

THE USE OF ONLINE QUIZZES IN TEACHING ENGLISH GRAMMAR  
DURING COVID-19

MICHEAL TANG SWEE KONG

A project report submitted in partial fulfilment of the  
requirements for the award of the degree of  
Master of Education (Teaching English as a Second Language)

School of Education  
Faculty of Social Sciences and Humanities  
Universiti Teknologi Malaysia

AUGUST 2021

## **DEDICATION**

This project report is dedicated to my parents, who always gives me the motivational support and I truly appreciate their confidence in me. It is also dedicated to my supervisor and lecturers who taught and inspired me to persevere and prepared me to face any obstacles along the way. I would also express my gratitude to my friends who always provide encouragements and support to me.

## ACKNOWLEDGEMENT

In preparing this thesis, I came across with many people, lecturers, educators, and practitioners. They have contributed towards my understanding and thoughts. In particular, I wish to express my sincere appreciation to my supervisor, Dr Kew Si Na, for her encouragement, guidance, knowledge and support. Without her continuous support and motivation, this project report would not have been the same as presented here and complete on time.

I would also like to show my greatest appreciation and gratitude to my dearest parents and my family members for their unconditional love and affection who encourages me all the time. Their love and motivational support had driven me to keep on going during difficult times. Not forgetting Universiti Teknologi Malaysia (UTM), I am indebted to my school for their assistance in supplying the relevant literatures.

My fellow postgraduate student should also be recognised for their support. My sincere appreciation also extends to all my colleagues and others who have provided assistance at various occasions. Their views and tips are useful indeed. Unfortunately, it is not possible to list all of them in this limited space. I am truly grateful to all my lecturers who had taught me along my journey in completing this research.

## ABSTRACT

The main objectives of this study are to investigate the effectiveness of the usage of online quizzes in teaching English grammar and students' satisfactions towards the use of online quizzes in a Chinese primary school in Johor Bahru. The study was carried out to examine students' performance on learning grammar using the online quizzes and also on the students' preferences and satisfactions on online quizzes in learning grammar. The respondents were 100 primary school students from a Chinese primary school in Johor Bahru. The instruments used to collect the data were the London Teacher Training College's (LTTC) Grammar Proficiency Test for Grade 4, a 30 items four Likert Scale questionnaire for students and also excerpts from the interview with the students. All the students were satisfied with the use of online quizzes which consisted of 100% scores in satisfaction based on the questionnaires. Apart from that, it was found out that majority of the students prefers Kahoot! and Quizizz as compared to Google Quiz. Nevertheless, the most preferred online quiz among the three online quizzes is Quizizz with the highest scores of 1107. There was a significant difference between the treatment and non-treatment group of students where there is only a small margin of improvement (+237) in the non-treatment as compared to treatment group with an total margin of improvement (+709). There was also a significant relationship between the effectiveness of online quizzes in teaching grammar and the satisfaction of students towards online quizzes. The treatment group of students obtained an average of (+14.18) margin of improvement in their post-test scores with notable improvement been (+26) and (+27) and there was a significant difference between the pre and post-test in which portrayed the increase in students' English grammar performance. Based on the analysis from the excerpt of the interview, most of the students enjoyed and were satisfied with their English learning through online quizzes as they were fun and engaging. At the same time, students also became aware of their learning through online quizzes. Students also preferred Kahoot! and Quizizz due to their competitiveness and the unique features of the quizzes such as leaderboards and points. Implications had been made for teachers, schools and community to review on the use of online learning tools particularly online quizzes currently used in the classroom teaching and learning process due to Covid 19 and strived to utilise online quizzes to improve on the students' mastery of language learning. Furthermore, recommendations had been included for future studies in order to obtain more reliable data and to enhance the research data in Malaysia especially towards Chinese primary schools or Sekolah Jenis Kebangsaan Cina (SJKC).

