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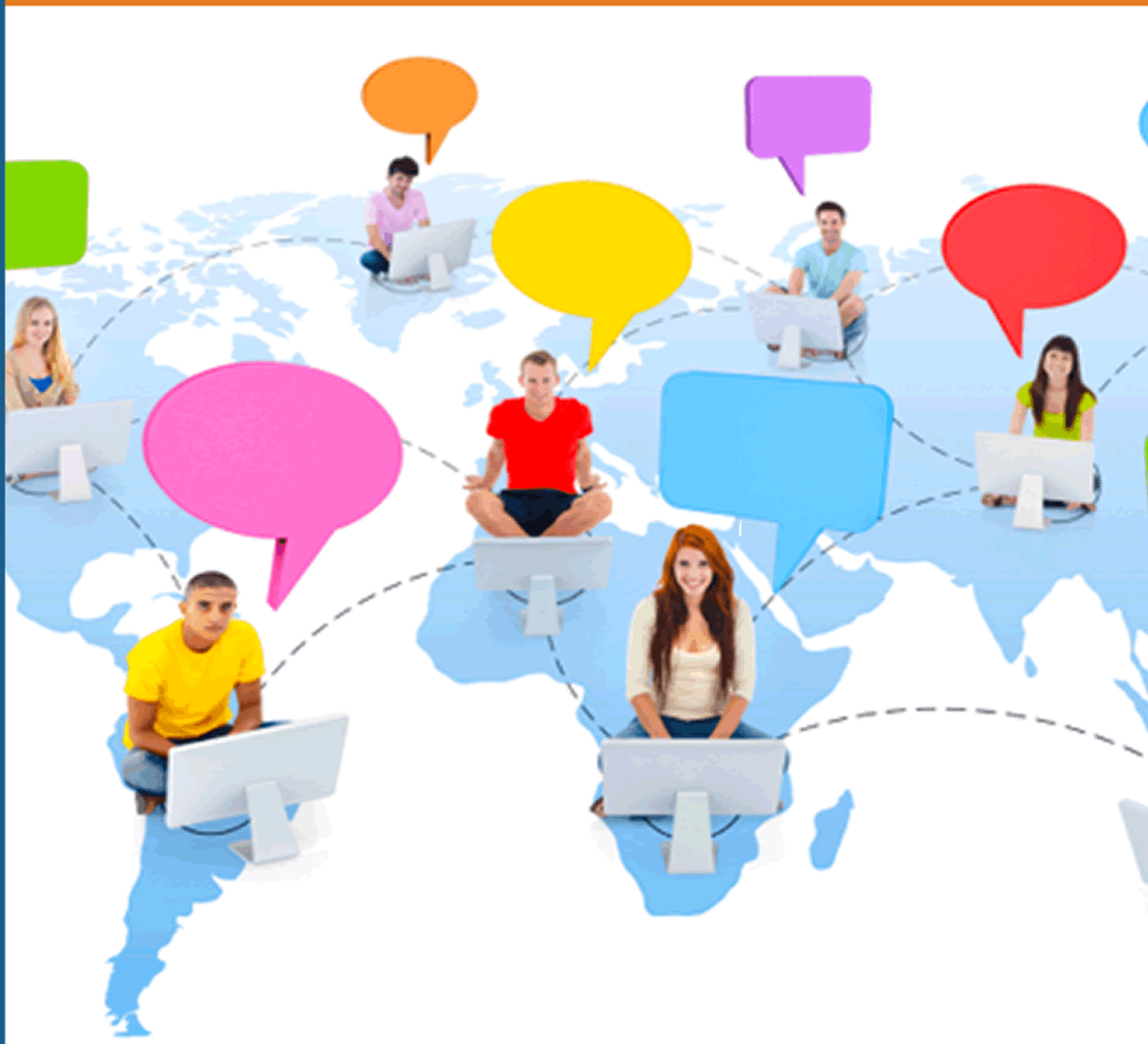

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The Effectiveness of Gamification in Online Learning

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Abstract

Purpose: The main objective of this study was to examine the effectiveness of gamification in online learning.

Methodology: The study adopted a desktop research methodology. Desk research refers to secondary data or that which can be collected without fieldwork. Desk research is basically involved in collecting data from existing resources hence it is often considered a low cost technique as compared to field research, as the main cost is involved in executive's time, telephone charges and directories. Thus, the study relied on already published studies, reports and statistics. This secondary data was easily accessed through the online journals and library.

