Information Management and Business Review (ISSN 2220-3796)
Vol. 15, No. 4(SI), pp. 109-114, December 2023

The Influence of Online Classroom Games (OCG) on Undergraduates' Academic Excellence: A Study in the Context of Hybrid Learning

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Abstract: Hybrid learning has gained momentum globally, offering a viable alternative to traditional face-to-face education. As it involves combining traditional classroom instruction with online elements, hybrid learning has expanded possibilities for enriching education. Due to this fact, educators are constantly seeking innovative ways to engage students in the ever-evolving educational landscape. Hence, exploring diverse teaching tools beyond traditional methods is crucial. This concept paper explores the influence of Online Classroom Games (OCG) on the academic attainment of undergraduates, utilizing a qualitative approach to gather data. Initially, the interview transcripts will be gathered from 4 programs in the cluster of Business and Management faculty involving 16 participants. They will be carefully reviewed to identify recurring patterns. The findings of this study will offer empirically-based strategies to heighten student engagement and improve learning outcomes in the contemporary educational sphere. Ultimately, the outcomes of this research aspire to aid the educational community in readying itself for the hybrid and flexible learning system, as recently introduced by the Malaysia Ministry of Higher Education (MOHE).

Keywords: *Hybrid learning, online classroom games, academic excellence.*

1. Introduction and Background

The landscape of education has witnessed a significant transformation in recent years, primarily driven by advancements in digital technologies. In response to these changes, the Malaysia Ministry of Higher Education (MOHE) has introduced a hybrid and flexible learning system, recognizing the need for adaptable educational approaches in the post -pandemic era. The hybrid approach allows students to combine remote learning with on-campus components, providing them with the flexibility to customize their learning experiences while ensuring necessary face-to-face interactions and hands-on learning opportunities (Raes, 2022). The decision had numerous benefits including the reduction of educational debts and expenses, as well as granting students the flexibility to engage in off-campus employment or pursue activities that demanded their presence elsewhere.

Within this context, educators are encouraged to explore innovative teaching tools and strategies that enhance student engagement and learning outcomes in the hybrid learning environment. Online classroom games have emerged as a promising avenue for integrating technology into education. Research has shown that well-designed educational games can improve student motivation, engagement, and knowledge retention (Cheung & Ng, 2021). In addition to engaging students in the learning process, hybrid learning and the incorporation of online classroom games have shown promising potential in enhancing students' performance. By leveraging technology and interactive elements, educators can create dynamic learning environments that cater to individual student needs and preferences. Through incorporating elements of competition, collaboration, and interactive learning, online games can create an immersive and engaging learning experience as well as promote academic excellence (Essa, 2023). Online classroom game learning combines educational content with the utilization of digital games in an online setting. These games are specifically designed for educational purposes and have the ability to engage diverse learning styles and behaviors. Learning can occur in formal or informal environments, either individually or in groups. Game-based learning has been found to enhance various cognitive abilities such as perception, reasoning, critical thinking, spatial navigation, and memory retention (Essa, 2023).

Unfortunately, existing empirical research on digital game-based learning has predominantly focused on adolescents (Ding, Guan, & Yu, 2017). While some studies have examined the effectiveness of incorporating digital games in teaching for traditional college students (Ding et al., 2017), there is a limited amount of

research dedicated to investigating the impact of digital game-based learning on non- traditional undergraduate students. When strategically designed and implemented, digital games have the potential to improve academic performance and overall learning effectiveness. Therefore, this study aims to explore the research on digital game-based learning for undergraduates and examine the implications of online classroom games on achievement and learning outcomes.

2. Literature Review

Technology has had a great influence on every aspect of society and is constantly evolving. Higher education institutions still struggle with how to effectively integrate electronic devices in the classroom to increase student engagement, development, performance, and learning outcomes. The lack of guidance is apparent from the existing gap in research literature that addresses the topic of the use of digital games to engage nontraditional students. This study attempts to bridge the gap by providing an overview of the existing problem, method, benefits, challenges, and possible solutions. The use of digital game-based learning as supplementary aids at the university level is in the early stages of development (Moylan, Burgess, Figley, & Bernstein, 2015). College and university leaders hesitate to use digital games at the post-secondary level because of insufficient data on learning outcomes, assessments, and academic performance directly linked to digital game-based interventions (Vandercruysse, Vandewaetere, Cornillie, & Clarebout, 2013). Ding et al. (2017) stated, "due to difficulties in defining, constructing, and measuring complex variables as well as the subsequent results, rigorous empirical research on the effectiveness of gamification in education or game-based learning has been limited" (p. 148). However, technology-savvy students seek an engaging hands-on interactive learning experience that is available in game-based learning. To increase teaching effectiveness, instructors must develop an understanding of the internal structure of digital game design as well as the limitations of technology (Kanthan & Senger, 2011). Research is lacking on the design aspects of digital games and related learning to undergraduate students (Tham & Tham, 2014). The lack of research and comprehension deter the use of digital gaming for instructional purposes.

