Gamification and Young Learners:
A Comparative Study to Gain Insights on ESL Learners Aged Five to Twelve

by

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Abstract

Gamification has been growing in popularity in recent decades, especially among pedagogical communities. It has been well documented that there are benefits to using gamification techniques within an ESL classroom. To date, however, there is no research investigating the effects of gamification in comparison to slide-based presentations when teaching young learners. This study aims to investigate the effect of gamification pedagogical methods in contrast with a slide-show presentation in ESL classrooms and online lessons for young learners. In this study, 24 children between the ages of five to twelve years undertake a cloze test as means of a pre-treatment data collection and then receive one of four treatments based on presentation-based lessons or gamification-based lessons.

This study discusses theories regarding pedagogical practices for teaching young learners and delves into understanding their feelings about the ESL lessons they receive. The literature review investigates topics involving cognitive development and how to choose appropriate material to teach to students aged five to twelve. To collect further data after receiving the treatment, the participants in this study take a final cloze test and then participate in a questionnaire to gain insights on their feelings about the lesson. The results reveal that there are benefits of gamification techniques in lessons, but those benefits have more to do with students' enjoyment than with learning. Presentation based lessons may serve not only mbe ore beneficial to test scores but also almost as enjoyable as their gamified alternatives.

Key words: ESL, Gamification, Pedagogical methodologies, young learners, cognitive development.

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1.Introduction

This study will test 24 participants between the ages of five to twelve pre and post-test results to gain insight into different presentation types. The presentation types also referred to as the treatments are a classroom PowerPoint presentation lesson, a classroom gamification lesson, an online PowerPoint presentation lesson, and an online gamification lesson. From the Cloze tests, quantitative data will be gathered. The students will also participate in a questionnaire to gather qualitative data on the students' thoughts and feelings on the type of lesson they received. The materials for this study are the two cloze tests and their accompanying vocabulary (regular past tense English verbs). The gamification treatments require a website, links to games and activities, the software Koala (Koala, 2022), and will use Google Classroom (Google, 2022). The classroom lessons will also use the cloze tests and will require links to activities. The classroom lessons also have a PowerPoint presentation.

At the time this study was originally conceptualized it was an idea to use non-real English words like a study in 2020. Abel, Sharp, and Konja's research team tested vocabulary acquisition and its effect on the brain waves by using some real words and some made-up words (Abel, Sharp, & Konja, 2020). However, for this paper, there was an ethical issue with teaching fake words, as these participants were students who agreed to the test after gaining their parents' and guardians' permission. The permissions are in the form of signed consent forms with the parents and guardians having the understanding the students would participate in a realistic English lesson whilst still being an experimental study. This paper contains a literature review, methods and procedure explanation, and a discussion to review findings regarding the research questions.

The literature review serves as an explanation of background research related to this study and current teaching practices online and offline involving young ESL learners. Written

grammar was chosen to be the topic of testing. Specifically, the regular past tense verbs in English. To choose to select appropriate vocabulary to teach, vocabulary levels tests were consulted based on students' CEFR proficiency levels. In this review of literature, there is also an overview of online teaching practices. The main focuses of this study are teaching young learners, English as a second language, gamification practices, and PowerPoint presentations and comparing these elements for both online lessons and offline-school lessons.

To complete this study treatments will be conducted on four groups of young learners to gauge test results and gain qualitative insights into participants' thoughts and feelings. The procedure involves gaining quantitative data from cloze exams, after presenting students with different treatments. Group 1 will undergo a class gamification treatment, Group 2 will undergo an online gamification treatment, Group 3 will undergo a class gamification treatment, and Group 4 will undergo an online PowerPoint treatment. The results from this study suggest although gamification may be more entertaining it is not always as effective as PowerPoint presentations.

A much-debated question is whether the supposed effects on motivation and engagement that comes from lessons using presentations with software like PowerPoint or gamification methods lead to the retention of information. A considerable amount of literature has been published on Gamification from a critical perspective. These studies argue that gamification is a form of "chocolate-covered broccoli," (Granic, Lobel., & Engels, 2014) arguing as soon as you introduce elements of learning a game will lose elements of fun. Amongst the critiques, much of the current literature on Gamification pays particular attention to its impact in the ESL classroom; With the use of Computer-assisted language learning (CALL) methodologies increasing in recent history (from technical innovation and many students switching to online learning during the COVID19 pandemic); More research has been carried out on the effects of gamification.

This study also seeks to investigate participants feelings on the different types of presentations and will report of some literature related to young learner cognitive development. The critical period theory states there is an age period where students are most adept for attaining native like pronunciation in a second language (Penfield, 2022). Lenneberg who popularized the theory states that the period ranged from two until puberty (Lenneberg, 1967). Learning English as a second language is an increasing trend resulting from globalization (Poggensee, 2016). Globalization is a term used to define cultures, often American, having a huge influence over another cultural community (Zhao, 2007).

Grammar has been an important part of teaching English as a second language. Rama and Agulló (2012) contemplate at what age and proficiency grammar should be taught in an ESL class. Their study examined children aged three to ten. They find grammar is an important tool however, focusing solely on grammar won't provide a learner with a fully developed understanding of how to use English outside of class (Rama & Agulló, 2012). The grammar of English is often emphasized as a key element when conducting coursebook analysis (Pemberton, 2019). For these reasons, a grammar element was selected to teach in this study. The regular simple past tense is often introduced in the Common European Framework of Reference (CEFR) scale A1 and A2 levels (Papageorgiou, 2005)

The CEFR scale is a useful tool for analysing how competent the student is with their English skills. A study on English learners living in China showed that students learn language individually, which could mean that the CEFR scale is not always a reliable guide, since no scale can accurately account for individual differences between learners. (Nikolov, 2016). Critics of the CEFR scale displayed in Figure 1 argue that there are not enough accompanying

verified and authentic materials to make it practical for application in the classroom (Alderson 2007).

Justification

Fans of the Pokémon franchise (a popular tv show and game) may have played the first versions as a child on game devices such as a Gameboy or a PlayStation which are gaming consoles popular in the 1990s and early 2000s (Nintendo, 1996). These same fans could engage with the game later updated consoles over time. Pokémon is still played by millions of people worldwide on video game consoles such as the Nintendo Switch, or apps (smartphone applications) on smartphones and tablets (such as the iPad) with app-based versions like the popular mobile game Pokémon Go (Niantic, 2016). Imagine an educational game that you could keep falling in love with as a gamer or one in which students could play and learn from repeatedly.

Gamification as exists today seems to only mean gamifying elements of a game (Khaitova, 2021). This can be functions such as matching text with pictures, shooting or popping the correct answer to a question, or using known video game characters such as Super Mario in lessons. Games are fun, and for the most part, children agree. Even students who don't necessarily like video games may prefer board games or card games. Students who don't like playing games indoors may prefer to play a game of football(soccer) or tag (a game where children select one person to be 'it' when you are 'it' you must run and 'tag' by tapping another child. The newly 'tagged; the child becomes 'it' and so on) outside. This study suggests the need to update these practices to include fun, immersive, games created specifically to teach.

There is a lack of actual gaming in gamification Azawi, Faliti, & Blushi, 2016). The term gaming refers to playing video games online, on a console, or a smartphone. Introducing

elements from games does make the display of information more interesting to students who are engaged by this type of input (Henry & Apelgren, 2008), but the excitement in these students may be short-lived as educational games can be repetitive and uninspiring after playing them once. This can create a never-ending cycle for a teacher who must constantly find new gamification ideas to introduce materials. If a gamified lesson is repeated over and over, it will likely have the same effect as a PowerPoint presentation and the ladder is much easier to create.

The following is a discussion regarding the effects of two popular learning practices the first being PowerPoint presentations, and the second being gamification methods when teaching young learners both online and in the classroom. PowerPoint is software created by Microsoft to create presentations with computers to be used for a variety of reasons including in lessons (Microsoft, 2022). The term gamification is used for introducing elements of games into a lesson (Khaitova, 2021) It is now well established from a variety of studies that there may be major benefits from using gamification in lessons in all subject areas (Pinto, Peixoto, Melo, Cabral & Bessa, 2021). It has been noted introducing elements of fun is more engaging for students and as mentioned instant feedback can be a good motivational tool (Lari, 2014). Gamification also often introduces transferable skills while simultaneously learning a new language (Furdu, 2017) This study seeks to investigate Gamification and pedagogical presentation methodologies when teaching young learners.

2. Literature review

This study seeks to investigates the effects of gamification techniques and PowerPoint presentations on young learners. In the following review of literature, the current online teaching practices will be reviewed as well as an overview of theories of young learner cognitive development regarding learning English. There is also a review of the way different L1 (a person's first spoken language) can cause different errors when acquiring English and how vocabulary is often selected to be taught. Finally, an overview of studies regarding young learners, gamification, and PowerPoint presentations will be reflected on. This literature review concludes with the research questions and hypothesis for this study. However, first a review of studies involving the chosen grammar aspect to test the simple past tense in English.

Grammar in English

There is little published data on the effects of gamification in contrast to PowerPoint presentations with young learners. To remedy this a grammar treatment was chosen for this study. The Common European Framework of Reference (CEFR) was created by the Council of Europe as a means of standardizing language testing (Council of Europe, 2022). Teaching English to young learners (TEYL) has increased because of globalization in the twenty-first century. With the rise of TEYL, there is a need for a means of assessing students (Nikolov, 2016). Young learners may have a low level of English which can make it difficult to find useful tools for monitoring their progress with tests. The scales of the CEFR define linguistic, pragmatic and sociolinguistic competencies needed to carry out the activities (Adamczyk,

2019, p. 30). The levels from the CEFR scale for the participants in this study are between A1 to B1. The simple past tense provides an example of what is taught in an ESL classroom for children of this age Grammar A1 Grammar A2 Grammar B1

Vocabulary Levels Test

One of the best suited and effective methods for measuring vocabulary proficiency is the Vocabulary Levels Test. The Vocabulary Levels Test measures the vocabulary size and vocabulary knowledge of the participants and is a great way of monitoring the abilities of ESL speakers, as well as tracking their progress throughout their learning experience. (Victoria University of Wellington, 2022) There are correlations found between vocabulary knowledge and a learner's proficiency in a second language especially involving comprehension (Bartning, Milton, & Vedder, 2010)

Current Online Teaching Practices

The literature on e-learning (learning with computers, over the internet) has highlighted several benefits and downfalls. The downsides are argued to be the level of computing competency required by the student, and without regulations, there is a poor attention span and high dropout rates from students. Upsides are personalized lessons, small or one-to-one classes, reduced study size and freedom to teach students less restrained by school curriculum (Huang, 2020). Online English lessons usually involve a camera for the teacher and students individually that can be connected to a personal computer, or one automatically installed on a smartphone, computer tablet, or laptop(webcam). These lessons have certain practices in

common DaDa formally DaDaABC is an example of some issues with online learning companies and the best example of their strengths.

Shared features for online companies are a whiteboard display where students and teachers can draw, a PowerPoint presentation, a student and teacher webcam display, and a reward button system. DaDa was forced to shut down after changes in Chinese regulations at the end of 2021. While it was active DaDa paired native English-speaking teachers with students aged three to sixteen in China. The students and teachers built a relationship over weekly lessons practising English together. DaDa was paired with Pearsons English, National Geographic, and Oxford English (Prnewswire, 2018) to source lesson material for teachers to use in the classes.

For Teachers, Dada provided regular lessons if they pass the interview process. Teachers did not have to do any type of self-promotion which is common with companies like Palfish. Teachers saw the same students weekly which provided stability and the ability to build rapport. Teacher's provided daily assessments after the lesson, and students had regular tests to check progress and understanding. (Wilkinson, 2019) Trial classes could be stressful for the teacher as with DaDa they were not provided with the opportunity to talk with the student before the lesson. Preply is an American online education company where students can learn a range of skills including music, French, German, English, economics and many more. Preply allows prospective students to message the teacher before booking a lesson. DaDa paid for contracted hours, and trial lessons. The first lesson booked on Preply goes directly to the company, and teacher's set the price with Preply. DaDa set the teacher at regular wage with contractual regular increases (Spence, 2022).

Somewhat paradoxically, given the large geographical distances involved, the Total physical response (TPR) teaching method plays a key part in online teaching methods. It was introduced by Asher first in 1966 (Asher, 1966). TPR is a language teaching method where a

teacher uses gestures to reinforce taught language. Asher believes that using kinaesthetic intelligence and body movement would be more beneficial to learners (Wang, Hwang, Chen, Li & Manabe, 2019). Research findings into TPR have found that TPR can act as a tool for memorization and bridging language gaps (Wang, Hwang, Chen, Li & Manabe, 2019). TPR is used in most online language classrooms in TEYL classes. During the onboarding and training programs, companies specify teachers display knowledge of TPR before being hired (Maria, 2022). TPR will be employed in this study.

Gamification

Gamification, which is the process of adding gaming elements to a task, in this instance education (Christians, 2018), First appeared as a named concept in 1980 due to Richard Bartle, a game developer and researcher based in the UK, (Khaitova, 2021). Gamification has existed in various forms throughout the 20th century, and it can be argued gamification aids in useful skills such as communication whilst sometimes adding unwanted elements like distractions (Rabah, Cassidy, & Beauchemin, 2018). A relevant topic that must be considered when analysing gamification is the use of game-based learning as a comparison. A study explored and compared the similarities and differences between gamification and game-based learning. Found that gamification in lessons overall is an enjoyable experience for students (Azawi, Faliti, & Blushi, 2016)

PowerPoint

Recent evidence suggests that PowerPoint has specific benefits when teaching young learners. Features such as the animation of text for emphasis. Images for enjoyment and general abilities of customization can make learning more enjoyable. Craig (2006) speaks of a PowerPoint culture, which refers to the use of PowerPoint in so many modern settings that it touches almost all aspects of life. Other studies suggest that PowerPoint can harm students in the ESL classroom by making them share their attention between the speaker and the PowerPoint slides (Xin-Geng, 2011). PowerPoint will be used for this study, but it is not the only means of presenting information in the form of a slideshow.

There are other slide-based presentation tools available. Slide-based is a term used for the type of software like PowerPoint that has pages to be projected onto a screen or displayed on a computer with the accompaniment of a human speaker (Velarde, 2022). PowerPoint is the most well-known software for this type of presentation in England and America, but globally and especially for people under the age of 30, there are other options (Jones, 2003; Sheikh, 2022). One other popular slide-based software is a web-based solution called Google Slides. Google Slides has many of the same features as PowerPoint and is free to use. Google Slides must be used online, whereas PowerPoint can be used offline (Nuckols, 2022). A user often must pay for PowerPoint or buy it as part of a software package from Microsoft.

