Trainers

1.1 Overview of the MOOC Topic

This MOOC introduces trainers and adult learners to Artificial Intelligence (AI) as it applies to teaching and learning environments. It is designed specifically for people who are training to become teachers or who are continuing their professional development as educators. Across three modules and nine units, learners explore how AI is transforming assessment, feedback, tutoring, and learning management in education — and what this means for their own future professional practice in classrooms and training environments.

The MOOC is practical and reflective by design. It is not a computer science course. No prior technical knowledge is required, and all concepts are illustrated with real-world examples drawn from vocational and educational settings, and supported by guided reflection activities suited to adult learners in teacher training programmes.

1.2 Why This Topic Matters for Trainee and In-Service Educators

Educators entering or continuing in the profession today will work in environments profoundly shaped by AI. Whether they teach in VET schools, adult education centres, corporate training environments, or online learning platforms, they will encounter AI-powered tools: automated grading systems, adaptive learning platforms, intelligent tutoring assistants, chatbots for learner support, and learning analytics dashboards. AI literacy is no longer optional for educators — it is a foundational professional competence.

Understanding AI's role in education serves two intertwined purposes for trainee teachers: it prepares them to integrate AI tools responsibly and critically into their own future teaching practice, and it equips them to guide their own future learners in using these technologies effectively and ethically.

Three accompanying use cases ground these topics in authentic educator dilemmas — from a new professional learning to use AI at work (D6.3.1), to a teacher trainer navigating AI-generated grading (D6.3.5), to a lecturer questioning how much course design she should delegate to AI (D6.3.6). These cases are described further in Section 10.

1.3 Addressing uncertainty around AI

Many adult learners — and trainers — approach AI with a mixture of enthusiasm and apprehension. For trainee educators, this uncertainty is compounded by a professional dimension: they not only need to understand AI for themselves, but must develop the capacity to explain, model, and critically facilitate its use for their own future learners. This MOOC, and the accompanying materials, are designed with that dual awareness in mind. Trainers do not need to be AI experts. Their role is to create a space for critical and reflective engagement with the material.

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1.4 Who the MOOC is designed for

In a CVET context, the primary learners are:

Adults in continuing teacher professional development — in-service VET teachers, trainers, and instructors updating their AI competence

Adults in initial teacher education programmes who are pursuing a teaching qualification as a second career (career changers)

Educational professionals in roles adjacent to teaching: learning designers, curriculum developers, educational technologists, and school administrators

VET trainer certification candidates who need to demonstrate digital and AI literacy as part of their qualification.

1.5 How this guide supports CVET trainers

The MOOC's modular structure significantly reduces preparation time. Each unit is self-contained and includes knowledge checks, reflective prompts, case studies, and scenario exercises. Trainers can assign units for self-paced completion, use selected sections to trigger group discussion, or integrate the full MOOC into a blended workshop programme. The three dedicated use cases (Section 10) provide concrete, roleplay-ready scenarios that connect MOOC content to authentic educator dilemmas.

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2. Target Learners and Professional Relevance

2.1 Target learner profiles

The MOOC is suitable for adult learners from different professional backgrounds. It can be used with participants who are currently employed, unemployed, self-employed, returning to education, or moving into a tourism-related role.

The primary target audience for this MOOC in a CVET context is adults engaged in continuing professional development or career-change teacher training programmes. These learners are typically aged 25 and above, often working alongside their studies, and come from diverse professional and educational backgrounds — but share a common direction: they are preparing to teach, or they are already teaching and seeking to upskill.

Typical characteristics include:

- Some teaching or training experience, or strong vocational expertise they are preparing to teach
- Basic to intermediate digital skills, but limited formal exposure to AI systems in an educational context
- High motivation when learning connects directly to classroom practice and professional development
- Preference for concrete, case-based, and practice-oriented learning over abstract theory
- Varied time availability — many are combining study with employment or family responsibilities

2.2 Prior knowledge requirements

No prior knowledge of Artificial Intelligence is required. Basic digital literacy — the ability to navigate online platforms and interact with digital tools — is sufficient. Trainers may find it useful to begin with a brief informal discussion about AI tools trainees already use: voice assistants, email autocomplete, translation tools, or any AI-powered features in their current workplace or LMS. This almost always reveals more familiarity than participants initially claim.

2.3 Professional relevance – education as the vocational sector

Just as an 'AI in advertising' MOOC prepares students for careers in marketing, this MOOC prepares learners for careers in education and training. The professional contexts to which MOOC content applies include:

- VET classroom teaching: AI tools for assessment feedback, differentiated instruction, adaptive exercises, and student monitoring
- Adult education and workplace training: AI-assisted tutoring, automated quiz generation, and learner analytics dashboards
- Online and blended learning design: AI-powered course design assistants, LMS analytics, and personalised content delivery

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- School administration and curriculum development: AI tools for scheduling, reporting, and curriculum alignment
- Teacher training and coaching: Using AI to model effective pedagogy, analyse teaching cases, and support reflective practice

All three CVET use cases (D6.3.1, D6.3.5, D6.3.6) feature protagonists who are educators or people becoming educators — making the professional relevance immediately visible to trainees

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3. Learning Objectives and Competence Development

3.1 Overall learning objectives

After completing all three modules, learners will be able to:

