

Gamified learning environment (GLE): A Case study to compare between traditional learning and Gamified learning environment.

Kinzang Pelden, Rinchen Wangmo, Chening Yangden, Pema Gyalpo & Parshu Ram Dhungyel

DOI: <https://doi.org/10.17102/bjrd.rub.10.2.022>

Abstract

The purpose of this research is to assess the difference between the Gamified learning environment and the traditional learning environment. The comparison shows the interests of students in ways of learning, improvement in different fields and learning environments. In this research a questionnaire-based survey was conducted among 400 students from the College of Science and Technology and came with 364 responses, after which compilations and analyzes were performed. This survey also deals with the related revised works, the methodology used, the results and the discussion of the interpreted result.

Keywords: *Gamified learning environment (GLE), Traditional learning environment (TLE)*

Introduction

“Gamified Learning Environment (GLE) or gamification is a process or an application of game mechanism to the non-game environment to improve and motivate student learning behaviors” (Brigham, 2015).

Gamified learning Environment (GLE) is an educational approach to motivate students to learn by using game-based applications(s). Many people learn new things in life from different environments and when it comes to academics, students seem to learn more and much better in hands-on, practical involving subjects. When learning new things about anything it may be, the things that is learned through

practical involvement remains in long term memory (LTM) part of the brain. Therefore, practicality in case of educational learning comes only through user interface or Game based learning environment, enhancing the nature of learning within the students who are learning new things.

Traditional learning technique makes any student rely on teachers, as a consequence it suppresses the creative side of their personality and they never get to know their strength. They get bound inside a wall of classroom where it always involves teacher teaching them and giving some homework, students following the regular schedule and just passing the exam. This is the reason that makes this topic more needed to break through the wall and every student get to explore more about their own potential. This study focuses on student's experience in learning educational related things like their own syllabus and as of now this study mainly focuses within Bhutan and with Bhutanese students learning national language (Dzongkha), more specifically with the spelling using mobile spelling game app.

This research aims to verify whether learning through games is better than the traditional learning environment through questionnaire surveys.

Related works

In Bhutan, Dzongkha serves as the official language, which is indeed in threat to foreign languages, especially English (Kuensel, 2015). To preserve our national identity and to encourage younger generations to maintain constant contact with Dzongkha, the learning environment must change. The paper-based learning appears to be a boring learning technique and hence results in a helpless outcome. On the other hand, if the student is given the opportunity to learn or improve Dzongkha skill through an interactive and fun interface (Dolkar et al., 2017), the likelihood of using Dzongkha will increase.

Game-based learning environment creates situational learning environment, where students are able to learn various kinds of knowledge through playing games and further apply the knowledge

they have learned to real-life situation (Dondlinger, 2007). Traditional cramming way of learning has led to a result that students lack interest in learning. Game-based learning environment makes student's level of thinking to elevate, including the use of strategies, hypothesis verification and problem-solving rather than memorizing (Prensky, 2004). Cagiltay (Cagiltay & Gokdal, 2001) mentioned that in comparison to traditional teaching methods, game-based learning can provide students with more interesting environment to learn, since the concept of education has changed with change in time, the student must have a diversified environment to study. In recent years, digital learning materials have been gradually introduced to the environment (Chang & Yang, 26-30 May 2016).

Experiences with the latest technologies can pave the way for extraordinary learning opportunities (Tahir & Arif, July 28-30, 2015).

The national language Dzongkha is considered one of the toughest in terms of spelling among Bhutanese students and, therefore, it is important for every individual Bhutanese to promote and preserve our language with the use of new technology (Tshering et al., 2018). With the development of new Dzongkha learning applications, the spelling will be an initiative of this kind so that the children of Bhutan get more interest in promoting our national language (Yan & Liping, Nov 2013).

1 Research methodology

The methodology used in this research paper is questionnaire survey. For this research, questionnaires were distributed to students of College of Science and Technology, Phuntsholing, Bhutan. All students were to spend at least 5 minutes to read the questions carefully and respond accordingly. The results of this study were based on student responses within the university regarding their experiences of the education system and how they learn by themselves. This study specifically compares the efficiency between the traditional way of learning and the Gamified concept / Gamified learning environment.

