

'Tense Up?': A Collaborative Gamification Approach in Enhancing Lower Secondary Students' Utilisation of English Tenses

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Abstract

Grammar is one of the main building blocks of the English language and it comes with a multitude of elements which include tenses. In Malaysia, English is taught as a second language with attention given to all four language skills while grammar is a common component appearing in most of the Textbook units. However, students are still struggling to understand tenses and to use them accurately. Due to this, 'Tense Up?' has been designed to encourage a deeper understanding of tenses and a higher accuracy of its usage. It is gamification with collaborative elements aimed towards lower secondary school students. This paper aims to investigate tenses mastery via collaborative gamification towards lower form secondary school students by utilising the design and development research. Participants were chosen through purposive sampling, and data was collected from 31 Form 2 students from a sub-urban secondary school in Selangor through the use of a pre-test and post-test, survey questionnaire, and interview. Findings show that 'Tense Up?' improves students' tenses utilisation while allowing them to participate in a competitive, collaborative, and enjoyable gamified lesson. This research is hoped to provide an insight for educational stakeholders into how a collaborative gamification approach improves tenses mastery among lower secondary school students.

Keywords: English Language Teaching and Learning, Grammar Skills, Educational Gamification, ESL Learners, Education.

Introduction

Grammar is a vital component in the English language and its accurate use in any English user is crucial for comprehensibility and coherency. As one of the grammar components, tenses are regarded as a difficult area to master for some English learners (Nicoladis et al., 2020; Stosic, 2019). Due to this, initiatives have been done by multiple educational stakeholders to

aid the teaching and learning of tenses. One such initiative is gamification that has been said to be motivating (Hong et al., 2022) and effective in increasing academic achievement (Turula, 2021). Furthermore, the use of game-related teaching strategies for grammar is said to be a beneficial “visualisation mechanism” for students to see their learning in a clearer depiction as opposed to traditional methods (Purgina et al., 2019). Although tenses might be challenging to learn, this difficulty may be alleviated through gamification.

In Malaysia, English is regarded as a second language and is one of the compulsory subjects to be taken by schoolchildren from primary to secondary schooling. Grammar teaching and learning is outlined in the nation’s English Language Education Reform Roadmap (Ministry of Education Malaysia, 2015) with the focus being on revamping the current curriculum and methods used in lesson delivery. Where educational gamification is concerned, there have not been any governmental policies related to it. However, Zainal and Zainuddin (2020) stated that there have been many digital education initiatives made by the government, with varying success. In due time, it might be a possibility to see attempts made at a national level gamification-based education policies.

Based on the multitude of strategies, research, and policies concerning grammar education, it cannot be denied how the subject matter is crucial for English language learners. However, Malaysian students often face difficulties in learning the English language, particularly the grammar component (Idris et al., 2020; Hashim et al., 2019). Tenses comprise one of the main components of English grammar and an inability to master it will result in numerous language errors throughout the language acquisition process. Therefore, this issue should be remediated through effective teaching and learning strategies, one of which is collaborative gamification which will be the main focus of this research. The sole objective of this research is to investigate the usefulness of collaborative gamification (Tense Up?) in assisting lower form secondary school students to accurately utilise English tenses. The research questions are as follows

- 1) Does the use of collaborative gamification (Tense Up?) assists lower form secondary school students in accurately utilising English tenses?
- 2) What are lower form secondary school students’ perceptions on a collaborative gamification approach to enhance English tenses utilisation?

Literature Review

English Teaching and Learning of Grammar

The teaching and learning of grammar is crucial to ensure English learners are aware of how to use the language properly. Generally, grammar is taught in order for students to obtain an understanding of the structure of the English language (Rao, 2019) but in Malaysia, grammar is taught and learned as a way to gain economic and social mobility (Leng et al., 2021). Even in the nation’s Education Blueprint 2013-2025 (Ministry of Education Malaysia, 2013) and the English Language Education Reform Roadmap (Ministry of Education Malaysia, 2015), a lot of emphasis is placed on students to learn English in order to gain better employment prospects. However, the teaching and learning of grammar in Malaysia comes with challenges of its own. This includes the poor grammatical competence of Malaysian students (Hamid et al., 2022; Sarangapani & Hashim, 2022) and a sociolinguistic-related issue such as an inability to choose an appropriate form for spoken grammar purposes (Ruivivar, 2022). Furthermore, the Malaysian education syllabus focuses more on the four skills of English, namely, reading, writing, listening, and speaking, rather than on grammar (Leng et al., 2021).