Google Slides has better features than PowerPoint for working on projects with more than one person (Pavlova, 2022), but it is not as widely used, and the slide presentation is not as sleek as PowerPoint which is one of the main reasons it was not used for this study (Osipovskaya & Burdovskaya, 2019). PowerPoint generates slide background colours,

suggests related images to text that is inputted, and has encapsulating formatting options based on what text is written on the slides. Google slides do not have these features (at the time of writing).

A third slide and web-based presentation tool that is growing in popularity are Canva.com (Cloudflare, 2012). Canva has almost unarguably the most attractive presentations for slides (Gehred, 2020). Meaning hands down its features for making a presentation look nice are much better than PowerPoint (Noar, 2018). Canva like Google slides has a free version, or for more advanced features there is also a paid version. Elements of Canva have been used for the presentations in this study. It was not selected as the main tool for the PowerPoint presentation because it is more difficult to download for use offline (in our classroom groups) and Canva doesn't have the same easy to use text automation features as PowerPoint (Jameel, 2021). PowerPoint has features such as toggling animation with a click from the user or going to the next slide by pressing the spacebar

Young Learner Cognitive Development

For young learners, language acquisition is an aspect of cognitive development (Clark, 2004). Piaget (Piaget & Inhelder, 1969), Erikson (Erikson, 1994), and Vygotsky (Vygotsky, 1978) have different theories on how students aged between five and twelve can learn new skills. Piaget's and Erikson's theories of cognitive development both have stages in which a person must pass through to have functional cognitive development throughout their adult lives. The theory of cognitive development by Vygotsky is slightly different because it does not contain any stages, rather, suggests that children learn in response to the environment in which they are raised when developing language and other life skills (Erikson & Erikson, 1998; Jeltova, 2004; Lee, 2014).

This paper focuses on young learners aged between five and twelve. Erikson has theorized 8 stages of cognitive development; stage four of Erikson's theories are referred to as industry versus inferiority. Erikson's stage four was classed for learners aged between five and twelve. This is relevant to this study because, in this stage, Erikson proposed children can begin to discover their interests, and they also wish for those interests to be acknowledged by others. Games provide an opportunity for children to discover their interests (Henry & Apelgren, 2008). Regarding the two classroom groups in the study, Erikson's stage implies school life begins to play a larger role in the life of students and thus becomes a major influence.

Erikson's theory takks about children aged five to twelve needing to discover interests which may be achievable through games, and that outside influences become a larger influence on children during this stage. If this is the case will the effects of the classroom groups having multiple students be noticeable in the one-to-one online lessons during the study? To discuss Piaget's theory the first stage to define for this study is the pre-operational stage. At this stage, children are said to have fantasies (Santa Clause) and can believe that items such as toys or household objects can be alive. Children begin to understand that words, pictures, symbols, and body language can give deeper meaning than their face value. A child at this age may draw a house without considering the scale of its features nor being concerned about using the correct shapes, as the imagination can fill the meaning behind the objects drawn. In this stage, games can be important as activities where one immerses themselves in imagination are key to understanding at this stage (Ziauddin, 2016).

According to Piaget during this stage around the age of four children become curious about everything and begin to ask many questions. At this stage, children are egocentric: meaning they think everyone thinks the same way as themselves, this is a contributing factor to why students older and younger at this stage are not considered for participants in this study. One of the differences between Piaget, Erikson, and Vygotsky is that instead of passing through

stages, Vygotsky has theorized a child's journey through cognitive development as an individual process dependent on their social environment. This means the interaction they receive from family members and contributing factors such as the role of societies (gender, age, class status). Vygotsky introduced the theory of the zone of proximal development (ZPD). The ZPD refers to the space between what one is capable of on their own, and what one can do with guidance (from tools or a carer/ mentor).

This study tests the tools given to a learner to access weather games and PowerPoint presentations act as better guidance for achieving a higher cloze score. Another factor related to cognitive development and language acquisition is stress (Branco & Linhares, 2018). Stress is often a detrimental factor to adults, teenagers, and children alike. A type of stress called "toxic stress" (Barry, 2017) negatively impacts brain development in children. Stress such as overcoming a challenge like building a tower with Legos can be beneficial to a young mind, but stress like neglect and abuse results in the phenomenon of toxic stress. This type of stress can affect neural connectivity in developing minds that can last a lifetime. (Garner, 2013) In L1 and L2 language acquisition, toxic stress may make it harder for students to focus and retain information. A study in China found negative elements of gamification such as exhaustion and social overload can contribute to toxic stress (Clark, 2004). Games help students focus on goals and achieve activities which can reduce the effects of toxic stress (Epstein, 2000).

The effects of L1 in the ESL classroom

Swan and Smith's research (2001) was used as a guide for the creation of the content in this study. They write about the differences between languages and how these differences can create transfer errors. Many of these errors relate to tense. The participants of this study

have the first languages of Chinese, German, Catalan, Mexican, and Japanese. For native German speakers, pragmatic issues may arise with the varied use of stress and intonation between German and English (Swan & Smith, 2001).

Swan and Smith continue to explain the Chinese language as a mix of languages that share similar written language and important structural aspects. There are many differences between Chinese languages and English for example Chinese is a tonal language and "there are no established comprehensive grammatical classifications" (Swan & Smith, 2001, p. 314) Regarding tense forms "Chinese expresses the concept of time entirely differently than English and it does not conjugate the verb to express time relations"(Swan & Smith, 2001, p. 315). Swan and Smiths' list of areas of conflict between Chinese dialects and English include:

- Phonology (vowels, consonants, consonant clusters, rhythm and stress, intonation, and juncture)
- Orthography (spelling, reading, and writing)
- Grammar (sentence structure, verb forms, time, tense, and aspect, modals, passives, articles, gender identification in speech, countable and uncountable nouns, and word order)
- Vocabulary
- Culture

In contrast to Japanese and Chinese dialects, Spanish and Catalan show similarities to English in grammar, phonology, and vocabulary. There are still areas of conflict despite similarities regarding time, tense, and aspect:

- The simple tense
- The present tense
- Imperative Form
- The frequency verb *soler*

Swan and Smith speak specifically about grammar transfer issues and although German and English are quite similar there are differences. One of the differences is, that in German the past may be used where English speakers would use the present perfect tense. There are many more differences with the grammar as well regarding aspects not of tense such as modal verbs, and word order. German and English are similar in comparison to English and Chinese or Japanese. Japanese word order and sentence structure include a verb transfer error which leads to Japanese students sometimes dropping the pronouns, subjects, and objects in English sentences (Swan & Smith, 2001, p. 301). Students also have difficulties learning the verb tense. There is also a difference related to classroom management as Japanese students do not like to be placed in the centre of attention as being wrong is taken seriously in Japanese culture (Swan & Smith, 2001).

Research Questions

Considering the discussion above, this study aims to make the effects of gamification in lessons teaching young learners the simple present tense for regular verbs. It also seeks to find the preferences of young learners regarding gamification and PowerPoint techniques. To achieve these aims the following research questions are posited:

- RQ1. What are the effects of gamified lessons online, in comparison with the effects of gamified lessons in the classroom on ESL learners between the ages of 5-12 when teaching simple regular past tense use?
- RQ2. Do young learners prefer the use of PowerPoint presentations or gamification methodology more in ESL lessons?
- Based on these questions, the following hypotheses have been posited:
- H1. Implementing gamification methodologies in a lesson will improve students' knowledge of the simple regular past tense.
- H2. Students aged between five and twelve will prefer gamified lessons to lessons with PowerPoint.

3. Method

This study aims to address questions concerning the enjoyment and the practical element of effectiveness of PowerPoint presentations and gamification methodologies. A pilot test was carried out to determine the age range for the study and how long the treatment takes to complete. There were restrictions which led to the creation of this study's methodologies. Time restrictions meant the treatments had to be completed in one session. When working with children, it is important to consider ethical considerations (Asselin & Doiron, 2016). This was a matter of extra steps to ensure that the information was relevant and simple enough for the age range and level of participants, whilst still being a grammar aspect to teach. Therefore, words that weren't regularly in levels tests and could be made past tense by adding the suffix *-ed*, or *-d* were chosen. To establish validity for the test the Cloze exams data is collected and compared with JASP. This measure of data gathering in conjunction with the optional Google forms questionnaire creates data to answer the research questions.

The participants

In total 56 students participated in this study and 49 of those students participated in the questionnaire. The participants (students) for this study were recruited for the classroom treatments from a partial government and a partial privately funded school (escuela conertada in Spanish). For the online treatments, the participants came from recruiting on a Chinese social app called WeChat (WeChat, 2022), a Thai based language learning app called PalFish (PalFish, 2022), and from Preply (Preply, 2022) an American online educational company. Not all the students who participated completed the study completely, of the 56 total participants 24 were selected. These 24 participants completed all parts of the study and have

the correct age and CEFR levels to be considered in this study. These participants were split into four groups. The groups are class gamification, class PowerPoint, online PowerPoint, and online gamification.

The class PowerPoint(PP) group contains four boys and two girls, this group's participants are aged ten and eleven. The participants in this group will receive a classroom-based lesson in the escuela conertada they currently attend. Catalan is the L1 of students in the class PowerPoint group and the class gamification group. The class gamification group takes place in the same school but in a different classroom. Two teachers were required for the classroom presentations (a teacher for each group).

The students in the class gamification group are four girls and two boys aged ten and eleven. The classroom treatments are conducted in person, with class students, in a school with multiple students using Koala, Google classroom, and PowerPoint. The online groups are not conducted in a school but over the internet. These students received one-to-one lessons with the teacher. The online PowerPoint group and the online gamification group used the same materials as the class PowerPoint and class gamification lessons.

Instead of the lessons for the online group being performed in the classroom, they are conducted over Zoom, Preply, or PalFish. Although they are conducted on different software this should not impact the students' test results as the different mediums of conducting the lessons are just a means to share the same material to all different locations of the students from a singular laptop where all the data and necessary materials could be stored. The online gamification groups consist of three boys and three girls. These students have a mix of L1s in German, Mandarin, Cantonese, Mexican, and Japanese. The online PowerPoint group's participants are also three boys and three girls. All the students in the online PowerPoint group speak Cantonese or Mandarin as a first language. Charts and tables depicting the age, gender, and L1 data of participants can be found in the appendix.

The participants were selected for being of the correct age. All the participants in the classroom treatments are Catalan speakers. The PowerPoint presentation online was given to native Mandarin and Cantonese speakers and performed on the teaching app Palfish. The gamified treatments online were given to 4 students using the education website Preply, and two students received the treatment online via Zoom (Zoom, 2022). The students from Preply were from all over the world. These participants were all selected for being a sample audience of the studies aimed to focus on young ESL learners

Pilot tests

It was decided after the pilot tests that students must be non-native speakers as this study is seeking to investigate students learning English as a second language. The study is aimed at students who are young learners so if the student is more advanced than B1 the material may be too easy for them ideally students should be of the CEFR levels A1, A2, and B1. The pilot test was conducted on four students three boys and one girl. The ages of these participants were a four-year-old, a thirteen-year-old, and two fourteen-year-olds. The students were recruited using the social media app WeChat and Palfish. These four students made two groups: online PowerPoint and online games. The online games group contained two boys a four-year-old and a thirteen-year-old. The test was administered over zoom for the fourteen-year-old, and Preply for the thirteen-year-old. The online PowerPoint group consisted of a fourteen-year-old girl and a thirteen-year-old boy. Both PowerPoint presentations were given over the platform Palfish. The tests to the participants were all given during a one-to-one online lesson, and several useful improvements were noted during these tests.

There were some positive observations during the pilot tests. The materials were tested and confirmed during the pilot tests, after some trial and error about the most appropriate websites to use. It was also decided to translate all instructions and the final google Forms into the participants' native language. Timings were decided from the pilot test. The online lessons took thirty minutes with the Cloze exams taking between five to ten minutes for the students to complete. From observation it was deducted the activities were too hard for the four-year-old student and, the thirteen-year-olds both enjoyed the lessons. However, the games were too easy for the thirteen-year-old in the online games' treatment. The measuring instrument (the questionnaire) was an important factor in understanding the feelings of the students. The four-

year-old's answers were unrelated to the questions when responding to open-ended questions. This result confirmed the impression that the material was out of their realm of comprehension

Materials and Procedure

The material for this study was selected as a means of presenting the treatments to the different groups both in school and around the globe. Cloze tests have been selected as a method of recording pre and post-treatment analysis. Vocabulary for the cloze tests had to be chosen carefully to be appropriate for the young learners in this study. Google classroom was used to share links with a student in the class groups. A website was created for this study to share the gamification treatment links and activities with the students. A PowerPoint presentation was created for use in the class PowerPoint and online PowerPoint lessons. Google forms were used to create the questionnaire used to gather student feedback on the lessons they received.

Cloze Tests

Two cloze tests were created for this study. The cloze tests were chosen as a method of data collection as it is in a format student frequently encounter during both schools and in online lessons (Gellert & Elbro, 2012). The tests were made to contain the target vocabulary words. Each quiz omits 5 regular verbs for the students to input an answer. The stories from the quiz are written using regular past tense forms where the verbs should appear the role of the students is to fill in a word, they think is correct.

The first quiz:

The boy was (ground) by his father since he stayed up too late. He had to work on the farm in the morning, but there was a problem. When he went to feed the animals all the food was too (process) for the animals to eat. They need natural foods. So, the boy had to grow some. He asked his dad why do plants have leaves? His father replied, "The sunlight is (absorb) by the leaves on a plant to make food". "Where do the flowers come from?" The boy asked his father "The flowers are (reproduce) by seeds". Just then the sister arrived at the farm. As the girl ran over, she (exhale) heavily. "Slow down". Said the father, there is no need to rush!

The second quiz:

The men (function) well as a team. They had a job to do to protect the people in the village! There was also a new king with new powers. The new capabilities (enable) the king to also help the people in the town. There was an army coming, and that wasn't the only problem. There were gangs of naughty teenagers. The women of the city (discipline) the teenagers who threw eggs at their houses. This was what happened in the village above the sea; however, there were problems in the water too! The seaweed was all stolen by the sharks! Luckily the mermaids broke into the sharks' lair and got it back! The seaweed was then(appropriate) by the mermaids to be spread out to all the fish fairly. Like the villagers, the fish (worship) the mermaids as the villagers did their new king!

Vocabulary

When choosing the vocabulary for this study, it was important to choose words that students would not have already encountered while learning English, because that would render the Cloze tests pointless. To do this vocabulary lists were consulted for the CEFR levels A1, A2, and B2, to try and choose words that were regular verbs that did not regularly appear in the curriculum aged at ESL learners of those CEFR levels. Regular verbs were chosen so a grammar rule could be learned during the lesson. If the students were given regular and irregular verbs the worry is that students' memory of recalling specific words would be tested rather than testing the student's ability to learn a new grammar rule. The cloze tests are designed to test whether students can identify the endings of the word they are being asked to make past tense and add the current letters based on the word they see. Narrowing the words down to past tense regular verbs that you can add d or ed down to provides the formula for testing the grammar rule when writing English regular verbs in the past tense, they often end in d or ed.

