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ACADEMIC RESILIENCE IN THE AGE OF AI: ENGAGEMENT WITH AI-DRIVEN LEARNING TOOLS AMONG COLLEGE FRESHMEN

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ABSTRACT

The growing integration of artificial intelligence (AI) in higher education has transformed students' learning experiences and their capacity to manage academic challenges. Anchored on the Technology Acceptance Model and Resilience Theory, this study examined college freshmen's engagement with AI-driven learning tools and its relationship with academic resilience. Using a mixed-methods descriptive–correlational design, data were collected from 95 college freshmen enrolled in a private higher education institution. A validated survey instrument assessed learner engagement with AI tools in terms of frequency of use, time spent, number of interactions, type of tool, perceived usefulness, perceived ease of use, and depth of engagement, alongside four dimensions of resilience: emotional, cognitive, social, and motivational. Qualitative data from open-ended responses and semi-structured interviews were analyzed using thematic analysis to explore challenges students faced when using AI-driven learning tools.

Students consistently engaged with AI-driven tools and perceived them as moderately to highly supportive of academic resilience. Pearson correlation analysis revealed a very high and statistically significant positive relationship between learner engagement and resilience (r = 0.81, t = 7.33, p < 0.05), leading to rejection of the null hypothesis. Higher engagement

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was strongly associated with improved adaptability, problem-solving, emotional regulation, and perseverance. Qualitative findings highlighted AI's role in reducing academic stress, promoting flexible and independent learning, encouraging inquiry and help-seeking, and sustaining motivation.

Despite these benefits, students reported challenges including limited feedback depth, fewer opportunities for critical and creative engagement, ethical concerns (plagiarism, algorithmic bias, data privacy), and technical constraints such as internet dependency and platform costs. Findings emphasize the need for structured institutional programs, ethical guidelines, and pedagogically guided AI integration to ensure AI-driven tools enhance academic performance and students' emotional, cognitive, social, and motivational resilience.

Keywords: *academic resilience; AI-driven learning tools; learner engagement; academic challenges; college freshmen*