Findings: The findings revealed that there exists a contextual and methodological gap relating to the effectiveness of gamification in online learning. Preliminary empirical review revealed that gamification significantly enhances online student engagement, motivation, and learning outcomes. It emphasized the importance of carefully integrating gamification elements aligned with course objectives and tailoring strategies to meet diverse learner preferences for maximum impact in the online learning environment.

Unique Contribution to Theory, Practice and Policy: The Self-Determination Theory (SDT), Flow Theory and the Cognitive Load Theory may be used to anchor future studies on gamification and online learning. Based on the study on the effectiveness of gamification in online learning, several key recommendations can be made. First, educators and instructional designers should thoughtfully incorporate gamification elements into online courses, ensuring alignment with learning objectives. Clear instructions and timely feedback within gamified components are crucial for student engagement. Customization of gamification to cater to diverse learner preferences and characteristics is recommended, with options for students to choose their level of engagement. Lastly, institutions and instructors should regularly evaluate and iterate on gamification strategies to ensure their continued effectiveness and alignment with evolving online learning needs, treating gamification as a dynamic tool for enhancing online engagement and learning outcomes.

Keywords: *Gamification, Online Learning, Effectiveness, Student Engagement, Instructional Design, Learning Outcomes*

1.0 INTRODUCTION

Online learning has become a prominent mode of education in the United States, with the increasing adoption of digital technologies and the internet. Research over the past few years has shown that online learning can be highly effective when implemented correctly, offering numerous benefits to students, educators, and institutions. According to Allen & Seaman (2017), online learning has experienced significant growth in the U.S., with over 6 million students enrolled in at least one online course. This trend highlights the increasing acceptance and recognition of online learning as an effective educational method. One key aspect of the effectiveness of online learning in the USA is its accessibility. Online courses provide flexibility in terms of scheduling and location, allowing learners to access educational content from anywhere and at their own pace. This is particularly advantageous for working adults, parents, and individuals with other commitments. For example, the Online Learning Consortium reports that 74.1% of higher education institutions in the U.S. consider online learning critical to their long-term strategy, reflecting the recognition of its accessibility benefits (Online Learning Consortium, 2020).

Another critical aspect of online learning's effectiveness is its ability to cater to diverse learning styles and needs. Online courses often incorporate multimedia resources, interactive activities, and various modes of communication, catering to visual, auditory, and kinesthetic learners. This adaptability enhances the learning experience. Means, Toyama, Murphy & Baki (2013 found that blended and online learning formats in the U.S. led to improved student outcomes and satisfaction, partly due to their ability to cater to individual learning preferences (Means et al., 2013). Furthermore, online learning has proven to be particularly effective in promoting engagement and interaction among students and instructors. The integration of discussion boards, video conferencing, and collaborative tools fosters meaningful interactions, enhancing the overall learning experience. The "2019 National Student Satisfaction and Priorities Report" published by Ruffalo Noel Levitz found that students in the U.S. who participated in online discussions and collaborative projects reported higher levels of engagement and satisfaction (Ruffalo Noel Levitz, 2019).

Additionally, the effectiveness of online learning in improving student outcomes is supported by empirical data. A study conducted by the U.S. Department of Education in 2010, known as the "Meta-Analysis of Online Learning Studies," found that students engaged in online learning performed better, on average, than those in face-to-face instruction, with a mean effect size favoring online learning (U.S. Department of Education, 2010). Online learning in the USA has demonstrated its effectiveness through increased accessibility, adaptability to diverse learning styles, enhanced engagement, and empirical evidence of improved student outcomes. These trends reflect the evolving landscape of education in the digital age. As Allen & Seaman (2017) indicated, online learning continues to grow, with institutions recognizing its significance in shaping the future of education in the USA.

Online learning has become increasingly popular in the United Kingdom and around the world, offering flexible educational opportunities for a wide range of learners. The effectiveness of online learning is a topic of ongoing research, and several trends and examples from the UK highlight its impact on education. According to Allen & Seaman (2017), online enrollment in higher education in the UK has been steadily growing. In 2015, 12.3% of all UK higher education students were enrolled in online courses, showing the significant presence and acceptance of online learning in the country (Allen & Seaman, 2017). One key aspect of the effectiveness of online learning in the UK is its ability to reach a diverse student population, including those who might have difficulty accessing traditional on-campus education. For example, the Open University UK has been a pioneer in distance and online education, providing opportunities for adult learners and those with work or family commitments. This institution offers a wide range of courses and degree programs, allowing students to study at their own pace and convenience (Open University, n.d.).

