



TEACHERS IN AI-ENABLED CLASSROOMS

Uses, Roles, Skills
In K-12 Classrooms



Introduction

IREX advances practical, teacher-centered approaches to AI in education by linking research, system reform, and classroom practice. In Jordan, IREX and Development Gateway are partnering with the Ministry of Education to pilot an AI Accelerator that integrates readiness diagnostics, upskilling, and tool testing to support safe and equitable system-wide adoption.

As artificial intelligence (AI) rapidly enters classrooms around the world, educators, policymakers, and training institutions face an urgent question: How is AI changing the role of the teacher and what new skills do teachers need to thrive? This isn't just a theoretical question any longer: the OECD's 2024 Teaching and Learning International Survey indicates that more than a third of lower secondary teachers across the OECD region reported using AI in the last year.¹

While much of the global conversation has focused on tools and technologies, AI is already reshaping the everyday dynamics of teaching and learning. At the same time, much of the attention around AI and education falls into one of two extremes: on the one hand, this space is filled by tech platforms that are looking to sell software and packaged professional development courses to educators. On the other hand, there are global policy institutions setting out the parameters for how education policy should meet the AI moment.

At IREX, we see a missing middle in this conversation: the need for practical, pedagogy-grounded frameworks that help teacher training institutions and education systems understand how AI is being used in classrooms; make sense of how the teacher's role is evolving as a result; and understand what skills educators need now as they engage with AI. Recent scholarship has begun to address this need through systems-level analyses of AI in education (Reimers et al., 2026) and frameworks for understanding creative engagement with AI tools (Romero, 2025), yet there remains a gap in frameworks specifically designed to support practitioner decision-making about implementation and professional development.² Across diverse contexts and tools, one pattern is consistent: successful AI integration in education keeps teachers firmly "in the loop." Education remains a relational enterprise, and AI adds value only when human expertise and connection remain central.

1. OECD (2025), *Results from TALIS 2024: The State of Teaching*, TALIS, OECD Publishing, Paris, <https://doi.org/10.1787/90df6235-en>.

2. Reimers, F., Azim, Z., Palomo, M-R., & Thony, C. (2026). Artificial Intelligence and Education in the Global South: A Systems Perspective. Springer Nature. <https://doi.org/10.1007/978-3-032-11449-5>; Romero, M. (2025). From consumption to co-creation: A systematic review of six levels of AI-enhanced creative engagement in education. *Multimodal Technologies and Interaction*, 9(10), 110. <https://doi.org/10.3390/mti9100110>.

Drawing on international research, policy frameworks, classroom examples, and educator expertise, we outline a typology for understanding how AI is currently being used in K–12 classrooms and how those patterns of use affect the role and responsibilities of teachers.

This typology includes a spectrum of AI integration into K-12 classrooms³:

- **AI-as-Assistant:** AI supports behind-the-scenes teacher tasks such as lesson planning or translation. The teacher remains the core instructional leader.
- **AI-as-Partner:** AI tools are actively used within the classroom whether for personalization, assessment, or feedback alongside teacher facilitation and expert judgment.
- **AI-as-Lead:** AI platforms lead instruction and assessment, while teachers focus on mentorship, student well-being, and deeper learning.

Each mode introduces distinct demands and opportunities for teachers, requiring not only digital literacy but also pedagogical, relational, and strategic competencies that many teacher preparation and professional development programs do not yet address. As schools and education support organizations respond to the fast-changing landscape of AI in education, this framework provides a practical



tool for understanding how AI is being used, how teaching and learning are evolving, and what kinds of support teachers need to lead the future of education. Ultimately, this framework exists to support better learning outcomes for students. Each mode of AI integration—whether AI supports a teacher behind the scenes, partners with them in the classroom, or leads instruction while teachers focus on mentorship—should be evaluated by its impact on student learning. When teachers have clarity about how AI reshapes their role, they can make more intentional choices about which mode best serves their students’ needs. The skills outlined in this framework enable teachers to leverage AI in ways that enhance instructional quality, personalize learning experiences, and ensure that technology serves pedagogical goals rather than dictating them.