## ABSTRAK

Tujuan utama kajian ini dilaksanakan adalah untuk mengkaji keberkesanan penggunaan kuiz dalam talian dalam pengajaran tatabahasa Inggeris dan tahap kepuasan murid terhadap penggunaan kuiz dalam talian di Sekolah Jenis Kebangsaan Cina SJK(C) di Johor Bahru. Kajian ini dilaksanakan untuk mengenal pasti prestasi pelajar dalam mempelajari tatabahasa Bahasa Inggeris melalui penggunaan kuiz dalam talian serta untuk mengetahui lebih lanjut tentang pilihan murid terhadap kuiz dalam talian dan tahap kepuasan mereka mengenai pembelajaran tatabahasa melalui penggunaan kuiz dalam talian dalam kalangan murid Sekolah Jenis Kebangsaan Cina. Responden kajian ini terdiri daripada 100 murid dari Sekolah Jenis Kebangsaan Cina di Johor Bahru. Instrumen yang digunakan untuk pengumpulan data adalah Ujian Kemahiran Tatabahasa (LTTC) Kolej Guru Sekolah London (LTTC) untuk Gred 4, 30 item yang bersifat empat mata Skala Likert diberikan kepada murid serta petikan daripada temu bual dengan murid. Semua murid didapati berpuas hati dengan penggunaan kuiz dalam talian yang terdiri di mana mereka memberi skor yang tinggi iaitu 100% berdasarkan soal selidik dalam kajian ini. Selain itu, didapati bahawa majoriti murid lebih suka Kahoot! dan Quizizz berbanding dengan Google Quiz. Walaubagaimanapun, kuiz dalam talian yang paling diminati di antara tiga kuiz tersebut adalah Quizizz dengan skor tertinggi, 1107. Terdapat perbezaan yang signifikan antara kumpulan intervensi dan bukan intervensi di mana hanya terdapat sedikit peningkatan (+237) dalam kumpulan bukan intervensi dengan kumpulan intervensi dengan margin peningkatan keseluruhan (+709). Terdapat juga hubungan yang signifikan antara keberkesanan kuiz dalam talian dalam pengajaran tatabahasa dan kepuasan pelajar terhadap kuiz dalam talian. Kumpulan intervensi pelajar memperoleh purata (+14.18) margin peningkatan dalam skor ujian pasca mereka dengan peningkatan yang ketara seperti (+26) dan (+27). Terdapat juga hubungan signifikan antara ujian pra dan pasca di mana menggambarkan peningkatan prestasi tatabahasa Bahasa Inggeris pelajar. Berdasarkan analisi dari petikan temu bual, kebanyakan pelajar meminati dan berpuas hati terhadap pembelajaran Bahasa Inggeris melalui kuiz dalam talian kerana amat menyeronokkan dan menarik. Pada masa yang sama, pelajar juga menyedari onjektif pembelajaran mereka melalui kuiz dalam talian. Pelajar turut lebih meminati Kahoot! dan Quizizz kerana daya saing dan ciri unik kedua-dua kuiz tersebut seperti papan pendahulu dan markah. Implikasi telah dibuat untuk guru, sekolah dan masyarakat untuk mengkaji penggunaan alat pembelajaran maya terutamanya kuiz dalam talian yang kini sering digunakan dalam kelas maya kerana Covid 19 dan berusaha untuk menggunakan kuiz dalam talian untuk meningkatkan penguasaan pembelajaran Bahasa Inggeris pelajar. Di samping itu, cadangan telah disertakan untuk kajian masa hadapan untuk mendapatkan data yang lebih tepat serta untuk memperkukuhkan data penyelidikan di Malaysia, khasnya dalam kalangan sekolah rendah Cina atau Sekolah Jenis Kebangsaan Cina (SJKC).

