



CERTIFICATE NO : ICRESMH /2025/C0425416**Creating a Typology of Game-Based Learning Environments and Elements
Helping Student Achievement****Amit Singha**

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ABSTRACT

Game-based learning has emerged as a powerful pedagogical approach capable of enhancing engagement, motivation, and academic performance across diverse educational contexts. However, the rapid proliferation of digital and non-digital games has resulted in a fragmented landscape, making it difficult for educators and instructional designers to identify which specific environments and design elements most effectively support student achievement. This research aims to create a comprehensive typology of game-based learning environments and systematically identify the key structural and interactive elements that contribute to improved learning outcomes. Through an extensive review of existing literature, analysis of representative educational games and platforms, and empirical investigation involving student performance data and teacher/practitioner insights, the study develops a multi-dimensional classification framework. The typology categorizes environments according to pedagogical orientation, technological mediation, interaction patterns, assessment integration, and contextual adaptability. Concurrently, critical elements such as narrative structure, feedback mechanisms, challenge progression, collaboration features, and personalization pathways are examined for their measurable impact on cognitive, affective, and skill-based achievement indicators. The resulting framework provides educators, curriculum developers, and game designers with an evidence-based tool for selecting, adapting, and designing game-based interventions that maximize student achievement. This work advances both theoretical understanding and practical application of game-based learning within formal education systems.

Keywords: *Game-Based Learning Environments; Typology Development; Student Achievement.*