Besides the challenges existing in the teaching and learning of grammar, there are many recent developments in the field that have the potential to mitigate the issues. There have been numerous studies conducted on how gamification affects grammar learning with positive results obtained from each study (Almufareh, 2021; Ardi & Rianita, 2022; Turula, 2021). Virtual-reality has also been incorporated into grammar lessons resulting in better accuracy in grammar use (Ma, 2021; Wu & Hung, 2022) and higher enjoyability during the learning process (Sato et al., 2019). There has recently been a shift from traditional face-to-face lessons to a higher use of e-learning for grammar lessons and most research conducted on it have proven that it is beneficial and effective in increasing students' grammar competence (Roh & Kim, 2019; Wach et al., 2022; Windsor, 2021). Although there remain challenges in the teaching and learning of grammar, modern and effective developments in the field might mitigate the issues that exist.

Collaborative Learning in English Education

Collaborative learning is deemed as an effective educational strategy that can benefit students in learning the English language in various ways (Aruchelvan et al., 2019; Rajendran & Yunus, 2021; Rusli et al., 2019). This approach begins with recognising the gaps in the students' knowledge and offers them the chance to work together to fill those gaps, which will help them to come to a shared understanding (Saito et al., 2021). Students in a collaborative learning setting serve as one another's learning resources by exchanging ideas, brainstorm possibilities, and coming to conclusions together (Leeuwen & Janssen, 2018). It helps them to develop strong thoughts and ideas through group work where they may access additional resources and knowledge, thereby improving their learning performance (Qureshi et al., 2021). This significantly emphasises the use of collaborative learning as a strategic pedagogical approach that gives students a better opportunity to be the key player in acquiring knowledge actively and independently (Bravo et al., 2018).

By highlighting the benefits of group work, collaborative learning also encouraged the growth of communication and interpersonal skills in the students while strengthening their motivational role (Abdullah et al., 2018). L2 students are motivated and more self-assured as a result of the productive interaction and teamwork, which inspires them to learn English more proactively and compassionately (Yacob & Yunus, 2019). This positive social practices of collaboration among students may as well enhance the participation of passive students in the class (Qureshi et al., 2021; Tanggapan, 2018), and gives them the opportunity to engage with the lesson and their peers (Aruchelvan et al., 2019). With the opportunity to work together and engage in group discussions actively, it can help these students to improve their academic progress and communication skills, thus reducing the gaps between students in the class (Supena et al., 2021).

Gamified Learning in English Education

Gamified learning has gained proliferating popularity in the educational context and has significantly contributed to the shift of a traditional classroom into an engaging learner-centred classroom. With the help of technological advancement, gamified learning will not only be beneficial for students but also for educators to equip themselves with the best pedagogies and newest teaching methods (Fithriani, 2021). It also has become more relevant, especially to adhere to the needs of younger generations that grow up with technology (Hashim, 2018; Wichadee & Pattanapichet, 2018). Regarding the potential benefits of gamified learning, the key features that gamification has to offer such as competition, real-

time feedback and interaction as well as 2D simulated words enhanced students' motivation and engagement rather than the old chalk-and-talk method (Zou et al., 2019).

In addition, many past studies have been conducted to investigate its diverse effectiveness on English education. These studies reported that gamification stimulates learning and alters students' learning experiences from tedious learning into an engaging and fun lessons (Fithriani, 2021; Kingsley & Grabner-Hagen, 2018; Wichadee & Pattanapichet, 2018), encouraging and motivating students to learn (Korlu & Mede, 2018; Reynolds & Taylor, 2020) as well as students obtaining better results while experiencing the sense of competition-driven features in gamification such as ranking and prizes (Hashim et al., 2018; Wichadee & Pattanapichet, 2018). Within the context of grammar learning in digital environments, previous studies have reported positive findings towards students' learning experiences and achievement, thus, improving students' grammar skills (Dehghanzadeh et al., 2021; Hashim et al., 2019; Turula, 2021).

