AI foundation application	**Level 1: Acquire**	**Level: Deepen**	**Level 3: Create**
TEACHER COMPETENCY	3.1 Basic AI techniques and applications: Teachers are expected to acquire basic conceptual knowledge on AI, including: the definition of AI, basic knowledge of how AI models are trained, and associated knowledge on data and algorithms; main categories of AI technologies and examples of each; and the capacity to examine the appropriateness of specific AI tools for education and operate validated AI tools.	3.2 Application skills: Teachers are expected to be able to proficiently operate AI tools adopted in educational settings; to deepen their knowledge of various categories of AI technologies and their practical skills concerning data and algorithms that are appropriate to teaching responsibilities and background competencies while infusing relevant ethical principles in practice.	3.3 Creating with AI: Teachers are able to customize or modify AI tools in a proficient manner, applying enhanced conceptual knowledge and operational skills to create AI-assisted inclusive learning environments, and address broader challenges in educational contexts.
CURRICULAR GOALS (CG)	CG3.1.1 Adapt the level of difficulty of basic conceptual knowledge on AI according to teachers' responsibilities and prior experience with AI; illustrate how a specific AI tool is developed based on data and algorithms; and explain the basic methods used by AI tools to process data to generate their outputs. CG3.1.2 Support the hands-on operation of AI tools that are relevant to teachers' responsibilities to give a basic understanding of how these tools work; guide them to experience different types of AI tools and help them understand the technological advances of AI from previous generations of ICT tools, as well as the functional features of different categories of AI tools. CG3.1.3 Support users' testing of AI tools by introducing a rudimentary method for analysing the reliability and appropriateness of specific AI tools for local contexts and engaging teachers in trialing of the method. CG3.1.4 Support teachers to establish their own collection of AI tools, starting from recommending basic exemplar tools and guiding them to curate trustable AI relevant to	CG3.2.1 Enrich 'operation and comparison' experiences of typical AI tools, supporting teachers to gain experience of main functions and learn operational skills of these tools; guide them to analyse the similarities and differences of common AI techniques (e.g. symbolic, predictive and generative AI), as well as their implications for education. CG3.2.2 Scaffold deepened construction of conceptual knowledge by facilitating teachers' research-based learning, including on how a selected AI system (such as a large language model) is trained and tested and what typical models, algorithms and datasets are used for the training. CG3.2.3 Support problem-based learning of operational skills in data, algorithms and coding. Based on teachers' prior knowledge and work responsibilities, design typical problem situations to facilitate teachers' acquisition of knowledge and operational skills with regard to data, algorithms and coding, as well as their capacity to use them to design AI applications. CG3.2.4 Offer hands-on practice to assess the 'ethics by design' of AI tools. Organize teachers	CG3.3.1 Nurture adaptability and creativity in customizing AI tools; support teachers to integrate skills on data, algorithms, programming and AI models to customize or design tools to address challenges in education, focusing on the needs of people with different abilities and protecting linguistic and cultural diversity in local contexts. CG3.3.2 Foster critical views on open-source AI by supporting teachers to deepen critical views on the advantages, limitations and risks of open-source in comparison with commercial AI tools; support teachers to learn how to review, adapt and/or iterate open-source AI tools. CG3.3.3 Simulate and practice adaptability and creativity in co-creating AI tools through project-based learning. Design and facilitate project-based learning practices to simulate teachers to learn how to adapt accessible and affordable off-the-shelf commercial AI models/tools, semi-finished tools and/or open-source toolkits to assemble or create new AI tools to address real-world problems based on human-centred and ethical approaches; enhance teachers' adaptability, resilience and ability to clarify ambiguities, overcome obstacles and take risks when solving complex authentic problems.

	their needs and local contexts with a particular consideration of open-source tools.	to review and modify a specific set of criteria or an instrument used to assess key aspects of 'ethics by design'; and facilitate teachers to use the adapted criteria or instruments to assess selected AI tools in relation to data security, data privacy, safety for users, accessibility for people with different abilities, biases (including gender discrimination) in data and algorithms, and potential harms for vulnerable groups.	CG3.3.4 Support teachers to embed values, knowledge and skills into existing repositories of educational AI tools; offer hands-on opportunities for teachers to examine the ethical and pedagogical appropriateness of the tools, and iteratively update the repository of AI tools for schools.