Another trend in online learning effectiveness in the UK is the use of Massive Open Online Courses (MOOCs). Universities such as the University of Edinburgh have offered MOOCs on platforms like Coursera, reaching a global audience. Ferguson, Coughlan, Egelandsdal, Gaved, Herodotou, Hillaire & Scanlon (2016) found that these MOOCs have provided opportunities for lifelong learning and skill development, with a diverse range of participants, including professionals looking to upskill or change careers (Ferguson *et al*., 2016). Furthermore, the COVID-19 pandemic accelerated the adoption of online learning in the UK. During lockdowns and social distancing measures, traditional in-person classes were disrupted, leading institutions to pivot to online delivery. This rapid transition showcased the adaptability and effectiveness of online learning. According to a report by UCAS (Universities and Colleges Admissions Service), the number of students applying for online courses increased during the pandemic, with many recognizing the value and convenience of online education (UCAS, 2021).

Moreover, online learning platforms in the UK have leveraged data analytics and learning management systems to enhance the effectiveness of their courses. For instance, FutureLearn, a UK-based MOOC provider, uses data analytics to track student engagement and performance, allowing educators to tailor their courses for better outcomes. This data-driven approach has been shown to improve student retention and completion rates (Ferguson & Clow, 2015). Online learning in the UK has demonstrated its effectiveness in reaching diverse learners, providing flexible educational opportunities, and adapting to changing circumstances, such as the COVID-19 pandemic. Statistics and examples from the UK highlight the growth and impact of online learning in higher education. The adoption of MOOCs, the presence of institutions like the Open University, and the use of data analytics all contribute to the effectiveness and evolution of online education in the country.

In Japan, as in many other countries, online learning has seen notable growth and transformation in recent years. Statistics from the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) indicate that the number of students enrolled in distance education programs has steadily increased. For example, according to MEXT (2020), in the 2019 academic year, there were approximately 395,000 students enrolled in distance education courses in Japan, highlighting the growing significance of online learning in the country. This trend reflects the recognition of online learning's effectiveness in addressing various educational needs and preferences.

Online learning has been particularly effective in Japan in catering to the diverse learning needs of students, including those who are unable to attend traditional classes due to geographical constraints or work commitments. The flexibility of online courses allows students to access education regardless of their physical location, making it a suitable option for working professionals and those living in remote areas (Hirata & Nishizawa, 2018). This accessibility aspect of online learning contributes to increased participation and improved educational outcomes among previously underserved populations.

Moreover, the integration of technology in Japanese online learning has been a driving force behind its effectiveness. The utilization of Learning Management Systems (LMS) and multimedia resources has enhanced the interactive and engaging nature of online courses. For instance, Sugimoto, Kose, Takasaki, Takeda & Kato (2018) highlighted the success of incorporating multimedia elements, like video lectures and interactive quizzes, in online language courses. The study found that students' engagement and retention rates improved significantly, demonstrating how technology can enhance the effectiveness of online learning in Japan.

Furthermore, Japan has embraced the concept of lifelong learning, and online platforms have played a crucial role in supporting this endeavor. The Japanese government has promoted continuous skill development and education throughout individuals' lives to adapt to the changing job market. As reported by the Organization for Economic Co-operation and Development (OECD, 2020), Japan has

shown a high participation rate in adult education and training programs. Online platforms have facilitated this by offering a wide range of courses and resources that adults can access conveniently, contributing to the country's commitment to lifelong learning.

In addition, the COVID-19 pandemic underscored the significance of online learning in Japan. With the closure of physical schools and universities, institutions rapidly transitioned to online teaching to ensure continuity in education. Yokoyama & Takaku (2020) highlighted the successful adaptation of educators to online teaching during the pandemic. It emphasized the importance of pedagogical training and effective use of online tools to maintain the quality of education. Online learning in Japan has demonstrated its effectiveness in addressing diverse educational needs, improving accessibility, enhancing engagement through technology integration, promoting lifelong learning, and adapting to unforeseen challenges such as the COVID-19 pandemic. The cited statistics and research studies illustrate the growth and impact of online learning in Japan, emphasizing its importance as a viable educational mode.

Online learning in Sub-Saharan countries has shown promise in increasing access to education. According to the World Bank (2021), Sub-Saharan Africa has experienced significant growth in internet penetration and mobile phone usage, providing a foundation for online learning initiatives. For example, Chisaka, Odumbe & Lumbasi (2019) found that online courses in Kenya, such as the Massive Open Online Course (MOOC) "Digital Skills for Africa," have enrolled thousands of participants, enhancing access to quality education.

