

Learning Engagement and Performance Patterns in an Asynchronous Professional Training 4 Educators

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Abstract:

The growing prevalence of online teaching has brought about a significant surge in the use of big data and learning analytics. These tools capture digital traces that reflect participants' engagement, performance, and learning experiences. Researchers are utilizing learning analytics data to extract features and build models of the learning process. Specifically, they focus on measuring participants' engagement by quantifying behavioral indicators such as frequency and time-on-task. In this study, the spotlight is on the Professional Development Institute of a midwestern US state's Department of Education, catering to individuals pursuing a teaching license through the Alternative Resident Educator pathway. The institute offers three online content modules available 24/7, providing essential knowledge and skills for success in the classroom. Each module consists of lessons and assessments to gauge individual mastery of the content. The research question driving this study explores how various performance patterns emerge as educators engage with the required activities and how these patterns impact knowledge and skill mastery in a self-directed e-learning setting. The assumption is that individuals demonstrate diverse learning strategies and performance patterns influenced by the e-learning content. To delve into these dynamics, the study draws upon the Wigfield & Eccles (2000) model of expectancy-value theory, typically applied in face-to-face learning contexts. Here, the same motivational theoretical principles are applied to comprehend the relationship between motivation and engagement in an online learning environment. Through data visualization techniques, the researchers identified five distinct patterns within the e-learning context and pinpointed various performance strategies employed by the educators.