Gamification and Experiential Learning in Education

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Abstract

The term "gamification" refers to the practice of incorporating elements of game design into non-game contexts such as websites, online games, and learning management systems. Gamification's end purpose is to get people involved so as to motivate them to share, collaborate, and talk to one another. The goal of gamifying material is to increase user participation, particularly when it comes to unpleasant learning, like completing a study on a topic either boring or unpleasant to learn. Game elements used in gamification include the goal of making learning more fun; gamification attempts to model the classroom environment after a first-person video game. The purpose is to improve education by stimulating interest amongst students. More specifically, "learning through reflection on doing" captures the essence of the experiential learning process. While students may be required to reflect on their work as part of a hands-on learning activity, this is not always the case. The suggested study addresses the merits and cons of gamification for experiential learning. This paper endeavors to make some conclusions, bringing into the limelight of education the incorporation of different cross-disciplinary dimensions in education by adding gamifying and understanding its core aspects in the process of teaching and learning. Gamification is added to a new approach to learning through various games using devices. This paper covers learning

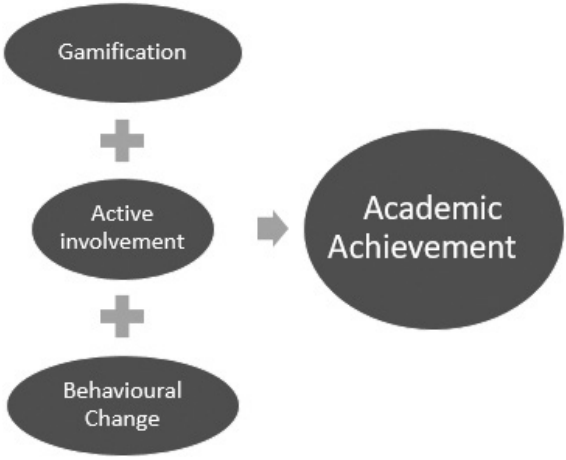
by doing, experiential learning, gamification, and their aids in the education system. The data were collected from the secondary sources (literature, books, Google, etc.). To conclude, it is stated that the rigid curriculum and formal learning are replaced by cross-functional content that can satisfy curiosity, and thus, informal learning can occur. The new tools and approach to making its titles in social communication have brought an era where we have to rethink learning, knowledge sharing, and collaborative learning by understanding the new concept of gamifying and experiential learning.

Key words: learning by doing, gamification, collaborative, experiential learning, knowledge

Introduction

Recently, gamification has attracted the attention of academics and practitioners as a promising tool for promoting behavioral change among the learners. The extensive influence of gamification diagonally in several segments has renovated outdated approaches to engagement in learners, notably in education. The formal, traditional methods are no longer sufficient to remain competitive in the knowledge economy, and organizational cultures, thus corporate learning environments, play a vital role in this transformation process. Fun and optimally challenging learning climates that support students' engagement are vital for academic well-being and student achievement (Chodkiewicz & Boyle, 2017; Patall & Zambrano, 2019), and they underlie well-being in the classroom (Frawley, 2015; Nakata et al., 2022). Developments in science and technology are becoming game modifiers to this approach, shifting policies that allow people to maintain moral and ethical standards and do 'good work' (Gardner, Csikszentmihalyi, and Damon 2001). At the beginning of the 20th century, various theorists such as John Dewey, Jean Piaget, and Kurt Lewin considered that education should be active. Their theories, based on

the idea that learning "occurs best when it's the result of meaningful experiences," were later put into practice by David Kolb, a professor at Harvard University. He believed that "learning-by-doing" provided better results by allowing students to apply concepts and theories to real situations. With this in mind, he implemented activities such as games, simulations, or roleplays in his classes, obtaining better results in attention and retention. This way, he developed experiential learning theory, or what we know today as learning-by-doing. Consequently, perceptions such as universal instructor capability values, interdisciplinary courses, information economy, and sharp minds (Farr 2014) are evolving, preparing the emergence of new mind interpretations, i.e., a conceptual model for affective development applied to the use of games and simulations.



Gamification + Active Involvement + Behavioral Changes = Academic Achievement

Purpose of the Study

The purpose of the study is to explore gamification and experiential learning in education, typically centered around understanding how these approaches can improve student engagement, motivation, and learning outcomes. The suggested

study addresses the merits and cons of gamification for experiential learning. This paper endeavors to make some conclusions, bringing into the limelight of education the incorporation of different cross-disciplinary dimensions in education by adding gamifying and understanding its core aspects in the process of teaching and learning. Research on these topics seeks to generate insights on optimal integration strategies, measure impacts on various learner demographics, and develop frameworks for sustained educational innovation.