Furthermore, the effectiveness of online learning can be measured by its impact on learning outcomes. Adera, Wawire & Mauka (2016) examined the effectiveness of online teacher professional development programs in East Africa. They found that these programs led to improved teaching practices and student learning outcomes. This indicates that online learning can positively influence educational quality in Sub-Saharan countries. Online learning has also played a critical role in addressing specific educational challenges, such as teacher shortages and distance barriers. For instance, Adomi & Okiy (2015) discussed how the National Open University of Nigeria (NOUN) uses online learning to address educational access issues in remote areas. NOUN's model has enabled students to access higher education without the need for physical campuses.

However, challenges related to infrastructure and technology adoption must be considered. Musa, Yusuf & Dogarawa (2018) emphasized that limited access to reliable electricity and internet connectivity can hinder the effectiveness of online learning in Sub-Saharan Africa. These infrastructure issues need to be addressed to maximize the potential of online education. Online learning has demonstrated effectiveness in Sub-Saharan countries by increasing access to education, improving learning outcomes, and addressing specific challenges such as teacher shortages and distance barriers. However, challenges related to infrastructure and technology adoption remain significant. To further enhance the effectiveness of online learning in the region, continued investment in infrastructure and supportive policies is essential.

Gamification is a multifaceted concept that blends elements of game design with non-gaming contexts to enhance engagement, motivation, and learning outcomes. It involves the use of game-like features, such as points, badges, leaderboards, and challenges, in non-game settings to encourage participation and behavior. Gamification has gained significant attention in education, particularly in online learning environments, where its application has shown promise in improving student engagement and performance (Hamari, Koivisto & Sarsa, 2016).

Gamification in online learning often leverages the principles of intrinsic and extrinsic motivation. Intrinsic motivation refers to engaging in an activity for the inherent satisfaction it provides, while extrinsic motivation involves external rewards or recognition. By integrating game elements, online

courses can tap into both forms of motivation. For instance, earning badges or points in an online course can provide extrinsic rewards, while the sense of achievement and progress within the course can foster intrinsic motivation (Deterding, Dixon, Khaled & Nacke, 2011). One way in which gamification enhances the effectiveness of online learning is through increased learner engagement. Gamified elements introduce an element of challenge and competition, making the learning experience more enjoyable and interactive. Engagement is a critical factor in online learning success, as engaged learners are more likely to complete courses and achieve better outcomes (Al-Azawi, Alnajjar & Almousa, 2015).

Moreover, the social aspect of gamification can foster a sense of community among online learners. Leaderboards, collaborative challenges, and peer competition can encourage communication and cooperation, leading to a more interactive and collaborative online learning environment (Deterding, Dixon, Khaled & Nacke, 2011). Social interaction is crucial for building a supportive learning community, which can positively impact the effectiveness of online learning (Hamari *et al*., 2016). Another key aspect of gamification is immediate feedback. Games often provide instant feedback on players' actions, allowing them to learn from their mistakes and make better decisions. In the context of online learning, feedback mechanisms like quiz scores, progress indicators, and real-time performance feedback can guide learners, helping them identify areas where improvement is needed (Landers & Landers, 2014).

Furthermore, the personalization of learning experiences is facilitated by gamification. By allowing learners to choose their paths, set goals, and explore topics of interest, online courses can become more tailored to individual needs and preferences. This personalization can lead to higher learner satisfaction and better outcomes (Deterding *et al*., 2011). In conclusion, gamification, with its incorporation of game-like elements into non-gaming contexts, holds great potential to enhance the effectiveness of online learning. By leveraging principles of motivation, engagement, feedback, and social interaction, gamification can create a more engaging, motivating, and personalized learning experience for online learners. The gamification of online learning has shown promise in improving engagement, motivation, and learning outcomes, making it an essential consideration for educators and instructional designers.

1.1 Statement of the Problem

Online education has witnessed substantial growth in recent years, with the global e-learning market expected to reach $374.3 billion by 2026 (Market Research Future, 2021). While online learning offers unprecedented access to education, it faces challenges related to learner engagement and motivation. Although gamification has been touted as a potential solution to these challenges, the empirical evidence supporting its effectiveness remains inconclusive. Existing research on gamification in online learning has yielded mixed results, with some studies highlighting its benefits, while others question its impact on learning outcomes. This study aims to address these gaps by rigorously examining the effectiveness of gamification in online learning and shedding light on its practical implications for educators, instructional designers, and policymakers. The findings of this study are expected to benefit a wide range of stakeholders in the field of education. Educators and instructional designers will gain insights into the specific conditions under which gamification enhances online learning, enabling them to design more engaging and effective online courses. Policymakers can use the results to inform decisions related to the integration of gamification into educational policies and curricula. Additionally, students themselves stand to benefit, as a better understanding of the impact of gamification on learning outcomes can guide their choice of online courses and their engagement with the learning materials. Ultimately, this research aims to bridge the gap between the theoretical promise of gamification and its practical application in online education, contributing to the improvement of online learning experiences for all stakeholders.