OCG as a Supplemental Tool for Classroom Engagement: Indications of interest in digital game-based learning are noted in research studies across many disciplines. For example, significant gains over traditional teaching methods for both male and female students were reported when a 3D gam e-based learning system for teaching engineering content was assessed (Su & Cheng, 2013). The display of a positive attitude and engagement were higher for engineering students who used digital games, compared to the engineering students who learned via traditional teaching methods (Boeker, Andel, Vach, & Frankenschmidt, 2013). The use of digital game-based learning resulted in increased cognition for medical students over script-based instruction (Boeker et al., 2013). Digital games often provide a safe environment for students learning a second language thereby reducing anxiety and increasing willingness to communicate which directly affects language learning (Reinders & Wattana, 2015). Alternatively, digital games were not always found to inspire students in higher education. A group of college students in Singapore who were found to possess a high level of intrinsic motivation showed no increase in motivation or engagement due to the use of games (Tham & Tham, 2014). In fact, Singapore students who were unfamiliar with digital games-based learning experienced feelings of apprehension. Further assessments of student learning indicated the continued need to use a combination of lectures with digital teaching (Rondon et al., 2013). Familiarizing students with the technology requires extensive time, which further delays learning. Adjusting for these differences presents challenges for instructors (Holmes & Gee, 2016). Another factor that affects student acceptance of digital games in learning is the mindset of students accustomed to a passive style of learning through the lecture format (Herro & Clark, 2016). What would be the case in our university? This research therefore looks to investigate OCG as a supplemental tool to engage students in classroom instruction and coursework.

Building Learning and Work-Related Skills for Undergraduate Students: Digital games-based learning has been used to increase student retention, build teamwork skills and communication (Bodnar, Anastasio, Enszer, & Burkey, 2016). Furthermore, digital gaming technology provides the option to measure students' progress over extended periods of time due to the prolonged interaction and play with the games. To be effective at the university level, digital games must align with the course content and course objectives (Moylan et al., 2017). When appropriately designed, educational games have been shown to increase student engagement and participation (De-Marcos et al., 2014). Kuo and Chuang (2016) demonstrate the positive

impact of games in an online setting for promoting academic dissemination, effectively achieving the goal of enhancing engagement and motivation. Few studies examined the relationship between digital games and achievement for undergraduate students (Burgess, Stermer, & Burgess, 2012). Additionally, Clark, Tanner-Smith, & Killingsworth (2016) aimed to uncover the impact of a gamified instructional process on student engagement and the correlation between engagement and academic performance within a real classroom setting. The use of OCG as a supplemental tool in online courses has a positive influence on the motivation, academic achievement, and retention of undergraduate students pursuing a degree (Snow, 2016). The use of OCG as supplemental learning aids would promote students' confidence, satisfaction, interest, and effort (Tham & Tham, 2014). Therefore, this research is to investigate the influence of OCG on building learning and work-related skills for undergraduate students.

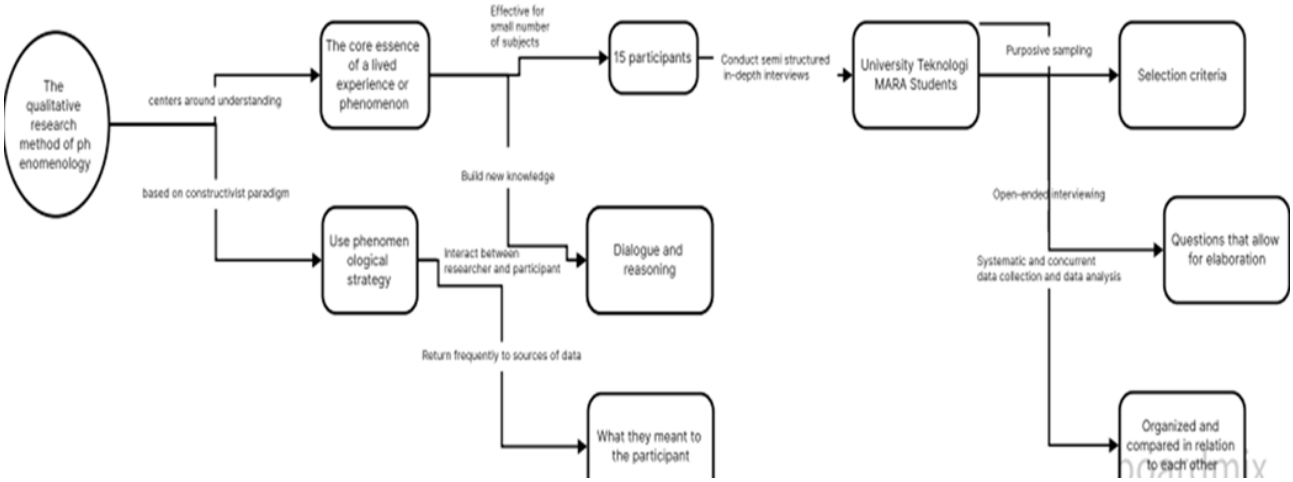
3. Research Methodology

The study will use a qualitative research approach, specifically the phenomenological method. This method is chosen because it's effective at uncovering the significance people attribute to the events they go through (Merriam & Tisdell, 2015). In the context of this study, the aim is to understand how online classroom games affect classroom dynamics and influence students' engagement, motivation for learning, and overall experience. Phenomenology is centered on comprehending the fundamental essence of a lived experience or occurrence. This essence can be sensed or felt by people from different viewpoints (Flood, 2010). The goal of phenomenology is to accurately capture how individuals who were part of the event went through it.

