



**TEACHERS' PERSPECTIVE ON STUDENT ENGAGEMENT AND
LEARNING OUTCOMES IN SCIENCE EDUCATION THROUGH
GAME-BASED ACTIVITIES**

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ABSTRACT

This study aimed to address the gap by investigating how the integration of game-based activities influences student engagement levels and academic performance in science. It aims to determine whether incorporating games into the science curriculum can provide a more effective and enjoyable learning experience compared to conventional teaching methods. Data were gathered from 63 respondents through a structured questionnaire with standardized indicators, and analyzed using descriptive statistics and tests of significance.

The study revealed that the level of Mean Percentage Score (MPS) of Key Stage 2 learners in Science game-based activities was Proficient, with an overall weighted mean of 3.07. Among the different game-based strategies, Science Scavenger Hunt and Interactive PowerPoint obtained the highest performance, indicating that structured, interactive, and visually engaging activities are more effective in enhancing learners' understanding and participation in Science lessons. Meanwhile, Mentimeter obtained the lowest mean, suggesting

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that real-time response systems may require additional instructional support to maximize their effectiveness in improving learners' performance.

The study found that the integration of game-based activities in Science education was effective to a Great Extent in terms of learners' engagement, performance task, and academic performance. Learners demonstrated high levels of enthusiasm, active participation, sustained attention, and collaboration during game-based Science lessons. In terms of performance tasks, learners showed improved ability to apply scientific concepts, produce quality outputs, and perform hands-on activities. In academic performance, learners exhibited improved quiz scores, better mastery of competencies, and higher overall achievement, indicating that game-based learning positively influences both cognitive and behavioral learning outcomes.

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