To meet these requirements, the vocabulary was selected that did not appear on these vocabulary lists except *reproduce* on a B1-level, targeted list. The word *reproduce* was still included to aid the plot structure of the story used in the Cloze pre-test and post-test (Susanto, Halim & Nuwrun, 2019; Shin & Joo 2008). *Reproduce* is on the B1 a part of the Cambridge English vocabulary list but not for A1 or A2. (Cambridge English, 2022). Studies using cloze tests do not always prove to be the most useful tool for statistical analysis (Kleijn, Maat & Sanders, 2019). They were used in this study as a data collection tool because they do not limit the input from the student like a multiple-choice test. Used in language acquisition since 1950, cloze deletion is used to omit certain words from a passage to be filled in by a learner (Ross, 2017).

Vocabulary:

- *absorb*
- *exhale*
- *ground*
- *process*
- *reproduce*
- *appropriate*
- *discipline*
- *enabled*
- *function*
- *worship*

PowerPoint Presentation

The PowerPoint presentation contains 15 slides in total (PowerPoint is attached as a zip file). They will all be shared using the screen share feature on zoom, Preply or Palfish for the online PowerPoint group. The slides are typical of what students will be used to if they are currently enrolled in any online learning platforms. The material in the PowerPoint is focused on teaching grammar rules regarding simple past tense verbs in English. The class PowerPoint group views the presentation on a whiteboard from a projection of the teacher's computer screen. The YouTube video (Anchor Creative Education, 2019) was used as part of the PowerPoint presentation for both the online and classroom groups, it features a song about Suffixes (-ed) and their correct use. The video was featured on slide 11 of the presentation, where it was used as an engaging review activity before the final quiz to finish the lesson.

Website

The website was created specifically for this research using Hyper Text Markup Language HTML, JavaScript and Cascading Style Sheets (CSS) A website provided a way of sharing the links to games and activities for the online gamification lesson reliably. HTML, CSS, and JavaScript also allowed the creation of further activities for the study as displayed in Figures 1 and 2.

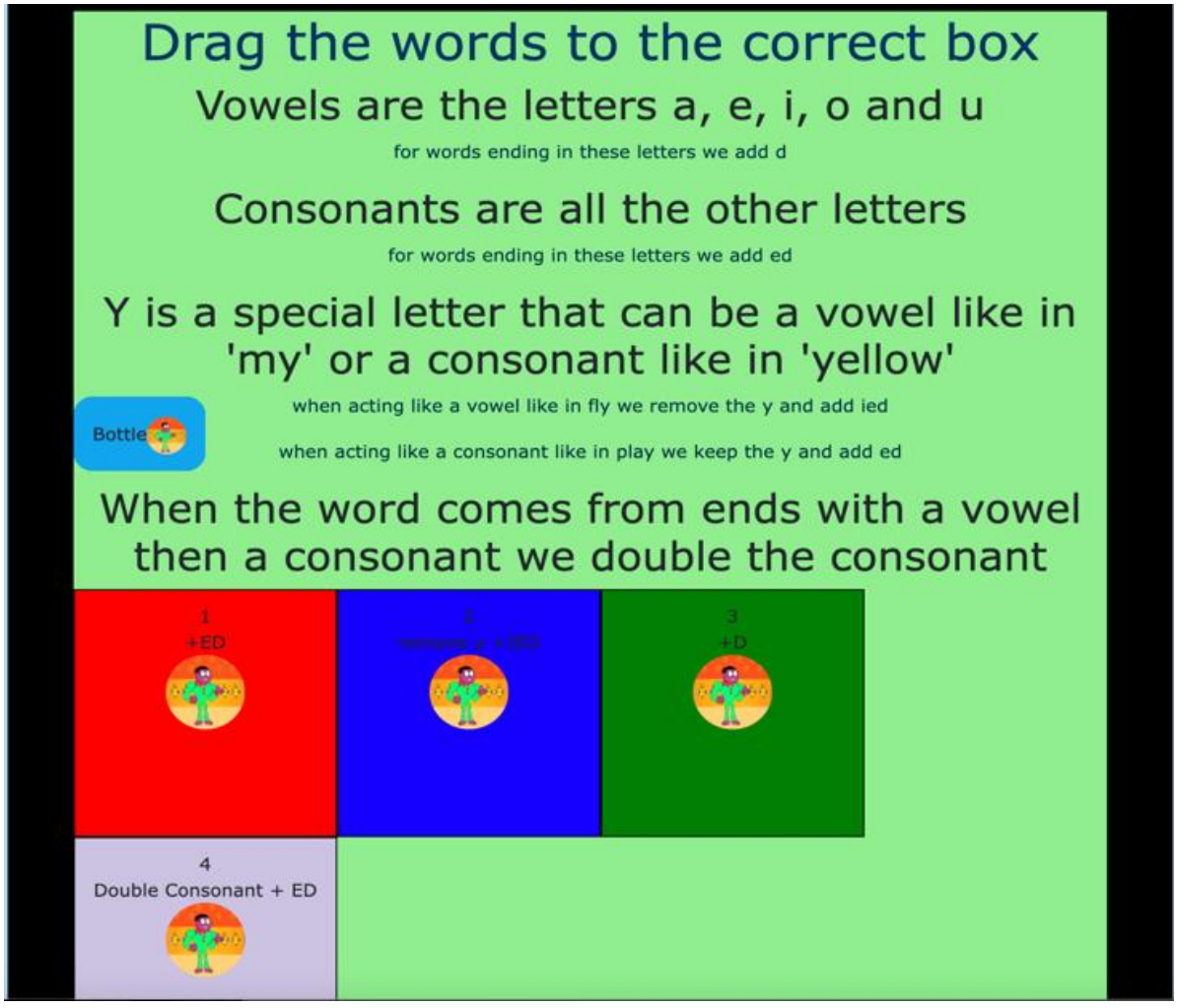


Figure 1 The drag and drop game

Figure 1 displays text teaching how to write regular verbs in the simple past tense, this text is the same as the text in the PowerPoint presentation for lessons for the non-gamification

treatment groups. To add elements of gamification text a drag and drop game was created. A drag and drop game was chosen to add here as it is a representation of games currently found in online, and language learning lessons (Educational Games for Kids, 2021).

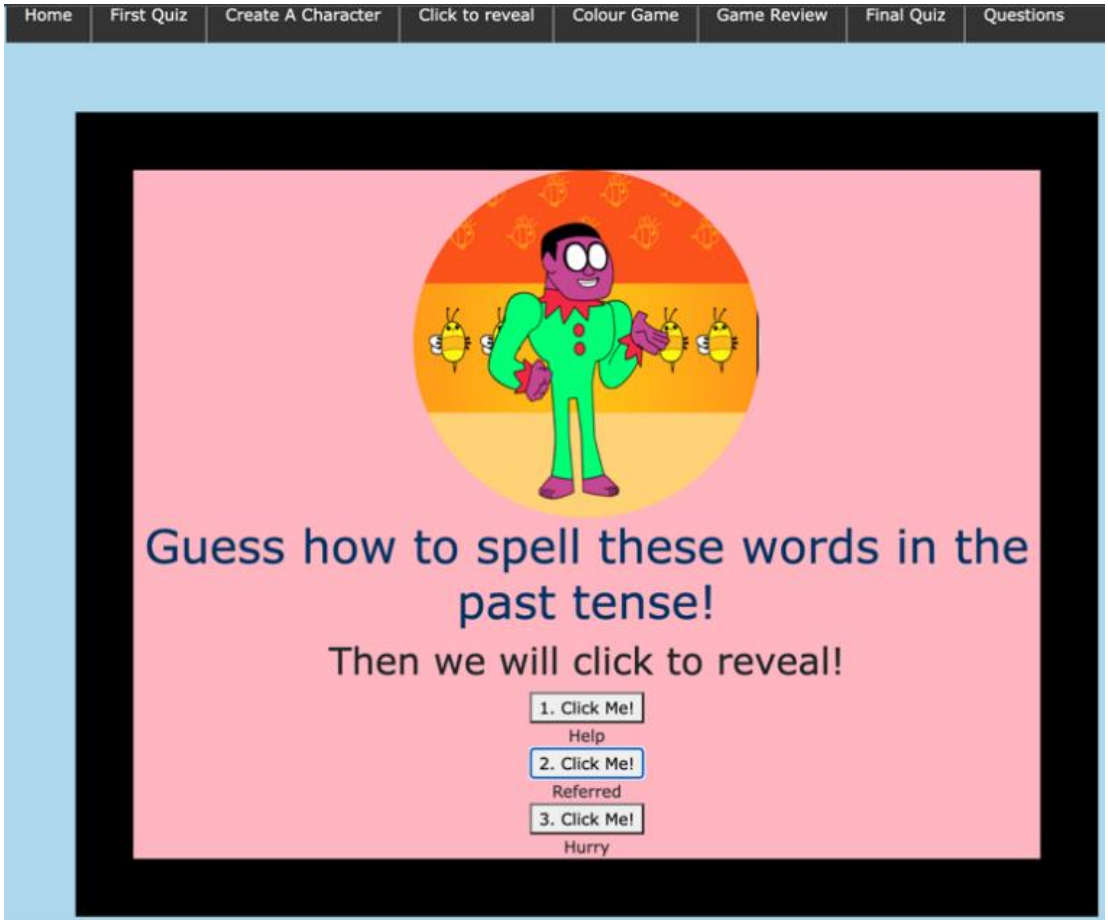


Figure 2 The flashcard style click to reveal game

To introduce the topic of the study to students a click to reveal gamified feature was created as displayed in Figure 2. This click to reveal method was introduced as a representation of how flashcards can be implemented in an online environment as they are commonly used in language lessons for young learners (Nuryani & Fadloeli, 2021). The entire website is attached as a zip file.

Games

The following will discuss the games played during the gamification treatments. The first activity is called a character generator. Character generators are popular in many games (Voorhees, 2009). In the case of this study, they also provide an element of fun after the quiz. The character creator chosen for this presentation is from gamaverse.com (Game Verse, 2022) but is based on a TV show Teen Titans originally popularized on Cartoon Network (Cartoon Network, 2017). This character creator was used because it had options for both male and female characters or to create characters allowing the student can make a character of their preference.

The games all feature content involving the past tense, though all follow different formats. The first game, Games to Learn English, (Games to Learn English, 2022) gets the learner to match past tense verbs to pictures, while the second game, ESL Kids Games, (ESL Kids games, 2022) features a more traditional board game approach, where players progress by stating the correct past tense verb of the words on the board. The final game, MES Games, (MES Games, 2022) contains elements more commonly found in mainstream video games (such as fantasy or sports themes), though still is themed around students finding the past tense version of verbs.

These games are a good example of the variety of educational gaming websites available to young learners online today. They showcase a range of different learning styles and methodologies, and these different approaches to the same topic give the teacher more flexibility to use certain teaching styles or games specific to students learning needs and interests, to play the discussed games to find out more about simple regular past tense verbs,

for the class gamification group, the students use Google Classroom to play the games. For the online gamification group, the teacher shared the game with the student from their computer.

Questionnaire

The questionnaire was created on Google Forms (Google, 2012), and it contains six questions. The first is an opportunity for students to create a nickname for themselves. This is a common practice in games (Mese & Dursun 2019). The following two questions are in the form of a modified Likert scale. A Likert scale collects ordinal data on scales for this study the scales are from 0-to-10. This can gauge students' enjoyment of the lesson treatment they received, and the likelihood they would like to participate in a similar lesson. There is also a multiple-choice question. The multiple-choice question (Figure 3)

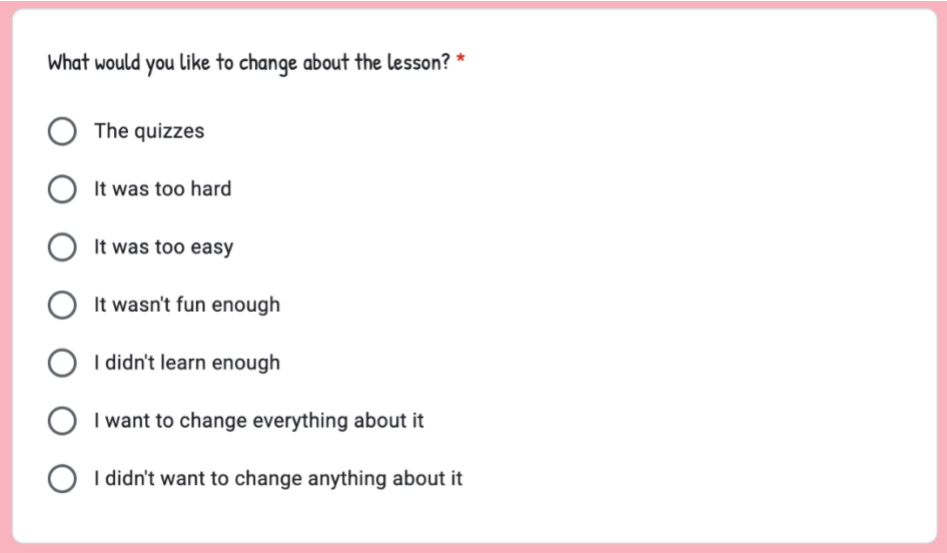


Figure 3 the multiple-choice question from the Google Forms document

was chosen to find out if any parts of the lesson stood out as unenjoyable to a notable number of students.

Google Classroom

Google Classroom is a website that allows teachers to stay in touch, and share materials for a class (Zhang, 2021). Google classroom is a type of 'virtual classroom' meaning a place where participants can interact with each other (Iftakhar, 2016). Google Apps for Education (GAFE) provide services aimed at keeping learners and educators organized and allowing them to share assignments, homework, and deadlines (Sudarsana, Putra, Astawa, & Yogantara, 2018). The students who participated in this study were used to using Google Classroom during their lessons. This familiarity for the students was the main reason why the links were shared in this manner for the study. Another reason for using Google classroom was for the teacher's benefit. The online treatments are all given by the same tutor. In the class another teacher had to be recruited as both the gamification and PowerPoint treatments in the school happened simultaneously, so two teachers were needed for the two classes. The recruited teacher for this study was familiar with and confident in using google classroom also. The recruited teacher performed the PowerPoint treatment with the PowerPoint class group

Koala

Koala (Koala, 2022) was used to share the website from the teacher's computer with all the students in the class gamification group. Like Google classrooms, Koala is a virtual classroom. In the online gamification treatment, students create a character that can be shared on the website. In the class lesson, it would be very difficult to share all the students' characters at the same time on the website, so instead koala allows the student to create a character, and

multiple students can still view the same website as in the online lessons. as a way for the students to create a character as displayed in Figures 4 and 5.