- Explain what Artificial Intelligence is and identify its foundational components: Machine Learning, NLP, Computer Vision, and Robotics (Bloom: Understand)
- Describe the historical development of AI and distinguish between AI capability categories (Bloom: Understand)
- Identify AI tools used in educational assessment and feedback and evaluate their strengths and limitations for teaching practice (Bloom: Apply / Evaluate)
- Explain how AI-based tutoring systems, chatbots, and virtual assistants support differentiated learning in educational settings (Bloom: Understand / Apply)
- Analyse how adaptive learning technologies and AI-powered LMS platforms personalise instruction and the implications for educator roles (Bloom: Analyse)
- Interpret learning data from dashboards and apply GDPR rights responsibly in educational data contexts (Bloom: Apply / Evaluate)
- Apply ethical and pedagogical criteria when selecting and integrating AI tools into teaching settings (Bloom: Apply / Evaluate)
- Design human-AI collaborative learning activities that preserve teacher authority and student agency (Bloom: Create)
- Evaluate the ethical implications of AI in education — bias, transparency, data privacy — and communicate these to learners and institutions (Bloom: Evaluate).

Technical Competences

- Understanding of AI terminology and tools used in educational and training settings
- Ability to identify, compare, and critically evaluate AI tools for assessment, tutoring, and learning management
- Familiarity with learning analytics dashboards and data interpretation for instructional decision-making

Professional Competences

- Capacity to integrate AI tools into lesson planning and curriculum design with pedagogical justification
- Ability to evaluate AI tools from both a teacher's perspective and a learner's perspective
- Competence in communicating AI literacy concepts clearly to students, colleagues, and institutions

Transversal Competences

- Critical thinking: assessing the benefits, risks, and limitations of AI systems in educational contexts

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- Ethical reasoning: identifying and responding to fairness, privacy, transparency, and accountability issues
- Digital literacy: confident engagement with AI-powered platforms and tools
- Lifelong learning: building habits of critical engagement with a rapidly evolving technological field

3.2 Supporting Employability and Career Development

The competences developed through this MOOC are directly aligned with growing institutional expectations for AI-literate educators across all sectors of VET and adult education. Trainee teachers who complete this MOOC will be better positioned to design technology-enhanced learning experiences, contribute to institutional AI strategy discussions, and model responsible AI use for their own future learners.

3.3 Learning Objectives and Competence Development — Detail by Unit

The following section maps learning objectives to Bloom's taxonomy levels and describes the competences developed unit by unit. This detail is intended to support trainers in planning formative assessment and discussion activities aligned with each unit's goals.

Module 1 — Introduction to AI in Education

Unit 1.1: AI and Its Role in Education

After completing this unit, learners will be able to: explain what AI is and identify its foundational components (Understand); distinguish between Narrow, General, and Superintelligent AI (Understand); describe AI's historical development and key milestones (Understand); identify current AI trends and their implications for the teaching profession (Analyse).

Unit 1.2: AI in Student Assessment and Feedback

After completing this unit, learners will be able to: explain how AI tools are applied in formative and summative assessment (Understand); identify real-world AI assessment tools and evaluate their strengths and limitations for educator use (Apply / Evaluate); evaluate the appropriate balance between AI automation and human teacher judgment in assessment contexts (Evaluate).

Unit 1.3: AI-Based Tutoring Systems, Chatbots, and Virtual Assistants

After completing this unit, learners will be able to: describe how AI tutoring systems personalise instruction (Understand); distinguish between basic chatbots, conversational agents, and generative AI (Understand / Analyse); evaluate pedagogical implications and ethical considerations of deploying AI tutors in educational settings (Evaluate).

Module 2 — AI for Personalized Learning and Adaptive Systems

Unit 2.1: Adaptive Learning Technologies

Learners will be able to: explain how adaptive systems dynamically adjust content and pacing (Understand); trace the historical development of adaptive learning from early teaching machines to modern AI platforms (Understand); evaluate the benefits and challenges of adaptive systems from both a learner and educator perspective (Evaluate).

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Unit 2.2: AI-Powered Learning Management Systems

Learners will be able to: describe the architecture and core capabilities of AI-powered LMS platforms (Understand); analyse real-world case studies of AI-powered LMS implementation in professional training contexts (Analyse); evaluate ethical concerns including data privacy, algorithmic bias, and transparency in LMS use (Evaluate).

Unit 2.3: Data-Driven Insights in Learning

Learners will be able to: interpret common types of learning data and explain how dashboards support instructional decisions (Apply); apply GDPR learner rights to data contexts in their own future teaching practice (Apply); evaluate the ethical use of learning data and recognise risks of misinterpretation (Evaluate).

Module 3 — Ethical and Pedagogical Considerations

Unit 3.1: Integration of AI in Teaching Settings

Learners will be able to: select appropriate AI tools aligned with specific pedagogical goals (Apply); design AI-integrated lesson plans that maintain pedagogical integrity (Create); evaluate strategies for monitoring AI's impact on learning outcomes (Evaluate).

Unit 3.2: Human-AI Collaboration in the Classroom

Learners will be able to: define the distinct roles of teacher and AI in collaborative learning environments (Understand); design human-AI collaborative activities where learners critically interact with — rather than passively receive — AI output (Create); evaluate teacher training requirements for effective human-AI collaboration (Evaluate).