Theoretical Framework on Experiential learning

Experiential learning has been approached by many scholars in relation to the concepts. Kolb (1983) explains experiential learning consists of grasping an experience and then transforming it into an allocation or result. The Association for Experiential Education also defined experiential learning as a methodology in which educators direct students to a specific experience and then guide the students through reflection to' increase knowledge, develop skills, clarify values, and develop people's capacity to contribute to their communities (Association for Experiential Learning Education, 2012). Khanna (2016) expressed that experiential learning is the form of learning in the digital world based on the experience of learning. Fatma Alkan (2016) states that experiential learning takes the students to attain new experiences, skills, and knowledge in real situations, which have also been verified in laws and principles. Experiential learning is considered as 'learning by doing' as a part of gaining knowledge. Hedge M.S. (2016) Students in experiential learning situations cooperate and learn from one another in a more semi-structured approach that ties real-world problems and situations in facilities to direct students' progress. Lee Andresen et al. (2017) talk about involving ethical standards to accept in applying experiential learning. Coker, J.S. (2017) says in every school experiential learning should mandate the substantial benefits of the students. Caroline M.I.

(2017) states that the utilization of physical facilities on academic performance indicates great influence on the students. Voukelaton G (2019) describes the project teaching method implementation, which is important to recognizing the values of traditional culture and cultural heritage. Highlights the student has gained new ideas and knowledge and learning opportunities that are flexible and manageable. Experiential learning has positive experience through effective implementation in quality methods. Thote P. *and* Gowre S. (2021) Experience Learning has design in three positive activities: strengthening, enhancing the academic performance, and outcomes.

Current Prerequisite in Education

According to Holland (2014), it is important to integrate emerging technologies in education, as not doing so will lead us "marching towards obsolescence as we fail to adapt to changing educational goals, objectives, and new technologies." Learning and being an innovative thinker differ in their measurable value to companies and employers in the business world, where continuous improvements are the norm. According to the Partnership for 21st Century Learning and Pearson, critical thinking, collaboration, communication, and creativity are innovative approaches in learning (American Management Association, 2010). Innovative skills, like simulating certain real situations and other interactive elements, are excellent opportunities for employees to develop skills especially valued in the current context, such as creativity, strategic and critical thinking, decision-making, and self-evaluation. Critical thinking is one of the top skills needed in students in higher education (Casner-Lotto & Barrington, 2006). Multifaceted skill: It is the ability to analyze, evaluate, form logical conclusions, and make decisions based on the information given. Using a pedagogical approach, or "active learning," on teaching critical thinking and collaboration, when individuals are placed into teams, those who possess higher collaborative skills will lead to more successful teams. (Morgeson, Reider, and Campion 2005).

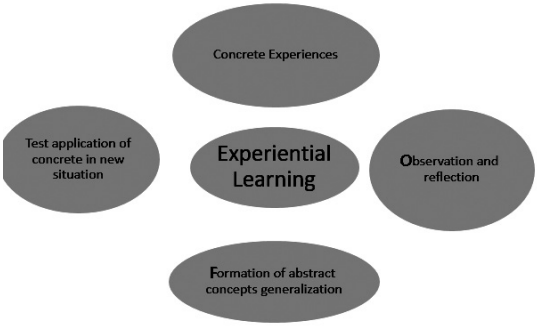
Learning by Doing

Learning-by-doing is a procedure grounded in investigation and training. It consists of obtaining skills that allow people to resolve real-life circumstances or difficulties. But to learn through experiences, these must be stimulating for the students: this is specifically pertinent in an era where time is not the only barrier to learning but also the attention span. Learning and doing makes learning more interesting and meaningful for the learners because it involves individuals creating and put along; they acquire and sense, strengthening students' volume for accomplishment, encouraging involvement and participation. In addition, positive networking among colleagues occurs through learning experiences, which help strengthen bonds and develop social skills. The inclusion of gamification will drive learners' engagement levels, leading to the sizable demand for the use of know-how, resulting in constantly changing one's lives, cultures, and behaviors, bringing us closer by providing instant connections across the world. Due to the increasing use of digital technology in the workplace, there is a need for it to be incorporated into the education system. Training and exercises are the prime tools in this approach.

The learning-by-doing approach is one of the imperative bases of experiential learning. It helps in accomplishing a profound knowledge. Participation is the basic element in this approach. Any kind of learning here can happen with the active participation of the learners. The participation helps in developing interests among the learners; they get the opportunities to cross-check their views and ideas to sublimate them in the proper direction. Encourage the learners to prompt and think of ways and means to come up with the solutions to the existing problems. All the above three elements sooner or later help in accomplishment.