Methodology

This study employed design and development research which integrated collaborative gamification elements. In understanding the necessity for this study, a need analysis was conducted where 3 experienced English teachers were interviewed. It was found that despite being introduced to tenses since primary school, many lower form students still struggle to practise the accurate usage of tenses, particularly in writing and reading exercises. In addressing this issue, a collaborative educational game was designed and developed using Google Slides with the implementation of hyperlinks, animation, points, levels, competition, scoreboard, rewards and chance card elements. There are 30 grammar tenses questions (level 1: 12 questions; level 2: 12 questions; level 3: 6 questions) and 7 chance cards designed in this game. The theme employed in this game is 'Travelling across the world' where students can choose their destination by clicking on the flag and answering the grammar tenses question related to the respective country chosen. The design and questions used in the game were validated by 2 experts in the TESL field, where amendments were made based on the feedback received. Figures below show the finalised design of 'Tense Up' developed by the researchers.



Figure 1: Level page



Figure 2: Flags page

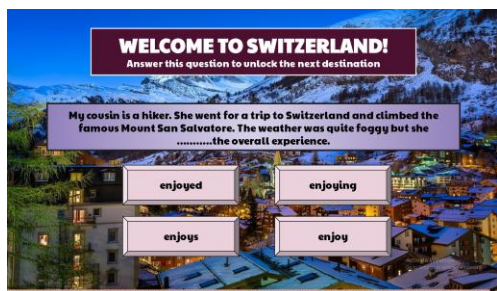


Figure 3: Sample question

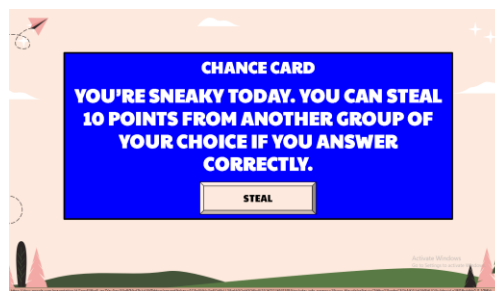


Figure 4: Chance card

For the implementation phase, 31 lower form students from a secondary school in Selangor were chosen as the participants through purposive sampling where they were first given a pre-test with 20 multiple choice questions. All of the students were divided into groups of 5 and three interventions were then executed which included a tenses revision session, 'Tense Up?' collaborative games in three different levels, and a collaborative discussion session as shown in figure 5 and 6. Following the third intervention, a post-test with 20 multiple choice questions was administered. The data obtained from the test were triangulated with a survey questionnaire and semi-structured interview in evaluating the usefulness of 'Tense Up?' collaborative gamification intervention. The survey questionnaire consisted of 6 questions which gathered data pertaining to the students' perceptions towards 'Tense Up?' using a 4-point Likert scale ranging from strongly disagree to strongly agree. A brief interview was also conducted with three students with the highest improvement based on the pre-test and post-test score to explore their perceptions towards the game extensively. The quantitative data were analysed using the Statistical Package for Social Sciences (SPSS) version 28, meanwhile, the qualitative data were transcribed and analysed using thematic analysis.



Figure 5: 'Tense Up?' implementation



Figure 6: Group discussion

Findings and Discussion

Pre-test and Post-test

This research aimed to investigate the usefulness of collaborative gamification in assisting lower form secondary school students' usage of English tenses. A paired sample T- test was conducted in determining the differences between the pre-test and post-test score after the collaborative gamification intervention. Table 1 depicts the mean scores and standard deviation for pre-test (M= 10.87, SD= 3.471) and post-test (M=13.90, SD= 3.350) which shows an improvement in the students' scores generally after participating in the 'Tense Up?' game.

Table 1

Paired samples statistics for pre-test and post-test

		Paired Samples Statistics			
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test score	10.87	31	3.471	.623
	Post-test score	13.90	31	3.350	.602

Based on the results shown in Table 2 below, the improvement in the students' score reported a mean difference of 3.032 with the standard deviation of 1.906. The result depicts that there exists a statistically positive significant difference between the score of the students before and after the collaborative gamification intervention with $p < 0.01$.

