

Digital Age Teaching Seminar Course Summary

This course examines the integration, applications, and implications of artificial intelligence in K-12 educational settings. The course takes a comprehensive approach, beginning with foundational overviews of AI learning tools and ethical considerations, then drilling down into subject-specific applications across the core curriculum areas (science, math, English language arts, and social studies). The practical component introduces educators to actual AI-powered tools they can implement in their classrooms.

The course is designed to help educators understand both the theoretical landscape of AI in education and the practical tools available, while maintaining critical awareness of ethical challenges unique to working with young learners.

Course Readings

| Citation | Topic |
|--|---|
| Heung Yue Yim, I., & Su, J. (2024). AI learning tools in K-12 education: A scoping review. <i>Journal of Computers in Education</i> , 11(1), 45-68. Read Article | Foundational overview of AI tools in K-12 |
| Akgun, S., & Greenhow, C. (2021). Artificial intelligence in education: Addressing ethical challenges in K-12 settings. <i>AI and Ethics</i> , 2(3), 345-362. Read Article | Ethics of AI in K-12 education |
| Unpacking Epistemic Insights of Artificial Intelligence (AI) in Science Education. (2024). <i>Science & Education</i> , 33(2), 123-145. Read Article | AI in Science Education |
| Yi, L., Liu, D., Jiang, T., & Xian, Y. (2024). The effectiveness of AI on K-12 students' mathematics learning. <i>International Journal of Science and Mathematics Education</i> , 10(61). Read Article | AI in Mathematics Education |
| Huang, X., Zou, D., Cheng, G., Chen, X., & Xie, H. (2023). Trends, research issues and applications of AI in language education. <i>Journal of Educational Technology & Society</i> , 26(1), 112–131. Available via APA PsycNet. | AI in English Language Arts |
| Yetisensoy, O., & Rapoport, A. (2023). Artificial intelligence literacy teaching in social studies education. <i>Journal of Pedagogical Research</i> , 7(3), 1-20. Read Article | AI in Social Studies Education |

AI Tools for Classroom Implementation

| Tool | Primary Function |
|--|---|
| Khan Academy | Personalized learning experiences |
| Quill | AI-driven writing & grammar exercises |
| Duolingo | Adaptive language learning |
| Edmentum | AI-powered assessments & learning paths |
| DreamBox | Personalized math instruction |
| Socrative | Quiz creation & grading |
| Newsela | Leveled reading materials |
| NoRedInk | Grammar & writing practice |
| Canva for Education | Visual content creation |
| MagicSchool.ai | Teacher lesson planning & differentiation |
| Additional AI Tools for Students | Curated list of student AI tools |