## TABLE OF CONTENTS

	<b>TITLE</b>	<b>PAGE</b>
	<b>DECLARATION</b>	<b>iii</b>
	<b>DEDICATION</b>	<b>iv</b>
	<b>ACKNOWLEDGEMENT</b>	<b>v</b>
	<b>ABSTRACT</b>	<b>vi</b>
	<b>ABSTRAK</b>	<b>vii</b>
	<b>TABLE OF CONTENTS</b>	<b>viii</b>
	<b>LIST OF TABLES</b>	<b>xi</b>
	<b>LIST OF FIGURES</b>	<b>xiii</b>
	<b>LIST OF ABBREVIATIONS</b>	<b>xiv</b>
	<b>LIST OF APPENDICES</b>	<b>xv</b>
	<b>DECLARATION</b>	<b>iii</b>
	<b>DEDICATION</b>	<b>iv</b>
	<b>ACKNOWLEDGEMENT</b>	<b>v</b>
	<b>ABSTRACT</b>	<b>vi</b>
	<b>ABSTRAK</b>	<b>vii</b>
	<b>TABLE OF CONTENTS</b>	<b>viii</b>
	<b>LIST OF TABLES</b>	<b>xii</b>
	<b>LIST OF FIGURES</b>	<b>xiii</b>
	<b>LIST OF ABBREVIATIONS</b>	<b>xiv</b>
	<b>LIST OF APPENDICES</b>	<b>xv</b>
<b>CHAPTER 1</b>	<b>INTRODUCTION</b>	<b>1</b>
	1.1 Introduction	1
	1.2 Problem Background	3
	1.3 Problem Statement	6
	1.4 Research Objectives	8
	1.5 Hypothesis	8
	1.6 Research Questions	9

1.7	Scope of Study	9
1.8	Conceptual Framework	10
1.9	Significance of Study	13
1.10	Definition of the terms	14
1.11	Chapter Summary	17
<b>CHAPTER 2</b>	<b>LITERATURE REVIEW</b>	<b>19</b>
2.1	Introduction	19
2.2	English Grammar Teaching	19
2.3	Educational Theories Related to the Research	21
2.3.1	Behaviourist Theory	22
2.3.2	Self Efficacy Theory	23
2.3.3	Flow Theory	23
2.4	New Normal of Covid-19 in Education Field	25
2.5	Teaching and Learning Methods to English Grammar Teaching	25
2.5.1	Gamification	26
2.5.2	Gamification in English Classroom	28
2.6	Types of Online Quizzes	29
2.6.1	Google Quiz	29
2.6.2	Kahoot!	31
2.6.3	Quizizz	32
2.7	Students' Perceptions on Online Quizzes	33
2.8	Previous Studies	34
2.9	Chapter Summary	36
<b>CHAPTER 3</b>	<b>RESEARCH METHODOLOGY</b>	<b>37</b>
3.1	Introduction	37
3.2	Research Design	37
3.3	Participants of the Research	38
3.4	Research Instruments	39
3.5	Methods of Data Collection	43
3.6	Methods of Data Analysis	44

3.7	Research Procedure	46
3.8	Ethical Considerations	48
3.9	Pilot Study	50
3.10	Chapter Summary	53
<b>CHAPTER 4</b>	<b>FINDINGS AND DISCUSSION</b>	<b>54</b>
4.1	Introduction	54
4.2	Satisfactions and Preferences of Students on the Online Quizzes among Google Quiz, Kahoot! and Quizizz	55
4.3	Students' Performance on Learning Grammar Using the Online Quizzes	60
4.4	Analysis on the Reasons Students Feel Satisfied towards Online Quizzes in Learning English Grammar	67
<b>CHAPTER 5</b>	<b>DISCUSSION, SUMMARY AND RECOMMENDATION</b>	<b>77</b>
5.1	Introduction	77
5.2	Discussions	77
5.3	Conclusions of Research Findings	84
5.4	Implications	85
5.5	Limitations of the Research	88
5.6	Recommendations for Future Research	89
5.7	Chapter Summary	90
<b>REFERENCES</b>		<b>91</b>



