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Learning Inside the Box: Enhancing Academic Literacy through Educational Escape Boxes

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Abstract

Active and dynamic learning environments are increasingly replacing traditional passive instruction in higher education. This transition is particularly significant for teacher education programs, where students must learn to navigate diverse pedagogical tools while mastering professional skills. This exploratory study investigates Educational Escape Boxes (EEBs) to reframe technical, often tedious topics, such as APA citation rules, into a collaborative, immersive challenge. Forty-two pre-service teachers participated in the intervention, working in small teams to solve physical puzzles (ciphers, jigsaws, etc.) to "unlock" a box. During the activity, the lecturer moved from a traditional instructor role into a facilitator, guiding to ensure steady group progress. Data were collected through post-intervention questionnaires and analyzed using a mixed-methods approach. Quantitative results were processed via descriptive statistics, while qualitative feedback underwent thematic analysis. Findings reveal high levels of self-reported confidence and enhanced academic literacy. The analysis identified several success factors, most notably the power of peer-led learning and a clear reduction in the cognitive barriers often associated with technical writing rules. Given its exploratory nature, this study identifies emerging trends in gamified learning. Although the sample size is limited, the results offer compelling evidence of EEBs' potential to revitalize the learning experience for inherently dry subjects. Over 90% of the participants expressed a clear intent to use similar game-based strategies in their own future teaching. Overall, this research demonstrates that even technical content can be transformed into a meaningful and professional experience through pedagogical innovation.

Keywords: Educational Escape Boxes (EEB); Game-Based Learning (GBL); Innovative Pedagogy; Pre-service teachers ; 21st-Century Skills