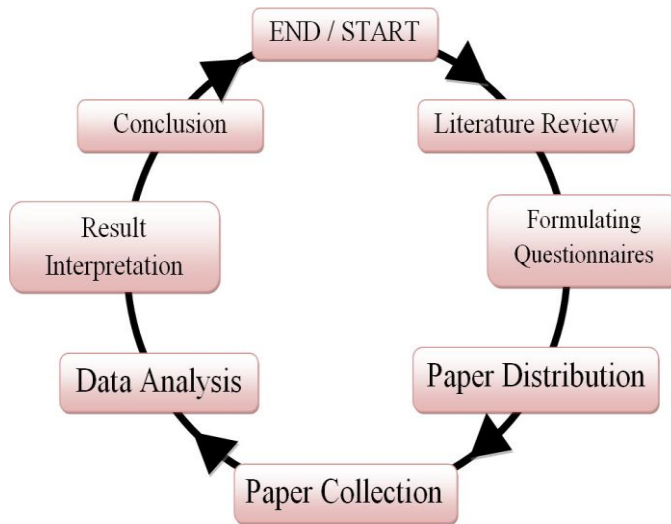


Figure 3-1 Survey Process

Data collection

The method followed in this research was a paper and online survey that was distributed to students of College of Science and Technology. A total of 400 questions were distributed by the paper survey, in which 364 students responded. However, only 123 students responded to the online survey. Students were given a certain amount of time to complete the survey questions. The data collected was entered manually and then analyzed.

Data Analysis

The survey participants consisted of 145 female and 219 male students of College of Science and Technology.

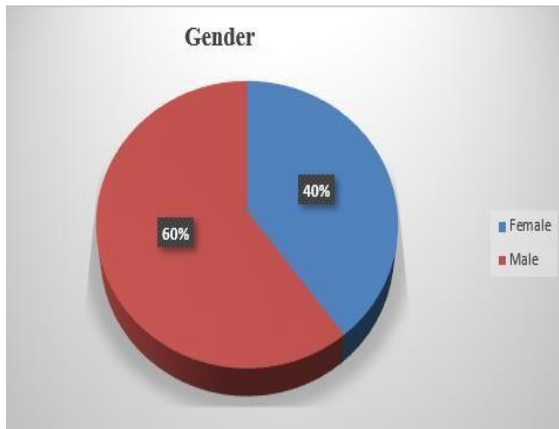
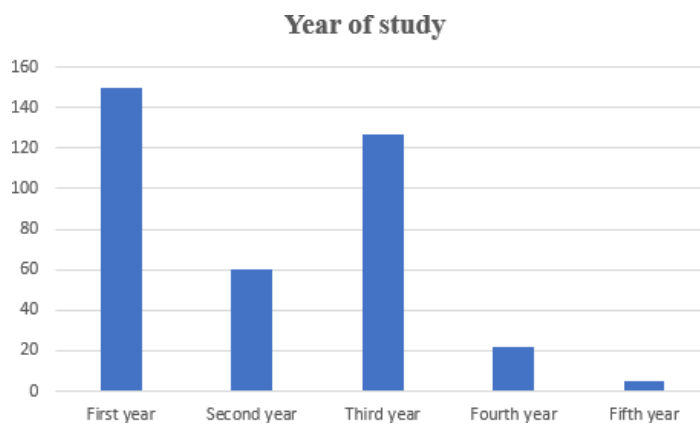


Figure 5-1 Result of question 1

The College of Science and Technology offers five programs, four of which are four-year courses and a five-year course consisting of students from the first to fifth year.



Majority of the students feel difficulty in learning the national language of Bhutan, Dzongkha and the result shows that 88% of the students agreed to that point where as rest didn't feel the same.



Figure 5-3 Result of question 8

The concluding demo graph shows that there is more need of interfaces identified with the language to make the learning simpler and rouse students to take in more and get enlivened from each exercise learned.

