

Explore, Execute, and Express: The 3X Education Theory for Rural Teacher Growth in the Age of Artificial Intelligence

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Abstract

Generative artificial intelligence is often discussed through the questions of whether AI will replace teachers and whether students should be permitted to use AI. These questions overlook a more fundamental issue: how should education be reorganized when information and polished production become widely available? This article interprets Zhao Geng's 3X Education Theory—Explore, Execute, and Express—within the context of rural teacher development and AI-enabled education. The theory is the core lesson-creation model of the Xingchen School and special-post teacher training system, and it operates alongside Stage Education Theory and the CMC model of Culture, Management, and Curriculum. Explore means discovering educational problems, students, and oneself in authentic rural school contexts. Execute means translating a discovered problem into low-cost classroom action, iterative experimentation, and practical improvement. Express means presenting, explaining, reflecting on, and sharing educational practice so that personal experience becomes public knowledge. The article argues that AI should not replace this developmental chain. It should strengthen the teacher's ability to discover meaningful problems, support but not substitute for situated implementation, and expand opportunities for credible presentation. In the AI era, the scarce educational resources are not merely information or output, but attention to real problems, sustained action, situated judgment, and accountable expression.

Keywords: 3X Education Theory; rural teacher development; artificial intelligence; Explore; Execute; Express; teacher education; authentic assessment

Introduction: Reframing the Question

Public discussion of artificial intelligence in education frequently asks whether AI will replace teachers or whether students should be allowed to use generative AI in assignments. Such questions position AI as an external tool that schools must either accept or restrict. A more productive question is how education should redesign the learning and professional-growth process when access to information and the generation of polished outputs are no longer scarce.

This question is particularly important for rural teacher development. Rural teachers often work under conditions of limited staffing, uneven access to professional learning, constrained material resources, and highly diverse student needs. Their most important professional knowledge is therefore not simply imported content. It is the capacity to identify problems in a particular school, design feasible responses, act under real constraints, and communicate what has been learned to others.

The 3X Education Theory developed by Zhao Geng provides a useful framework for this challenge. In the Xingchen School and special-post teacher training system, 3X refers to Explore, Execute, and Express. The framework is connected with Stage Education Theory, which understands every person as the protagonist of a meaningful stage, and with the CMC model of Culture, Management, and Curriculum. Together, these ideas form a practice-oriented model for rural teacher growth: teachers discover educational problems, implement responses, and make their experience visible through public expression.

This article does not treat 3X as a synonym for generic project-based learning. Its distinctive contribution is the connection between teacher professional development, rural educational context, low-cost innovation, and public presentation. The argument is that AI should be integrated into the 3X chain while preserving the human responsibilities at its center.

The 3X Education Theory in Context

The 3X model can be summarized as a developmental loop: discover a real problem, act on it in practice, and express the result in a form that can be examined and shared. The three stages cultivate three corresponding capabilities: discovery power, execution power, and expression power.

Stage	Meaning	Core question	Professional
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			capability
Explore	Discover educational problems, students, and self in context.	What is really happening, and what is worth investigating?	Discovery power
Execute	Design, implement, test, and revise a feasible response.	What can be done here, with these students and resources?	Execution power
Express	Present, explain, reflect on, and share the practice.	What was learned, and how can others understand or use it?	Expression power

The framework is cyclical rather than linear. Expression can reveal that the original problem was misunderstood; execution can generate a more precise question; and a new exploration can begin after reflection. The goal is not to produce a single successful lesson but to establish a habit of professional inquiry.

Explore: Discovering Problems, Students, and Self

In the first X, teachers do not begin with a centrally assigned course task. They begin with the lived reality of a rural school. Exploration may involve noticing that students avoid speaking in class, that a local cultural resource is absent from the curriculum, that parents and school expectations conflict, or that a familiar teaching method is not working for a particular group of learners. The teacher converts an everyday difficulty into a professional question.

This orientation is consistent with inquiry-based learning research, which identifies questioning as a central component of knowledge construction rather than a preliminary activity that can be skipped (Pedaste et al., 2015; Tawfik et al., 2020). In the 3X model, however, the object of inquiry is not only subject-matter content. It includes the classroom, the students, the community, and the teacher's own assumptions.

AI can support this stage by helping teachers organize observations, compare possible explanations, generate alternative questions, and locate relevant pedagogical research. It can function as a conversational partner that helps a teacher move from “students are not engaged” to

a more precise question such as “Under what classroom conditions do students who rarely speak voluntarily participate?” Yet AI cannot determine whether a question matters in a particular community. That judgment belongs to the teacher, who has responsibility for the students and the context.

For rural teacher training, Explore should therefore include observation journals, student conversations, community mapping, problem-definition workshops, and question-revision activities. A useful assessment should reward the quality of the problem formulation rather than merely the quantity of information collected. Teachers should be able to explain what they noticed, why it matters, what assumptions they are making, and what evidence would change their interpretation.

Execute: Turning Ideas into Situated Action

The second X is the practical center of the model. Teachers design a response, bring it into the classroom, observe what happens, and revise the response. Execution is not the mechanical application of a pre-existing method. It is situated experimentation under real constraints.