Unit 3.3: Ethics in AI for Education and Privacy

Learners will be able to: evaluate key ethical concerns in educational AI use — bias, transparency, surveillance, consent (Evaluate); apply GDPR rights and data protection principles to their own future teaching contexts (Apply); communicate ethical responsibilities clearly to learners and colleagues (Apply).

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4..Constructive Alignment

The table below maps each learning objective to its corresponding MOOC unit, the activity through which it is practised, and the assessment approach through which it is validated.

Table 1 Constructive alignment table

Learning Objective	Module / Unit	Activity	Assessment
Explain AI concepts and distinguish AI types	Mod.1, Unit 1	Click-to-reveal; multiple choice quiz	Knowledge check quiz
Describe AI milestones and current trends	Mod.1, Unit 1	Drag-and-drop timeline	Matching exercise
Identify AI assessment tools; evaluate automated feedback	Mod.1, Unit 2	Case analysis; reflective exercise	Reflection + discussion
Evaluate AI tutoring systems, chatbots, virtual assistants	Mod.1, Unit 3	Matching; scenario decision	Scenario-based quiz
Analyse adaptive learning technologies	Mod.2, Unit 1	Interactive diagram; scenario	Multiple choice + reflection
Evaluate AI-powered LMS features and ethics	Mod.2, Unit 2	Click-to-reveal; case discussion	Reflection + case analysis
Interpret learning data; apply GDPR in teaching	Mod.2, Unit 3	Branching scenario; dashboard task	Scenario quiz; reflection
Apply pedagogical and ethical criteria for AI integration	Mod.3, Unit 1	Decision-making; matching task	Multiple choice; discussion
Design human-AI collaborative teaching activities	Mod.3, Unit 2	Scenario decisions; role analysis	Scenario; peer discussion
Evaluate AI ethics, data privacy, and accountability	Mod.3, Unit 3	Branching scenario; GDPR quiz	Quiz + portfolio reflection

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5. Overview of the MOOC Structure and Content

The MOOC comprises three modules of three units each. The full course takes approximately 18–22 hours to complete at a self-directed pace, though this varies based on engagement with optional reflection activities and external resources.

Table 2 MOOC overview

Mod.	Title	Units	Est. Time
1	**Introduction to AI in Education & AI-Assisted Learning and Teaching Tools**	1.1 AI and Its Role in Education 1.2 AI in Student Assessment and Feedback 1.3 AI-Based Tutoring Systems, Chatbots and Virtual Assistants	6–7 hours
2	**AI for Personalized Learning and Adaptive Systems**	2.1 Adaptive Learning Technologies 2.2 AI-Powered Learning Management Systems 2.3 Data-Driven Insights in Learning	6–7 hours
3	**Ethical and Pedagogical Considerations**	3.1 Integration of AI in Teaching Settings 3.2 Human-AI Collaboration in the Classroom 3.3 Ethics in AI for Education & Data Security	6–8 hours

5.1 Unit Summaries

Module 1, Unit 1: AI and Its Role in Education

This unit establishes foundational AI literacy. Trainees explore Machine Learning, NLP, Computer Vision, and Robotics — understanding how these underpin tools they will encounter in educational settings. The historical arc from Alan Turing's 1950 Turing Test to contemporary generative AI is covered through interactive timelines. The unit frames AI as a set of tools with specific capabilities and limitations, not a magical force.

Module 1, Unit 2: AI in Student Assessment and Feedback

Trainees examine how AI tools support formative and summative assessment — auto-graders (Gradescope), writing tools (Grammarly, Write & Improve), plagiarism detection (Turnitin, Urkund), and analytics (Century Tech). Real cases include UC Berkeley grading 2,500 answers in 15 minutes. The unit addresses bias, accuracy limits, and the irreplaceable role of teacher judgment — directly relevant to Use Case D6.3.5.

Module 1, Unit 3: AI Tutoring Systems, Chatbots, and Virtual Assistants

Trainees explore specific AI tutoring systems (Knewton Alta, MATHia, IBM Watson Tutor) and chatbot evolution from ELIZA to modern generative AI. Benefits (24/7 access, personalisation) and risks (over-reliance, data privacy, inaccuracy) are examined through scenarios and matching exercises.

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Module 2, Unit 1: Adaptive Learning Technologies

Trainees explore how adaptive systems dynamically adjust content and pacing, tracing the history from Skinner's teaching machine to modern AI platforms. Benefits and challenges (algorithmic bias, cost, data privacy) are examined through interactive diagrams and scenario planning.

Module 2, Unit 2: AI-Powered Learning Management Systems

Trainees examine LMS architecture — data ingestion, machine learning, real-time inference, and presentation layers. IBM and Deloitte case studies illustrate how AI-powered LMS systems change professional development delivery at scale. Ethical concerns about transparency and bias are central.

Module 2, Unit 3: Data-Driven Insights in Learning

Trainees explore how learner behaviour generates data, how dashboards visualise progress, and how six types of learning insight support teaching decisions. A branching scenario guides ethical decision-making when a student is flagged as 'at risk'. GDPR learner rights are covered fully.

Module 3, Unit 1: Integration of AI in Teaching Settings

Practical implementation: selecting AI tools aligned with pedagogical goals, maintaining pedagogical integrity alongside automation, and monitoring AI impact. Interactive decision-making scenarios guide trainees through realistic classroom dilemmas — connecting directly to Use Case D6.3.6.