Figure 4 Koala character in the lesson

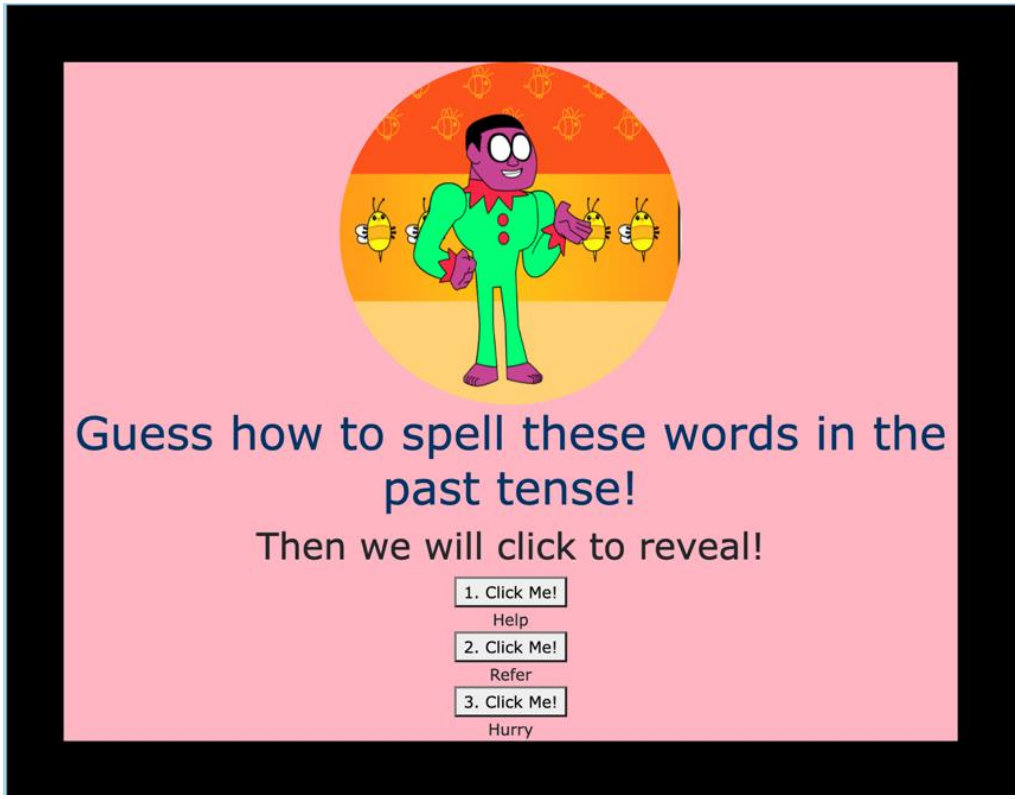


Figure 5 Student created character on the website created for study

Procedure

In this study, two different treatments are being tested in four different learning environments. PowerPoint presentations are being used for two groups - one will participate in individual online lessons, and the other will participate in a class lesson at school. Gamification treatments will be used for two groups, one will receive the gamification treatments online using Zoom and Preply, and the other group will receive the treatments in class using Koala, and Google Classroom. The procedures for all groups can be broken into four parts: pre-treatment test, treatment, post-treatment test, and the questionnaire. To start the four groups, take the first cloze test, after the cloze test the groups receive different treatments. The treatments are a PowerPoint presentation and YouTube video for the class PowerPoint group, and the online PowerPoint group. For the online and class gamification groups the treatments are 5 games, two created specifically for the study and three from websites currently available as a resource for young language learners. After the treatments, all groups participated in the final cloze exam before answering the questionnaire.

Data collection

The methods used to analyse the data and statistics for this study are to be discussed in the following. JASP is software for analysing statistics on computers (Jasp, 2020). JASP will be used for the analysis of quantitative data in this study. The quantitative data collected from cloze exams (also referred to as cloze quizzes, pre-test, and post-test quiz/test) are the scores, from the questionnaire quantitative and qualitative data will be gathered. The quantitative data are derived from the Likert scale questions and the qualitative data are derived from open-

ended and multiple-choice questions. JASP was selected for use as it can display measurements such as mean and mode and common statistical practices such as standard deviation.

JASP can analyse data so long as the input is entered the correct way JASP sorts the data so a user can decipher if any data is missing or non-valid. Microsoft Excel is spreadsheet software that allows a user to input data for statistics (Quirk, Quirk & Horton, 2016), and then export the data to a format readable by JASP. This method allows data analysis, and the performance of independent t-tests, and paired analysis tests. These methods will be used for the analysis of the results of the quantitative data. For the qualitative data, Google Forms was used to create a questionnaire for the students. JASP and Excel are used to analyse the answers of the student from the Google forms questionnaires. Closed questions require a yes or no answer only, open-ended questions are the opposite of that (Popping, 2015). Popping would define open-ended questions from this form as apparent open-ended and open-ended. Apparent open-ended questions are alternatives for closed questions, they get answers to specific questions.

The open-ended questions, after being analysed are graded on their grammatical correctness, length of response based on average and relevance to the question asked. Once the scores are completed. Schuman, Presser & Ludwig find in their research that open-ended questions are not the most suitable for statistical analysis (Schuman, Presser & Ludwig 1981). However, in the case of this study, they were necessary to gain a full understanding of the participants' perspectives and opinions on the treatment they received. This combined method allows an overview of the student insight and a measurable data figure. The data comes from the cloze quizzes from a website display for the gamification and PowerPoint lessons online. For the lessons in the class, the same cloze test was uploaded to a website called live worksheets (Live worksheets, 2022).

Live worksheets was used because it provided a means of collecting the data in the same format from the two different groups of students in a way that was familiar to the participants. The school where the students came from regularly uses Live worksheets in class. The website was used online for the same reasons. The website was not uploaded to the world wide web. Instead, to be accessible to students it was shared by the teacher in Zoom or using Preply and Palfish. This way the teacher could control the setting of the test and minimize costs that would go into hosting a website online with the ability to collect the cloze data necessary for this study. The cloze tests contain five questions each between the two tests ten questions in total. For each test, one word is worth 20 points making the total grade possible 100 points. Live worksheets automatically rate the students' tests using this system which is why it is continued throughout the analysis. The data collected from the questionnaires was inputted using scales of 1-10 and text for the open-ended and multiple-choice questions.

4 Results

The results discussion to follow first explains the quantitative results, then the qualitative. It begins with an explanation of pre-treatment cloze results describing descriptive features including the mean details which explain the results on average, and the rates of standard deviation. Next, those details for the post-treatment results. The findings that follow explain the analysis of t-testing. The result section finishes with an explanation of the findings from the questionnaire.

Pre-Treatment Cloze Results

The results of the first cloze test as seen in Appendix A, are as follows and serve as a baseline to compare with the post-treatment cloze results. The mean for the class gamification group (Group 1) was 93.333 the standard deviation (SD) is 10.328. For the online gamification group (Group 2) group the mean was 23.333, and the SD = 40. The class PowerPoint group (Group 3) mean was 80 and SD = 40. The mean for the online PowerPoint group (Group 4) was 3.333 and SD = 8.165.

Post-Treatment Cloze Results

After the groups received the treatments a second cloze test was administered. The means and standard deviation rates as seen in Appendix b, are discussed in the following. Group 1 had a mean of 86.667 this is 6.666 points lower than the first test, the SD for Group 1 in both the pre- and post-treatment cloze quiz results is 10.328. Group 2 had a mean of 60 and SD = 40. Group two had the same rate of standard deviation in both pre- and post-treatment test results. Group 3 had a mean of 80 and the SD = 25.298. Group 4 had a mean of 36.667 and the SD = 36.583.

The Comparative Findings of the Pre- and Post-treatment Cloze Tests Results

Groups 1 (class gamification), Group 2 (online gamification) Group 3 (class PowerPoint) and Group4 (online PowerPoint) were tested to compare if there was a significant difference between all groups pre- and post- treatment results. The treatments when all 24 participants are

considered improved pre- and post- treatment. The degree of freedom value (DF) was 23 with a significance level (p-value) (0.027). The distribution (t-value) value was 2.030(Appendix c). When the question posed is are the pre-treatment cloze test results higher than the post-test cloze treatment results? The t-test displayed a non-significant result the p-value = 0.973 the t-value was 2.030, and the DF = 23. When the question posed is are the post-test cloze treatment results higher than the pre-treatment cloze test results? Significant results were displaying a p-value of 0.027, a t-value was 2.030, and the DF = 23. These t-test results showed that the results post-treatment were significantly greater than the pre-treatment results for all groups collectively. (Appendix d)

Post Treatment Test findings

The results of an independent t-test, as seen in Appendix e, of both post-treatment, class gamification, and class PowerPoint groups (both class groups Group 1 and Group 3) cloze results showed both significant and non - significant result. These results were testing weather PowerPoint treatments or Gamification treatments were more beneficial to the post-treatment test scores. The t-value was 0.598, the DF=10, and the p-value was 0.563. Group 1 (gamification) scored higher post-treatment than Group 3, but not significantly higher. In the cloze tests however both Group 1 and Group 3's test results between the first and second cloze tests decreased in mean.

A paired t-test (Appendix f) comparing the pre- and post-treatment cloze test results for class treatment groups (Group 1 and Group 3) showed the means decreased the SD for the first cloze, results were 28.710 for the post quiz results the SD was 18.749. The class average decreased between the results pre and post quiz, but post-treatment there was less variation.

The results also showed this was a significant difference in variation t-value = 0.598, the DF = 10, and the p-value = 0.563.

The online groups (online gamification Group 2, online PowerPoint Group 4) pre- and post-treatment are discussed in the following. The results of the independent t-test showed the t-value = 1.190, the DF = 10, and the p-value = 26% (0.262), for the two groups there was no significant improvement between the results pre and post. When comparing both groups post treatment results, there were significant results were showing there was an improvement in the cloze quiz results for the two groups pre- and post-treatment, overall. A paired samples t-test showed a t-value of 3.436, the DF was 11 and the p-value was 0.003. The test scores on average improved and there was a significant difference between the PowerPoint and Gamification treatments reflected in the results.

Results of Gamification in Comparison to PowerPoint

The finding of the effect of Gamification and PowerPoint in contrast found that the mean of the Gamification groups (Groups 1 and 2), as seen in Appendix d, pre-treatment was 58.333, post-treatment the mean was 73.333. For the PowerPoint groups (Group 3 and 4) the mean was 46.286 pre-treatment, and post-treatment 58.333. An independent samples t-test, as seen in Appendix E, showed that there were non-significant results for either Gamification or PowerPoint groups having a larger score. When the hypothesis of the t-test is pre-treatment is greater than post-treatment, t-value = 1.136, the DF = 22, and the p-value = (26%) 0.268.

The Questionnaire

For the questionnaire, the first question is used for identifying the student so they could be placed into the correct groups. Questions 2 and 3 gathered the Likert scale information. The first question *how much did you enjoy today's lesson* was answered on a scale of 0 – 10 scores under 5 are deemed negative responses. A neutral response is considered 5, and a positive response is over 5. Six students are in each group and each student completed a questionnaire. Figure 6 shows the results, Group 1 (class gamification) responses were all positive. For group two the results were mainly positive but there was a singular neutral response shown in Figure 7.

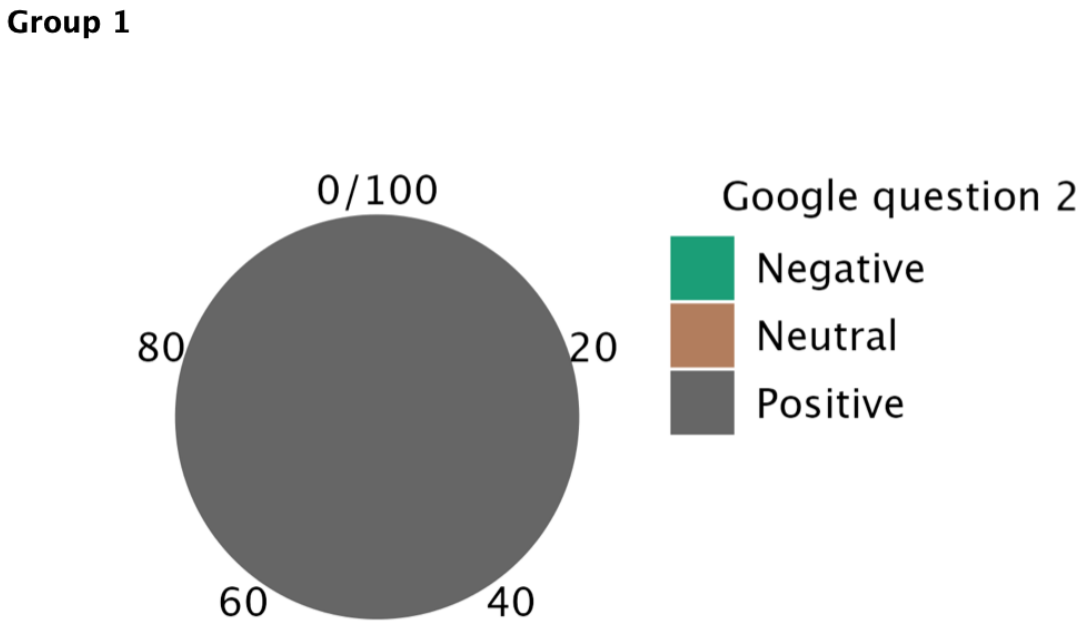


Figure 6 Shows Group 1's response to the first Likert scale question

Group 2

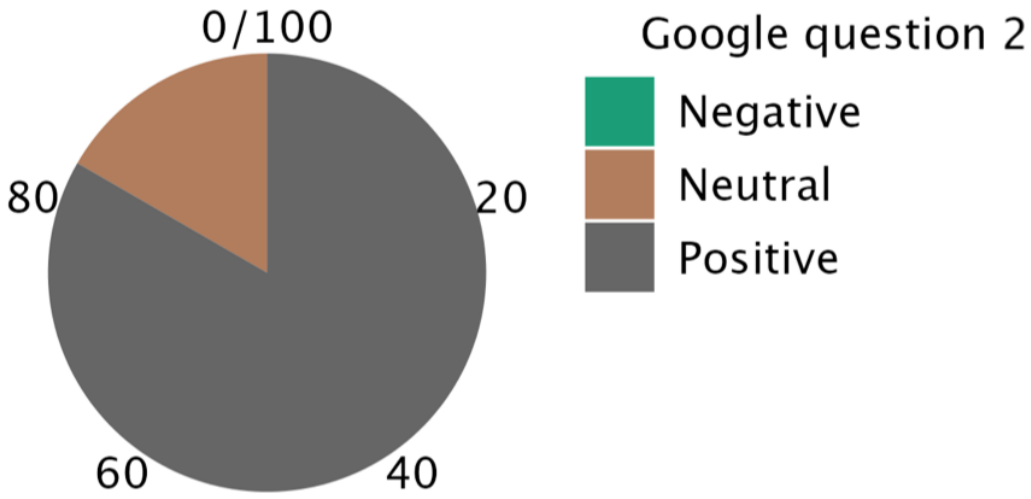


Figure 7 Group 2's response to the first Likert scale question

From these graphs, we can see the gamification groups mainly enjoyed the lesson they received. Figure 8 displays Group 3's results. Group 3 enjoyed the lesson just as much as the

Online Gamification group based on these results. Group 4 had the most mixed response. As displayed in Figure 9 the group had an equal amount of positive and negative responses.

