Impact of Gamification in Modern Educational Scenario

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ABSTRACT

Now a day, digitalization is demanding in every aspects of human life in order to face modern transformations worldwide especially in field of education because implication of digitalization in it will modernize and empower all dimensions more effectively and efficiently. Gamification along with digitalization i.e. implication of game machines in non game text will revolutionize education context in great manner. The current article explored impact of Gamification in present education system along with digitalization. It results effect of Gamification as better engagement of students via educational games with fun and positive motivation by using information and communication technology based e-learning tools. Two learning management system (LMS) tools Moodle and Quizizz are discussed briefly. No doubt, Gamification has effectively influenced for better learning outcomes but proper care should be maintained during implication due to some side effect like addiction in nature, mental and health problems even victim of cyber bullying and scamming.

Keywords: Gamification, Digitalization, Learning management system (LMS)

1. Introduction

Modern educational system is transforming from traditional classroom structure towards digital platform worldwide. Digitalization is now demanding for all type of learners and teachers to face day by day challenges like during covid-19 pandemic, online teaching and learning being stimulating for all of us but sometimes, lack of learners engagement, motivation and some technical unawareness also governed some unwanted unexpectational outcomes. It focused digitalization towards more easier, attractive to reinforce community for growing knowledge, skills and encouragement. National Educational Policy 2020 has also promised to revolutionize educational system implicating digitalization in every aspects empowering for all. For all these, Gamification is an important empowering aspect. Gamification is generally, implication of game machines in

teaching learning environment to encourage and involve students. Gamification is aesthetics and game thinking to engage people, motivate action, promote learning and solve problems by using game based machines [1-7]. It is integration of game elements and game thinking into non game activities to promote learners for better outcome. Gamification not only work for educational sector but also emerging in many more like business, management, in-service training, health, society and others for variety of purpose like learning, employee performance, customer engagement, performance study and many others [8-10]. Thus, in modern digital era, Gamification is helping humans for attractive utilization of digital technologies.

In concern to educational prospects, Gamification is a method of learning to involve and engage students via educational games, puzzles, quizzes for assignation of students and exciting them for learning using some game elements with fun and positive motivation. For educational Gamification, users are students which perform towards given objectives step by step so points are accumulated as a result of task and after getting some definite points; students achieve levels representing their success. Rewards are given in terms of badges and then ranking is generated in game. It promotes engagement and motivation of students in positive frame out. Modern Information and communication technology (ICT) based e-learning governs favorable possibilities for implementation of Gamification in educational environment by introducing objectives, engaging students, optimizing learning, supporting behavioral changes and socialization[11-13].

The effect of Gamification on student learning is broad area of research. Gamification generates sense of competition, make easy understandable context for better achievement and memorable by engaging learners. The games using a story may be linked with questionnaire, practical assessment and instant feedback to understand learner's progress. When game elements are amalgamated with education context, learning is just a fun resulting better engaging environment. Now a day, Gamification research has paid greater attention worldwide for enhance learning outcomes. Involving of game machines improve learning new skills. There are large research outcomes for online engagement through Gamification [11]. The general framework of Gamification and learning is based on instructional content, behaviors and attitude, game characteristics and learning outcomes. The involvement of different game layers at various stages for different type of groups or learners may promote better engagement, learning, motivation, profile, personality in gamified learning environment [12, 13].

Gamification and game based learning are two different criteria in which Gamification is addition of game element into non game text while game based learning involve a complete game which are independent to real world systems [14]. Gamification is a methodology which may be adopted not only for motivation but also behavioral and affective design trend [15]. The impact of Gamification for extroverted and introverted learners groups are driven by points, levels and ranking resulting motivation in education and learning. Application of theoretical framework, assessment and analysis of learning process and methodological rigor implies need for Gamification research [16, 17]. Lots of literature review on Gamification depicts its importance and need for

modern e-learning context. Use of social media and Gamification techniques for learner's engagement, performance analysis and behavior based on personality tests are studied. Gamification for teaching and learning, its implication in education are those outcomes who explore Gamification for next generation e-learning. No doubt, Gamification research is an enlightening area to be explored for next generation achievement in e-learning [11-19].