Module 3, Unit 2: Human-AI Collaboration in the Classroom

Trainees examine how teachers and AI can share roles without diminishing teacher authority or student agency. The unit addresses activity design for meaningful human-AI collaboration and what professional development looks like in AI-enhanced educational environments.

Module 3, Unit 3: Ethics in AI for Education and Privacy

The final unit brings together all ethical threads: GDPR rights, algorithmic bias, surveillance risk, transparency, consent, and the right to challenge AI decisions. A branching scenario simulates an LMS flagging a student as 'at risk'. Final quiz and reflection consolidate the full course.

5.2 Level of Difficulty

This MOOC is rated at beginner to intermediate level. No technical knowledge is assumed. Bloom's taxonomy levels are primarily Understand and Apply across Modules 1 and 2, with significant Analyse and Evaluate components throughout Module 3.

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6. Key AI Concepts Explained for Trainers

This section provides non-technical explanations of key AI concepts covered in this MOOC. Trainers do not need to be AI experts. The table below is designed to build confidence and provide accessible vocabulary for facilitating discussions with trainee educators.

Table 3 Key AI Concepts Explained for Trainers

Concept	Explanation	Real-world Example	Relevance to This MOOC
Machine Learning (ML)	Algorithms that learn from data and improve without explicit programming.	Spam filters; recommendation engines (Netflix)	Underpins adaptive feedback and personalised learning paths in LMS platforms
Natural Language Processing (NLP)	AI that enables machines to understand and generate human language.	ChatGPT; Grammarly; Google Translate	Powers automated writing feedback, chatbots, and conversational tutoring systems
Adaptive Learning Systems	Systems that adjust content, pacing, and format based on real-time learner data.	Knewton (Alta); DreamBox; Khan Academy	Central to personalized learning paths and intelligent LMS platforms
Learning Analytics	Collecting and analysing learner data to improve teaching decisions and outcomes.	Moodle dashboards; Canvas; Century Tech	Enables trainers to identify at-risk learners and tailor instructional interventions
Generative AI	AI that produces new text or content in response to user prompts.	ChatGPT; Claude; DALL-E	Used in lesson planning, quiz generation, and feedback drafting — with ethical caveats
Algorithmic Bias	When AI produces unfair outcomes due to skewed training data.	Grading tools penalising non-standard grammar	Critical for understanding fairness in AI-assisted assessment and curriculum design
GDPR / Data Privacy	EU regulation governing how personal data is collected, stored, and used.	Student data in LMS; learning analytics	Trainers and institutions must ensure compliant, transparent, consent-based data use

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7. AI Tools and Practical Implementation

7.1 Tools Referenced in the MOOC

The following tools and platforms are discussed across the nine units. Trainers are encouraged to explore at least two or three — particularly free versions — before facilitating the module. Hands-on familiarity significantly enriches discussion and helps trainers anticipate questions from trainees.

Table 4 Tools Referenced in the MOOC

Tool / Platform	Type	Relevance in MOOC	Access
Grammarly	Writing feedback	Mod.1, Unit 2	Free tier at grammarly.com
Turnitin / Urkund	Plagiarism detection	Mod.1, Unit 2	Institutional licence required
Gradescope	AI-assisted rubric grading	Mod.1, Unit 2	Free for instructors at gradescope.com
Write & Improve / ClassView	Writing feedback + class analytics	Mod.1, Unit 2	Free at writeandimprove.com
ChatGPT / Claude	Generative AI assistant	Mods 1–3; Use Cases 5–6	Free tiers at chat.openai.com / claude.ai
Khan Academy (Khanmigo)	AI tutoring system	Mod.1, Unit 3	Free at khanacademy.org
Knewton (Alta) / Century Tech	Adaptive learning platform	Mod.2, Unit 1	Demo/institutional access
Moodle / Canvas	LMS with AI analytics	Mod.2, Units 2–3	Open-source (Moodle); institutional (Canvas)
EssayGrader.ai	AI grading and feedback	Mod.1 Unit 2; Use Case 5	Free trial at essaygrader.ai

7.2 Practical Use Examples for Training Sessions

- Live writing feedback demo: Ask trainees to submit a short pedagogical reflection to Grammarly or Write & Improve. Then evaluate together: Would this feedback be appropriate to give to a student? What is missing? Could it disadvantage non-native speakers or non-standard writers?

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- Generative AI for lesson planning: Ask trainees to generate a 5-activity lesson plan on a topic in their teaching specialism using ChatGPT or Claude. Then critically review: Is this pedagogically sound? Is it culturally relevant? What would you change before using it with learners? This connects directly to Use Case D6.3.6.
- LMS dashboard exploration: Share a sample learning analytics dashboard (available in Unit 2.3) and ask trainees to identify which data points they would act on — and which raise privacy concerns. Ask: As a future teacher, how would you explain this dashboard to a student?
- Chatbot interaction as a learner: Ask trainees to interact with Khan Academy's Khanmigo or another AI tutor for 10 minutes as if they were a struggling student. Then debrief: What did the AI do well? What would a teacher add that the AI could not? This grounds Module 1, Unit 3 in lived experience.