## LIST OF TABLES

<b>TABLE NO.</b>	<b>TITLE</b>	<b>PAGE</b>
Table 3.4.1	Comparison of LTTC’s grammar proficiency test for Grade 4 and the Malaysia CEFR syllabus for Chinese National-type school Year 5	40
Table 3.5.1	Mehtods of Data Collection	43
Table 3.7.2	Progress of treatment	47
Table 4.2.1	Scores coded into groups for students’ satisfaction of online quizzes on grammar learning.	56
Table 4.2.2	Scores coded into groups for students’ preference of online quizzes (Google Quiz, Kahoot!, Quizizz) on grammar learning.	56
Table 4.2.3	Satisfactions of students on the use of online quizzes in learning English grammar	57
Table 4.2.4	Scores coding of students on each online quizzes.	58
Table 4.2.5	Descriptive Statistics on the preference of students on online quizzes	58
Table 4.2.6	Students’ preferences on the three types of quizzes (Google Quiz, Kahoot!, Quizizz)	59
Table 4.3.1	Scores of pre-test and post-test from the non-treatment group	61
Table 4.3.2	Scores of pre-test and post-test from the treatment group	62
Table 4.3.3	Mean scores of the pre-test and post-test from non-treatment group	64
Table 4.3.4	Mean scores of the pre-test and post-test from treatment group	65
Table 4.3.5	Test of normality of treatment group	65
Table 4.3.6	Paired sample statistic of treatment group	66
Table 4.3.7	Paired samples test of treatment group	66
Table 4.4.1	Participants response, codes and themes of students’ satisfaction on using online quizzes in learning English grammar	67
Table 4.4.2	Participants response, codes and themes of students’ awareness of language learning on using online quizzes in learning English grammar	69

Table 4.4.3	Participants response, codes and themes of students' excitement and enjoyment on using online quizzes in learning English grammar.	71
Table 4.4.4	Participants response, codes and themes of students' challenges and obstacles on using online quizzes in learning English grammar	72

## LIST OF FIGURES

<b>FIGURE NO.</b>	<b>TITLE</b>	<b>PAGE</b>
Figure 1.8.1	Conceptual Framework	11
Figure 1.8.2	Five-step process of gamification (Huang & Soman, 2013)	12
Figure 2.1	Examples of Google Quiz	31
Figure 2.2	Examples of Kahoot! application	32
Figure 2.3	Examples of pictures of Quizizz	33
Figure 3.7.1	Procedure of the Research	46
Figure 3.9.1	Flow Chart of Pilot Study	50
Figure 4.2.1	Satisfactions of Students on the Online Quizzes	55
Figure 4.2.2	Preferences of students on the online quizzes among Google Quiz, Kahoot! and Quizizz	56
Figure 4.2.1	Satisfactions of Students on the Online Quizzes	55

## **LIST OF ABBREVIATIONS**

- LTTC - London Teacher Training College  
CEFR - Common European Framework of Reference for Languages

## LIST OF APPENDICES

<b>APPENDIX</b>	<b>TITLE</b>	<b>PAGE</b>
Appendix A	LTTC English Grammar Proficiency Test Grade 4	98
Appendix B	Students' Questionnaire	107
Appendix C	Students' Interview Questions	<b>Error! Bookmark not defined.</b> 111
Appendix D	Detailed Scores and Analysis on Questionnaire	112

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

It is well-known to the public that grammar is one of the prominent components of a language as it proposes a window into the human mind and our amazingly intricate subconscious contents. Previous researches had strongly suggested that the most valuable method of assisting learners' command of grammar in writing is to engage the learners' writing as the fundamental basic for evaluating grammatical views. Santana (2019) further acclaimed that as English language learners, we should acknowledge that grammar acts as the core in both oral and written discourse as internalizing English grammar plays an prominent role in achieving the aim of successful communication. On the other hand, Polat (2017) also posited the importance of grammar knowledge in language learning and believed that it is an integral part of the four primary language skills which are listening, speaking, reading and writing.

