USING GAMIFICATION TO ENHANCE ESL LEARNERS' MOTIVATION IN THE SECONDARY SCHOOL CONTEXT

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Abstract

This action research centers around gamification, a relatively recent and promising approach that involves incorporating game concepts into non-game situations to increase motivation. The main purpose of this study is to investigate the impact of using gamification to enhance ESL learners' motivation in the secondary school context. The research design employed is quantitative; whereby the research questions were answered using pre and post-test questionnaires to assess changes in motivation, along with survey questionnaires to explore students' demographics and perceptions related to accomplishment, challenge, competition, guided experience, immersion, playfulness, and social interaction. The key motivational factors investigated include intrinsic motivation, self-determination, self-efficacy, grade motivation, and career motivation. The data collection tools of this study are the Likert-scale structured questionnaires and pre- and post-test questionnaires, which measure motivational variables and how well gamified learning motivated them to learn. There were 55 ESL learners, namely 28 students from Form 1 students and 27 students from Form 2 in a Malaysian secondary school. The purposive sampling technique was utilized to choose the participants, whereby the sample were students who had engaged in ESL learning and had undergone the gamified lessons within a set period. The findings are intended to provide details about effective educational practices and drive future efforts for incorporating gamification into ESL instruction.

Keyword(s): *ESL, gamification, motivation, secondary school*

INTRODUCTION

The process of learning a second language is highly dependent on motivation, and in the case of countries such as Malaysia where English is a second language (ESL), this factor plays a dominant role in the integration of the language. Although the Ministry of Education has made efforts and launched various programs that are aimed at raising the level of proficiency of the English language in students, they have largely served little purpose as most learners still feel demotivated and disheartened in English lessons. In many cases, this lack of motivation is attributed to the belief that English is hard, does not apply in their day-to-day lives, or is not very interesting with its teachers following the traditional mode of teaching which uses textbooks and rote learning as the primary forms of teaching.

To counter these dilemmas, teachers have started to investigate the development of gamification to reinvigorate classroom dynamics. Gamification, or the act of inserting game-like elements, including points, badges and ranks, leaderboards to non-game settings, such as education. Gamification when used to the best of its potential, when done correctly, can yield higher levels of engagement in leaners as well as immediate feedback, which can bring the classroom to form a place where the leaners themselves are eager to contribute actively to the learning process. This is because by mirroring the game conditions, teachers can use the structure to develop a sense of accomplishment and improvement that encompasses the intrinsic motivation involved with students.

Therefore, this present paper aims to investigate gamification in ESL classrooms as one of the methods of developing motivation in ESL learners. To fulfill these aims, a research question needs to be addressed: (1) What is the impact of gamification on students' motivation levels in the classroom? (2) How do student's demographics, such as gender, age, proficiency level, or prior gaming experience affect the effectiveness of gamification in promoting motivation?

LITERATURE REVIEW

Gamification in education settings has been well discussed, especially when it comes to this strategy increasing student engagement and motivation. This research is informed by two theoretical backgrounds, which are the Self-Determination Theory (SDT) and self-Efficacy Theory. Based on SDT, learners feel more motivated when their needs in terms of autonomy, competence, and relatedness are satisfied (Deci & Ryan, 2013). Autonomy is associated with the feeling that one is in control of his or her learning; competence means feeling capable and being effective; and relatedness means feeling connected to other people. In the meantime, Self-Efficacy Theory (Bandura, 1972) implies that there is a direct correlation between the belief of people in their capability to attain success and motivation as well as performance.