When explaining a phenomenological study, the emphasis is on clarifying the specifics of what individuals underwent and how they experienced it (Creswell & Poth, 2018). This study will follow the constructivist approach as researchers aim to grasp and rebuild the meanings that people, including the researcher, associate with the subject under investigation (Guba & Lincoln, 1994). Constructivist researchers develop knowledge by interacting with participants, utilizing dialogue and reasoning as their main investigation techniques (Guba & Lincoln, 1994). The researcher will then consistently revisit the data sources, seeking to comprehend what these sources meant to the participants and how those meanings align with the researcher's understanding (Rudestam & Newton, 1992).

Thus, for this study, semi-structured in-depth interviews will be conducted with 16 students from 4 programs in the Business and Management faculty. Phenomenology is effective in studying a small number of subjects – in this case, 16 participants – to identify the core of their experiences with the phenomenon and to produce patterns and identify relationships of meaning that build new knowledge (Creswell & Poth, 2018). The qualitative research methods to be used for this study include purposive sampling, open-ended interviewing, and systematic and concurrent data collection and data analysis procedures. Specifically, the grounded theory or constant comparative method (Glaser & Strauss, 1967) will be used to analyze the data and discover the influence of online classroom games on students' engagement, motivation toward learning and students' experience. The diagram below visually depicts the flow of the methodology process.

Figure 1



4. Data Analysis and Results

Analysis occurred in three phases. First, interview transcripts will be reviewed several times, searching for "recurring regularities'' (Merriam & Tisdell, 2015). Then researchers will highlight the quotes and phrases from the interviews that were significant to the study. Using the constant comparative method, the researcher will go back and forth among transcripts until categories emerge that are consistent, yet distinct (Glaser & Strauss, 1967). The researcher will name these categories, code the transcripts, and place sections in labeled folders representing each category (Bogdan & Biklin, 2003). Second, the researcher will bring together the coded interviews and look for relationships within and across the data sources. A table will be developed to compare various coded interviews. As tentative categories emerge, the researcher will test them against the data (Merriam & Tisdell, 2015). Finally, the researcher will integrate and refine the categories until themes solidify (Strauss & Corbin, 1998).

The study expects to find that online classroom games, by their interactive and engaging nature, can foster a deeper understanding of the subject matter, enhance critical thinking skills, and encourage active participation among students. This heightened engagement is likely to translate into better retention of information and improved application of knowledge in assessments and assignments. Furthermore, the study might indicate that the competitive elements inherent in many online classroom games could stimulate students' motivation to excel academically. The gamified learning environment may create a sense of challenge and accomplishment, thus encouraging students to invest more time and effort into their studies, ultimately leading to higher achievement levels. Additionally, the study might reveal that online classroom games have the potential to address various learning styles, allowing students to learn at their own pace and in ways that suit their preferences. This adaptability could contribute to a more comprehensive understanding of the material, potentially resulting in higher grades and overall academic success.

5. Conclusion

As the number of undergraduate students enrolled in higher learning institutions increases, along with the effect of the COVID-19 pandemic, higher learning institutions are pressured to develop effective strategies to not only engage but promote academic success for this population of students online. As a result, the demand for digital games in education for undergraduate students will continue to grow because of their potential role in academic achievement and student engagement.

Although this is a preliminary study, it will be able to make some significant contributions in terms of theory building towards assessing the improvement of quality teaching as well as enhancing students' learning abilities to become lifelong learners. As online classroom games offer a unique opportunity to make learning more enjoyable and immersive, it is expected to allow students to actively participate and take ownership of their education. These games provide instant feedback, personalized challenges, and rewards, which not only motivate students but also foster a sense of accomplishment and self-confidence. In a nutshell, this study is not only to explore student engagement but also helps to develop students' interpersonal skills and self - confidence with the face to face with the lecturers and classmates as it will be conducted in a fun and casual way where students will be more comfortable to participate. It is hoped that educational administrators, policy-makers, instructors, and decision-makers better understand the complex issues surrounding the educational needs of nontraditional students and how digital games support efforts to improve persistence, access, equity, retention, and persistence to obtain a quality education.

Acknowledgement: This research is funded by Universiti Teknologi Mara, Kampus Puncak Alam, file no. 600-TNCPI 5/3/DDF (FPP) (012/2021).

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