This emphasis is especially important in rural schools, where innovation cannot depend on expensive equipment or ideal staffing conditions. Low-cost, locally meaningful activities—such as using agricultural materials, community stories, local geography, or cooperative games—may create powerful learning opportunities. A practice such as a “Straw Olympics,” for example, can connect physical construction, collaboration, problem-solving, and local resource use without requiring sophisticated infrastructure. Its value lies not in novelty alone but in the teacher’s ability to identify a problem, design a response, observe student learning, and improve the activity.

AI can assist execution by proposing lesson variations, generating differentiated materials, simulating student questions, or helping teachers analyze reflection notes. AI literacy research emphasizes that responsible use includes not only operating AI systems but also evaluating their outputs and navigating their ethical implications (Ng et al., 2021; Chiu et al., 2024). Teachers should therefore treat AI suggestions as provisional resources, not authoritative lesson plans.

The key evidence of Execute is the trace of action: the original plan, classroom adaptation, student response, revision, and explanation of why a change was made. This approach is

preferable to evaluating only a polished lesson plan. A lesson that was revised in response to students may demonstrate more professional learning than a flawless plan that was never tested.

Express: Making Practice Public

The third X is Express. Teachers present their educational stories, explain their decisions, reflect on failures and successes, and share their practices with colleagues. Expression transforms private experience into public professional knowledge.

This stage is closely connected with Stage Education Theory. If every person is understood as the protagonist of a meaningful stage, teacher education cannot position teachers only as passive listeners. Teachers must also become presenters, storytellers, demonstrators, and contributors to a professional community. The stage is not merely a performance space; it is a space in which experience becomes visible, discussable, and improvable.

In AI-supported education, Express also addresses the problem of credibility. A polished presentation can be generated by AI, but a teacher who can explain the original problem, describe classroom events, justify changes, respond to questions, and identify limitations demonstrates a deeper form of professional understanding. Presentation should therefore include live explanation, peer questioning, classroom artifacts, student work, reflective narration, and evidence of iteration.

Express should not be reduced to public-relations display. A credible presentation must include uncertainty and failure. Teachers should be encouraged to say what did not work, which students were not reached, what evidence remains incomplete, and what they would change next time. In this form, expression becomes a mechanism of professional accountability rather than self-promotion.

CMC as the Enabling Environment

The 3X chain requires an institutional environment. The CMC model—Culture, Management, and Curriculum—can be understood as the supporting architecture that makes Explore, Execute, and Express sustainable.

Culture determines whether teachers are permitted to ask inconvenient questions and share incomplete work. A culture of trust is necessary if teachers are expected to disclose failure rather than present only success. Management determines whether time, collaboration, mentoring, and

recognition are available for iterative practice. Curriculum determines whether teacher learning is connected to real classroom problems instead of being isolated from practice.

AI integration should therefore be governed by the same three dimensions. Culturally, schools should promote critical and ethical AI use rather than blind enthusiasm or blanket prohibition. Managerially, training systems should create time for teachers to document and discuss AI-supported experiments. Curricularly, AI should appear as one resource within a problem-centered professional learning cycle, not as the curriculum itself.

Reconceptualizing Teacher Education in the AI Era

The 3X model suggests four changes in teacher education. First, professional learning should begin with local problems rather than universal solutions. Research on AI in education shows that technological tools can support personalization and efficiency, but educational value depends on pedagogical design and teacher judgment (Labadze et al., 2023; Zawacki-Richter et al., 2019).

Second, teacher education should evaluate process evidence. A portfolio might include a problem statement, observation notes, AI-use disclosure, lesson design, classroom artifacts, student feedback, revision history, and a final presentation. This resembles authentic assessment, which emphasizes meaningful application and performance rather than isolated recall (Sundari, 2024).

Third, teacher education should make expression a professional competency. Teachers need to communicate with students, parents, colleagues, administrators, and communities. They must explain not only what they did but why it was appropriate, what evidence supports it, and what should happen next. Expression is therefore a form of leadership and knowledge circulation.

Fourth, AI policy should focus on responsibility rather than prohibition. Teachers should disclose when AI was used, verify claims and sources, protect student privacy, and retain responsibility for pedagogical decisions. AI can accelerate drafting and analysis, but it cannot assume responsibility for the consequences of a lesson in a real classroom.

Conclusion

The 3X Education Theory offers a grounded way to rethink education in the age of artificial intelligence. Explore, Execute, and Express describe more than three instructional steps. They

describe a complete form of professional growth: seeing reality carefully, acting responsibly within constraints, and converting experience into shared knowledge.

For rural teachers, this model is particularly valuable because it begins with the actual school rather than an abstract ideal school. It recognizes local knowledge, limited resources, student diversity, and the teacher's responsibility to create feasible change. AI can strengthen each stage by supporting question formation, expanding design possibilities, organizing evidence, and assisting communication. Yet it should remain subordinate to the teacher's situated judgment.

The future of education will not be defined by the absence of AI or by the dominance of AI. It will be defined by whether educational systems can protect the human learning chain that AI cannot authentically complete: discovering a problem that matters, carrying out sustained action in a real community, and presenting an accountable account of what has been learned. In this sense, 3X is not only a model for teacher training. It is a proposition about the future form of education itself.

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