7.3 Risks and Limitations to Discuss with Trainee Educators

Trainers should facilitate an open, balanced discussion about the limitations of AI tools as they apply to teaching practice specifically:

- Pedagogical shallowness: AI tools that generate technically correct but pedagogically thin content — lesson plans that look structured but lack contextual depth or learner-specific adaptation. Use Case D6.3.6 illustrates this vividly.
- Assessment bias: AI grading tools may penalise non-standard grammar, unconventional argument structures, or culturally specific reasoning — forms of expression that human teachers learn to recognise and value. Use Case D6.3.5 explores this directly.
- Over-reliance and deskilling: If trainees come to depend on AI for lesson planning, feedback generation, and quiz creation, they may not develop the deep pedagogical intuition that effective teaching requires. Use Case D6.3.1 raises this concern from a professional development angle.
- Data privacy in educational settings: Student data generated in LMS platforms is personal data under GDPR. Future teachers must understand their legal obligations before deploying any AI tools in their own classrooms.

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8. Guidance for Facilitating Learning in CVET Contexts

CVET learners often bring workplace experience, time constraints, different confidence levels, and immediate professional goals. Trainers should treat the MOOC as a flexible learning resource rather than a fixed classroom course.

8.1 Delivery Approaches

Self-paced Learning

All nine units are designed for independent completion. Trainers facilitating self-paced delivery should establish clear completion milestones, check in at mid-module points, and offer a structured reflection session after each module. The use cases (Section 10) can serve as between-session reading tasks.

Trainer-guided Learning

In guided delivery, the trainer introduces each module with a contextual framing exercise — ideally drawing on one of the three use cases — learners complete unit content, and the trainer facilitates a debrief discussion. This format typically requires two to three contact hours per module in addition to self-directed study.

Blended Learning

Blended delivery combines asynchronous MOOC completion with facilitated workshops. A recommended structure per module: 90 minutes asynchronous MOOC study, followed by a 60-minute workshop focusing on application activities, use case discussion, and peer reflection. This format suits employed adult learners who cannot commit to full training days.

Workshop-only Delivery

Selected sections of the MOOC can anchor standalone workshops. For a half-day session on Module 3 (ethics and pedagogy), the recommended sequence is: Use Case D6.3.5 as an opening discussion trigger, Unit 3.2 (human-AI collaboration) for conceptual grounding, and Unit 3.1 (implementation) as a practical planning exercise. Use Case D6.3.6 works well as a closing reflection.

8.2 Practical Facilitation Tips

Grounding in Teaching Practice

- Begin every session by connecting to trainees' future professional role: 'Imagine you are three years into your teaching career. You have 28 students, 6 hours of contact per week, and a new AI tool your school has just introduced. How does what we are discussing today prepare you for that moment?'
- Use the use case protagonists (Sofia, Elena Fischer, Sophie) as recurring reference points across sessions. Trainees will come to know these characters and find it easier to connect new concepts to their situations.

Supporting Trainees with Low Confidence

- Reassure trainees that the goal is not to become AI programmers but to become critical, confident users and facilitators of AI tools in educational settings.

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- Celebrate moments of recognition: when trainees identify that a tool they already use (Google Classroom's plagiarism checker, Grammarly) is an AI tool, use this as a confidence anchor.

Encouraging Critical Professional Reflection

- Ask trainees to keep a 'professional AI journal' throughout the course: one entry per module noting what they have learned and one practical implication for their future teaching.
- For each use case, ask trainees: 'What would you do in this situation? What institutional support would you need? How would you explain your decision to your students?'

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9. AI Use Cases for Professional and Workplace Contexts

Three dedicated use cases have been developed as companion materials for this MOOC. They are structured narrative scenarios featuring educator protagonists facing realistic dilemmas about AI in professional and educational settings. Each case includes: context, a narrative, a description of the AI system involved, a decision point, and five discussion / reflection questions.

These cases are provided as separate documents (Deliverables D6.3.1, D6.3.5, and D6.3.6). Trainers should share the relevant PDF with trainees before each session. There is no need to summarise the case content in the session — trainees read the cases themselves and use the discussion questions as structured prompts for group reflection and debate.

Table 5 Use-case to case-study matching table

Section 9 use case	Matched case-style presentation	MOOC / competence link	Suggested trainer use
Use Case	MOOC Units	Key Themes	Integration Guidance for Trainers
Understanding Foundations of AI for Personalized Learning and Growth (Sofia Klein, marketing & communications company)	Mod.1 Units 1–2; Mod.3 Unit 1	Workplace AI literacy; prompt quality; over-reliance; professional judgement	Ask trainees to read the case before the session. Use it to open Module 1 discussion: 'What does responsible AI use look like in a professional context?' Debrief with the five discussion questions provided. Revisit in Module 3 when covering pedagogical integration — Sofia's journey from passive consumer to critical user mirrors the shift trainers must facilitate in their own learners.
Fast Feedback, Black Boxes, and Ethical Choices: An Educator's AI Dilemma (Elena Fischer, VET teacher trainer)	Mod.1 Unit 2; Mod.3 Units 1–2	AI grading transparency; human oversight; fairness; professional accountability	Assign this case alongside Module 1, Unit 2 (AI in Assessment and Feedback). This case is directly parallel to

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			trainees' future role — Elena IS a teacher trainer, making it immediately relatable. Use the decision point as a structured small-group debate: under what conditions would you release AI-generated grades? Connect to Module 3 Unit 2 discussion on human-AI roles. The five discussion questions work well as a written reflection task.
AI-Powered Course Design Assistant for Educators (Sophie Lang, university lecturer)	Mod.2 Units 1–2; Mod.3 Units 1–3	Lesson planning with AI; pedagogical creativity; cultural bias in AI content; educator autonomy	Use this case as the anchor for Module 3, Unit 1 (Integration of AI in Teaching Settings). Sophie's dilemma — efficiency vs. pedagogical authenticity — is the defining tension for trainee educators. Run the five reflection questions as a 'future self' exercise: imagine you are Sophie two years into your teaching career. What would you decide? Also valuable for Module 2 Unit 2 when discussing AI-powered LMS and course design tools.