Experiential Learning

Learning that swipes its culture from conventional to unconventional is experiential learning. In experiential learning, the teaching is largely transmissive, unlike conventional learning, in which the students remain unmotivated and disengaged. In experiential learning, the role of the teacher is to facilitate rather than direct the student's progress (Kolb & Kolb, 2009). Experiential learning is the process of learning by doing. Engaging students in hands-on activities helps to connect theories and knowledge learned in the classroom to real-world situations. Experiential learning provides prospects that occur in a diverse course and non-course-based forms and embrace community service, service-learning, etc. Experiential learning is a philosophy and methodology in which educators firmly participate with scholars in direct experience and focused reflection in order to increase knowledge and develop skills. The experiential learning approach emphasizes more practical experience in the acquisition of knowledge, skills, values, and attitudes. Students are encouraged to develop a passion for learning and a thirst for knowledge by engaging in authentic experiences that allow them to learn what they need to know. Driving this shift is the recognition by universities that the purpose of 21st-century education has evolved to include the generation of student competence in self-directed learning, citizenship, eco-sustainability, and employability, in addition to traditional knowledge, skills, and attitudes within particular disciplines (Deakin Crick, Goldspink & Foster, 2013).



Gamification and Game-based Learning

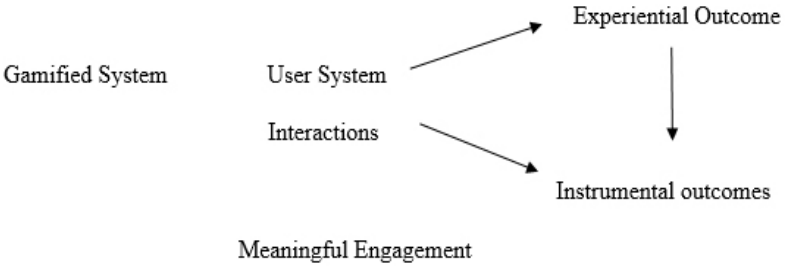
Games are identified as offering the optimum environment for the development of the ethical mind as they offer the opportunity to explore ethical problems and see the consequences and experience the emotional impact of the solutions (Smith, 2008). Vandercruysse et al. (2012) study found that games as a learning method are not a new thing. In an attempt to best capture the spirit of the underlying concepts and practices, the term gamification has been defined in several ways; i) Deterding, Dixon, Khaled, & Nacke (2011), "the use of game design elements in non-game e contexts." ii) Hamari, Koivisto, & Sarsa, (2014), "The phenomenon of creating gameful experiences." iii) Werbach, (2014) "the process of making activities more game-like." iv) Seaborn & Fels, (2015), Gamification is a multidisciplinary concept spanning a range of theoretical and empirical knowledge, technological domains, and platforms and is driven by an array of practical motivations. "Abd Rahman, Siti PY-2022, the study found that gaming elements as a training method and learning platforms will boost students' engagement, motivation, and productivity. Pivec & Kearney (2014), in their study, conduct a model of game-based learning. And they stated that by using online games, and especially digital educational games, learners should be able to conduct factual knowledge, learn on demand, and gain experiences in the virtual world that can later shape their behavioral patterns and directly affect their reflection.

Gamification Outcomes

Since gamification design borrows elements from video games, it may stimulate similar hedonic experiences, evoking game-like player behavior (Kankanhalli et al. 2012). The gamification systems should use this experience to change a person's behavior toward a desirable outcome. The literature maintains that this double effect of gamification is required to be successful; nevertheless, using different concepts (Burke and Hiltbrand 2011; Hamari et al. 2014b;

Kankanhalli et al. 2012; Nel et al. 1999; Webster and Ahuja 2006).

To provide a taxonomy about gamification terminologies in IS, Liu et al. (2017) classify the effect of gamification elements as experiential outcomes and instrumental outcomes. The experiential outcome is generally associated with user perceptions, such as a feeling, thought, or emotion, while the instrumental outcomes are associated with the utilitarian result of gamification. Liu et al. (2017) also establish a set of principles that describe how gamification can provide meaningful engagement. The authors state that experiential outcomes should fit task context with gamified elements and desired instrumental outcomes. Given the broader definition of gamification outcomes, we use the dual outcome framework (Liu et al. 2017) to classify the main categories of gamification outcomes presented in the figure.



In general, the identification of instrumental outcomes is straightforward given the direct association to the task context, while the identification of experiential outcomes is a more complex task (Liu et al. 2017). Dichev and Dicheva (2017) found that the empirical studies provide a diverse list of constructs, which are more difficult to group into logical categories. This inaccuracy can be partially explained by the failure in defining the conceptual domain of the constructs that may lead to some issues, such as the misunderstanding about what the constructs truly refer to, the overlapping of constructs that already exist in the field, and invalid conclusions about the relationship among constructs (MacKenzie et al. 2011).