A Framework of AI Use in K-12 Classrooms

To make sense of the wide range of ways AI enters classrooms, IREX has outlined a framework describing three modes of AI integration: AI-as-Assistant, AI-as-Partner, and AI-as-Lead. Each mode reflects not only how AI tools are used, but how they reshape

the teacher’s role and the kinds of skills teachers need to succeed. This typology can help educators, training providers, and teacher training institutions plan for practical implementation and professional development.

3. It’s important to note that these modes may look different across contexts and that certain modes may be more appropriate for certain subjects or grade levels.

AI Use in the Classroom: Three Modes of Use



Mode 1: AI-as-Assistant



Mode 2: AI-as-Partner



Mode 3: AI-as-Lead

Description	AI is used in targeted ways that enhance conventional teaching without fundamentally altering the classroom dynamic. Teachers remain firmly in charge of instruction, and AI serves as a quality-enhancing assistant for specific tasks.	AI-as-Partner integration involves a more intentional and visible use of AI in teaching and learning activities. Here, AI tools become embedded in the pedagogical process as they are used to support personalization of learning, providing tutoring or feedback to students, and assisting with assessment. Yet teachers still orchestrate the overall experience. In these classrooms, one might see blended teacher/AI roles with AI handling certain instructional interactions or data-driven personalization, while the teacher focuses on facilitation, mentorship, and higher-order skills.	In this mode, teachers are primarily mentors, while AI drives content delivery. In these scenarios, almost all instruction, practice, and assessment are delivered through AI-driven systems, and human educators take on a very different role. Classrooms adopting this model look unlike the traditional teacher-at-the-front format; instead, students often engage independently with adaptive learning software, and teachers act as facilitators, coaches, or “guides” rather than primary instructors.
How AI Is Used	<ul style="list-style-type: none">• AI helps draft lesson plans, quizzes, assignments, and generate examples.• AI helps write email updates to students and caregivers.• AI helps to quickly differentiate reading texts for different levels.• AI helps draft portions of IEPs.	<ul style="list-style-type: none">• AI chatbots tutor students through academic problems.• Teachers mix delivering traditional lessons with individualized learning through platforms such as Chimple or iXL.• Teachers use AI to analyze quiz results to better understand which students need extra help.• Teachers train AI on a rubric and use AI to provide automated assessment and feedback on tests or assignments.	<ul style="list-style-type: none">• AI tools are trained on learning content that was originally developed by expert human educators.• In-person educators focus on motivating students, facilitating collaborative projects and group learning activities that develop teamwork, communication, and problem-solving skills, and addressing socio-emotional needs.• Students work on tablets or computers at their own level and speed, guided by AI that adjusts the content and difficulty continuously.• The guide’s (i.e. teacher) role in this model is largely to monitor progress, intervene for motivation or discipline, and handle tasks the AI cannot (such as leading group discussions or addressing misconceptions that the software flags).
What is the Role of the Teacher	<p>The teacher remains the central planner, instructor, and content expert, but uses AI to streamline behind-the-scenes work. They rely on AI to draft lesson plans, generate rubrics, create exemplars, or translate routine communications, which frees up time for instructional prep and relationship building. The teacher doesn’t change how they teach but begins to translate familiar tasks into prompts for AI tools, acting more like a strategic planner. Teachers continue to review all AI output for errors, contextual fit and bias. Their role is still highly hands-on, with AI serving as a quiet assistant in the background rather than a visible presence in the classroom.</p>	<p>The teacher shares instructional roles with AI tools. While they still guide the overall learning, AI tools may take on specific tasks like delivering adaptive practice, giving feedback, or generating real-time data on student progress. The teacher’s role shifts toward facilitator, interpreter, and mentor while using insights from AI to regroup students, personalize instruction, and deepen learning through targeted discussion or small-group work. They must monitor both student understanding and AI behavior, stepping in to correct, contextualize, or extend what AI tools provide.</p>	<p>The teacher’s role shifts to become primarily a mentor. AI platforms handle most instruction, assessment, and pacing by guiding students through personalized learning paths. The teacher focuses on setting broader goals, monitoring progress, and providing emotional, ethical, and cognitive support. They interpret AI data to spot patterns or intervene, but their main value lies in motivating students, fostering belonging, and supporting critical thinking. Critically, teachers in this mode must attend to the aspects of learning that AI cannot measure, including shifts in body language, tone of voice, or social dynamics. This relational work becomes even more essential when AI handles content delivery. Human connection gains increased importance: the teacher helps students reflect, collaborate, and navigate challenges that AI cannot address. They ensure learning remains meaningful, equitable, and grounded in human judgment.</p>

