From AI users to AI learners: Pedagogical support for co-regulation in the GenAI-integrated higher education landscape.

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Abstract: As generative artificial intelligence (GenAI) tools such as ChatGPT become embedded throughout academic and professional workflows, higher education faces a pressing need to provide students with guidance for responsible use of GenAI. This qualitative study explores how US undergraduate students interact with GenAI technologies in their learning processes and how those interactions reflect differing approaches to leveraging AI within the curriculum. Drawing from over 8,500 survey responses and a subsample of student interviews, the data revealed two learner types. These types include co-regulating, ethically-engaged, process-oriented "AI learners" as well as "AI users," who are product-oriented, efficiency-driven, and risk-aware. Findings suggest that adopting the "AI learner" role is not solely a function of access or tool proficiency but emerges from students' values, cognitive strategies, and academic identities. Key influences include the degree to which faculty model being an "AI learner," disciplinary norms, digital self-efficacy, and perceptions of institutional support. Implications for practice include design strategies for AI-integrated instruction and student-centered faculty professional development. The study contributes to emerging research at the intersection of AI pedagogy, personalized learning, and the ethical use of GenAI in academic settings.