2.0 LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Self-Determination Theory (SDT)

Self-Determination Theory, initially developed by Deci and Ryan in 1985, is a psychological framework that focuses on understanding the intrinsic motivations that drive human behavior. It posits that individuals have innate psychological needs for autonomy, competence, and relatedness. Autonomy refers to the need to feel in control of one's actions, competence pertains to the desire to feel capable and effective, and relatedness involves the need for meaningful social interactions. In the context of gamification in online learning, SDT offers valuable insights into how the gamified elements can influence learners' sense of autonomy, competence, and relatedness. Gamification strategies in online learning can be designed to cater to these fundamental psychological needs. For instance, allowing students to have choices in selecting learning paths, rewarding them with badges for demonstrating competence, or fostering collaboration and competition to enhance relatedness can all align with the principles of SDT. By meeting these needs, gamification can promote intrinsic motivation and engagement among online learners, which are essential for effective learning experiences (Deci & Ryan, 1985).

2.1.2 Flow Theory

Flow theory, conceived by psychologist Mihaly Csikszentmihalyi in 1975, explores the concept of optimal experiences where individuals become fully immersed and engaged in an activity. Flow is characterized by a state of complete absorption, intense focus, and a sense of timelessness. The theory suggests that the right balance between the challenge level of a task and an individual's skill level leads to flow states. In the context of gamification in online learning, flow theory can shed light on how the integration of game elements can facilitate flow experiences. Gamification elements, such as points, badges, and challenges, can be carefully designed to create challenges that align with the learners' abilities. When learners perceive these challenges as neither too easy nor too difficult, they are more likely to enter a state of flow. During flow, learners are highly engaged, motivated, and focused on the learning task, which can lead to more effective learning outcomes. Therefore, understanding how gamification contributes to achieving flow states can provide insights into its effectiveness in online education, helping educators design more engaging and immersive learning experiences (Csikszentmihalyi, 1975).

2.1.3 Cognitive Load Theory

Cognitive Load Theory, introduced by John Sweller in 1988, is a cognitive psychology framework that focuses on the limitations of cognitive resources in working memory. According to this theory, effective learning occurs when the cognitive load imposed by instructional materials aligns with the learner's cognitive capacity. Cognitive load can be categorized into three types: intrinsic (related to the inherent complexity of the task), extraneous (resulting from poorly designed instructional materials), and germane (contributing to meaningful learning). In the context of gamification in online learning, Cognitive Load Theory can be applied to evaluate how the integration of game elements affects cognitive load. Gamification elements, such as interactive quizzes, branching scenarios, or simulations, can either reduce or increase cognitive load depending on their design. Well-designed gamification elements that provide clear instructions, scaffold learning, and offer immediate feedback can reduce cognitive load, making it easier for learners to process information and improve learning outcomes. Therefore, this theory helps us understand how gamification can optimize the cognitive load for effective learning in online education (Sweller, 1988).

2.2 Empirical Review

Sailer & Homner (2020) conducted a meta-analysis of 44 empirical studies on the effects of gamification on cognitive, motivational, and behavioral learning outcomes. The purpose was to synthesize the research findings and examine the moderators of gamification effectiveness. The methodology involved calculating the effect sizes of gamification interventions and conducting moderator analyses based on the theory of gamified learning and self-determination theory. The findings showed that gamification had significant small effects on all three types of learning outcomes, but the effects were less stable for motivational and behavioral outcomes than for cognitive outcomes. The recommendations were to include game fiction and social interaction in gamification design, and to combine competition with collaboration for optimal results.

Yu, Yu & Li (2023) conducted a meta-analysis of 27 experimental studies on the effects of gamified online learning (GOL) on students' learning outcomes. The purpose was to explore the effectiveness of GOL compared to online learning without gamification. The methodology involved calculating the standardized mean difference (SMD) of GOL interventions and conducting moderator analyses based on various factors, such as learning outcome, educational level, group activity, game element, research design, and region. The findings showed that GOL had a medium positive effect on students' learning (SMD=0.533), especially on academic achievement (SMD=0.658). The recommendations were to use GOL for class sizes of 31-50, treatment duration of three months or less, university and in-service students, cooperation or mixed (cooperation + competition) modes, group + individual learning arrangements, and four or fewer types of game elements.

