



Cracking Online Learning: How Data-Driven Insight Shape Personalized Interventions

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Abstract

This paper shares insights from an upskilling journey using Pintara, a digital learning platform that aims to make adult education more data-focused and personal. The program included 44 employees from a leading property company and intended to improve their sales and marketing skills through a combination of online modules, quizzes, and practical tasks. During the program, we monitored learner activity with a behavioral scoring system that tracked logins, learning streaks, and quiz accuracy. By comparing this data to initial skill assessments, we found important patterns in how adults learn online. From the analysis, we identified four distinct learner groups: Potential Unmet, skilled learners who had trouble staying engaged; Proficiency Masters, confident and committed learners; Plateaued Performers, learners facing skill and motivation gaps; and Growth Prospects, less skilled but highly motivated learners. For each group, we created targeted interventions, including manager check-ins, peer mentoring, micro-coaching, and advanced practice simulations. These personalized strategies increased engagement, improved completion rates, and sped up skill development. The findings show how understanding learner behavior can change how we design and deliver online adult learning programs, making them more effective and focused on individual needs.

Keywords: Adult Education; Behavioural Clustering; Learner Engagement; Personalised Learning; Upskilling