SCHOLARSHIP OF TECHNOLOGY ENHANCED LEARNING

From Traditional to Transformed: Leveraging AI to Craft Adaptive, Interconnected Educational Landscapes

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Abstract

In a transformative educational landscape, this research pioneers a novel method that leverages AI to transform traditional classroom lectures into interconnected learning units. This innovative approach revolutionises lecture consumption by reimagining it as a network of knowledge, fostering a more engaged and participatory learning experience amongst students.

By recording lectures, automatically transcribing them, and then using Artificial Intelligence to restructure the content into accessible "interactive content cards", it heralds a new era in education, breaking the constraints of time, space, and traditional learning paradigms. Such an endeavour enhances knowledge absorption and fosters a self-directed learning environment, empowering students to lead their educational paths. It, therefore, integrates Constructivism, Connectivism, and Heutagogy into an innovative framework.

Constructivism, highlighting active learning, is exemplified as students engage with AI-refactored content, deepening their exploration and promoting critical reflection for personalised learning journeys (Siemens, 2005; Lockey et al., 2021). Connectivist theory expands this framework, highlighting the role of networks and technological advancements in learning. The AI-facilitated transcription and refactoring of lecture content into accessible formats exemplifies the Connectivist paradigm, where learning is dispersed across many connections. This method cultivates a learning ecosystem ripe with diverse digital resources, thereby enriching the educational experience in previously unimaginable ways (Siemens, 2005). Heutagogy's push for learner autonomy is significantly advanced by this AI strategy, introducing "content cards" for students to interact with materials at their own pace, independent of traditional lecture sequences.

Using Heutagogical models decentralises and personalises learning, emphasising curiosity-driven exploration and marking a shift from conventional education to a future of universal access and empowerment (Blaschke & Hase, 2019). The educational strategy explored here is also grounded in action research, following an iterative cycle of planning, action, observation, and reflection, and coupled with Phelps and Hase's (2002) complexity theory, deepens our understanding of education and work settings. Through this lens, the research recognises learning environments as unpredictable and emergent, requiring continuous refinement of innovations, which embodies the principles of complexity theory and action research. Adopting these paradigms means revolutionising education delivery and continuously improving the learning experience to remain adaptive to student needs (Indeed.com; Structural-Learning.com; George, 2023; Phelps & Hase, 2002).

It is against such a backdrop that this exploration marks a significant educational advancement by utilising AI to transform lecture formats, integrating Constructivism, Connectivism, and Heutagogy with AI technologies for a personalised, self-directed learning experience. Through the application of action research, this venture into AI-enhanced hands-on learning questions the status quo of educational frameworks and paves the way for a future where learning materials are inherently flexible and sophisticated. It crafts an environment where educational content can dynamically adjust to suit individual student needs, heralding a new era of engaging and intelligent learning resources.

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