Table 2

Paired samples test for pre-test and post-test

		Paired Samples Test							Significance	
		Paired Differences			95% Confidence Interval of the Difference		t	df	One-Sided p	Two-Sided p
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper				
Pair 1	Pre-test score - Post-test score	-3.032	1.906	.342	-3.731	-2.333	-8.858	30	<.001	<.001

Table 3 presents the paired sample effect size for pre-test and post-test during the collaborative gamification intervention. Effect sizes were categorised by Cohen (1988) as being small ($d = 0.2$), medium ($d = 0.5$), and large ($d \geq 0.8$). The table below shows a large effect size ($d = 1.906$) where Cohen's d value reported is above 0.8. This demonstrates the usefulness of 'Tense Up?' game in enhancing lower form secondary school students' English tenses mastery.

Table 3

Paired samples effect size for pre-test and post-test

		Paired Samples Effect Sizes				
		Standardizer ^a	Point Estimate	95% Confidence Interval		
				Lower	Upper	
Pair 1	Pre-test score - Post-test score	Cohen's d	1.906	-1.591	-2.118	-1.052
		Hedges' correction	1.955	-1.551	-2.065	-1.025

The positive results from the pre-test and post-test scores analysed using paired sample T-test proved that the implementation of 'Tense Up' using a collaborative gamification approach is effective in enhancing lower form students' understanding of the usage of English tenses. The findings from this study support the claim by Qureshi et al. (2021) which viewed collaborative approach as beneficial in enriching students' performance in learning as students may access additional resources and knowledge by collaborating with their peers. The elements of gamification embedded in this game is also proven to be effective in the context of this study, thus supporting the previous studies which highlighted the benefits of gamified learning in enhancing students' grammar skills and overall academic progression (Dehghanzadeh et al., 2021; Hashim et al., 2019; Turula, 2021). Therefore, the findings of this study highlighted the significant influence of 'Tense Up' with the integration of collaborative and gamified learning

elements which is deemed as effective in improving students' performance for grammar tenses learning.

Survey

In order to examine students' perceptions towards the 'Tense Up?' game, a survey questionnaire consisting of 6 questions was gathered at the end of the session using a 4-point Likert scale ranging from strongly disagree to strongly agree. The result indicated that the lower the mean score, the more they lean towards strongly agree. The positive and negative items for students' perceptions were identified where the mean score that is below 2 (out of four Likert scales) indicates a positive perception towards the item. Meanwhile, the mean score that is above 2 (out of four Likert scales) indicates negative perceptions towards the item.

Table 4

Students' perceptions of 'Tense Up?'

		Statistics					
		Understanding	Participation	Motivation	Engagement	Design and Presentation	Teamwork and Interaction
N	Valid	31	31	31	31	31	31
	Missing	0	0	0	0	0	0
Mean		1.58	1.77	1.65	1.48	1.39	1.52

Table 4 depicted the results from the survey of students' perceptions towards the use of 'Tense Up?' game. According to the table, students expressed the highest positive views towards the design and presentation of the game with the lowest mean score being 1.39. It was also found that engagement in the game had the second lowest mean (Mean= 1.48). Therefore, this shows that both of the findings are in line with Zou et al (2021) and Aruchelvan et al (2019), which emphasised that interesting features of gamified learning and positive collaboration will give students the opportunity to engage with the lesson and their peers. Plus, students responded positively towards teamwork and interaction in the 'Tense Up' game as it came third as shown in Table 4 with a 1.52 mean score. The students also perceived motivation positively throughout the game with a mean score of 1.65. These two findings supported past research where students are confident and motivated to learn due to the result of the effective interaction and teamwork through collaborative gamification (Korlu & Mede, 2018; Reynolds & Taylor, 2020; Yaccob & Yunus, 2019). Moreover, this supports the claim by Abdullah et al (2018) that collaborative learning will strengthen students' motivational roles. Based on the findings, it can also be seen that the students positively agree that 'Tense Up?' help them to understand better with a mean score (Mean= 1.58). As shown in Table 4, the students also perceived positive perceptions towards the use of 'Tense Up?' in facilitating their participation where the mean score recorded is 1.77. These two findings support the claim that the integration of collaborative and gamified learning facilitates students' participation in exchanging knowledge, thus helping students to improve their academic achievement (Saito et al., 2021; Tanggapan, 2018; Qureshi et al., 2021).