The current paper is highly focused on importance of Gamification research for better e-learning outcomes. The Gamification via Moodle, Quizzes and swift chat are briefly discussed. This paper explores addition of game element into educational context for a group of students at high school level and results are analyzed based on quizzes outputs in order to obtain Gamification impact on learning.

2. Gamification via learning management system (LMS): Moodle and Quizizz

2.1 Moodle

As a current demand for e-learning, learning management system (LMS) is application software helping in online learning for better engagement, motivation and effective outcomes. Moodle is an online learning platform to create online course, add assignments, quizzes, discussion and evaluate student progress. Moodle stands for modular object oriented dynamic learning environment. Moodle empower our educational world via open source e-learning software and available in more than 100 languages, governing freedom for online learning and training according to current demands. The learning activities supported by Moodle are videos, discussion forum, chats, materials and quizzes. Gamification in Moodle may results highly beneficial for learners because Gamification makes online courses more attractive, engaging and motivational for learners [20, 21]. Moodle was first designed by Martin Daugiamas in 2002 which transform learning media into web form. Moodle is open web software which improves effectiveness of e-learning by offering various learning materials interacting with teachers and friends i.e. dynamic learning. In Moodle, content can be added or deleted which make interface very initiative and allows for easy navigation. It can be organized in topics or weekly courses and all these have lesion, quizzes, assignments and forum. Moodle implements three roles- administrator, teacher and student. Administrator can control and create role or assign a role to anyone. When user enrolled in particular role, it will be student. Teacher enrolls each student one by one and has full control in addition or removal of students. Moodle includes various tools for creating resources and activities. Resources tab offers choice of creating levels, text pages, web pages, generating link to files or websites, videos and text pages. In activity section, assignments, chats, question choice, data base table may be included. In forum, anyone can send his response to discussion. Quiz enables to create variety of quiz as well as feedback from students may be collected. Here in Moodle, video games may be included and rewards are given after successfully completion of different levels. It may be more attractive for learners so course management may be

more exciting by Gamification. Thus, implication of ICT and Gamification allow Better Corporation among learners via accessibility, usability and collaborative learning by motivating learners and teachers [20-23].

2.2 Quizizz

Technical advancements in field of education has implied various application tools for meeting demands for digital generation of learners as well as teachers for efficient and affective tasks. Quizizz is an online assessment tool applicable from elementary to college level students. It provides more interactive and fun exercises via multilayer activities governing game like educational application. Multiple features like memes, themes, avatar, music, make it more attractive in classroom. Quizizz also provide data and statistics about student performance via monitoring progress and downloading reports. Learners can stimulate their interests and improve their engagement via Quizizz. Both live and homework module may be applied under Quizizz. It offers functionalities to add music and pictures. Random questions in Quizizz also avoid cheating among learners and focus more centered and mindful test and at end, learners can get their rank also however, greater length of time to complete questions, internet connectivity are big obstacles for Quizizz among learners[24,25].

Quizizz is multilayer game platform in classroom for teaching and assessment tool depicting favorable outcomes in terms of learning efforts, motivation, involvement and academic achievement [26]. Quizizz is an interesting tool which encourages confidence, motivation and improves skills. Quizizz helps teachers to conduct tests easily. It improves self confidence, self evaluation and motivation via new learning style and reading ability by focusing on questions. Quizizz can be designed in multiple forms like multiple choice questions, true false etc. on public and private mode. Students can join quiz via a given code from mobile in which a unique avatar is given to him for excitement. Quiz can be customized in structure via background music, ranking, shuffling questions as well as quiz for homework. Immediate feedback is obtained after answering questions as for correct answers, funny pictures and for wrong answer, try again. The ranking of students based on their performance is obtained on leather board. After finishing Quizizz game, students can review all questions and figure out where the need to improve. Quizizz can be integrated with Google classroom which facilitate assignment tracking and enhance student's safety [27-29].