Skills Required



The skills outlined below represent what teachers need to develop, but many require institutional support—time for professional development, access to tools, leadership backing, and technical infrastructure. Effective AI integration depends on both teacher capacity and organizational infrastructure.



Mode 1: AI-as-Assistant

Prompt writing for planning tasks

Writing clear, structured prompts for lesson plans, rubrics, exemplars, or emails.

Understanding when to use AI

Embedding AI-generated materials into lesson sequences and adapting outputs to meet specific learning goals and classroom needs

Classroom management

Managing technical disruptions and setting clear expectations for AI tool use

AI output evaluation and quality control

Reviewing AI-generated content for accuracy, appropriateness, bias, and tone.

Instructional editing

Adapting AI drafts to fit student needs, classroom context, or curricular goals.



Mode 2: AI-as-Partner

Platform fluency

Comfort navigating and troubleshooting AI systems used for tutoring, feedback, or personalization.

Ability to weave AI into pedagogy

Orchestrating blended instruction by transitioning between AI-supported and teacher-led activities, using data to inform real-time instructional decisions

Classroom management

Balancing attention across students working with AI and those in direct instruction, addressing AI misuse, and managing tech frustrations without disrupting learning

Instructional flow alignment

Directing AI tools to fit within the broader learning sequence and scope plan.

AI tool selection and integration

Choosing appropriate AI platforms and knowing when and how to incorporate them into lessons.



Mode 3: AI-as-Lead

AI platform mastery

Deep mastery with AI tools to configure settings, troubleshoot, and ensure alignment with goals.

Pedagogical integration

Structuring learning environments that balance AI-delivered content with teacher-facilitated collaboration, reflection, and socio-emotional support

Classroom management

Maintaining student focus during independent AI-based work, establishing collaboration norms, and monitoring engagement when not directly instructing

Family and stakeholder communication

Explaining AI-driven learning to caregivers in clear, reassuring ways.

Mentorship and relational support

Building trust, motivation, and emotional safety when not delivering daily lessons.

<p>Task decomposition Breaking larger instructional goals into smaller tasks that AI can support</p>	<p>Classroom monitoring in blended settings Managing a room where some students work with AI tools while others receive direct instruction.</p>	<p>Learning path planning Setting and adjusting long-term goals for students within the AI system's parameters.</p>
<p>Time management for AI integration Knowing when to use AI for speed, and when to build from scratch.</p>	<p>Decision-making on teacher-AI division of labor Judging which parts of a lesson or unit should be AI-supported versus teacher-led, and maintaining critical thinking by limiting overreliance on automation – ensuring checks in the process.</p>	<p>Ethical oversight and student advocacy Ensuring AI decisions are fair, transparent, and adaptable to individual student needs.</p>
<p>Copyright and originality awareness Understanding ethical reuse and how to check for overreliance on generic AI outputs.</p>	<p>Feedback validation and refinement Checking AI-generated student feedback for tone, accuracy, and alignment with learning goals.</p>	<p>Behavior and engagement management in semi-autonomous settings Keeping students focused, accountable, and socially engaged when working independently on devices.</p>
<p>Data protection and privacy literacy Knowing what personal data and what student/family/school information should not be shared with AI tools.</p>	<p>Facilitation and coaching Guiding students as they interact with AI, helping them make sense of outputs, errors, or confusion.</p>	<p>Socratic facilitation Leading reflective conversations, helping students make sense of what they're learning and how they're learning it.</p>
<p>Data analytics Understanding why and how data will be used to curate teaching resources</p>	<p>Intermediate data analytics Reading AI-generated dashboards or progress reports to inform grouping, reteaching, or intervention.</p>	<p>Advanced data analytics Analyzing dashboards, trends, and alerts to track student progress, identify issues, and make targeted interventions.</p>
	<p>Ethical oversight and explainability Knowing how to address student or parent concerns about fairness, bias, or how AI decisions are made.</p>	<p>Equity and AI Recognizing and developing protocols that ensure prevention of disparities and biased AI instruction that overlooks learner needs.</p>
	<p>Strong data protection skills Developing, deploying, and transparently communicating to parents and students' personal data use policies and procedures to ensure that student/family data is safeguarded and is not/will not be misused during the educational process or in the future.</p>	<p>Critical responsibility for safeguarding and protection of minors (students) data The more and the longer AI systems have access to analyze students' educational performance, the more important it becomes to define and potentially limit the use of this data for high stakes outcomes – higher education, job placement, career advice.</p>