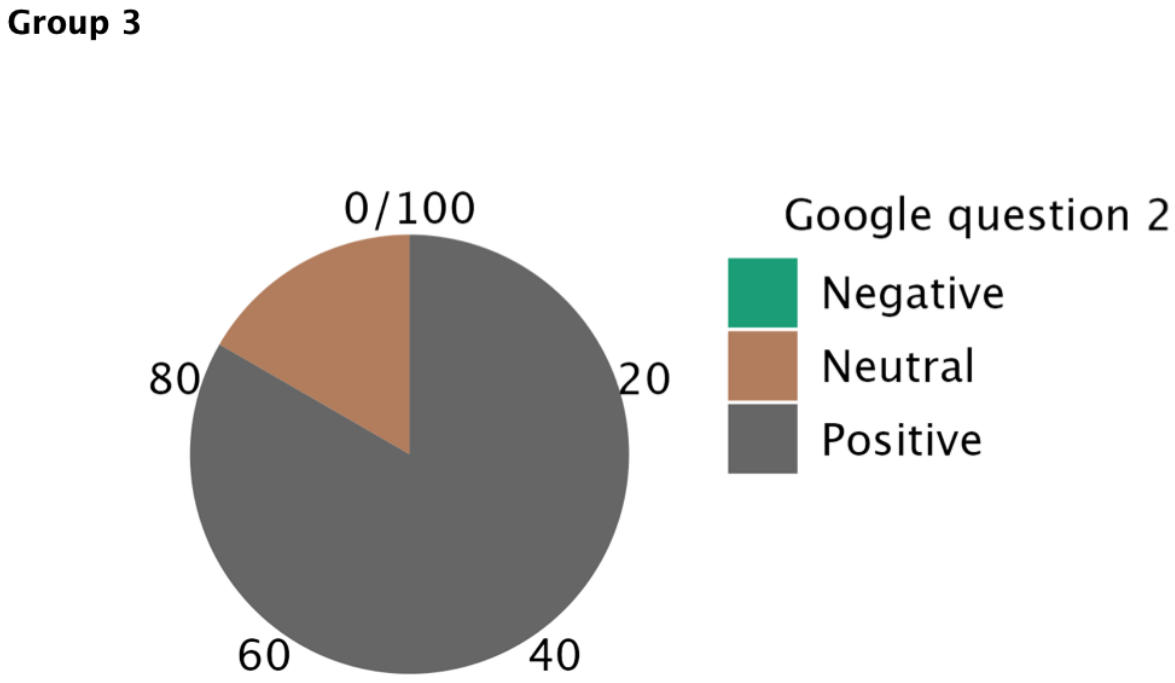


Figure 8 Group 3's response to the first Likert scale question

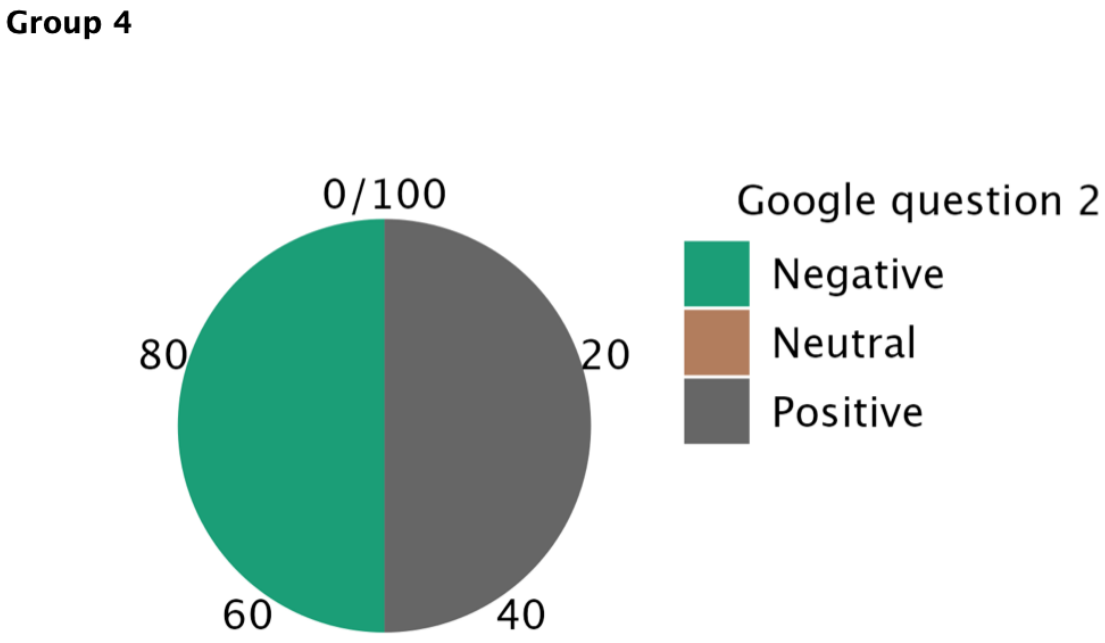


Figure 9 Group 4's response to the first Likert question

Question 3 *would you like more lessons like this* was scored in the same way as in question 2. The results show equal or more negative responses in enjoyment. Group 1 as seen in Figure 10 still mainly enjoyed the lesson but had a singular neutral response. Group 2 (Figure 11) and 3 (Figure 12) had the same responses for questions 2 and 3. Group four had a slightly less positive response than in question 2 (Figure 13).

Group 1

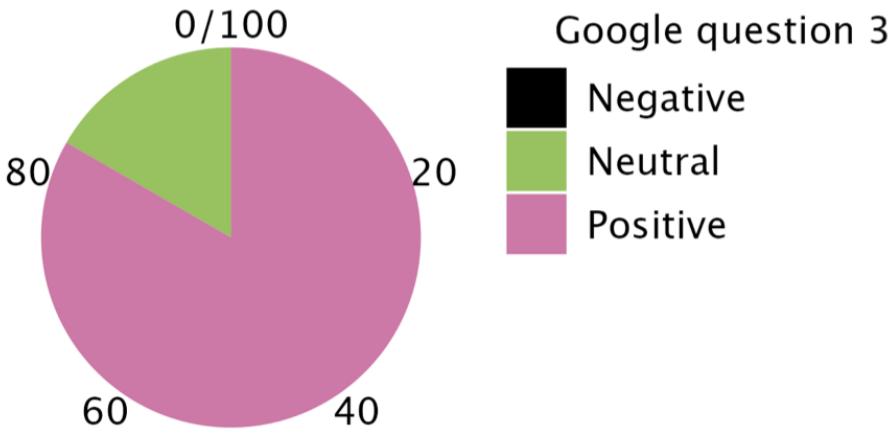


Figure 10 Group 1's response to the second Likert question

Group 2

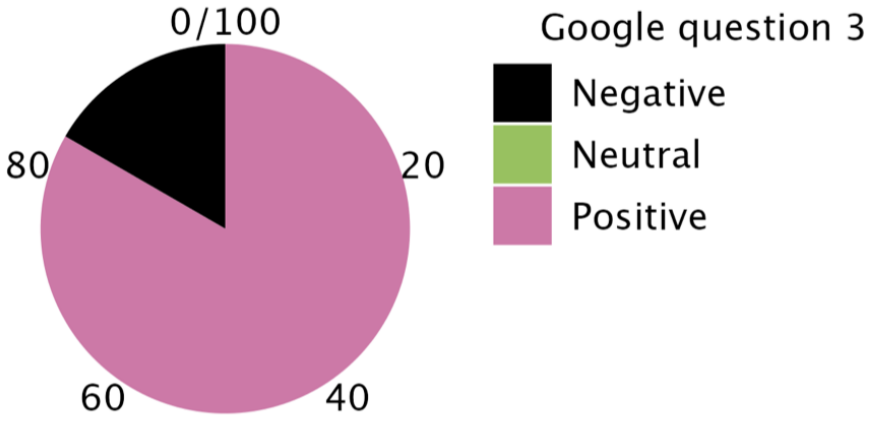


Figure 11 Group 2's response to the second Likert question

Group 3

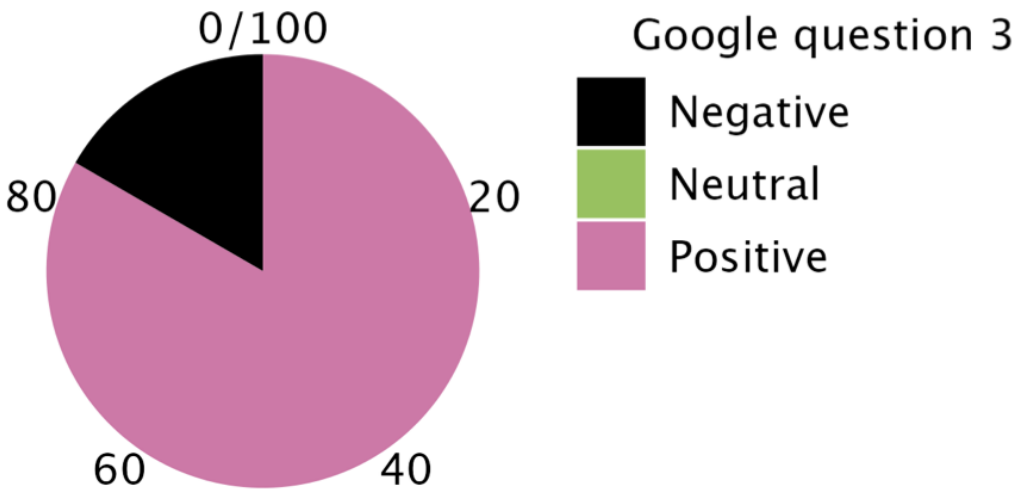


Figure 12 Group 3's response to the second Likert question

Group 4

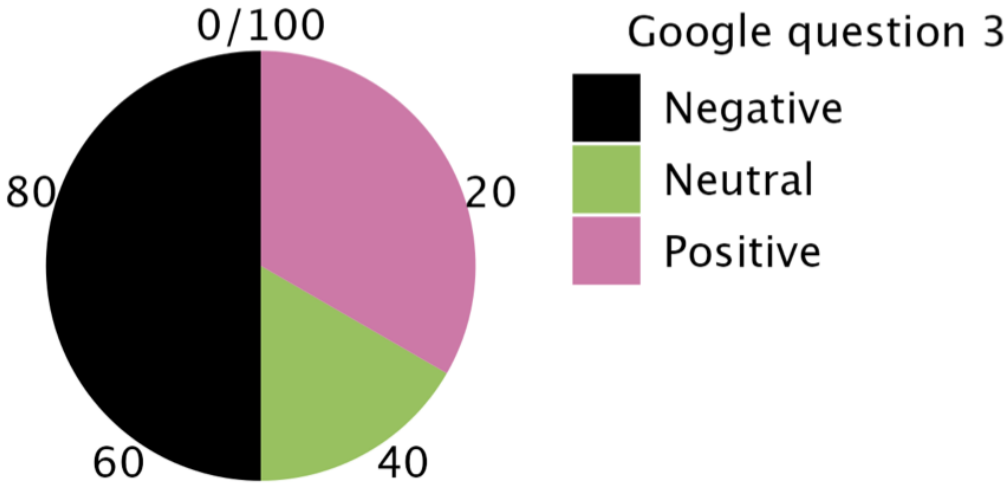


Figure 13 Group 4's response to the second Likert question

A multiple-choice question was included in the questionnaire asking about parts of the lesson the students would like to change, if any. Group 1 as shown in Figure 14 had two students who felt the lesson was not fun enough. Two students believed the questionnaire should be changed, one student felt the lesson was too easy, and one student did not want to change anything about the lesson. Group 2 displayed one student who wanted to change the cloze test, two students who thought the lesson was too easy, and three students who did not want to change anything about the lesson (Figure 15).

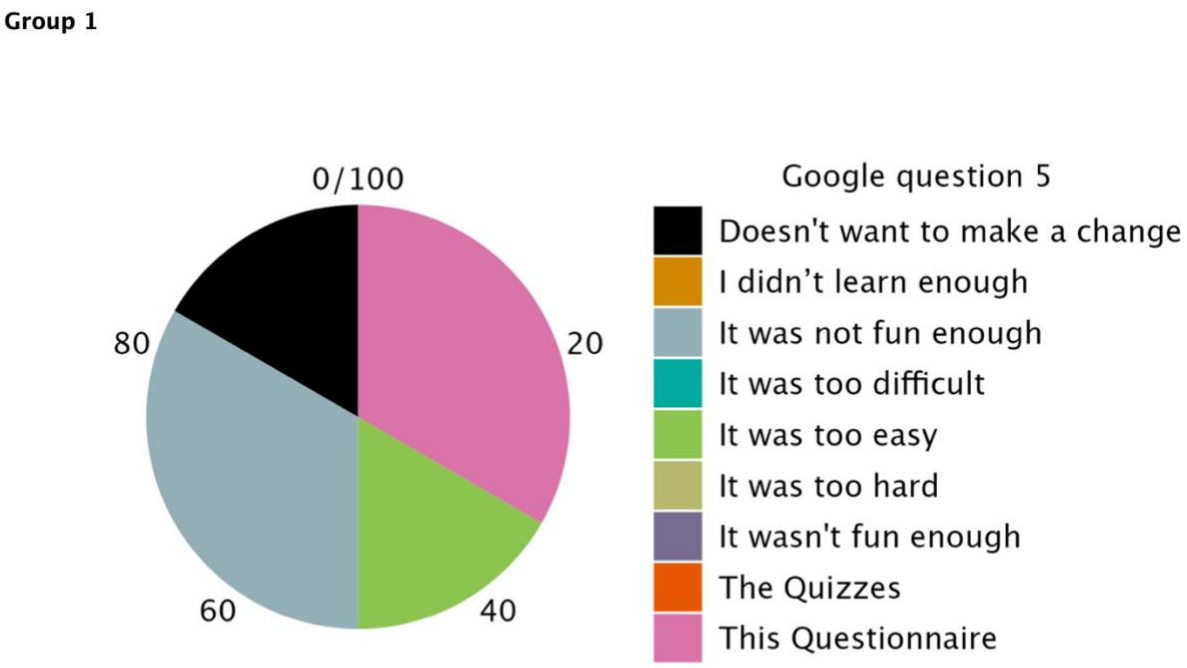


Figure 14 Group 1's response to the multiple-choice question

Figure 15 Group 2's response to the multiple-choice question

In Group 3 most students (4 students) did not want to change anything about the lesson they received. One student felt they did not learn enough in this group, and one student felt the lesson was not fun enough (Figure 16). In Group 4 half of the students did not want to change anything about the lesson (Figure 17). Two students felt the lesson was too difficult, in contrast, one student felt the lesson was too easy.