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LEARNING OBJECTIVES (LO)	LO3.1.1 Demonstrate conceptual knowledge appropriate to their competencies and responsibilities on how AI systems are developed using data, algorithms and computing architecture; acquire relevant understanding and skills on data, algorithms and programming; and exemplify key steps including problem-scoping, design, training, testing, deployment, feedback and iteration. LO3.1.2 Exemplify what AI is and is not, the main categories of AI techniques and AI technologies, the novel capabilities that AI could actualize compared to previous generations of ICT tools, and the core functions of various categories of AI tools.	LO3.2.1 Proficiently operate commonly used AI tools in daily life and in education; exemplify the typical techniques used by these tools and explain their implications for education. LO3.2.2 Visually represent how selected AI systems work, including how they are trained and tested, as well as the typical models, algorithms, and datasets used. LO3.2.3 Demonstrate transferable knowledge on data, algorithms and coding and apply it to solve problems that are	LO3.3.1 Demonstrate knowledge and skills on AI system design at the level of expert teachers as well as comprehensive competencies to analyse the limitations of selected AI systems in solving real-world problems in local educational contexts. LO3.3.2 Apply appropriate knowledge and skills on data, algorithms, programming and AI models to customize and/or assemble existing AI tools or semi-finished AI models to create AI tools or fine-tune open-source AI systems to create solutions that are both relevant and affordable for local settings and

	LO3.1.3 Locate and operate AI tools that are necessary for their daily work in local contexts. LO3.1.4 Explain the importance of evaluating AI tools to ensure their accessibility, inclusivity, and reliability; undertake basic analyses of the appropriateness of specific AI tools for education in local contexts with particular attention to the impact on students with special needs. LO3.1.5 Start consolidating a personal collection of trustable AI tools that are necessary for life and work and relevant to the local language and culture. Investigate the extent to which locally relevant open-source AI tools are available or not.	appropriate to their abilities and the remit of their role. LO3.2.3 Critically apply knowledge and skills related to data, training, algorithms and models of AI to assess the ethics rooted in the design of AI tools.	specific use cases. LO3.3.3 Revise or define criteria for the comprehensive testing of a self-created AI tool and for the purpose of optimization and further iteration of the tool. LO3.3.4 Contribute to a new or existing repository of user-created or tailored AI tools based on personal and institutional needs and promote a focus on only utilizing the most appropriate tools for education.

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CONTEXTUAL ACTIVITIES	Conceptual mapping of how AI works: Start to draw and iteratively update paper-based or digital concept maps showing how AI systems are developed and the workflow of decision-making regarding specific AI tools used in education. Extension and enhancement of skills: Extend knowledge on AI tools that are relevant to the teachers' responsibilities. Help them to enhance the fluency and breadth of their existing operational skills or to develop new skills. 'Navigation compass' for selection of AI tools: Discern which tools are using AI and which ones are not, and the basic comparative advantages and limitations of ICT tools and AI tools used in local contexts. Collection of appropriate AI tools: Cooperate with other teachers and school managers to assess the appropriateness of specific tools being used or recommended by AI providers and discuss whether they should be adopted; collect validated AI tools, share open-source tools and start to curate a collection of	Skillful uses of AI tools in schools: Based on a deepened understanding of the advantages and limitations of different categories of AI technologies, skillfully operate widely used AI tools. Visualized 'know-how' on typical categories of AI tools: Draw a concept map or visualized workflow to explain how selected AI systems are trained and how they work. Facilitating students to learn about data, algorithms and coding: Facilitate students or peer teachers who are at beginner level to acquire knowledge of and skills related to data, algorithms and coding. Informed whistleblowing in ethics by design: Apply an understanding of how AI is trained and demonstrate capacity to investigate gender biases and discrimination against people with disabilities or vulnerable groups that may be rooted in datasets, data	Driving the design of AI tools for inclusion: Collaborate with a community of co-creators to add functions to existing AI tools or design new ones to facilitate accessibility, targeting AI or digital learning platforms for people with disabilities. Design AI tools to support the detection of inclusive accessibility among widely used AI platforms. Promoting the co-creation of AI tools to support climate-friendly actions: Co-create AI tools or organize hackathons to facilitate students to design AI tools that promote climate education or climate-friendly actions (e.g. AI tools to track carbon emissions caused by selected AI platforms or the energy consumption of schools). Coordinating the building and use of repositories of educational AI tools: Support the creation of a repository of selected trustable and self-created AI tools for education that can be shared through school

	trustable AI tools.	labelling, algorithms and training methods. Reveal and report any evidence-based findings of biases or ethical risks.	web spaces or publicly (e.g. on GitHub). Where appropriate, assume the roles of school-based AI coordinators to provide training for other teachers to support their use of the repository.