In spite of the importance of English grammar, it is very complex and most of the learners have difficulties to remember, comprehend and use it masterfully. In spite of the importance of English grammar, it is very complicated and most of the learners have difficulties to remember, comprehend and use it proficiently. Learning grammar is like learning how to drive. A learner can memorize all of the theories, rules and regulations, but he won't be able to master or skilled at it unless he practice it and it starts to become second nature to any learner as the saying goes, practice makes perfect. Hence, English language learners commonly faced difficulties in mastering grammar skills and grammar usually causes moments of discomfort and sometimes terror to the learners (Al-Mekhlafi & Nagaratnam, 2011).

In fact, in this era of globalization filled with the recent advancements of technology, the world currently has become a point where events that happen in one corner of the globe can easily influence the lives of others in another part of the world. Due to the developments in technology and the Internet, the social, economic, and education inevitably undergo a rapid change in society. In the recent investigation, a number of meta-analyses of the existing literature have been carried out to evaluate whether online education is as productive as their residential complements (Allen, Mattrey, Bourhis, Titsworth, & Burrell, 2004; Bernard et al., 2004; Johnson, Aragon, & Shaik, 2000; Means, Toyama, Murphy, & Baki, 2013). Therefore, a new context of teaching practices are being introduced which is gamification and it carries a prominent role even though it is no longer a new concept to all of us.

Recently, the pandemic caused by Covid-19 has become a huge hurdle to the education systems. Daniel (2020) further asserted that it is the first time where the governments have issued orders to cease face-to-face instructions for most of the students to prevent the exponential spread of Covid-19. This pandemic has further accelerated the use of gamification by the educators in order to ramping up the capacity to teach remotely. In order to increase classroom engagement, educators have been using competitive games in their teaching and learning process. According to Werbach and Hunter (2012) as cited in Figueroa-Flores (2015) and Ong, Chan, Cho, and Koh (2013) gamification is the integration of the components of games or game design techniques in non-game contexts. Furthermore, in order to suit the Malaysia children's learning styles, Halim et al (2020) posited that various online learning tools are being applied by educators in order to aid the pupils in mastering their second or foreign language acquisition such as the online quizzes.

Despite the importance and effectiveness of using online quizzes, most of the researchers do not study upon the students' discernment on various types of usage of online quiz. Earlier studies on the effectiveness of online quiz mostly focusing on the four skills in English which are listening, speaking, reading and writing skills. The studies also revealed that most researchers only examine the effectiveness of one online quiz on either several concepts or one respective field of study. (Valiente,

Cazevieuille & Jover, 2016; Cohen & Sasson, 2016; Halim, Hashim & Yunus, 2020; Andzik et. al, 2019; Zarzyckz, 2016; Jalani & Hashim 2020) Comparable studies recognized on students' performance in taking one of the online quizzes such as Kahoot! quiz proclaimed that there is a higher levels of engagement, pleasure, motivation and concentration during the assessment than those who were evaluated using paper test (Wang, Zhu, and Sætre, 2016). One of the earlier studies portrayed that there is no significant difference in the grade percentage of students using or not using gamification. (Jared, 2019) and the researchers, Natalie et al. (2019) even stated that the students even preferred private quiz over Kahoot! There are also positive views from preservice teachers on both Kahoot! and Socrative applications in the increment of their motivation and attention (Gulcin & Handan, 2019).

Nonetheless, there are yet studies that investigate on the use of more than two quizzes in teaching primary school students in Malaysia. Further clarification on the impact of the online quizzes on the students' performance and their perceptions should be examined. Thus, in this paper, the researcher attempts to analyse the students' performance in English grammar, students' preference and perception towards application of the three online quizzes which are Google Quiz, Quizizz and Kahoot!.

