

AI-Supported Formative Assessment

Category: Artificial Intelligence in Education

AI-supported formative assessment uses artificial intelligence to help elicit, interpret or respond to evidence of learning during the learning process. Its purpose is to inform next steps for learners and educators, not merely to generate a score or accelerate marking.

Formative assessment is defined by how evidence is used. AI may generate questions, detect response patterns or suggest feedback, but educators and learners must interpret this information in context and act on it to close a learning gap ([Black & Wiliam, 2009](#)).

Formative Cycle

1. **Clarify:** Make learning intentions and criteria understandable to learners.
2. **Elicit:** Use questions or tasks that reveal reasoning rather than surface completion alone.
3. **Interpret:** Combine AI-supported patterns with the educator's contextual and disciplinary judgement.
4. **Respond:** Provide actionable guidance and opportunities to revise, practise or seek explanation.
5. **Review:** Check whether the response improved learning and whether errors differ across groups.

Examples in Practice

During a statistics workshop, an AI-supported quiz groups anonymous wrong answers by likely misconception. The lecturer inspects the original responses, discusses two reasoning patterns and gives a new problem. The second attempt provides the evidence needed to decide whether to move on.

Why It Matters

AI can make evidence and feedback available quickly, creating more opportunities for adjustment. It becomes educationally weak when proxy data are mistaken for understanding or feedback offers no usable next step; the formative purpose and human interpretation must remain explicit. Learners also need time and support to understand, question and use the information, rather than merely increasing system use ([Shute, 2008](#)).

Further Reading

6. Black, P., & Wiliam, D. (2009). [Developing the theory of formative assessment](#). Educational Assessment, Evaluation and Accountability, 21, 5–31.
7. Shute, V. J. (2008). [Focus on formative feedback](#). Review of Educational Research, 78, 153–189.
8. Miao, F., & Cukurova, M. (2024). [AI competency framework for teachers](#). UNESCO.

Related Terms: Formative Assessment | AI-Generated Feedback | Learning Analytics | Assessment for Learning