Group 3

Figure 16 Group 3's response to the multiple-choice question

Group 4

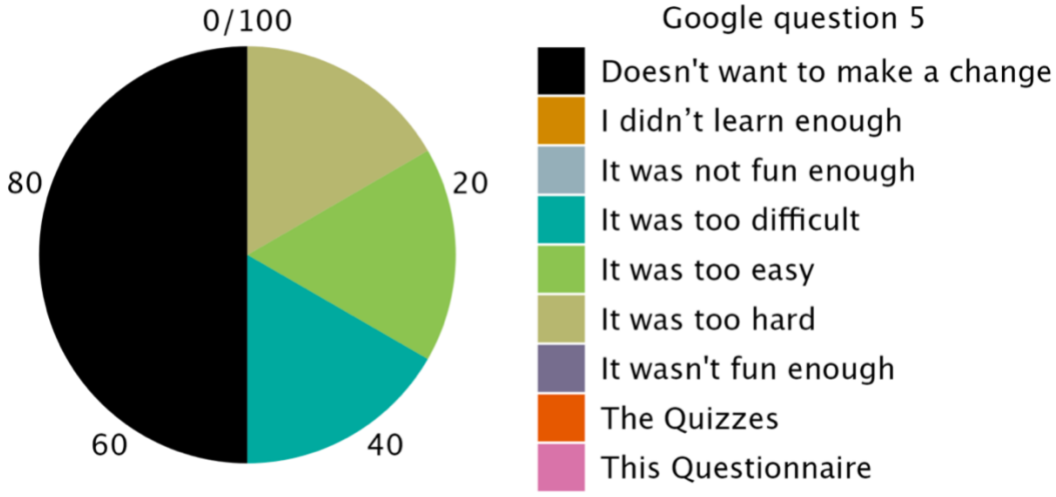


Figure 17 Group 4's response to the multiple-choice question

Open-Ended Questions

Question four asks *what was your favourite part of the lesson?* The majority of the students enjoyed the games most. One student enjoyed the Koala software best, and one student said they loved all the parts of the lesson. (Figure 18). Most students in Group 2 enjoyed the character creation game the most, two students enjoyed the other games best (Figure 19). Half of the students in Group 3 enjoyed the song the most, one student.

Group 1

Figure 18 Group 1's answers to question 4

Group 2

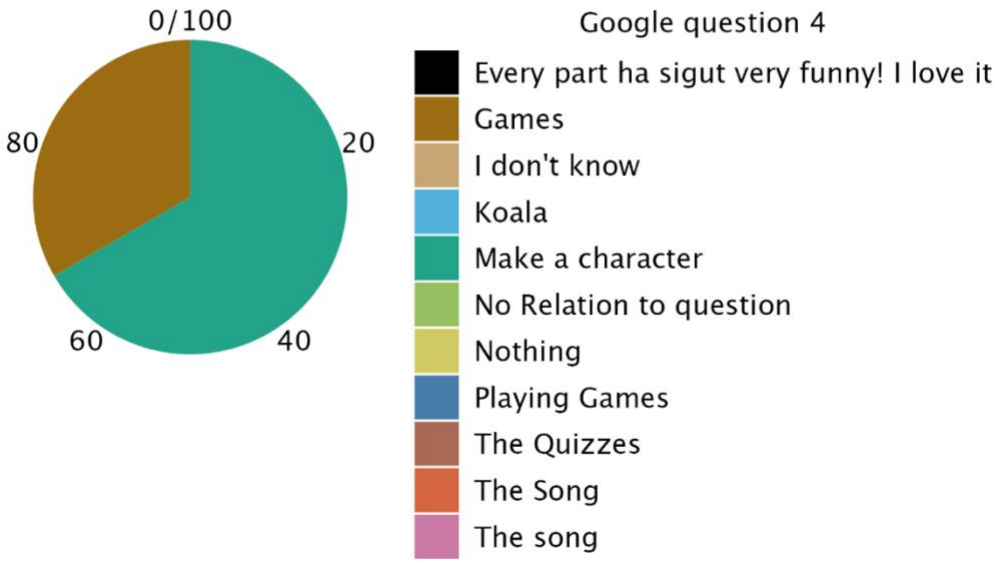


Figure 19 Group 2's answers to question 4

The majority of students in Group 3 said their favourite part of the lesson was the YouTube song, and two students enjoyed the cloze quizzes most (Figure 20). In Group 4 half of the students said they did not enjoy parts of the lesson specifically. One of the students in Group 4 said they enjoyed the song (Figure 21), another said they did not know what their favourite part was, and one student gave an answer that was unrelated to the question.

Group 3

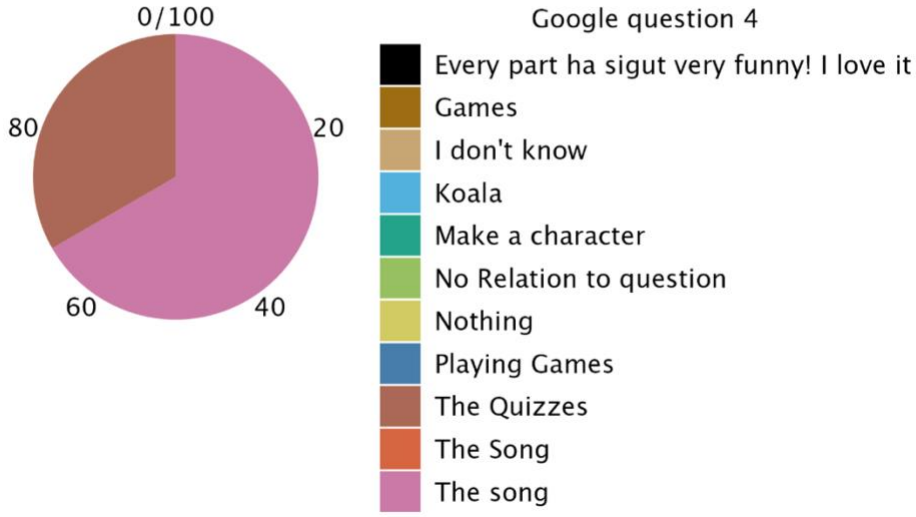


Figure 20 Group 3's answers to question 4

Group 4

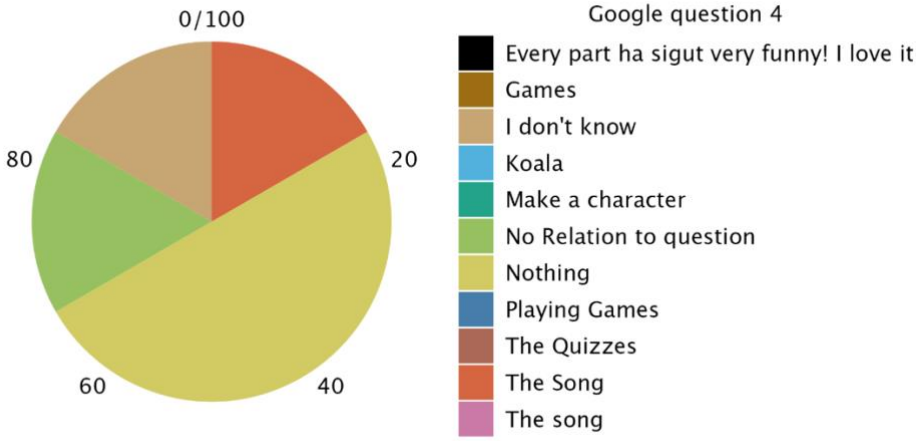


Figure 21 Group 4's answers to question 4

Question 6 asks *Can you summarise one thing you learned from today's lesson?* The responses were rated firstly whether students felt they learned something, they felt they did not learn anything (negative response), they were not sure(unsure), or they gave an answer

unrelated to the question. These results for Group 1(Figure 22), Group 2 (Figure 23), Group 3 (Figure 24), and Group 4 (Figure 25) are displayed in the following.

Group 1

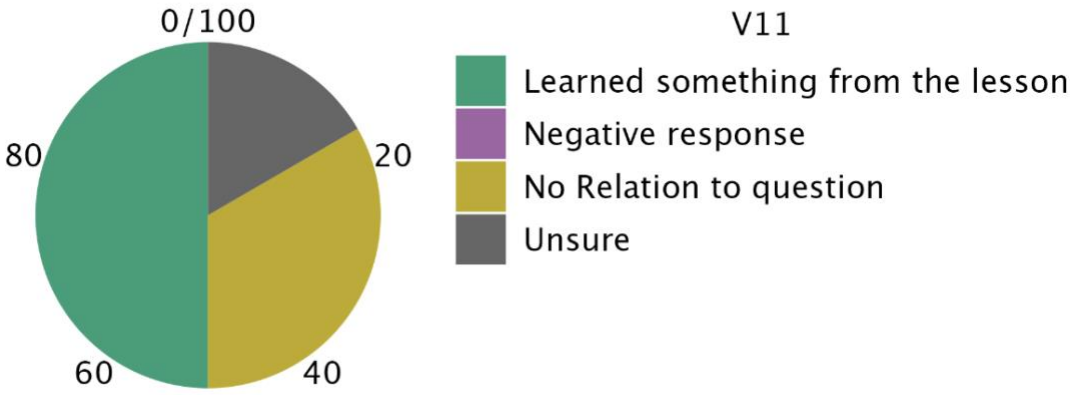


Figure 22 Shows Group 1's responses to question 6

Group 2

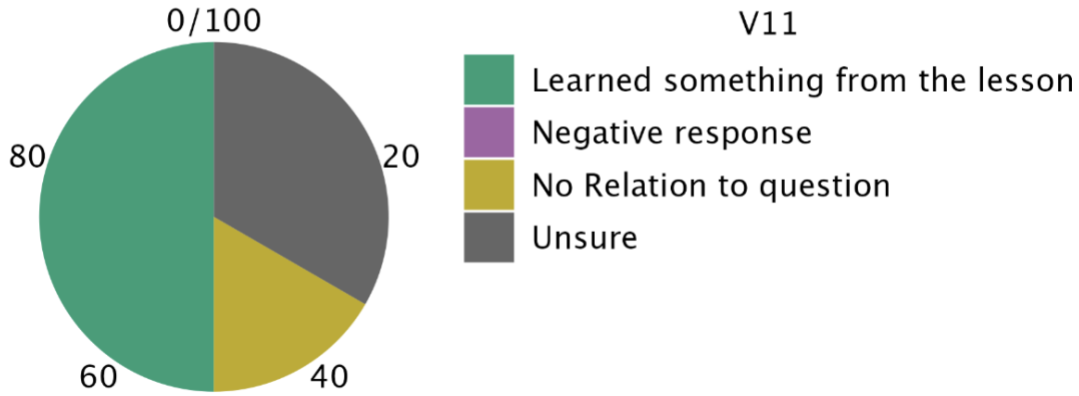


Figure 23 Shows Group 2's responses to question 6

Group 3

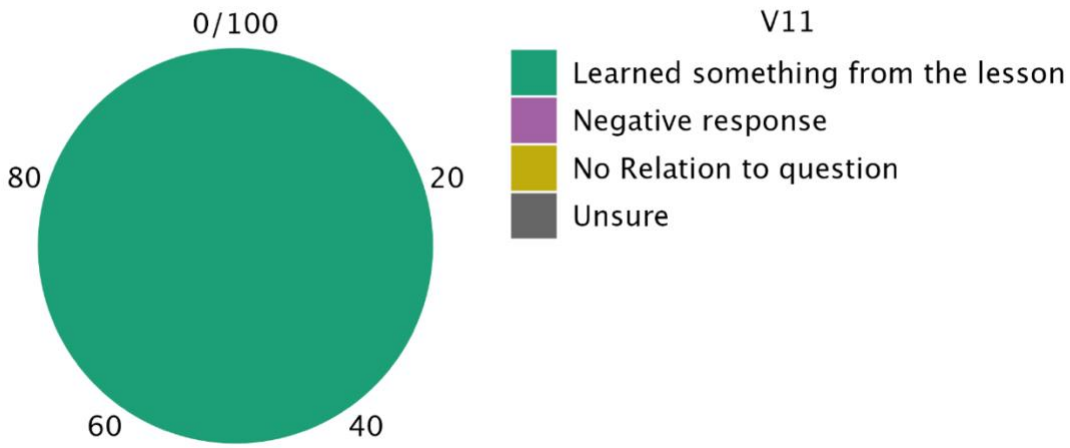


Figure 24 Shows Group 3's responses to question 6

Group 4

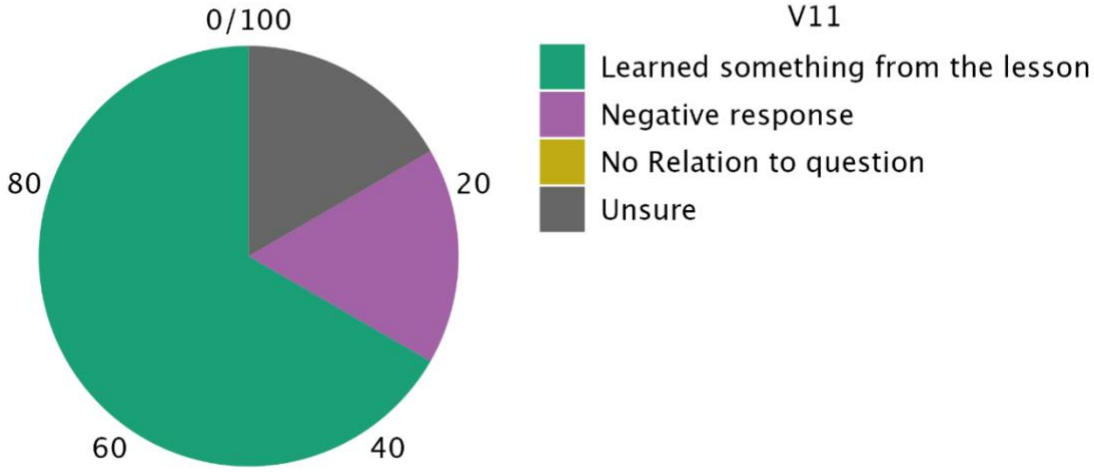


Figure 25 Shows Group 4's responses to question 6

In Group 1 (Figure 26) half of the students felt learned something related to the grammar taught (adding d and ed to make regular verbs past tense in English) throughout the treatments. Group 2 (Figure 27) had two students who felt they learnt something related to the grammar rule taught. In group 3 (Figure 29) all students felt they learnt something related to the grammar

rules taught In Group 4 (Figure 30) most students felt they learnt something related to the grammar rules.

