....

AI and University Cognition
Summary of Iqbal and Tayyab (2025)

Excellent Educator, Volume: 2, Issue: 23, Page: 7

This experimental study investigates how AI-supported learning influences university students' cognitive abilities across Bloom's taxonomy. Students were randomly assigned to an AI-supported group and a traditional-instruction control group. Pre- and post-tests measured growth in knowledge, comprehension, application, analysis, synthesis, and evaluation.

The AI-supported group showed stronger improvement in several domains, attributed to personalized explanations, automated feedback, and greater opportunities for practice. AI tools also helped students engage asynchronously and collaboratively, supporting deeper exploration of course concepts.

However, the authors caution that uncritical reliance may weaken higher-order thinking. Students may accept AI responses without questioning logic, accuracy, or relevance. The study underscores the need for structured integration in which AI supplements—not replaces—human reasoning and instructor guidance.

Implications for Practice

1. Design AI-based activities that require explanation and critique.
2. Emphasize verification and reasoning steps in assessments.
3. Use AI primarily for formative feedback, not summative evaluation.
4. Train students to recognize the limits of AI-generated responses.

Table 2.23.7

Item	Details
Context	Pakistan
Design	Experimental
Focus	AI & cognition
Contribution	Domain-specific cognitive gains

Reference

Iqbal, A., & Tayyab, I. (2025). Effect of artificial intelligence on students' cognitive abilities at university level. *International Premier Journal of Languages & Literature, 3*(1), 454–467.

Suggested Citation

Ross, E. M., & Malar, D. B. J. (2025). AI and University Cognition. *Excellent Educator, 2*(23), 7.

....

Visit Excellent Educator Online @ https://www.excellent-educator.org