## **1.2 Problem Background**

As much as we have learnt, grammar is a system of a language. It can be interpreted as the structure and system of a language, or languages, generally considered to consist of syntax and morphology (Eastwood, 1994). The word grammar can be defined variedly in a different context. Pradeep (2013) further divided the word grammar into several contexts such as correctness or incorrectness of the language of the speaker, analytical and terminological study of sentences. English grammar has become part and parcel of human life in the current days. Even though one did manage to master the four language skills of the English language, it doesn't mean that the learner may comprehend the grammar of the language. Nevertheless, there are obstacles in learning English grammar in young learners



nowadays. Larsen (2001) further postulated that even if the grammar to be worked on is derivative rather than scheduled in advance, an educator plays a prominent role in deciding on how to address the teaching method of English grammar to the learners.

Therefore, in this 20<sup>th</sup> century of globalization era, online learning has incorporated both online learning and blended learning. Some researchers anticipate it as an online tool for learning. It does not matter where we are and whether it is face-to-face until online learning spectrum, e-learning is its own spectrum. The main concept is the use of the Internet. In the past, online learning has been just a type of distance learning in which it is an umbrella term for any learning that take place across distance and not in a traditional classroom. Nonetheless, due to the current pandemic of the virus, Covid-19, Movement Control Order (MCO) is being implemented in Malaysia. During this lockdown period, none of the students, even the educators can go attend the school to teach and learn. Thus, in this year 2020, online learning is going to bring about a pedagogical shift on the ways of teaching and learning. Learners and educators can easily co-create the learning progress as there will be a shift away from top-down lectures and thus, will aid the passive learners to be more interactive, cooperative and collaborative.

In the past, educators have been trying to make various types of teaching materials or hands-on activities. However, in this year of 2020, online learning is catalyzing a pedagogical transformation in how the educators teach and the learning of the students. Educators have tried to devise numerous ways to assure teaching and learning can be sustained even while their students are at home. In some cases, live teaching through video-conferencing applications like Zoom has been a secondary alternative as such tools demand strong Internet connections as provided by the higher education institutions. Primary school educators have been recommended to use Google Classroom to teach their students. There are also various kinds of teaching applications that have been implemented by educators in order to teach their students online such as Quizizz, Edpuzzle, Youtube, WhatsApp, Telegram, and many more.

In both primary and higher education, many educators try to help the learners to partake in their teaching and learning process while simultaneously evaluating their abilities and comprehension in the particular field. Generally, Brookhart (2004) affirmed that formative and summative assessments are usually applied in the classroom for the purpose of grading the students' performances and gaining knowledge on the students' comprehension of respective fields or concepts. In the current studies, game-based learning has been receiving positive feedbacks when it is used in the college. For instance, Hadijah & Rohaya (2017) concluded in their research that the use of Kahoot! and Quizizz help the students to focus on the discussion and serves as formative assessments for the students to assess the progress of their own learning. Nurcihan (2020) also proved the effectiveness of Kahoot! platform in developing and improving the EFL pronunciation skills of the experimental group.

In general, there are benefits and disadvantages of online quizzes. One of the benefits of online quizzes is that educators can easily engage their audience or learners in a fun and unique way. In addition to that, as long as there is a connection, it is possible to have a large number of participants. In the past, the teachers will need to randomize the questions manually but now, with just a click, it is significantly easier to make a randomization on the questions. Another advantage of online quizzes is that both the educator and participants can obtain immediate results in which aids in identifying the gaps of knowledge among themselves and view upon their room for improvement in specific fields. Money and time can be saved as there will be no instructors needed too. Nonetheless, despite of the pluses, on the other hand, one of the drawbacks of this online quiz is that internet connection is obligatory. Besides that, technology is always not reliable in some circumstances and there are always some costs involved in using online quiz tool. Furthermore, the astounding varieties of materials available in the Internet are not all in good quality. There will be some questions that are not challenging enough or distractions like ads and banners with contents that are not appropriate for young learners.

### **1.3 Problem Statement**

In terms of teaching English language, Noam Chomsky (1976) posited that grammar is an abstract system of rules and therefore, it can be comprehended that the nature of grammar makes it difficult to teach structures of the English language to learners. It is also known that grammar has always been a centrepiece in the world of language acquisition and is always a hot issue on debate. Nevertheless, teachers and educators have never given up in finding the most suitable alternatives in teaching English grammar to the learners especially during this Covid-19 pandemic.

