Peer Review Activity

Topic: Artificial Intelligence in Education

Selected Papers:

Paper A:

Title: "An Experimental Study on the Effectiveness of AI-based Adaptive Learning Systems in Improving Student Performance"

Methodology: Quantitative (Experimental Study)

Source: Journal of Educational Technology & Society (2022)

Paper B:

Title: "Teachers' Perceptions and Ethical Concerns of AI Integration in Primary Classrooms: A Qualitative Approach"

Methodology: Qualitative (Interviews + Thematic Analysis)

Source: Computers & Education (2021)

1. Purpose, Problem, and Research Objective

Paper A aims to evaluate whether AI-based adaptive learning systems (ALS) enhance academic performance. The problem addressed is the lack of empirical evidence on ALS efficacy in real classrooms.

This aligns with my interest in AI's practical role in education and mirrors challenges I've seen in Qatari classrooms where adaptive tools are underutilized.

Paper B explores how teachers perceive the ethical and practical integration of AI tools in the classroom, especially in early education.

This reflects my personal experience with teacher hesitancy and ethical concerns when new tech is introduced without proper training or guidelines.

2. Is the Research Methodology Appropriate?

Paper A uses a quantitative, experimental design, randomly assigning students to either traditional or ALS-enhanced classes, with pre- and post-tests to measure performance.

This method is appropriate for determining measurable academic improvements.

Paper B uses semi-structured interviews with 15 teachers, analyzed thematically.

This is suitable for exploring perceptions, emotions, and ethical nuances that are not easily quantifiable.

3. Data Collection & Analysis – Appropriateness

Paper A:

- Data collected through standardized tests.
- Analysis via t-tests and regression models.
- Appropriate for evaluating performance changes and controlling for confounding variables.

Paper B:

- Interviews transcribed and coded manually, themes generated iteratively.
- Effective in capturing depth and diversity in teacher responses.

4. Are Claims and Conclusions Supported by Evidence?

Paper A:

- Provides statistically significant evidence that ALS improved student performance by 15%.
- Findings are backed by rigorous data and proper statistical validation.

Paper B:

- Offers rich excerpts from participants and connects themes to literature on AI ethics and teacher autonomy.
- Conclusions are well-supported by direct qualitative evidence.

5. How Would You Enhance Each Paper?

Enhancements to Paper A:

Add longitudinal data to see if learning improvements are sustained over time.

Include qualitative feedback from students to complement the performance scores.

Enhancements to Paper B:

Broaden the sample to include school leaders and policymakers, not just teachers.

Explore cross-cultural perceptions to compare different education systems' AI readiness.

Conclusion

Both papers contribute meaningfully to AI in education:

Paper A provides empirical evidence on performance outcomes, valuable for decision-makers.

Paper B enriches our understanding of ethical, cultural, and emotional aspects—crucial for practical AI integration.

Together, they reflect complementary perspectives—one measurable, one interpretive—on a topic of growing global importance.