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9.1 Tips for Facilitating Use Case Discussions

- Always ask trainees to read the case before the session — do not summarise it for them. The narrative detail is part of what generates authentic engagement.
- Use the decision point (the protagonist's dilemma) as the session's opening question: 'What would you do in Sofia's / Elena's / Sophie's position?' Then let discussion develop before introducing MOOC content.
- Return to the cases at the end of a unit: 'Having now studied [Unit X], would you advise the protagonist differently? What would you add?'
- Encourage trainees to consider all three perspectives: the individual educator, the institution, and the learner. Different stakeholders may have very different responses to the same AI dilemma.
- The discussion questions at the end of each case are suitable as written reflection prompts, group debate starters, or formative assessment tasks.

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10. Practical Training Activities and Workshop Exercises

The activities below are designed for CVET workshop settings. Each connects directly to MOOC content and to one or more of the three use cases. All activities require only standard classroom or online tools.

Table 6 Practical Training Activities and Workshop Exercises

Activity	Time	Description	Format
AI in My Future Classroom	30 min	Trainees list 15 teaching tasks (giving feedback, grading, lesson planning, differentiation, parent communication, etc.) and mark which could be AI-supported, which must remain human, and which are unclear. Results compared and debated. Draws on the role analysis in Module 3, Unit 2.	Individual → plenary
Automated Feedback Critique	45–60 min	Trainees submit a short pedagogical reflection to a writing AI tool (e.g. Grammarly or Write & Improve) and critically evaluate the feedback from a teacher's perspective: Is this useful feedback for a student? What would a teacher add? What might be unfair to multilingual learners? Connects directly to Module 1, Unit 2 and Use Case D6.3.5.	Individual → group debrief
Design a Chatbot for Your Subject	50 min	In pairs, trainees design a chatbot use case for a learning context in their teaching specialism (e.g. answering student questions in a VET programme; supporting formative assessment in a language class). They define scope, limitations, and teacher oversight requirements.	Pairs → class presentation
Adaptive Pathway Scenario	45 min	Groups receive the profile of a fictional learner (e.g. a slow-processing student flagged as 'at risk') and must evaluate how an adaptive LMS would treat them — and whether the system's assumptions are fair. Connects to Module 2, Unit 1 and Use Case D6.3.4.	Small groups
Lesson Plan with AI	60 min	Trainees take a traditional 90-minute lesson plan and redesign it integrating one AI tool. They must specify when AI is used, what the teacher does at each stage, how student agency is preserved, and how they would explain AI use to students and parents. Connects to Use Case D6.3.6.	Pairs → peer review

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Ethics and AI Discussion Circle	40 min	Structured discussion using provocative statements (e.g. 'AI grading is always fairer than a tired teacher'; 'Monitoring student emotions via webcam is acceptable if it helps them succeed'). Draws on Module 3, Units 1–3 and all three use cases.	Whole group

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11. Assessment and Competence Validation

Assessment in this MOOC is designed to be practical, competence-focused, and teaching-context relevant. The emphasis is not on memorisation of technical definitions but on the ability to apply knowledge to professional educator scenarios, evaluate AI tools from pedagogical and ethical perspectives, and communicate insights clearly. The use cases provide ready-made scenarios for assessment tasks.

Table 7 Assessment Options

Option	Format	Description	Evaluation Criteria
Option A — Case Study Analysis	Individual or pair	Select one of the three CVET use cases (D6.3.1, D6.3.5, or D6.3.6) and produce a structured written analysis (~500–700 words) covering: the AI technology involved, its pedagogical implications, risks and limitations, and what you would do differently as a future educator.	Use of MOOC concepts; real-world teaching connection; critical thinking; communication
Option B — AI Tool Evaluation Report	Individual	Choose one AI tool from the MOOC, explore its free version, and write a professional evaluation report (~400–600 words) addressing: what it does, how you could use it in your future teaching practice, its limitations, and any ethical or GDPR concerns.	Accuracy; professional tone; ethical awareness; specificity to teaching context
Option C — Reflective Portfolio Entry	Individual	Write a reflective journal entry (~300–500 words) addressing: what surprised you about AI in education, how it changes your thinking about your future role as a teacher, and one risk you will actively manage in your practice.	Depth of reflection; connection to teaching vocation; honest engagement with challenges

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Option D — Group Discussion and Peer Evaluation	Groups of 3–4	Participate in a structured discussion using one of the three use case decision points. Peers evaluate contributions using a simple rubric covering clarity of argument, use of MOOC concepts, and pedagogical reasoning.	Quality of argument; use of evidence; openness to other perspectives