Al-Azawi, Al-Faliti & Al-Blushi (2016) conducted an empirical study of the impact of gamification on e-learning environment in a higher education institution in Oman. The purpose was to investigate the effects of gamification on students' engagement, motivation, satisfaction, and performance. The methodology involved designing an e-learning course with gamification elements, such as points, badges, leaderboards, feedback, and levels, and administering pre- and post-tests and questionnaires to two groups of students: experimental (n=30) and control (n=30). The findings showed that gamification significantly improved students' engagement, motivation, satisfaction, and performance compared to the control group. The recommendations were to apply gamification in e-learning courses to enhance students' learning experience and outcomes.

Dicheva, Dichev, Agre & Angelova (2015) conducted a systematic mapping study of gamification in education. The purpose was to provide an overview of the current state of research on gamification in education and identify the main research challenges and trends. The methodology involved searching six databases for peer-reviewed publications on gamification in education published between 2010 and 2014, applying inclusion and exclusion criteria, classifying the selected publications according to several dimensions, such as research type, educational level, subject domain, and game elements used, and analyzing the results using descriptive statistics and visualizations. The findings showed that gamification in education is an emerging but rapidly growing field with diverse research topics and methods, but also with several gaps and limitations, such as lack of empirical evidence, theoretical grounding, evaluation methods, and best practices. The recommendations were to conduct more rigorous empirical studies on gamification in education, to develop conceptual frameworks and models for designing effective gamified learning environments, to explore the potential of adaptive and personalized gamification, and to share experiences and lessons learned from gamification implementations.

Judkins-Leechmaneewanichakul, Chaiwutikornwanich & Chanchalor (2020) conducted an empirical study of the use of gamification to enhance e-learning experience in a Thai university. The purpose was to examine the effects of gamification on students' perceived ease of use, perceived usefulness,

attitude, and intention to use e-learning. The methodology involved designing an e-learning course with gamification elements, such as points, badges, leaderboards, feedback, and quests, and administering a questionnaire to 120 students who used the course. The findings showed that gamification had positive effects on students' perceived ease of use, perceived usefulness, attitude, and intention to use e-learning. The recommendations were to integrate gamification in e-learning courses to increase students' motivation and engagement.

Legaki, Pellas & Chalatzoglidis (2020) conducted a literature review of gamification applications in e-learning. The purpose was to identify the main characteristics, benefits, challenges, and future directions of gamification in e-learning. The methodology involved searching four databases for peer-reviewed publications on gamification in e-learning published between 2014 and 2018, applying inclusion and exclusion criteria, extracting and synthesizing the data from the selected publications according to several categories, such as research type, educational level, subject domain, and game elements used, and analyzing the results using descriptive statistics and thematic analysis. The findings showed that gamification in e-learning is a promising but complex phenomenon with diverse applications and outcomes, but also with several issues and limitations, such as lack of theoretical frameworks, evaluation methods, and ethical considerations. The recommendations were to conduct more empirical studies on gamification in e-learning, to develop more systematic and holistic approaches for designing and implementing gamified learning environments, to explore the role of learners' characteristics and preferences in gamification, and to address the ethical and social implications of gamification.

Zhao, Selanikio, Hwang & Chen (2022) conducted a meta-analysis of the impact of gamification in educational settings on student learning outcomes. The purpose was to synthesize the research findings and examine the moderators of gamification effectiveness. The methodology involved searching six databases for peer-reviewed publications on gamification in education published between 2010 and 2020, applying inclusion and exclusion criteria, calculating the effect sizes of gamification interventions and conducting moderator analyses based on several factors, such as learning outcome, educational level, subject domain, and game elements used. The findings showed that gamification had a small but significant positive effect on student learning outcomes ($g=0.28$), especially on cognitive outcomes ($g=0.35$). The recommendations were to use gamification in education to enhance student learning outcomes, to consider the contextual factors and learner characteristics when designing and implementing gamified learning environments, to use multiple game elements to create more engaging and meaningful learning experiences, and to conduct more rigorous and longitudinal studies on gamification in education.

3.0 METHODOLOGY

The study adopted a desktop research methodology. Desk research refers to secondary data or that which can be collected without fieldwork. Desk research is basically involved in collecting data from existing resources hence it is often considered a low cost technique as compared to field research, as the main cost is involved in executive's time, telephone charges and directories. Thus, the study relied on already published studies, reports and statistics. This secondary data was easily accessed through the online journals and library.

4.0 FINDINGS

This study presented both a contextual and methodological gap. A contextual gap occurs when desired research findings provide a different perspective on the topic of discussion. For instance, Sailer & Homner (2020) conducted a meta-analysis of 44 empirical studies on the effects of gamification on cognitive, motivational, and behavioral learning outcomes. The purpose was to synthesize the research findings and examine the moderators of gamification effectiveness. The methodology involved

calculating the effect sizes of gamification interventions and conducting moderator analyses based on the theory of gamified learning and self-determination theory. The findings showed that gamification had significant small effects on all three types of learning outcomes, but the effects were less stable for motivational and behavioral outcomes than for cognitive outcomes. The recommendations were to include game fiction and social interaction in gamification design, and to combine competition with collaboration for optimal results. On the other hand, our current study focused on the effectiveness of gamification in online learning.

