

## Impact of Instructional Designing in Digital Game-Based Learning for Enhancing Students' Motivation

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**Abstract :** The primary reason for dropping out of school is associated with students' lack of motivation in class, especially in mathematics. Digital game-based learning is an approach that is being actively explored; there are very few learning games based on proven instructional design models or frameworks due to which the effectiveness of the learning games suffers. The purpose of this research was twofold: first, developing an appropriate instructional design model and second, evaluating the impact of the instructional design model on students' motivation. This research contributes significantly to the existing literature in terms of student motivation and the impact of instructional design model in digital game-based learning. The sample size for this study consists of two hundred out-of-school students between the age of 6 and 12 years. The research methodology used for this research was a quasi-experimental approach and data was analyzed by using the instructional material motivational survey questionnaire which is adapted from the Keller Arcs model. Control and experimental groups consisting of two hundred students were analyzed by utilizing instructional material motivational survey (IMMS), and comparison of result from both groups showed the difference in the level of motivation of the students. The result of the research showed that the motivational level of student in the experimental group who were taught by the game was higher than the student in control group (taught by conventional methodology). The mean score of the experimental group against all subscales (attention, relevance, confidence, and satisfaction) of IMMS survey was higher; however, no statistical significance was found between the motivational scores of control and experimental group. The positive impact of game-based learning on students' level of motivation, as measured in this study, strengthens the case for the use of pedagogically sound instructional design models in the design of interactive learning applications. In addition, the present study suggests learning from interactive, immersive applications as an alternative solution for children, especially in Third World countries, who, for various reasons, do not attend school. The mean score of experimental group against all subscales of IMMS survey was higher; however, no statistical significance was found between motivational scores of control and experimental group.

**Keywords :** digital game-based learning, students' motivation, and instructional designing, instructional material motivational survey

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