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Gamification and Teacher Learning: A Review of Game-Based Approaches in Professional Development Practices

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Abstract

Gamification has emerged as a powerful pedagogical tool in education in recent years, with a significant focus on its impact on student motivation and learning outcomes. Nevertheless, the importance of gamification in the professional development of teachers is a promising but under-researched field. The given review study summarises the available literature on the topic of game-based approaches and discusses the possibility of applying them to teachers as learners in the framework of contemporary professional development. Based on empirical studies in the education sector, corporate training, and higher education, the paper identifies the role of gamification features like badges, leaderboards, point systems, quests, and simulations in improving teacher engagement, collaboration, and reflective practice. The review also examines the indirect evidence presented by student-oriented studies of gamification and extrapolates to its implications on professional development, upskilling, and long-term motivation in educators. The results indicate that although the use of gamification in teacher learning remains in its early phase of development, it can potentially change the way in which the process of professional development is perceived as a compliance-based rather than an interactive, engaging, and long-term process. The paper will end by establishing gaps in the existing research and suggesting areas of future interest in utilising gamification in the development of contemporary teaching

practices.

keywords: gamification, teacher professional development, game-based learning, modern teaching practices, educator engagement

Introduction

Educational systems worldwide are under growing pressure to improve teaching quality while responding to rapid technological change and increasingly diverse learner needs. In this context, gamification—the use of game-design elements (e.g., points, badges, levels, challenges, and narrative) in non-game contexts—has moved from a student-focused novelty to a viable strategy for professional learning and teacher development. Recent systematic reviews and empirical studies indicate that gamified approaches can increase engagement, scaffold self-regulated learning, and provide structured, iterative practice opportunities that mirror authentic classroom challenges teachers face.

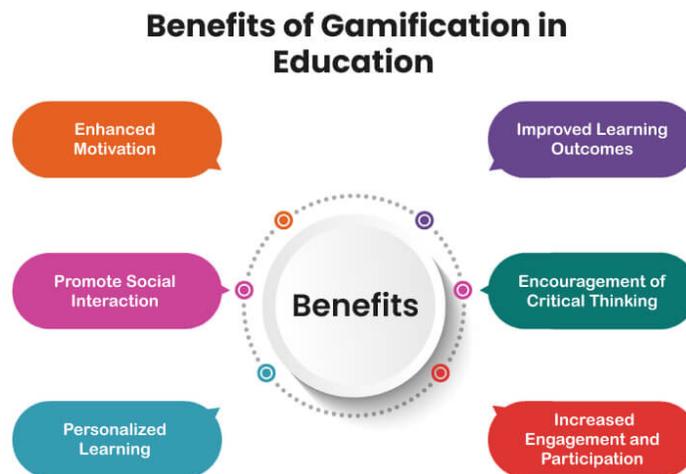
The teacher learning process is complex and multi-dimensional: it includes acquiring new pedagogical knowledge, developing classroom management and assessment practices, reflecting on instruction, and adopting innovations in curriculum and educational technology. Traditional professional development (PD) models—single workshops or lecture-driven sessions—often fail to support sustained behavior change because they lack iterative practice, feedback loops, and motivational structure. Gamified PD reframes professional learning as a layered, goal-directed experience where teachers earn micro-credentials, complete scaffolded challenges, and receive actionable feedback—structures that align with adult learning principles and the need for practice-based, contextualized learning.

Real-world implementations illustrate this potential. For example, district-level PD

programs that incorporate point systems, peer competitions, and micro-credentialing have reported higher rates of continued participation and increased adoption of targeted instructional strategies than comparable non-gamified offerings. At the same time, the literature highlights variability in outcomes: success depends heavily on design fidelity, alignment with teacher goals, and integration into teachers' daily routines. These practical findings underscore that gamification is not a plug-and-play fix but a design discipline that must account for teachers' time constraints, institutional incentives, and classroom realities.