Since the Covid-19 ravages around the world in March 2020, most of the learners from around the world could not attend their schooling sessions and all the educational organizations were forced to shut down. Bender (2020) defined Covid-19 as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV) that correspondingly can be as lethal and deadly. In order to cope up with the needs of the learners in the continuation of their learning progress, educators have developed a schedule or means of frequent and regular communication to ensure the academic learning and provide emotional support to the students. Variety means of educational delivery have also been done by the schools and educators in order to be versatile and given the learners an opportunity for interactions through the connection of Internet.

Online teaching and learning is a form of education where students can use their home computers or even mobile phones through the internet as both the educators and students are having problems in attending the school to teach and learn. Much more than just a new shift on distance learning, online schooling is transforming the features of traditional classrooms and creating a more accessible education. Educators have been focusing on producing more learning materials through online websites. Toquero (2020) further acclaimed that educators can easily access the devices that are obtainable online with innovative tools in promoting the learning of the diverse educational needs of the learners in these current days. Educators will need to acquire online-driven competencies in organizing, administering and evaluating the potential and capabilities of their learners through

electronic delivery. The technology devices, design of the curriculum, choices of teachers, receptive curriculum, and concerned yet encouraging stakeholders are essential and vital for the productive delivery of the teaching and learning lessons through an online setting (Barr & Miller, 2013).

Despite of the numerous positive results from implementing the online quizzes in teaching English language (Rajaretnam, 2004; Valiente, Cazevieille & Jover, 2016; Cohen, 2016; Halim, Hashim & Yunus, 2020; Zarzycka, 2016; Jalani & Hashim, 2020; Nanda & Daddi, 2018), there is still no researcher who has yet compared the perceptions and the use among the three quizzes which are Google Quiz, Quizizz and Kahoot!. Very little concern has been focused on the teaching of English grammar through online quizzes too. At this point, it is still unsure of whichever online quizzes may benefit most to the learners in learning English grammar as each of the online learning tools comes with their own strengths and weaknesses. Most researchers also claimed that it will increase the motivation of the learners but they did not mention on the students' satisfaction in using the online quizzes.

Taking into account all the circumstances aforementioned, it is vital to investigate into this issue from the students' perceptions. Opinions from pupils are equally important as teachers as it builds the foundation in the continuation of the learning of students during the MCO and CMCO period. Therefore, a research study should be conducted to identify the effectiveness of the online learning tool which is the online quizzes in maximizing the students' learning potential of the respective field of study and also their perception of the usage of the types of online quizzes in the process of gaining the knowledge.

## **1.4 Research Objectives**

The purpose of this study is to determine if there is a significant difference in the performance of the students in a Chinese Vernacular Primary when using online quizzes as the learning tools.

Based on the problem statement above, the researcher formulates the objectives of the research as follows:

- (a) To identify students' satisfaction and preference on the types of online quizzes.
- (b) To examine the students' performance on learning grammar using online quizzes.
- (c) To study on the perception of students' satisfaction and their challenges on using online quizzes in learning English grammar.

## **1.5 Hypothesis**

- (i) To identify students' preference on the types of online quizzes.

H0: There is no significant difference in the students' preference among the three online quizzes.

H1: There is a significant difference in the students' preference among the three online quizzes.

- (ii) To examine the students' performance on learning grammar using online quizzes.

H0: There is no significant difference in the mean of the post-test with the pre-test.

H1: There is a significant difference in the mean of the post-test with the pre-test.

## **1.6 Research Questions**

Online quizzes are becoming the latest form of distance learning tools today which takes place over the Internet and applied by most of the educators and thus, the research questions were formulated as follows:

1. What are the satisfactions and preferences of students on the online quizzes among Google Quiz, Kahoot! and Quizizz?
2. To what extent, is there a difference, if any, in the mean of post-test after the interventions using online quizzes with the pre-test before interventions?
3. Why do the students feel satisfied and challenged towards online quizzes in learning English grammar?