Gamification also fits in both theories by providing an agency to learners through competent challenges, providing progressively ramped-up challenges to promote a sense of accomplishment, and with peers through tasks promoting competition and collaboration. Werbach and Hunter (2015) also explicate that effective gamification is dependent on mediating the three levels of design, namely, mechanics (rules, scoring systems), dynamics (emotions, behavior), and components (badges, points, leaderboards). Gamification has usefully helped with increasing vocabulary acquisition in the ESL context (Nordin et al., 2024), with encouraging participation and lowering the anxiety levels by creating a more casual atmosphere of a game in a classroom.
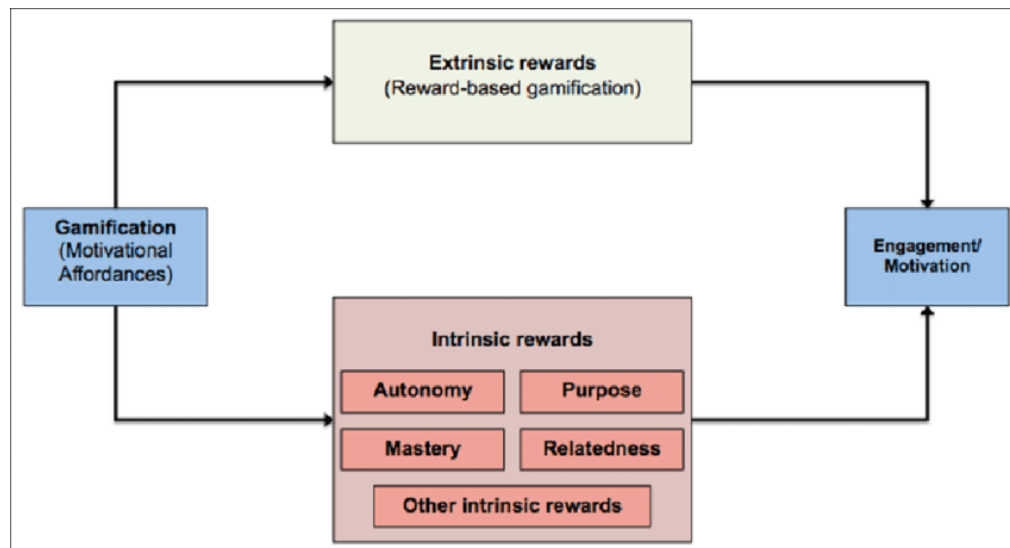
Figure 1: Motivation and engagement conceptual model (adapted from Hassan and Hamari, 2017)

The factors that may also affect the way the learners respond to the gamified instruction include demographic variables such as age, gender, prior experience with gaming, and feelings of confidence in using English. Bai et al. (2020) also reported that previous experience in gaming relative case, whereas the fact that game-based tasks were a safe environment without causing participants to feel threatened contributed to the success of other students with low self-confidence.

METHODOLOGY

This action research was done under the quantitative pre-test and post-test design, coupled with a perception survey. A total of 55 students from a private secondary school in Kota Kinabalu, Sabah were the participants. There were 31 males and 24 females that constituted the sample size, which was selected by purposive sampling because of their enrolment with their students in Form 1 and Form 2 of the ESL classes. The participants represented mixed proficiency and varied backgrounds, and they had different confidence in using English and experience in gaming elements. Next, the measures used were a motivation questionnaire, which was applied pre-test before and post-test after the intervention, comprising 23 items that would help to assess the levels of intrinsic and extrinsic motivation based on a 5-points and 4-points Likert development. A perception survey was also implemented to check the experience and attitudes of the learners towards gamification, specifically experience-based on enjoyment, autonomy, and competence.

The duration of the intervention was 1 week. In the initial day, a pre-test was carried out. During the four days, gamified ESL lessons were used, which included points, badges, quests, and leaderboards in classroom activities. During the last day of the week, students completed the post-test and perception survey.

Demographic Factor	Categories	Frequency
Gender	Male	31
	Female	24
Gaming Experience	Yes	55
	No	0
Confidence	High	37
	Moderate/Low	18

Table 2: Demographic distribution of the participants.

To maintain validity and reliability, two modified scales were used in this research. The motivation questionnaire administered in pre-, and post-test was modified in accordance with the validated questionnaire developed by and Deterding (2011), which was initially developed to assess the motivational constructs within gamified learning environments. This questionnaire was comprised of 23 items measured across the 5-points Likert scale with questions that had been modified to become linguistically clear and contextually relevant to the Malaysian secondary ESL learners. The reliability test showed that Cronbach's Alpha was 0.838 and Cronbach's Alpha in standardized items was 0.845 that showed high internal consistency. The validity of instruments was demonstrated by all the 23 questionnaire items correlating significantly and positively (0.01 and 0.05)

SPSS was used to analyse the data. The statistical significance of the differences between the pre- and post-test scores was tested with the use of paired-sample t-test. The validity of the construction was based on Pearson correlations, and Cronbach alpha was used to check the internal of construct. Descriptive statistics were employed to summarize the demographics of the participants whereas inferential statistics were employed to test the research hypothesis. Paired-sample t-test were performed to compare the motivation scores on the pre-test and post-test, which provides an opportunity to evaluate the significance and direction of change in the level of motivation concerning the gamified intervention.