Conclusion: Understanding the Framework's Limitations

This framework describes the skills teachers need to integrate AI effectively, but skills alone do not guarantee success. Teachers work within larger systems—schools, districts, and policy environments—that must also be aligned to support AI use for student learning. Effective implementation requires adequate infrastructure, leadership support, clear policies around data privacy and ethics, time for professional learning, and organizational cultures that empower teacher decision-making. Without these systemic conditions in place, teacher skills will have limited impact. Preparing teachers is essential, but it is only one part of the complex work of integrating AI into education systems.



As education leaders and teacher preparation programs navigate the integration of AI in K-12 settings, this framework offers a practical lens for understanding the landscape: identifying which mode of AI use is operating in a given context, recognizing what shifts in teacher roles are required, and determining what skills educators need to develop. By making these distinctions clear, the framework enables more intentional decision-making about professional development, implementation strategies, and the kinds of support teachers need. Most importantly, it keeps the focus on what matters most: ensuring that AI integration, in whatever mode, serves the goal of meaningful student learning within a “human always in the loop” approach to education.

Acknowledgements

Author: Matthew Vanderwerff

Collaborators: Jill Miller, Cameron Mirza, Katya Vogt, Mark Skogen

Designer: Sebastián Molina

Suggested Citation: Matthew Vanderwerff. “Teachers in AI-Enabled Classrooms.” IREX, 2026.

About IREX: With a relentless focus on effectiveness and efficiency, IREX works with governments, businesses, communities, and best in class partners to support leaders to bridge divides, learners to succeed in the world of work, and people to thrive in a technology-, AI-, and data-driven world, driving lasting change in communities in the United States and around the world.

Selected Sources and References

This framework draws on a curated set of international policy guidance, academic research, and practitioner-focused analysis that informed the development of the typology and skills outlined in this resource.

Foundational Policy & Frameworks

OECD (2020). *Trustworthy Artificial Intelligence in Education: Promises and Challenges*.

UNESCO (2021–2023). *AI Competency Framework for Teachers*.

U.S. Department of Education, OET (2023). *Artificial Intelligence and the Future of Teaching and Learning*.

European Commission (2021–present). *DigCompEdu and AI Pioneers Supplement*.

Australian Government, Department of Education (2023). *Australian Framework for Generative Artificial Intelligence in Schools*.

World Bank (2024). *Digital Innovations in Education: AI and the Learning Crisis*.

Key Academic Research

Reimers et al. (2026). *Artificial Intelligence and Education in the Global South: A Systems Perspective*.

Romero (2025). *From consumption to co-creation: AI-enhanced creative engagement in education*.

Practice-Oriented Analysis & Field Insight

ISTE (2023). *AI and the Changing Role of the Educator*.

Holmes, W. (2023). *AI Tutors and Teaching*. (Education International)

Education Week (2025). *AI won't replace teachers - but teachers who use AI will change teaching*.

The Hechinger Report (2024). *What aspects of teaching should remain human?*