

What Teachers Want From Generative AI Professional Learning and What Education Leaders Can Do Next

by Drew Nucci



Generative artificial intelligence (GenAI) is reshaping K–12 classrooms at extraordinary speed. In the summer of 2025, 60 percent of STEM teachers reported trying GenAI for instructional tasks such as generating lesson plans, writing feedback, creating assessments, or differentiating tasks. Yet fewer than 25 percent had received formal professional learning on GenAI from their school or district, and 54 percent name insufficient professional learning as a major barrier to adoption (Esbenshade et al., 2025).

While teachers and students have been experimenting with GenAI, education systems have not yet built the capacity to support them in using it effectively to improve teaching and learning. The result is fragmented adoption and sporadic professional learning disconnected from the instructional priorities that drive school improvement.

Teachers and other educators can help illuminate a path forward, and to that end, more than 60 educators were interviewed in 2025 and 2026 through the AmplifyGAIN Center with funding from the Institute of Education Sciences (Nucci et al., 2026). This WestEd Perspectives brief summarizes key takeaways.

What the Research Says About Teachers' Needs for Effective GenAI Professional Learning

GenAI professional learning should connect to instructional priorities. Teachers expressed stronger buy-in for sessions that frame GenAI as a way to advance work they were already doing by, for example, helping them write student growth goals, differentiate materials, communicate better with families, or return assessment feedback faster. By contrast, stand-alone GenAI sessions, or GenAI tools not situated in current initiatives, feel like “one more thing,” as one teacher put it. Another asked, “How do you weave [GenAI] into the work we’re already trying to do?”

“I want practical tools. ... You need to be able to come away with ways to use this in your classroom to better your practice and not just sit there so [leaders] can dot the i's and cross the t's and say, 'yep, we provided them with an opportunity to learn about AI.'”

–Teacher

Professional learning needs to be hands on and grounded in classroom practice and should allow for immediate application. According to the interviewed teachers, watching someone use a tool does not build confidence or capacity. Trying it, getting poor output, revising the prompt, and trying again does. Teachers want protected time to work on real lessons, assessments, and student data. They also want that work organized by discipline so that applications feel relevant to their content area and they can collaborate with other teachers who really understand their problems of practice.

Professional learning should serve a range of educator readiness levels. Every school contains a wide GenAI adoption gradient. Teachers noted that sessions pitched too high overwhelm novices; sessions pitched too low waste advanced users' time. For the GenAI-hesitant, professional learning might help them find their entry point through efficiency gains. Once they experience that value,

they can move toward student-centered design that can improve teaching. Advanced users want to share what they have learned. Accordingly, professional learning should be designed to provide opportunities for them to lead professional learning sessions.

Collaboration builds confidence. Teachers described peer collaboration as more powerful than expert-led demonstration alone. Mixed-experience groups give novices realistic classroom uses while advanced users deepen their own thinking by explaining to colleagues. Collaboration in professional learning can open doors of communication so that teachers in between sessions want to walk down the hall to ask other teachers questions about GenAI.

Sustained professional learning produces meaningful instructional change. One-off workshops may spark curiosity but seldom change instruction (Hill & Papay, 2022). Teachers consistently called for learning that unfolds across a school year—aligned with professional learning community (PLC) structures—so they can learn a technique, try it, process it with colleagues, return with questions, and make refinements.

Actions for State and District Leaders

Based on what teachers have said, the following are some implications for how leaders at the state and district levels can support GenAI professional learning and experimentation to deepen instruction in alignment with school improvement goals and instructional values.

Anchor AI professional learning in instructional priorities and system goals.

State and district leaders should require GenAI professional learning plans to have explicit alignment with continuous school improvement goals that are already in place.

Invest in ongoing, job-embedded, practice-based professional learning.

Vendor demonstrations and feature walk-throughs do not build instructional capacity. Funding should prioritize ongoing professional learning that protects time for teachers to apply GenAI to their own instructional materials and problems of practice.

Design professional learning for educators who have varied AI readiness.

Leaders should fund differentiated learning pathways—efficiency-focused entry points for hesitant teachers, student-centered design work for those further along, and leadership roles for advanced users of GenAI who can showcase use cases and inspire colleagues.

Build collaborative structures that sustain learning and innovation.

System leaders should invest in collaborative structures—PLCs, teacher-led sharing spaces, mixed-experience cohorts—that turn teachers into contributors to a shared instructional knowledge base rather than consumers of training.

Care for your messaging.

Leadership messaging matters. When leaders framed GenAI as an instructional design partner, modeled their own GenAI learning, and associated it with innovation rather than cheating, the teachers said they felt freer to experiment and learn.

How WestEd Can Help

WestEd supports states and districts in designing GenAI professional learning grounded in instructional priorities and system goals by

- beginning with system priorities (e.g., instructional quality, teacher retention, school improvement) and connecting AI use directly to those needs;
- designing and facilitating professional learning that enables educators to apply AI to real problems of practice and build confidence through use;
- supporting educators in using AI to reduce unproductive workload while strengthening teaching and student learning;
- helping teachers design AI-enhanced learning experiences that preserve productive struggle, social sense-making, and cognitive ownership; and
- providing flexible professional learning models, sustained learning series, and coaching embedded in PLCs.

Learn more at wested.org/support/ai-pl.

References

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