Importance of Gamification in Learning

There had been mixed observations about the ability and achievement of learners in different stages. However, there is a consensus that impactful teaching efforts could aid in stimulating innovative approaches in teaching learners. Achievement at any level differs as a result of exposing learners to gamification and experiential learning. The student-oriented method assists social, academic, and emotional development, making learning more fun and exciting (McCombs, 2004), supports student participation, involvement, and attention; sets up a team environment; and stimulates responses, discussions, and practical experiences (Senthamarai, 2018). David and Weinstein Such Gamified Experiential Technologies (GET; David & Weinstein, 2023) engage students through interactive learning in the classroom (Pearson, 2017). Experiential learning platforms such as Monsoon SIM allow students to work collectively to reach the same goal, similar to a company, and to build up a business based on role play, allowing them to learn technical skills while developing the 21st-century skills of the 4 C's (Critical thinking, Collaboration, Communication, and Creativity). In doing so, students are able to work together as a team to solve life-like problems in the business world, thus preparing them for their future working environment.

Gamification motivates, engages, and enhances the learners' experience. It is a speedily increasing phenomenon to provide engaging and persuasive resolutions in the educational context. The educational impact through gamification increases students' engagement and motivation, academic achievement, and social connectivity. The outdated chalk-and-talk method of classroom delivery seems increasingly degrading. In the digital era, forging global connections by clicking a button or using easy voice commands, enabling people to gain quick access to any type of information. Therefore, teachers or instructors should be trained in a variety of techno-savvy methods, not limiting

themselves to gamification. In this way, teachers could implement the right instructions using technology at the right time and in the right place. Gamification denotes the premeditated submission of game design principles, mechanics, and elements into non-game environments. It is often simplified using digital platforms, aiming to solve problems, increase engagement, and motivate students, fostering an interactive experience and enhancing perceived autonomy, competence, and relatedness among operators.

Aids of Gamification in Education

i) Benefits of gamification are known to be physiological (McGonigal, 2011). Scientists have measured the increased release of the chemicals norepinephrine, epinephrine, and dopamine in the brain that not only bring on "good feelings" but also make us more receptive to learning (Gutierrez, 2012). Neuroscientist Gregory Burns sees dopamine not as a reward necessarily, but as a chemical that allows us to learn properly (Rackwitz, 2012).

ii) Brain researchers have proved that learning requires neural connections to be made in the brain to store information in memory, and frequently learning comes from response to an actual event. The brain does not distinguish between actual and simulated events. The proper response is then stored, and when we do experience an actual event, our learned response will come into play.

iii) In a learning game, the outcomes are built around knowledge and skill sets and attitudes (Gutierrez, 2012) and (Kapp, 2012). Gaming allows one to exercise his/her imagination, to fantasize about aspirational roles.

iv) Gamification of education is a strategy for increasing engagement by incorporating game elements into an educational environment (Dichev and Dicheva 2017). The goal is to generate levels of involvement (Fardo 2014). (Knutas et al. 2014; Krause et al. 2015; Dichev and Dicheva 2017; Borges et al. 2013).

v) Gamification of education is a developing approach for

increasing learners' motivation and engagement by incorporating game design elements in educational environments. With the growing popularity of gamification and advancement in gamifying education, the gamification mechanisms, the gamified subjects, the type of gamified learning activities, etc., are important aspects of learning. Gamification is about motivating individuals to participate in a learning event through the addition of game elements, not full-fledged games (Nicholson 2012).

vi) Gamification and experiential education are both fun but not necessarily a learning experience if not placed in the right context by a skilled facilitator. Gamification is the exciting new approach to learning that isn't new. It's corporate learning catching up. Extracting design elements from games and embedding them into learning environments as a means of gamifying instruction has potential for increasing learner motivation and student learning (Van Eck 2007).

vii) Games offer a means of applying and practicing skills by presenting content in a manner that makes sense to the environment (Van Eck 2006). With the application of games, learning becomes meaningful and beneficial to the learner, unlike inert knowledge gained through decontextualized methods like classroom worksheets (Rieber 1996).

viii) Gamification is built on constructivist learning, which establishes the need for experiential learning via social interaction with the environment and peers (York & deHaan, 2018). Gamification helps improve the learning experience in many ways, whether it's through academic, industrial, or business contexts.

Conclusion

As learning moves out of the classroom. Learning is more and more loosely structured, adapting itself in time, space, and tools to the 'here and now' needs of learners. The rigid curriculum and formal learning are replaced by cross-functional content that

can satisfy curiosity, and thus, informal learning can occur. The new tools of social communication have brought an era where we have to rethink learning, knowledge sharing, and collaboration in a fundamentally different way than ever before. As technology becomes an increasingly important part of learning, the modern learning leader is tasked with sourcing and leveraging new learning tools, including gamified learning. The application of game mechanics to motivate and engage students can be arranged anywhere, in any grade and subject, regardless of the availability of digital devices. A study by McKinsey & Company found that hands-on learning is more valued by employees than theoretical learning because it allows them to develop skills and solve problems effectively in their roles.

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