

# **A Grounded Theory Approach for Integrating Gamification for Enhancing Programming Skills and Employability of Engineering Graduates**

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**Abstract:** Despite the proliferation of the digital economy in India, a persistent employability gap exists among engineering graduates, particularly regarding programming skills. This study explores gamification as an innovative pedagogical tool to bridge this gap. Using Strauss & Corbin's Grounded Theory methodology, the research analyzes qualitative data from interviews and focus group discussions with domain experts, faculty, and students. The findings identify six core conceptual categories, culminating in a theory-driven framework for integrating gamification into technical higher education. The results suggest that effective implementation relies on purposeful, context-sensitive design, scaffolded learning pathways, and continuous feedback systems. Furthermore, the study identifies Self-Determination Theory - specifically autonomy, competence, and relatedness—as the primary motivational mechanism driving this process. While institutional and pedagogical constraints moderate success, the proposed model offers a practical roadmap for developing sustained engagement and progressive programming expertise in engineering graduates.

**Keywords:** Employability, Gamification, Education Technology, Programming Skills, Coding, Grounded Theory

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