

S07-2: Promoting Health Through Physical Education: The Impact of Kahoot! on 5th Grade Students' Knowledge and Understanding

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Purpose: Physical Education (PE) plays a crucial role in fostering physical literacy (PL) among youth. Specifically, enhancing the Knowledge and Understanding (K&U) domain is fundamental to developing the broader aspects of PL. This study investigates the effectiveness of a game-based approach utilising the Kahoot! platform to improve K&U within a 5th-grade PE curriculum. This research aims to evaluate the impact of a gamified PE lesson strategy, implemented through Kahoot!, on students' acquisition of theoretical knowledge. We hypothesised that this approach would increase student engagement and improve learning outcomes.

Methods: An experimental design was employed, involving two groups: an experimental group ($n = 27$) and a control group ($n = 27$). Over one academic year, the experimental group received 14 theoretical PE lessons integrated with Kahoot! activities. Both groups were assessed for K&U using a validated test at the beginning and end of the study. Additionally, a focus group interview was conducted with the experimental group to gather qualitative insights into their learning experience.

Results: The experimental group demonstrated significant improvements in K&U scores from pre-test to post-test ($t(25) = -8.66$, $p < 0.001$, $d = 1.7$). Furthermore, the experimental group's post-test scores were significantly higher than those of the control group ($t(45) = -4.75$, $p < 0.001$, $d = 1.39$). The control group exhibited no significant change in K&U scores ($t(20) = -0.48$, $p = 0.63$). Qualitative data from the focus group indicated that students found the Kahoot! activities engaging and expressed a desire for continued use.

Conclusions: This study provides evidence that game-based approaches, such as the integration of Kahoot!, can effectively enhance the assimilation of theoretical concepts in PE. This method holds potential for teaching complex theoretical topics, including heart rate thresholds for aerobic endurance and metabolic processes related to weight management. Future research should explore the long-term retention of this method, and implementations into varied age groups.

Keywords: Physical education, physical literacy, Kahoot!, game-based learning, knowledge and understanding