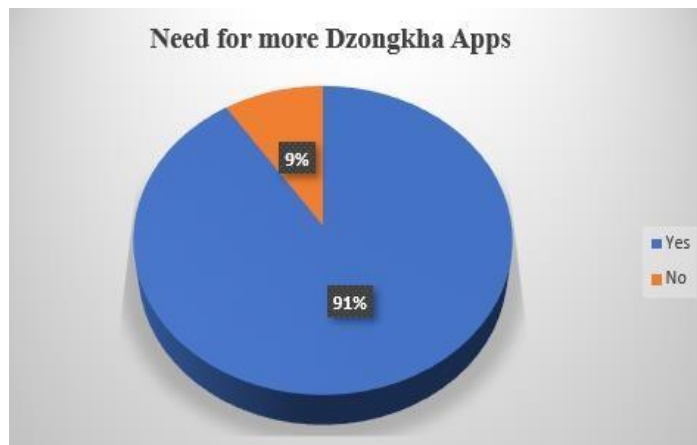


Figure 5-4 Result of question 10

The following section deals with the result obtained through a survey conducted among students from the College of Science and Technology.

Key findings and implications:

1. Most students had difficulty learning the Dzongkha language. According to the results, almost all the students (87.64%) who replied to the questionnaires felt they had difficulty in learning Dzongkha.
2. Many students believe that learning from a Gamified platform is much better than the traditional way. 84.9% of students think that the Gamified platform is preferable to the traditional one.

Conclusion

The goal of the research work is to provide a clear difference between the forms of technical learning participation that improves the mentality of the students to understand concepts. The survey conducted comes as a proof of evidence that students prefer the learning environment based on digital games rather than the traditional learning environment that was literally learning the concepts. Therefore, it is evident that students or any student can learn from game-based platforms or the Gamified learning environment. As expected, we conclude that students pay more interest and learn more through games, unlike classroom learning.

References

- Cagiltay, N., & Gokdal, G. (2001). What Do Computer Games Promise for Engineering Students.
- Chang, R., & Yang, C. (26-30 May 2016). Developing a Mobile App for Game-based Learning in Middle School Mathematics Course.
- Dolkar, K., Bidha, C., Tshering, S., & Thinley, D. (21-23 Dec 2017). Interactive Dzongkha Learning Apps for Kids. IEEE.

- Dolkar, K., Bidha, C., Tshering, S., Thinley, D., & Dhungyel, P. (2017). Interactive Dzongkha Learning Apps for Kds.
- Dondlinger, M. (January 2007). Educational Video Game Design: A Review of the Literature. Kuensel. (2015). The Dzongkha Dilemma.
- Prensky, M. (2004). Digital Game-Based Learning.
- Tahir, R., & Arif, F. (July 28-30, 2015). Mobile Technology in Children Education: Analyzing Parent's Attitude Towards Mobile Technology for Children.
- Tshering, P., Dorji, S., Norbu, D., Dema, N., & Dhungyel, P. (March 2018). Experience of a Gamified spelling solving by students for learning spelling: Development of Kids Spell Dzongkha App.
- Yan, W., & Liping, W. (Nov 2013). Using 3G Smartphones for MALL.

About the Author

Kinzang Pelden is currently working as an ICT officer under Office of President (OOP) at Khesar Gyelpo University of Medical Science, Bhutan. She completed her bachelor's degree in Information Technology from the College of Science and Technology, Bhutan in the year 2020. She has been involved in working towards building IoT related projects, loves doing research in cyber security and machine learning as well. During her stay in college, she led her team in carrying out research in gamified learning environment and also during the final year project 'Immediate Personal Security Service'. She is also an entrepreneur minded. During 'G-Fest' festival at Gedu College of Business Studies, Bhutan, she represented the college in 'Rural Le Carte' event and bagged second position. Apart from that, Kinzang is a 42nd graduate of Bhutan's prestigious voluntary service 'Desuup' and served as a frontline worker during the COVID-19 pandemic. Her proactive nature in learning new things and helping the community around her has made Kinzang an epitome of a brisk learner.