Table 8 Evaluation criteria

Criterion	Excellent	Satisfactory	Needs Development
Use of AI concepts	Accurately applies multiple MOOC concepts with nuance	Correctly uses key concepts with minor gaps	Concepts absent, confused, or incorrectly applied
Connection to teaching practice	Strong, specific, pedagogically reasoned connections	Reasonable connections with some specificity	Connections vague, generic, or absent
Critical thinking	Evaluates benefits and risks from both teacher and learner perspectives	Identifies benefits and at least one risk	Describes features without evaluation
Ethical reasoning	Addresses fairness, privacy, transparency, and accountability with depth	Touches on at least one ethical dimension meaningfully	Ethical considerations absent or superficial
Communication	Clear, well-structured, and professionally appropriate	Mostly clear with minor structural issues	Difficult to follow or poorly organised

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12. Adapting the MOOC for different CVET settings

12.1 Initial Teacher Education (ITE) Programmes

In ITE programmes for VET teachers, the MOOC can be integrated as a standalone digital literacy module or as a thread within a broader professional studies course. Each unit functions as a standalone session; all three use cases are immediately relatable because the protagonists are educators. Recommended format: 90-minute workshop per unit (30 min MOOC, 30 min facilitated discussion, 30 min activity). Use Case D6.3.6 works particularly well early in the programme, before trainees encounter their first placement.

12.2 In-Service Teacher Professional Development

For in-service teachers participating in CPD programmes, the MOOC can be delivered as a blended learning strand across a term. Trainees have the advantage of being able to reference their current school's AI tools and policies directly. If the institution uses an LMS, invite trainees to bring real examples of AI-generated feedback or analytics reports they have encountered. Use Cases D6.3.5 and D6.3.1 are particularly resonant for this audience.

12.3 Online and Remote Delivery

All nine units are natively suited to online delivery. For facilitated online sessions, tools such as Mentimeter, Padlet, or Jamboard can replicate physical activity formats. A dedicated discussion thread or messaging channel sustains peer learning between sessions. The three use cases can be shared as pre-reading 48 hours before each live session and discussed synchronously.

12.4 Blended Learning

Recommended three-week blended schedule: Week 1 — trainees complete Module 1 online; 90-minute workshop combining Automated Feedback Critique (Activity 2) with Use Case D6.3.5 discussion. Week 2 — Module 2 online; 90-minute workshop on adaptive learning and data ethics with Activity 4. Week 3 — Module 3 online; 90-minute workshop combining Lesson Plan with AI (Activity 5) and Use Case D6.3.6 reflection; assessment brief issued.

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13. Supporting Learners with Different Backgrounds and Needs

13.1 Trainees with Low Digital Skills

- Conduct a digital readiness check before starting. Identify trainees who may need support navigating online platforms or video content.
- Pair less confident trainees with peers for informal technical support. Printed summaries of key concepts support learners who prefer hard copy.
- Use case narratives are accessible without any technical background — they are story-based and focus on professional judgment, not technical knowledge.

13.2 Trainees with No Prior AI Knowledge

- Begin every session with a personal connection: 'Have you encountered AI in your teaching or learning context already?' Almost every trainee has, though they may not have labelled it as AI.
- Use everyday pedagogical analogies: an adaptive system is like a teacher who adjusts task difficulty in real time; an NLP tool is like an automated writing tutor; a learning dashboard is like a progress tracker.

13.3 Trainees with Anxiety About AI and Professional Identity

- Many trainee teachers worry that AI will make teachers obsolete. This concern should be taken seriously and addressed head-on rather than dismissed. The MOOC consistently argues that AI requires human oversight, ethical judgment, and pedagogical expertise — exactly the skills trainees are developing.
- Use Case D6.3.1 (Sofia's dilemma about professional growth vs. AI dependence) is particularly valuable for this conversation: at what point does AI support become a barrier to genuine professional development?

13.4 Trainees with Different Learning Speeds

- Fast finishers can explore optional MOOC extensions, read additional use cases, or research AI policies at their placement school.
- Trainees who need more time can complete MOOC units asynchronously without disrupting group progress.

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13.5 Trainees with Disabilities

- Ensure MOOC content is accessed with accessibility features: screen readers, text enlargement, closed captions on videos.
- Provide alternative assessment formats: oral presentation instead of written report; verbal discussion instead of written reflection.

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14. Teaching Materials and Resources

Table 9 Sample Half-Day Workshop Plan (4 Hours)

Time	Activity	Format	Resources
0:00–0:15	Welcome + warm-up: 'AI in My Future Classroom' (Activity 1)	Whole group discussion	Flipchart or digital display
0:15–0:45	Module 1 highlights: AI concepts, assessment tools, chatbots. Live demo of Grammarly or Write & Improve	Trainer presentation + demo	Laptop, projector, internet
0:45–1:15	Automated Feedback Critique (Activity 2) — with reference to Use Case D6.3.5	Individual → group debrief	Device per trainee; worksheet
1:15–1:30	Break		
1:30–2:00	Module 2: Adaptive learning and LMS analytics overview	Presentation + discussion	Slides based on Units 2.1–2.3
2:00–2:45	Lesson Plan with AI (Activity 5) — with reference to Use Case D6.3.6	Pairs → peer review	Lesson plan template
2:45–3:25	Ethics and AI Discussion Circle (Activity 6) — drawing on Use Case D6.3.1	Whole group	Discussion statement cards
3:25–3:50	Assessment briefing + Q&A	Trainer-led	Assessment brief handout
3:50–4:00	Close: 'One thing that changes how I see my future teaching'	Individual → shared	Sticky notes

14.1 Suggested Handouts

- AI Glossary: One-page reference covering all key terms from the MOOC (ML, NLP, adaptive system, LMS, learning analytics, generative AI, algorithmic bias, GDPR, etc.)
- Use Case Summary Cards: Brief overview cards for each of the three use cases (D6.3.1, D6.3.5, D6.3.6) — protagonist, context, key dilemma, and the five discussion questions. Useful for at-a-glance reference during workshop activities.