The study performed an analysis based on the data through IBM SPSS. To assess internal consistency, item validity, and efficacy of a gamified intervention, descriptive statistics and Pearson product-moment correlation coefficients, paired-sample t-tests were utilized. These tests have been chosen to check the issue of whether there was a high difference in the motivation of learners before and after implementing the gamified ESL lessons.

Several strategies were used to make the analysis process more credible and reliable. Cronbach alpha test of reliability was used to test the internal consistency of motivation questionnaire. Moreover, the Pearson correlations were used to make sure that every item made a significant contribution to the construction under consideration. Though the research involved self-reports tools, anonymity was congregated to diminish the social desirability bias. There was also variability reduced through the repeated measures design where the same participants were used in the pre-tests as well as the post-tests. Although no qualitative triangulation was employed (because of the quantitative nature of the study), establishment and validation of the instruments used in the study and proper use of statistical procedures facilitated the strength of the results.

FINDINGS & DISCUSSION

The results provided in this study highlight the possibility of gamification in enhancing motivation of ESL students. The finding that the motivation scores improved immensely following the intervention concurs with the Self-Determination Theory, whereby the game elements satisfy the psychological needs of the learners in terms of autonomy, competence, and relatedness. Based on the study, one of the insights is also the importance of having game mechanics in language learning as recommended by Werbach and Hunter (2015). Moreover, the results also demonstrate the students reacted positively towards gamification, which implies the fact that they felt more engaged and willing to take part in classroom activities. The gamified learning made them feel connected to their peers during the gamified activities as if they were engaging in an enjoyable competition to become better. To most students, these experiences were like the gaming experiences that they had already been exposed to, and as such, the learning process was much easier to relate with and hence enjoyable. Next, the role of demographic variables also shows the significance of individual gamification. Gamified learning was accepted by students who are more confident and experienced in gaming. This observation aligns with the previous studies conducted by Bai et al. (2020) that stressed building games in line with the particularities of a querying learner.

The results of the current research validate the practicality of gamification as a means of increasing the motivation of ESL students. The questionnaire of the pre- and post-test motivation, based on Conradty and Bogner (2022), were modified to measure intrinsic and extrinsic components of motivation. These were adapted to the Malaysian secondary ESL contextual and culturally, and the 23 items were answered using a 5-point Likert scale administered to students. Internal consistency reliability was achieved by Cronbach alpha test results having an alpha of 0.838 for both pre- and post-test which has a high alpha. Additional validation was achieved using Pearson product-moment correlation analysis, which proved that all the items were significantly correlated with each other ($p < 0.05$) and that, therefore, they contribute to the construction that is being measured.

In the perception questionnaire, scale items were modified to be based on the Gameful Experience Questionnaire (GAMEFULQUEST), created by Högberg et al. (2019), which is used to determine the perceived gamification elements of a system. Adjustments were made to make them reflect the classroom experiences instead of computer interfaces without losing relevance as to the major constructions including enjoyment, autonomy, and social connectedness. Also, reliability checks on this instrument provided an acceptable internal consistency (Cronbach alpha = 0.780) indicating that this instrument is appropriate in measuring perceptions of a student in gamified instructions.

Paired Sample T-Test

Paired sample t-test was used to find out a statistically significant difference in the motivation of learning before and after gamified intervention. The test involved pre-test mean and post-test mean within 23 items of motivation.