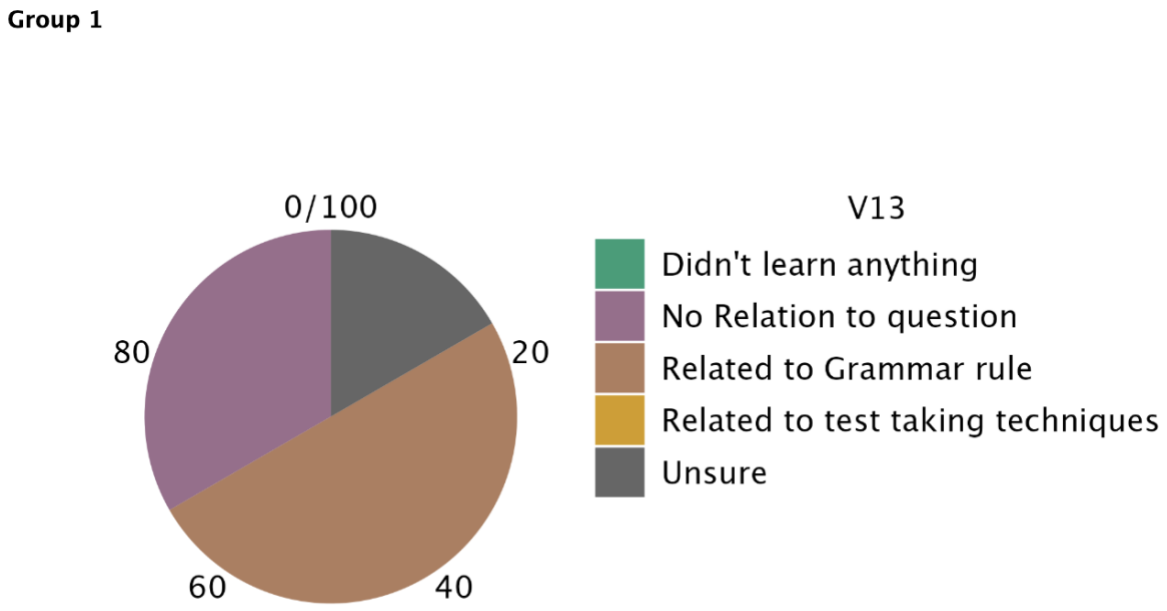


Figure 26 Shows Group 1's responses to question 6

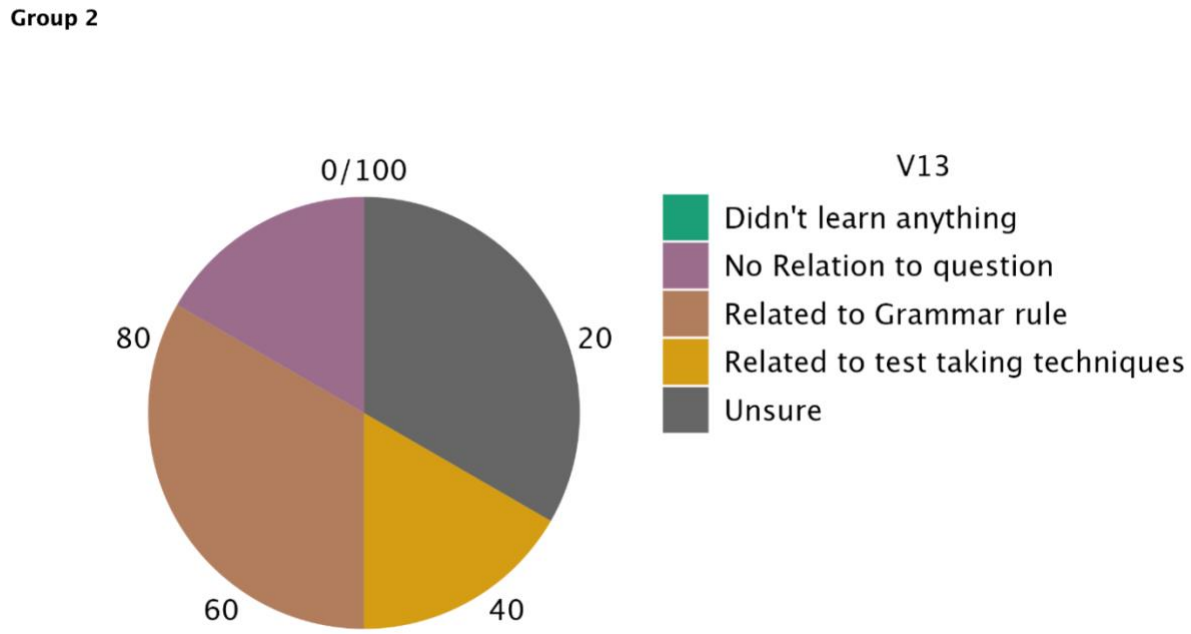


Figure 27 Shows Group 2's responses to question 6

Group 3

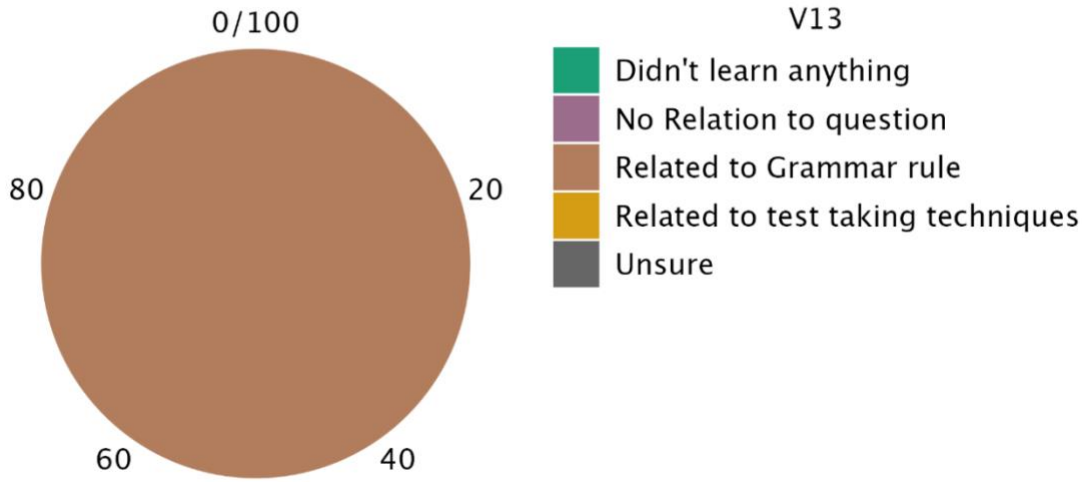


Figure 28 Shows Group 3's responses to question 6

Group 4

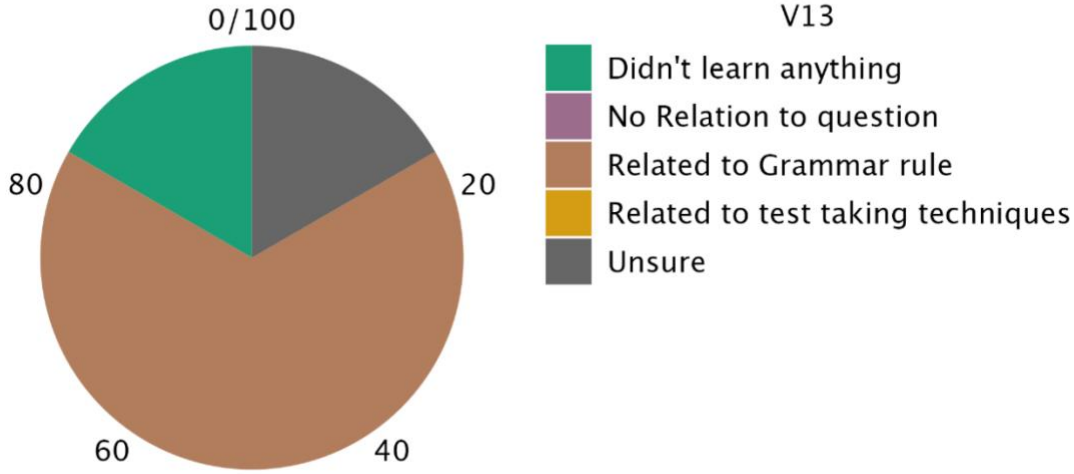


Figure 29 Shows Group 4's responses to question 6

Table 1 Table displaying the frequency of student responses to question 6

Variable	Level	Counts	Total	Proportion	p
Google question 4	Every part ha sigut very funny! I love it	1	24	0.042	< .001
	Games	5	24	0.208	0.007
	I don't know	1	24	0.042	< .001
	Koala	1	24	0.042	< .001
	Make a character	4	24	0.167	0.002
	No Relation to question	1	24	0.042	< .001
	Nothing	3	24	0.125	< .001
	Playing Games	1	24	0.042	< .001
	The Quizzes	2	24	0.083	< .001
	The Song	1	24	0.042	< .001
	The song	4	24	0.167	0.002
Google question 6	Add d	1	24	0.042	< .001
	Add d sometimes	1	24	0.042	< .001
	Add ied and ed	1	24	0.042	< .001
	Ed D Ied	1	24	0.042	< .001
	How to make the word to the past tense!	1	24	0.042	< .001
	I don't know	4	24	0.167	0.002
	I have improved by doing verbs in the past.	1	24	0.042	< .001
	I learned a little more about the past and the future	1	24	0.042	< .001
	I learned the rules of irregular and regular verbs, like it finish with any vowel we put -ed	1	24	0.042	< .001
	Learned Nothing	1	24	0.042	< .001
	No Relation to question	3	24	0.125	< .001
	Read before you write to avoid low level mistakes	1	24	0.042	< .001
	Simple Past Tense	1	24	0.042	< .001
	Some rules of the simple past tense	1	24	0.042	< .001
	That always when the vowel words end we have to add -ed.	1	24	0.042	< .001
	The -ed sufix	1	24	0.042	< .001
	To put ed in a few words.	1	24	0.042	< .001
	Verbs in the past	1	24	0.042	< .001
	add ed	1	24	0.042	< .001

The table above displays the frequency of the same response. 20% of students mentioned the games as being their favourite part of the lesson (Figure 30). 16% of students enjoyed the song most, and 16% of students enjoyed making a character most. 12% of students said they did not have a favourite part. These percentages are based on the proportion values, The data from question 6 shows that 50% of students learned something related to the grammar rule. 4% of students said they did not learn anything, and 12% of students gave an answer that was not related to the question.

5 Conclusion

Findings comments

This study aimed to investigate how students felt about gamification techniques in comparison to PowerPoint presentations in the traditional school classroom and in online lessons. 24 young learner underwent different treatments and took questionnaire, the results of this study confirmed Rabah, Cassidy, and Beauchemin's (2018) findings that although gamification can add useful elements, it also can bring unwanted distractions to a lesson. Firstly this paper sought to determine different effects of PowerPoint and gamification techniques and the results were surprising.

Regarding the first Research question:

What are the effects of gamified lessons online, in comparison with the effects of gamified lessons in the classroom on ESL learners between the ages of 5-12 when teaching simple regular past tense verbs?

The results showed online both gamification techniques and PowerPoint presentations have a significant positive effect of students test scores. Both classroom groups test scores decreased in mean however, suggesting both treatments had a negative effect in those lesson. The online group showed no significant differences between the two treatments which suggests the initial hypothesis is incorrect. The test scores pointed to both lessons being equally as effective or ineffective depending on the medium they received the treatments. The students' responses to the questionnaires however indicated that both online and, in the classroom, students felt they gained more knowledge about the grammar topic when receiving PowerPoint lessons.

The most unexpected result was the decrease in mean in both classroom groups (Group 1 class gamification, and Group 3 class PowerPoint), Some possible explanations could be a change of behaviour caused by an exciting schedule change to the day. Students may have initial been super engaged with the new experience, but they after some of the excited wore off

lost interest. Over 15 students who received the treatments that day declined taking the final questionnaire, opting for instead chatting to friends, doodle or continuing to play the games in the students in the gamification group. All the participants who had the online treatments were regular attendees of online lessons, so for these children it was a more familiar type of lesson. These factors were overlooked in this study and should be kept in mind for future research.

The second research question asked do young learners prefer the use of PowerPoint presentations or gamification methodology more in ESL lessons? The results suggested the second hypothesis was correct. Students scored more positively in aspects of enjoyments and mentioned elements of the treatment as their favourite parts of the lessons from the gamification groups (Groups 1 class gamification, and Group 2 online gamification). Students in the PowerPoint treatment groups Not all the evidence toward the PowerPoint treatments were negative from the students. The class PowerPoint group wanted more lessons like the treatment they received scoring similarly to the Gamification groups when asked the question *Would you like to have more lessons like this?* The group that scored the most negatively and seemed to enjoy the lessons the least were the online PowerPoint groups. This is interesting considering they are the group who improved in test scores most overall.

Suggestions for future study

Suggestions for future study topics are, firstly, ESL digital games on learners under the age of five, a study about the role of egocentrism in young learners in language acquisition. Imagination could be explored through the means of games whilst identifying key parameters of egocentrism and understanding the role in understanding ourselves when learning a new language. Secondly, a larger and longer expansion of this study, teaching a whole coursebook unit, within a game on a video game console with an RPG (role-playing games) based format. The study would be based on teenagers in comparison to young learners. This research set out to show gamification techniques are more fun and effective than PowerPoint presentations, fun

they are they are not the most beneficial in terms of test scoring. This paper hopes to serve as an aid to further research and a plea for more effective gamification techniques for students currently.

Conclusion statements

This research challenges the ideas that online lessons are not as effective as classroom lessons. Both groups who had online lessons improved significantly. Throughout the course of this study, it's been noted that what is considered a game is not always fun. This study supports research stating that as soon as you make a gaming element educational it becomes less fun, and equally as soon as you add games to a lesson the learning becomes hindered. This study is different however as it also suggests this narrative does not have to be the case. The gamification methodologies didn't have any worse of an impact that PowerPoint presentations for the class groups. Gamification also proved to be arguably just as effective as PowerPoint presentations for the online groups.

