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Beyond Usage Statistics: Segmenting AI Adoption Behaviours in Teaching and Learning

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Abstract: *The growing use of artificial intelligence (AI) tools in educational environments has generated increased research interest in how teachers and students develop their understanding of these technologies. Existing research studies focus on specific tools used in particular fields of study but they fail to acknowledge the different ways people adopt artificial intelligence for educational purposes. In this survey-based study, using participant's responses encoded as multi-select indicators, a clustering analysis was performed to identify distinct adoption profiles, complemented by principal component analysis for visualization and interpretability. The results reveal the presence of heterogeneous user segments characterized by differing levels of optimism, scepticism, and resistance toward AI adoption in education. The findings highlight key factors influencing AI acceptance and the need to address the challenges in educational settings.*

Keywords*:* Artificial Intelligence, Clustering Analysis, PCA

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