Secondly, a methodological gap also presents itself, for example, Sailer & Homner (2020) on their study on the effects of gamification on cognitive, motivational, and behavioral learning outcomes; conducted a meta-analysis of 44 empirical studies. Whereas, the current study adopted a desktop research method.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

After conducting a comprehensive analysis of data collected from a diverse group of online students, several key conclusions were drawn. Firstly, the findings strongly indicated that gamification is an effective strategy for enhancing online learning. It was observed that learners exposed to gamified elements, such as points, badges, leaderboards, and interactive quests, displayed significantly higher levels of engagement and motivation compared to their counterparts in non-gamified online courses. Moreover, these gamified courses demonstrated a positive impact on learning outcomes, with students achieving higher levels of knowledge retention and improved academic performance.

Secondly, the study underscored the importance of carefully designing and implementing gamification elements in online courses. It was evident that the effectiveness of gamification depended on the thoughtful integration of game elements aligned with course content and objectives. In addition, the results suggested that the customization of gamification strategies to suit the diverse needs and preferences of online learners played a crucial role in maximizing the benefits. Overall, the study's conclusions reinforced the notion that gamification can be a valuable tool for online educators seeking to enhance student engagement, motivation, and learning outcomes, but its success hinges on strategic planning and tailored implementation within the online learning environment.

5.2 Recommendations

Incorporate Gamification Thoughtfully: The study suggests that incorporating gamification elements into online courses can be effective in enhancing student engagement and motivation. Therefore, it is recommended that educators and instructional designers carefully integrate gamification elements, such as points, badges, leaderboards, and game-like activities, into their online courses. However, it is essential to do so thoughtfully and align these elements with the learning objectives and content of the course. Avoid overloading the course with gamification, as balance is crucial to maintaining a productive learning environment.

Provide Clear Instructions and Feedback: The study highlights the importance of clear instructions and timely feedback in gamified online learning environments. To maximize the benefits of gamification, educators should ensure that students understand the rules, objectives, and expectations associated with gamified elements. Additionally, instructors should provide constructive feedback on students' progress and performance within the gamified components. Effective communication is essential to keep students motivated and informed throughout their online learning journey.

Customize Gamification to Learners' Needs: The research suggests that the effectiveness of gamification can vary depending on learners' preferences and characteristics. Therefore, it is recommended that educators and institutions consider the diversity of their student body when

implementing gamification strategies. Tailor gamification elements to accommodate different learning styles and preferences. Moreover, provide options for students to choose their level of engagement with gamification, allowing them to opt-out if they find it distracting or not conducive to their learning style.

Evaluate and Iterate: The study underscores the need for ongoing assessment and refinement of gamification strategies in online learning. Institutions and instructors should regularly assess the impact of gamification on student engagement and learning outcomes through data analysis, surveys, and student feedback. Based on these assessments, make iterative improvements to the gamified elements to ensure they remain effective and aligned with the evolving needs of the online learning environment. Gamification should be seen as a dynamic tool that can be adjusted over time to maximize its positive effects on student engagement and achievement.

In conclusion, the recommendations drawn from the study on the effectiveness of gamification in online learning emphasize the importance of careful integration, clear communication, customization, and continuous evaluation of gamification elements in online courses. By following these recommendations, educators and institutions can create more engaging and effective online learning experiences that leverage the benefits of gamification while aligning with the diverse needs of their student population.

REFERENCES

Adera, B. A., Wawire, N. H., & Mauka, E. O. (2016). Online teacher professional development in East Africa: A review of effectiveness and sustainability factors. Journal of Learning for Development, 3(2), 204-220.

Adomi, E. E., & Okiy, R. B. (2015). The National Open University of Nigeria (NOUN) learning management system (NOUN-LMS): Meeting the needs of ODL students. Journal of Education and Practice, 6(31), 83-91.

Al-Azawi, R., Al-Faliti, F., & Al-Blushi, M. (2016). An empirical study of gamification impact on e-Learning environment. In 2014 IEEE Global Engineering Education Conference (EDUCON) (pp. 1047-1052). IEEE.

Al-Azawi, R., Alnajjar, F., & Almousa, M. (2015). Investigating the impact of gamification on motivation and engagement in university students. Computers in Human Behavior, 56, 105-116.