Figure 1

Benefits of gamification in education



Recent research clusters around three interrelated themes that are especially relevant to the teacher learning process: (1) engagement and motivation — gamified elements can increase participation and intrinsic motivation when they support meaningful practice; (2) scaffolding and feedback — game mechanics can structure repeated practice and deliver timely feedback critical for skill acquisition; and (3) adoption barriers and contextual fit — practical, cultural, and

logistical barriers limit scale-up unless programs are carefully designed with teacher input. These themes emerge consistently across systematic reviews and recent empirical trials, indicating both promise and clear design challenges for gamified teacher PD.

This review synthesizes the latest empirical and review literature (2019–2025) on gamification as applied to teacher learning. It situates gamified PD within real-life constraints of school systems, identifies evidence-based design principles, and highlights gaps—particularly the need for more robust, longitudinal, and context-sensitive evaluations—to guide researchers and practitioners seeking to implement gamified approaches at scale.

Figure 2

Infusing Joy into Teacher Learning: The Role of Gamification in Professional Growth



Findings

The literature review (2019 to 2025) indicates that there are a number of recurring trends

in the role of gamification in teacher professional development (PD) in the educational setting. These results are cognitive, motivational, and institutional aspects of teacher learning.

Enhanced Engagement and Motivation

The use of gamification elements, including badges, leaderboards, levels, and point systems, has consistently enhanced teacher involvement in professional learning programs. Research findings indicate that PD experiences with game-like feedback and progression have higher completion rates, voluntary engagement and long-term motivation among teachers.

Support for Reflective and Self-Regulated Learning

Game-based structures motivate teachers to personalise their learning objectives, track their progress and reflect on their teaching methods. The repetitive aspect of gamified problems is congruent with the adult learning theory and supports self-regulation and constant improvement instead of a one-time compliance.

Improved Knowledge Retention and Practice Transfer

Simulated classroom programs or quest-based challenges can assist teachers in practising pedagogical strategies in low-stakes settings that involve feedback. These structures will promote a higher level of conceptual knowledge and improved transfer of new practices into the classroom instruction.

Facilitation of Collaboration and Community Building

Leaderboards, peer challenges and cooperative quests lead to more robust professional

communities among educators. Such social processes increase peer responsibility, promote sharing of classroom experiences and lessen loneliness in teaching practice.

Design-Dependent Variability in Outcomes

Design fidelity is critical to the success of gamified PD. Superficially gamified and disconnected programs with real teacher objectives have little to offer. Successful interventions show high correspondence between game-based interventions and teaching issues in the real world.

Barriers to Implementation

The main obstacles that continue to exist include a lack of institutional backing, an absence of time to work on PD, and a shortage of design knowledge. It is common to hear teachers say that elements of gamification that have not been well integrated are extrinsic or trivial, and that co-design and contextual adaptation are essential.

Gaps in Research and Evaluation

Although the immediate benefits of increased participation and engagement are well-established, few longitudinal or experimental studies have established a relationship between gamified PD and enhanced instructional quality or student learning outcomes. In addition, equity implications like unequal access to gamified resources in schools are not explored.

Conclusion

The literature review introduces a rather optimistic view of the gamification role in

teacher professional development. Gamified PD can be used to boost engagement, facilitate reflective practice, and maintain motivation aspects that are essential to long-term professional development when designed properly and integrated into the context. But there is also evidence that gamification is not a panacea to all ills; its effectiveness relies on how well it is matched to real teacher requirements, the chances to provide feedback on learning iteratively, and the institutional frameworks that can reward continuous learning. To practice, the results indicate that the school systems and training organisations should:

- (1) Co-design PD models that are gamified with teachers to make them contextually relevant and authentic;
- (2) Combine micro-credentials, cyclical activities, and guided reflection time to impact participation in the classroom; and
- (3) Entrench assessment systems that measure teacher practice and student achievement.

In the case of research, longitudinal mixed-methods studies, randomised controlled trials within K-12 settings, and analyses of equity and access in a variety of educational settings are all priorities in the future. By filling these gaps, gamification can become more than an experimental addition to teacher learning by providing a lasting framework to develop teacher learning in the 21st century.

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