

Assessing the Impact of Feedback on Self-directed Learning in the Age of Generative AI: The Role of University Students' Evaluative Feedback Environment and Feedback Orientation

In the digital age, integrating AI-assisted feedback with traditional teacher feedback offers potential transformative impacts on educational practices. This research probes a pivotal question: How does the interplay between AI-assisted feedback and human-based feedback affect university students' self-directed learning (SDL)? Utilizing a student-centered perspective and the self-system processes theoretical model, this study seeks to decode the psychological processes students engage in when receiving feedback. It examines students' feedback orientation (FO), which encapsulates their perceptions of utility, self-efficacy, social awareness, and accountability in feedback utilization. Through a quantitative analysis of 1100 university students from Hong Kong and Shenzhen, using structural equation modeling (SEM), this research aims to elucidate the impact of external feedback from both teachers and AI on students' learning engagement (LE) and SDL. It explores the intricate relationships between students' perceptions of the availability and credibility of feedback from both sources, and how these perceptions shape the feedback environment (FE), FO, LE, and SDL. The study posits that while LE represents the process by which students engage with their learning activities, SDL manifests as a broader outcome. SDL as a broad outcome focuses on cultivating learners who are autonomous and capable of managing their own learning processes. It highlights the successful transfer and application of SDL skills across educational and professional contexts, aiming for ongoing personal and professional development. This investigation is designed to offer timely empirical data that will extend the existing feedback literature, providing educators and researchers crucial insights into crafting an FE conducive to fostering self-directed learners in the AI age. By critically evaluating the effectiveness and reliability of AI-generated feedback alongside human feedback, the findings will illuminate the role of FO in sculpting student learning experiences and guide the development of educational practices that effectively integrate both human and AI-assisted feedback to enhance student engagement and learning outcomes.