Interview

A brief interview consisting of five open-ended questions were conducted with three of the

students who obtained the best improvement in the post-test as opposed to the initial pre-test. The questions were centred around the students' opinions of which features of 'Tense-Up?' that help the students learn grammar, which were their favourite feature, their interest in the game, and what they think of the gamification element in learning tenses along with the collaborative aspect of the game. It was found that the students highly enjoyed their learning experience with 'Tense-Up?' and among the most common reasons is that they find the competitive aspect of the game to be highly motivating. Regarding the competition element in the game, a student (P3) reported, *"The competition will boost our morale and motivation to study more."* This supported past literature that emphasised on the competitive aspects of gamification that can boost students' motivation (Korlu & Mede, 2018; Reynolds & Taylor, 2020; Zou et al., 2019). Another (P2), stated that they liked the points feature in the game because *"I can get more marks if I get the answer right especially with the chance card and be competitive towards other teams."* A few other features of the game that were enjoyed by the students are the chance cards and animation (P1), along with the different difficulty levels (P2).

The students also favoured the collaborative part of the game. P2 claimed, *"I think working together with my peers helps me in learning grammar tenses better because I can learn some grammar that I didn't know before from them."* while P1 stated that they liked working together with their peers because *"We can discuss and state different opinions that can give us the conclusion at the end."* These findings aligned with Aruchelvan et al (2019) who stated that collaborative lessons allow students the chance to interact not only with the subject matter but also with their peers. When questioned on whether or not they think the game is interesting, all three students were in agreement that it was. Two of the students mentioned that the 'travelling across the world' theme used in the game was appealing and one (P3) reported *"It is interesting because the game gave me a lot of knowledge and fun practice about how to use grammar correctly."* The students claimed that the gamification aspect of their grammar learning was fun. The reasons given were, *"We can have better social engagement in the lesson between our classmates."* (P1), and, *"The element of gamification is cool and makes it easy for us to learn."* (P3). P2 mentioned that, *"For me gamification is very effective and interesting for learning grammar, especially for slow learners or students who have a problem of not remembering a lesson."* These are in line with past studies who concluded that gamified learning enables students to lean on each other for support (Leeuwen & Janssen, 2018) while providing an enjoyable learning environment (Fithriani, 2021; Kingsley & Grabner-Hagen, 2018).

Conclusion

The findings of the study significantly revealed that the lower-form secondary school students have positive perceptions towards the use of collaborative gamification which is the 'Tense Up?' game. Also, the positive results from the interview as well as the pre-test and post-test scores analysis proved that the implementation of 'Tense Up?' enhanced students' understanding of the usage of English tenses effectively while allowing them to participate in a competitive, collaborative, and enjoyable gamified lesson. This indicates the usefulness of collaborative gamified learning like 'Tense Up?' which positively correlates with its benefits even when learning any content that is considered difficult or tedious such as grammar.

This research has added value in providing insight for educational stakeholders into how a collaborative gamification intervention improves tenses mastery among lower secondary school students. For teachers, the integration of gamified learning in teaching ESL grammar

may help to alter students' learning experiences from traditional classrooms to an engaging learner-centred environment. For instance, the 'Tense Up' game gives more opportunities to collaborate and at the same time to have healthy competition among students. As for ESL learners, it is advisable to gain more knowledge by exploring game-based learning applications in order to improve their English language proficiency.

Other than that, this paper recommends future research to investigate further different types of game-based learning towards students' learning achievement, especially in learning grammar. Next, future studies should explore the features and design that Google Slides offers, where it could highly be useful to develop new and free game-based learning. This suggestion could help teachers to produce interesting teaching materials and require no cost to cater to different levels of learners. Finally, further research should involve a larger number of students, which is also the limitation of this study, that have different levels of proficiency to gather more detailed information and statistics.

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