Appendix

Appendix a

Results

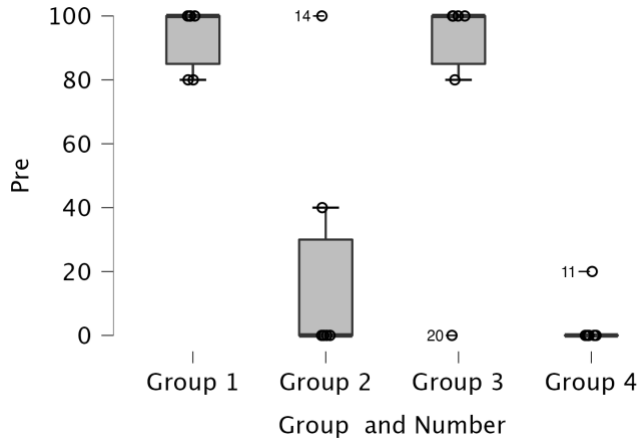
Pre Treatment

Descriptive Statistics

	Pre			
	Group 1	Group 2	Group 3	Group 4
Valid	6	6	6	6
Missing	0	0	0	0
Mean	93.333	23.333	80.000	3.333
Std. Deviation	10.328	40.825	40.000	8.165
Minimum	80.000	0.000	0.000	0.000
Maximum	100.000	100.000	100.000	20.000

Boxplots

Pre



Appendix b

Results

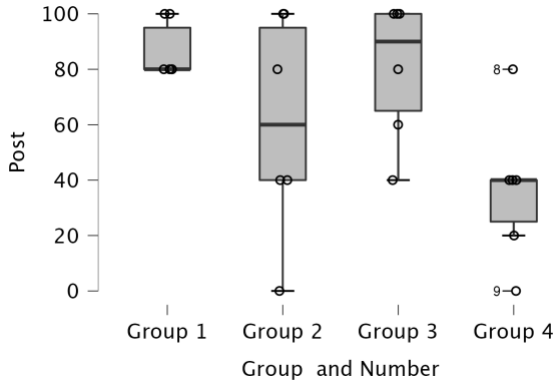
Post Treatment

Descriptive Statistics

	Post			
	Group 1	Group 2	Group 3	Group 4
Valid	6	6	6	6
Missing	0	0	0	0
Mean	86.667	60.000	80.000	36.667
Std. Deviation	10.328	40.000	25.298	26.583
Minimum	80.000	0.000	40.000	0.000
Maximum	100.000	100.000	100.000	80.000

Boxplots

Post



Appendix c

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
Pre	-	Post	−2.030	23	0.027

Note. For all tests, the alternative hypothesis specifies that Pre is less than Post.

Note. Student's t-test

Appendix d

Paired Samples T-Test

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
Pre	-	Post	−2.030	23	0.973

Note. For all tests, the alternative hypothesis specifies that Pre is greater than Post.

Note. Student's t-test.

Paired Samples T-Test

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
Pre	-	Post	−2.030	23	0.027

Note. For all tests, the alternative hypothesis specifies that Pre is less than Post.

Note. Student's t-test.

Appendix e

Paired Samples T-Test

Paired Samples T-Test

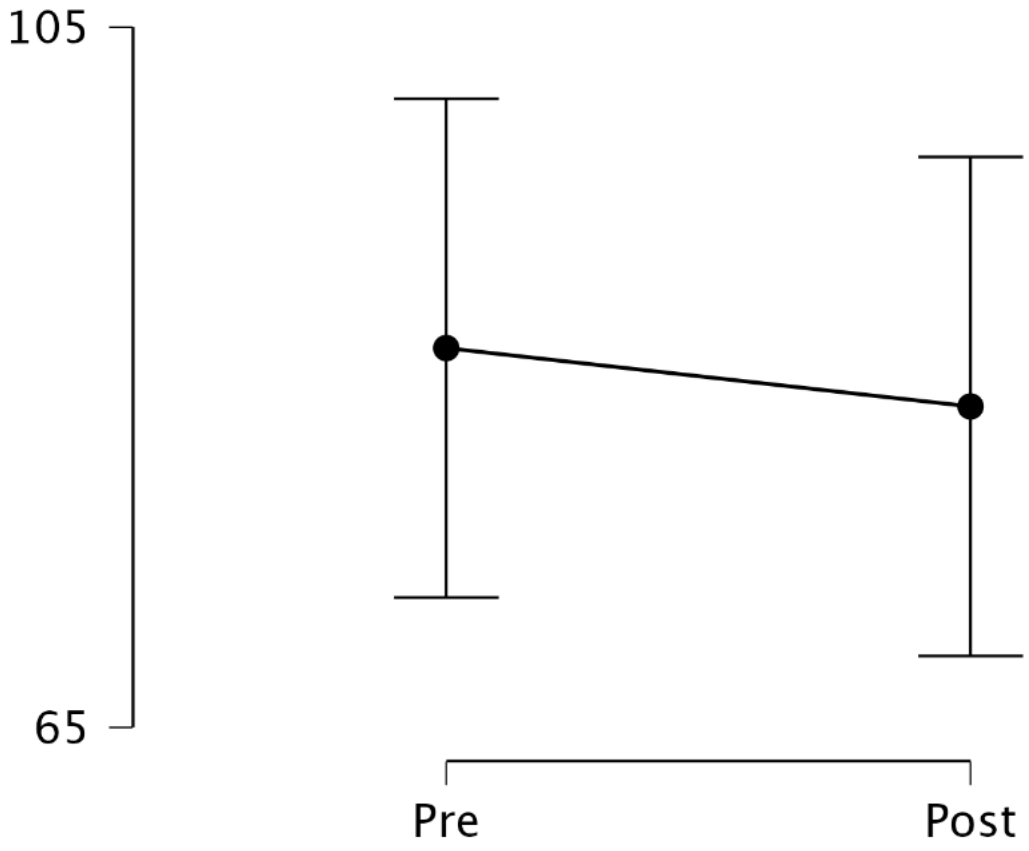
Measure 1		Measure 2	t	df	p
Pre	-	Post	0.364	11	0.723

Note. Student's t-test.

Descriptives

Descriptives Plots

Pre - Post



Appendix f

Independent Samples T-Test

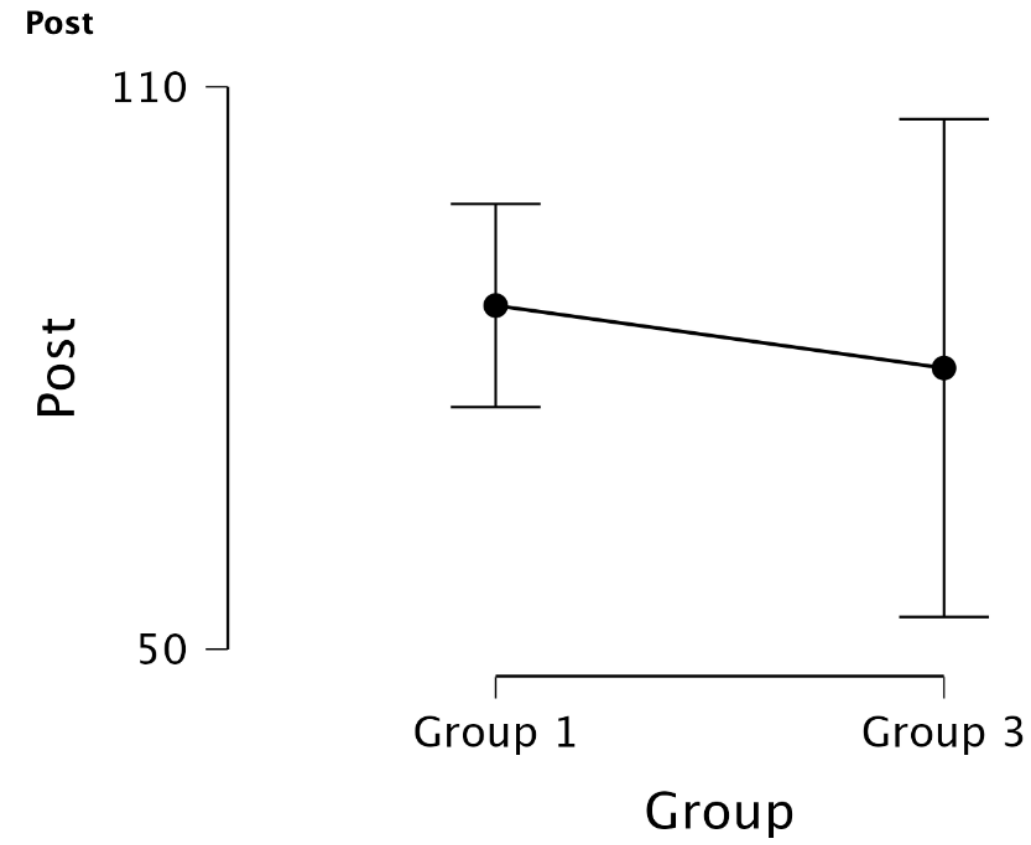
Independent Samples T-Test

	t	df	p
Post	0.598	10	0.563

Note. Student's t-test.

Descriptives

Descriptives Plots



Appendix g

Independent Samples T-Test

Independent Samples T-Test

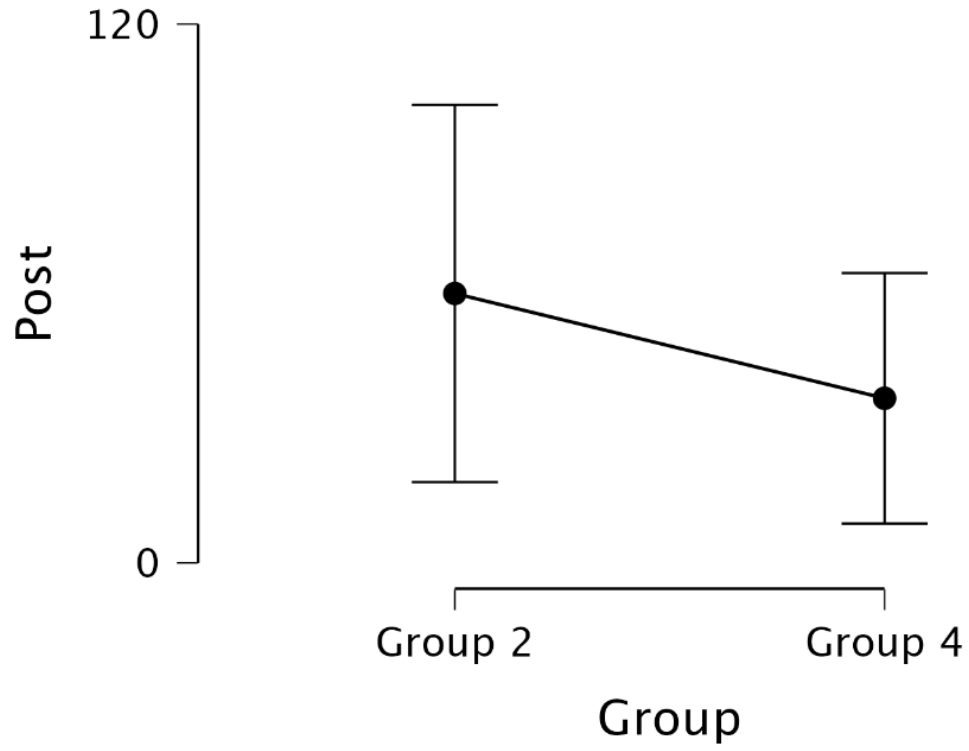
	t	df	p
Post	1.190	10	0.262

Note. Student's t-test.

Descriptives

Descriptives Plots

Post



Appendix h

Paired Samples T-Test

Paired Samples T-Test

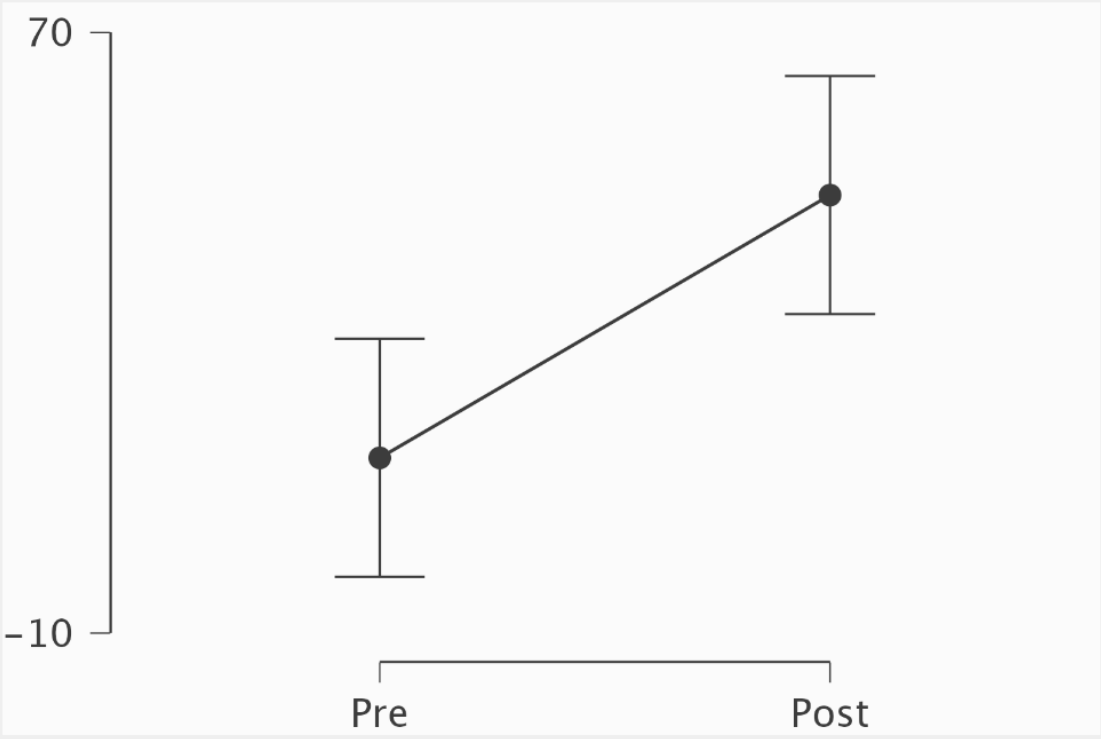
Measure 1		Measure 2	t	df	p
Pre	-	Post	−3.436	11	0.006

Note. Student's t-test.

Descriptives

Descriptives Plots

Pre - Post



Appendix i

Results

Descriptive Statistics

Descriptive Statistics

	Pre		Post	
	Games	Powerpoint	Games	Powerpoint
Valid	12	12	12	12
Missing	0	0	0	0
Mean	58.333	41.667	73.333	58.333
Std. Deviation	46.286	48.586	31.140	33.530
Minimum	0.000	0.000	0.000	0.000
Maximum	100.000	100.000	100.000	100.000

Independent Samples T-Test

Independent Samples T-Test

	t	df	p
Post	1.136	22	0.268

Note. Student's t-test.

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