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- Activity Worksheets: Structured templates for Activities 2 (feedback critique), 5 (lesson plan with AI), and 6 (ethics discussion circle) with guided reflection prompts.
- GDPR Rights Card: Concise visual summary of learner data rights under GDPR — suitable for trainees to adapt and use with their own future learners.
- Evaluation Rubric: Printable version of the assessment criteria table from Section 12, for trainee self-assessment or peer review.

14.2 Slide Deck Outline

A suggested 20-slide structure for a full-day workshop covering all three modules:

- Slides 1–3: Welcome, agenda, and 'AI in My Future Classroom' warm-up (Activity 1)
- Slides 4–7: Module 1 highlights — AI concepts, assessment tools, chatbots. Live demos.
- Slides 8–11: Module 2 highlights — adaptive learning, LMS architecture, learning analytics dashboard.
- Slides 12–15: Module 3 highlights — pedagogical integration, human-AI roles, ethical framework.
- Slides 16–18: Use case discussion facilitation slides (D6.3.5 + D6.3.6)
- Slides 19–20: Assessment briefing and professional reflection close.

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15. Additional Resources for Trainers

Trainers can use the following resources for preparation, further reading, or optional learner extension tasks. Always check availability, language, accessibility, and institutional policy before assigning external tools or websites.

15.1 Recommended videos

- **"How AI Could Save (Not Destroy) Education"** — Sal Khan, TED Talk (15 min)
  https://www.ted.com/talks/sal_khan_how_ai_could_save_not_destroy_education
- **"How AI is Used in Education"** — UNESCO (5 min)
  https://www.youtube.com/@UNESCO
- **"Rethinking Assessment in the Time of AI"** — UNSW eLearning, Prof. Cath Ellis (3:33 min)
  https://www.youtube.com/results?search_query=UNSW+Rethinking+Assessment+in+the+Time+of+AI+Cath+Ellis
- **"GDPR Explained"** — Channel 4 News (5:39 min)
  https://www.youtube.com/results?search_query=Channel+4+News+GDPR+Explained
- **"Benefits and Challenges of AI in Education"** — EdTech Magazine (5 min)
  https://edtechmagazine.com/k12/

15.2 Useful articles and reports

- **UNESCO (2023): Guidance for Generative AI in Education and Research**
  https://unesdoc.unesco.org/ark:/48223/pf0000386693
- **European Commission (2021): AI and Education**
  https://education.ec.europa.eu/focus-topics/digital-education/action-plan
- **DigComp 2.2 (European Commission): Digital Competence Framework**
  https://joint-research-centre.ec.europa.eu/digcomp/digcomp-framework_en
- **Hattie & Timperley (2007): "The Power of Feedback"**
  https://doi.org/10.3102/003465430298487
- **Irish National Teachers' Organisation: GDPR Guide for Teachers**
  https://www.into.ie/help-advice/legal-personal/gdpr/

15.3 AI literacy tools for trainer self-study

- **Elements of AI**
  https://www.elementsofai.com/
- **AI for Everyone** — Andrew Ng (Coursera)
  https://www.coursera.org/learn/ai-for-everyone

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- **European AI Alliance**
  https://digital-strategy.ec.europa.eu/en/policies/european-ai-alliance
- **AI4VET4AI Project Website**
  https://ai4vet4ai.eu/

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16. Self-Study Guidance for CVET Trainers

16.1 Recommended Preparation Order

- Read Section 1 (Introduction) and Section 2 (Target Learners) to contextualise the MOOC for your specific setting.
- Read Section 7 (Key AI Concepts) carefully — this is the foundation for your own confidence.
- Work through Section 6 (MOOC Structure) to understand the flow of the nine units.
- Read all three use cases (D6.3.1, D6.3.5, D6.3.6) and Section 10 (Use Cases) in full. These are the most important preparation material.
- Select two or three activities from Section 11 suited to your delivery format.
- Review Section 12 and choose the assessment approach appropriate to your setting.
- Spend 10–15 minutes with at least two recommended videos from Section 16.
- Complete at least two MOOC units independently as a learner — this is the single most effective preparation step.

16.2 Estimated Preparation Time

- Reading this guide in full: approximately 1.5–2 hours
- Reading the three use cases: approximately 1 hour
- Completing MOOC units as a learner: approximately 18–22 hours
- Preparing session materials and activities: approximately 2–3 hours per session
- Total recommended preparation before first delivery: 12–16 hours

16.3 Reflection Questions for Trainers

- What AI tools do you already use in your own teaching or learning? How might these appear in the MOOC content?
- Which of the three use cases resonates most with your professional experience? What would you do differently from the protagonist?
- How will you handle trainees who are anxious about AI displacing teachers? What framing will help them engage constructively?
- What AI tools are already in use in your institution's LMS or administrative systems that you could reference to make the content immediately tangible?
- How will you ensure that discussions about AI ethics don't become abstract? What concrete examples from your teaching context can you prepare?

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