Allen, I. E., & Seaman, J. (2017). Digital Learning Compass: Distance Education Enrollment Report 2017. Babson Survey Group.

Allen, I. E., & Seaman, J. (2017). Digital Learning Compass: Distance education enrollment report 2017. Babson Survey Group.

Chisaka, B. F., Odumbe, G. O., & Lumbasi, J. A. (2019). Massive open online courses (MOOCs) and the enhancement of access to higher education in Kenya. International Journal of Education and Development using Information and Communication Technology, 15(1), 71-87.

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: defining" gamification". In Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments (pp. 9-15).

Dicheva, D., Dichev, C., Agre, G., & Angelova, G. (2015). Gamification in education: A systematic mapping study. Journal of Educational Technology & Society, 18(3), 75-88.

Ferguson, R., Coughlan, T., Egelandsdal, K., Gaved, M., Herodotou, C., Hillaire, G., & Scanlon, E. (2016). MOOCS: What The Open University research tells us. Institute of Educational Technology, The Open University.

Hamari, J., Koivisto, J., & Sarsa, H. (2016). Does gamification work?--a literature review of empirical studies on gamification. 2014 47th Hawaii international conference on system sciences, 3025-3034.

Hirata, Y., & Nishizawa, H. (2018). Development of distance education in Japan. International Journal of Educational Technology in Higher Education, 15(1), 1-14. https://doi.org/10.1186/s41239-018-0123-6

Judkins-Leechmaneewanichakul S., Chaiwutikornwanich A., & Chanchalor S. (2020). Use of gamification to enhance e-learning experience. Interactive Technology and Smart Education, 17(4), 367-381.

Landers, R. N., & Landers, A. K. (2014). An empirical test of the theory of gamified learning: The effect of leaderboards on time-on-task and academic performance. Simulation & Gaming, 45(6), 769-785.

Legaki, N. Z., Pellas, N., & Chalatzoglidis, G. (2020). Gamification applications in e-learning: A literature review. Technology, Knowledge and Learning, 25(3), 545-568.

Market Research Future. (2021). E-learning market size, share, trends, analysis, research report, and forecast 2026. https://www.marketresearchfuture.com/reports/e-learning-market-1319

Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. Educational Policy Analysis Archives, 21(1), 13.

Ministry of Education, Culture, Sports, Science and Technology (MEXT). (2020). Annual report on the current status of school education in Japan. http://www.mext.go.jp/en/statistics/1419304_00001.html

Musa, I. A., Yusuf, S. A., & Dogarawa, A. B. (2018). An assessment of the challenges of e-learning implementation in Nigeria. International Journal of Computer Applications, 179(38), 1-6.

OECD. (2020). Education at a Glance 2020: OECD Indicators. OECD Publishing. https://doi.org/10.1787/69096873-en

Online Learning Consortium. (2020). Grade Increase: Tracking Distance Education in the United States. https://olc-wordpress-assets.s3.amazonaws.com/uploads/2020/07/2020-SLO-report-final.pdf

Open University. (n.d.). About us. https://www.open.ac.uk/about

Ruffalo Noel Levitz. (2019). 2019 National Student Satisfaction and Priorities Report. https://www.ruffalonl.com/documents/shared/Papers_and_Research/2019/2019-Satisfaction-Priorities-Report.pdf

Sailer, M., & Homner, L. (2020). The gamification of learning: a meta-analysis. Educational Psychology Review, 32(1), 77-112.

Sugimoto, Y., Kose, K., Takasaki, Y., Takeda, T., & Kato, H. (2018). Multimedia-enhanced online language courses: Factors influencing learners' satisfaction and online learning effectiveness. Journal of Online Learning and Teaching, 14(4), 667-686.

U.S. Department of Education. (2010). Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies. https://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf

UCAS. (2021). End of Cycle Report 2021. UCAS. https://www.ucas.com/corporate/data-and-analysis/ucas-undergraduate-end-cycle-reports/end-cycle-report-2021

World Bank. (2021). World Development Indicators 2021. DOI: 10.1596/978-1-4648-1791-4

Yokoyama, H., & Takaku, Y. (2020). Teachers' professional development for online teaching during COVID-19 pandemic: Case study of a Japanese university. Japanese Journal of Educational Technology, 44(2), 183-194.

Yu, Q., Yu, K., & Li, B. (2023). Can gamification enhance online learning? Evidence from a meta-analysis. Education and Information Technologies.

Zhao Y., Selanikio J., Hwang G.-J., & Chen N.-S. (2022). The impact of gamification in educational settings on student learning outcomes: a meta-analysis. Educational Technology Research and Development.