Item	Time	M	SD
Q1	Pre-test	3.41	1.190
	Post-test	4.50	0.505
Q2	Pre-test	3.05	1.079
	Post-test	4.42	0.498
Q3	Pre-test	3.22	1.083
	Post-test	4.53	0.504
Q4	Pre-test	3.71	0.896
	Post-test	4.65	0.480
Q5	Pre-test	3.31	1.069
	Post-test	4.51	0.505
Q6	Pre-test	3.87	1.156
	Post-test	4.55	0.503
Q7	Pre-test	3.73	1.008
	Post-test	4.55	0.503
Q8	Pre-test	3.76	0.962
	Post-test	4.53	0.504
Q9	Pre-test	3.40	1.065
	Post-test	4.49	0.505
Q10	Pre-test	3.71	0.809
	Post-test	4.58	0.498
Q11	Pre-test	3.91	1.093
	Post-test	4.64	0.557
Q12	Pre-test	4.27	0.849
	Post-test	4.76	0.429
Q13	Pre-test	4.42	0.762
	Post-test	4.78	0.417
Q14	Pre-test	4.29	0.832
	Post-test	4.78	0.417
Q15	Pre-test	3.78	0.994
	Post-test	4.67	0.474
Q16	Pre-test	4.38	0.733
	Post-test	4.71	0.458
Q17	Pre-test	4.18	0.841
	Post-test	4.69	0.466
Q18	Pre-test	3.96	0.999
	Post-test	4.55	0.503
Q19	Pre-test	4.02	0.913
	Post-test	4.62	0.490
Q20	Pre-test	4.35	0.673
	Post-test	4.62	0.490
Q21	Pre-test	4.27	0.781
	Post-test	4.60	0.494
Q22	Pre-test	4.13	0.904
	Post-test	4.62	0.490
Q23	Pre-test	4.24	0.816
	Post-test	4.75	0.440

Table 2: Illustrates the increase in motivation scores from pre-test to post-test

There was a regular progression of scores of the motivation in the pre-test and the post-test of all items. An example of this is Item Q1 that showed an increase in its mean of 3.41 (SD = 1.190) in the pre-test to 4.50 (SD= 0.505) in the post-test. Item Q2 increased to 4.42 (SD = 0.498) with a starting value of 3.05 (SD = 1.079) and that of Item Q3 to 4.53 (SD = 0.504) with a basal value of 322 (SD = 1.083). Likewise, Item Q12 to Q 23, which already had relatively high scores in pre-tests, also displayed noticeable changes in post-test results with Q13 rising to 4.78 (SD=0.417), and Q23 to 4.75 (SD=0.440) in post-test results.

The general trend shows that after the gamified English as a Second Language lessons, the motivation of students has greatly increased. The mean for all 23 questions increased as well as the lower standard deviations of the post-test indicate that the level of agreement on the success of higher student motivation was more consistent among the students.

These outcomes indicate the efficacy of gamification in enhancing Motivation of learners and high level of compliance with the theoretical propositions of Self-Determination Theory- mainly the gratification of autonomy, competence, and relatedness needs by the gamified classroom environments.

Descriptive Analysis

Table 3 shows a descriptive statistic for 29 items "Perception Questionnaire". Each item was measured on a 4-point Likert scale and collected 55 student responses.

The mean scores between all items were between 2.85 and 3.36, which is very high, and most participants were motivated to gamified learning environment. The lowest mean was Q6 (M = 2.85, SD = 0.756) and the highest mean was Q26 (M = 3.36, SD = 0.778). The mean was above 3.0 in most of the items, which can be interpreted as positive tendency to motivational elements of gamified learning experience. Furthermore, the minimum standard deviations were 0.663 with the maximum standard deviations being 0.845, indicating a moderate consistency in responses. None of the values were out of extreme range which presents some stability concerning the answers of students.

This evidence indicates that overall students also found motivation in the gamified learning activities, though some items (Q6 and Q18) were a bit lower and may indicate the fields where gamification method can be enhanced or explained better.

Question No.	Statement	N	Mean	SD
Q1	I feel the need to complete tasks during gamified activities	55	3.27	0.679
Q2	Gamified tasks push me to improve my performance	55	2.96	0.693
Q3	I feel motivated to achieve my goals during gamified lessons	55	3.27	0.679
Q4	Gamification helps me set clear goals in learning English	55	3.04	0.693
Q5	I strive to reach higher levels when I succeed in a gamified task	55	3.11	0.809
Q6	Gamified tasks make me push my limits	55	2.85	0.756
Q7	I feel positively pressured to do my best	55	3.16	0.788
Q8	I am motivated to overcome difficult tasks during gamified learning	55	3.16	0.788
Q9	Gamification makes me work near the best of my ability	55	2.95	0.731
Q10	Gamified lessons feel like a competition	55	3.13	0.818
Q11	I am motivated to win or be the best	55	3.09	0.845
Q12	Competing with others increases my motivation to participate	55	3.07	0.766
Q13	Winning in a game-like task makes me feel successful	55	3.16	0.764
Q14	I feel guided during gamified learning	55	3.24	0.744
Q15	I know what I need to do to improve	55	2.95	0.803
Q16	I receive helpful feedback during gamified activities	55	3.25	0.821
Q17	Gamified tasks help me stay on the right learning track	55	3.02	0.782
Q18	I lose track of time during gamified learning	55	2.87	0.840
Q19	I feel fully focused when doing gamified tasks	55	3.15	0.731
Q20	I get emotionally involved in gamified lessons	55	3.02	0.805
Q21	Gamification helps me forget distractions and focus	55	3.04	0.744
Q22	Gamified tasks feel playful and fun	55	3.27	0.757
Q23	I can be spontaneous and imaginative	55	3.31	0.663
Q24	I enjoy exploring and discover new things in gamified lessons	55	3.24	0.744
Q25	Gamification sparks my curiosity in learning English	55	3.05	0.826
Q26	I feel more connected to others during gamified activities	55	3.36	0.778
Q27	I receive support or encouragement from peers	55	3.18	0.796
Q28	I feel socially involved when learning through gamification	55	3.27	0.757
Q29	I feel noticed for my achievements in gamification	55	3.25	0.775