3. Drawbacks of Gamification

Gamification, no doubt, offers potential for effective learning experience, engagement, motivation, better learning environment along with fun learning, behavioral change and performance changing but there are some drawbacks also in applying Gamification in education which must be considered carefully. Implication of game in education may lead to be addictive in nature governing departure from responsibilities. The games are specific so it is difficult to apply it for all types of learners like person with disabilities. Even some game may have violence which attract to adults exploring violent nature by increasing emotional aerosol. Spending many hours on game may lead to obesity and mental stress, eye problem like health issues. Learners once addicted to

games, prefer Gamification more that may degrade their academic progress even learners may be victim of cyber bullying and scamming. If Gamification is to be made mandatory, it creates rule based experience that avoided fun from learning. Here, efforts must be rewarded not victory so that learners could see failure as opportunity instead of being fearful. Feedback must be used for correction of student's action and should be applied as stimulus for further activities [30-32].

4. Conclusions

E-learning is demanding in current educational scenario and Gamification along with e- learning will empower it in great context. Gamification not only governed entertainment but explored engagement, motivation, positive feedback and competition for better achievement among learners by applying game machine in non game text structure. Gamification may also be implied in business, management, in-service training, health, society and others for variety of purpose like learning, employee performance, customer engagement and performance study. Learning management system, Moodle and Quizzes are supported by game elements like videos, discussion forum, chats, materials and quizzes resulting better learning outcomes. No doubt, Gamification empowers educational context according to modern needs along with fun but careful implication is must because it may be addictive in nature governing emotional aerosol, mental stress, health issues and victim of cyber bullying and scamming.

Acknowledgement

References

1. C. Dichev & D. Dicheva, Gamifying education: what is known, what is believed and what remains uncertain: a critical review, International journal of Educational Technology in Higher Education, 1-36, 14 (2017).
2. S. Pathak, S. Aggarwal & Yashika, A study on systematic review of Gamification in education sector, Journal of contemporary issues in business and government, 2154-2166, 27 (2021).
3. I. Caponetto, J. Earp & M. Ott, Gamification and education: A Literature Review, European Conference on Game based learning; reading 50-57 ,1 (2014).
4. G. Kiryakova, N. Angelova & L. Yordanova. Gamification in education, Proceedings of 9th International Balken Education and Science Conference, 679-684, 1 (2014).
5. J. J. Lee & J. Hammer, Gamification in education: what how, why bother?, Academic Exchange Quarterly, 1-5, 15 (2011).

6. P. Yadav, Revolutionary phase in Higher Education via National Education Policy- 2020, International Journal of Innovative Research in Technology, 934-937, 8 (2021)

7. P. Yadav, Intercorrelation between Digitalization and Women Empowerment, British Journal of Multidisciplinary and Advanced studies, 1-6, 3 (2022)

8. M. Abou- Shouk & M. Soliman, The impact of Gamification adoption intention on brand awareness and loyalty in tourism: The mediating effect of customer engagement, Journal of Destination Marketing & Management, 1-10, 20 (2021).

9. S. Chauhan, A. Akhtar & A. Gupta, Gamification in banking: a review, synthesis and setting research agenda, Young customers, 456-479, 22 (2021).

10. J. Hwang & L. Choi, Having fun while receiving rewards? Exploration of Gamification in loyalty programs for consumer loyalty, Journal of Business Research, 365-376, 106 (2021).

11. N. S. Jayawardena, M. Ross S. Quach, A. Behl, M. Gupta & L. D. Lang, Effective online engagement strategies through Gamification: a systematic literature review and a future research agenda, Journal of Global Information Management, 1-25, 30 (2022).

12. D. Schofield, A. Spillane, E. Hinge, A. Houck & G. Pal, Using social media and Gamification to measure engagement with study abroad programs, International journal of Innovation and Research in Educational Science, 222-230, 3 (2016).