Table 3: Descriptive Analysis (Q1-Q29)

The results of this research support the principles of Self-Determination Theory and Self-Efficacy Theory. When students attended gamified ESL lessons, there was a declared statistically significant rise in their motivation, which went in line with the idea presented by Deci and Ryan

(2013) that learners tend to be significantly more intrinsically motivated when the needs tend to be significantly more intrinsically motivated when the needs of autonomy, competence, and relatedness are satisfied. On the same note, the results conform to the Self-Efficacy Theory by Bandura (1972), in which gamified activities were used to enable students to develop confidence about their English proficiency. These findings reflect the studies discussed by Nordin et al. (2024) have revealed that gamification positively affects the level of engagement and decreases anxiety in language instruction. Nevertheless, the present research contributes variability to the existing gap filling in the research by observing the impact of demographic variables including gaming experience and self-confidence and emphasizing their role in mediating motivational outcomes in gamified environment.

The study recognizes several limitations even though it has reported favorable results. To begin with, the study was narrowed down to specific private secondary school in Sabah, and thus the overall results cannot be perceived as a full interpretation. Secondly, it can be considered that a relatively short intervention period of one week was not enough to monitor long-term motivational changes or language proficiency improvement. Thirdly, the study utilized only individual reports that may be subjected to social desirability limitation. For future studies, the researchers are advised to add a broader range of sample schools in various regions and types of schools to overcome these limitations. Longitudinal research may be used to gain an idea of the long-term effect of gamification on motivation and learning performance. The study can also be designed as a mixed-methods project where quantitative surveys (questionnaires) would help to triangulate the results of the qualitative interviews or focus groups on gamified instruction and the experience of learners using gamified instruction. Also, researchers may want to incorporate online gamification platforms and mobile applications to expand the reach of these interventions and their interactivity.

CONCLUSION

The present research paper examined how the concept of gamification affected the motivation of ESL learners in the Malaysian secondary school setting. The findings indicated that the gamified teaching methodology had a profound positive impact on intrinsic and extrinsic motivation. Upon observing students after their completion of gamified lessons, students showed an improvement of scores on motivation. The points, badges, and leaderboards kept the environment conducive to promoting the aspect of autonomy, competence, and engagement, which are constituents of the Self-Determination Theory. Students also reported positive reaction to the gamified experience as they had more enjoyment in the process and felt more confident when the process involved learning English in it.

These results confirm the goals of the research by demonstrating that gamification is practical and acceptable step towards enhancing ESL motivation. Demographic factors like the experience of playing games and self-confidence also contributed to shaping the responses among learners, which would be worthy of the study.

In general, this study proposes that gamification may be used to transform ESL classrooms into more engaging and student-centered classes. Gamified approaches can positively influence motivation and affect enjoyment in language learning when created properly. The study motivates students to use gamification in their teaching methodology and proposes teacher training programs to train the educators that would help them during implementation.

To summarize it all, it can be stated that gamification can be used as a strategy of boosting the motivation of ESL students in the Malaysian secondary school environment. With psychological

needs being fulfilled and the application of gamified teaching into ESL classrooms requires the implementation of professional development programs that would teach teachers about how to design gamification.

Ethics Statement

This study was conducted following ethical guidelines. The Faculty of Education and Sports Studies issued an official notification letter to the school participating in the research and the school administration gave approval to carry out the research. The participation was voluntary, informed consent was taken, and the data was kept confidential throughout the study.

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