13. R. Raju, S. Bhat, S. Bhat, R. Dsouza & A. B. Singh, Effective usage of Gamification techniques to boost student engagement, Journal of Engineering Education transformation, 713-717, 34 (2021).

14. C. V. D. Carvalho & A. Coelho, Game-Based Learning, Gamification in Education and Serious Games, Computers, 1-4, 11 (2022).

15. R. Smiderle, S. J. Rigo, L. B. Marques, J. P. D. M. Coelho & P. A. Jaques, The impact of gamification on students learning, engagement and behavior based on their personality traits, Smart Learning Environments, 1-11, 7 (2020).

16. J. Jose & M. Vinay, Performance analysis of Gamification over the traditional classroom in education, Indian Journal of Science and Technology, 1-5, 10 (2017).

17. M. Sailer & M. Sailer, Gamification of in-class activities in flipped classroom lectures, British journal of Educational Technology, 75-90, 52 (2021).

18. A. Y. Ar and A. Abbas, Role of Gamification in Engineering Education: A systematic literature review, IEEE Global Engineering Education Conference (EDUCON), 210-213 (2021).

19. B. Suyunov, K. N. Sanakulovna & J. Suyunov, Gamification as a method of increasing motivation of students of higher educational institutions in teaching a foreign language on the example of English, Science and Innovation International scientific journal, 41-46, 2(2023).

20. C. Costa, H. Alvelos & L. Tiexeria, The use of Moodle e-learning platform: a study in a Portuguese University, Procedia Technology, 334-343, 5 (2012).

21. D. Chourishi, C. K. Buttan, A. Chaurasia & A. Soni, Effective E-Learning through Moodle, International Journal of Advance Technology & Engineering Research, 34-38, 1 (2011).

22. N. H. S. Simanullang & J. Rajagukguk, Learning Management System (LMS) Based On Moodle To Improve Students Learning Activity, IOP Conf. Series: Journal of Physics: Conf. Series, 012067-01273, 1462 (2020).

23. S. H. P. W. Gamage, J. R. Ayres & M. B. Behrend, A systematic review on trends in using Moodle for teaching and learning, International journal of STEM education,1-24, 9 (2022).

24. T. M. Lim & M. M. Yunus, Teachers' Perception towards the Use of Quizizz in the Teaching and Learning of English: A Systematic Review, Sustainability, 6436-6450, 13 (2021).

25. R. Degirmenci, The Use of Quizizz in Language Learning and Teaching from the Teachers' and Students' Perspectives: A Literature Review, Language Education and Techanology, 1-11, 1 (2021).

26. F. Zhao, Using Quizizz to Integrate Fun Multiplayer Activity in the Accounting Classroom, International Journal of Higher Education, 37-43, 8 (2019).

27. J. Pahamzah, Quizizz as a students' reading comprehension learning media: a case study at the eleventh grade of dwi putra bangsa vocational school in cimanggu, International Journal of English Language and Linguistics Research, 27-33, 8 (2020).

28. S. Y. Mei, S. Y. JU & Z. Adam, Implementing Quizizz as Game Based Learning in the Arabic Classroom, European Journal of Social Science Education and Research,194-198, 5 (2018).

29. S. Zuhriyag & B. W. Pratolo, Exploring Students' Views in the Use of Quizizz as an Assessment Tool in English as a Foreign Language (EFL) Class, Universal Journal of Educational Research 5312-5317, 8 (2020).

30. I. Furdu, C. Tomozei & U Kose ,Pros and Cons Gamification and Gaming in Classroom, BRAIN Broad Research in Artificial Intelligence and Neuroscience 56-62, 8 (2017).

31. J. M. Esteves, The perils of Gamification triviliazation: how and why Gamification is failing to deliver loyalty, Academy of Management Proceedings, 1 (2017).

32. R. C. Callan, K. N. Bauer & R. N. Landers, How to Avoid the Dark Side of Gamification: Ten Business Scenarios and Their Unintended Consequences. (Book Chapter) Gamification in Education and Business Springer 553-568 (2015).