## **1.7 Scope of Study**

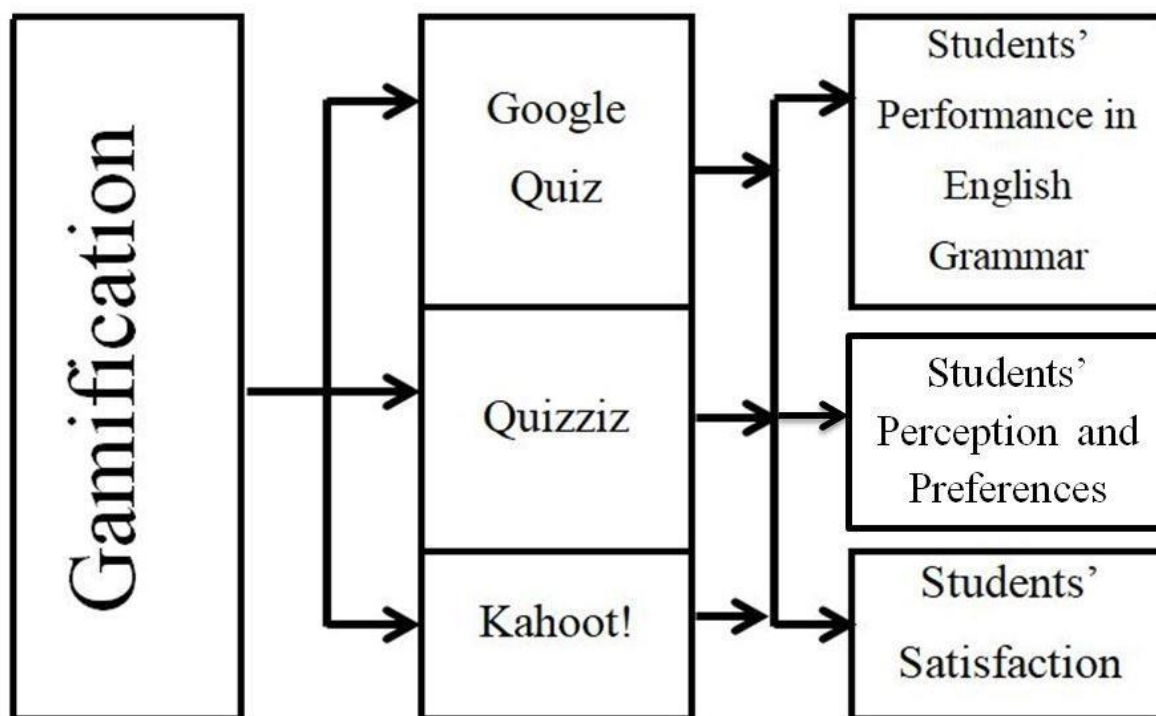
The participants for this study are 100 students from a Chinese Vernacular School in Johor Bahru, Johor. This study will aim at look into the students' performance using variety of online quizzes, their preference and perceptions towards the learning tools. Data on the students' performance will be gathered through pre-test and post-test. The researcher will compare the marks scored from both of the tests, looking at the percentages, to have more precise comparison. Data on the students' perceptions and preference will be collected through questionnaires

from survey whereas data on the students' satisfaction on the use of online quizzes will be accumulated via a satisfaction survey.

## **1.8 Conceptual Framework**

Online quiz has always been a highly valuable online learning tool. It can be easily conducted and created for the purpose of collection of emails, creation of online media presence or even increasing viewership. Despite of the fact that online quiz is fun and interesting, participants of the quiz will like to learn more about themselves and get immediate results. Due to the pandemic of Covid-19, teachers and educators around the world started to find initiative to apply this type of online learning tool in assessing the students as it can be easily constructed, recorded and comes with immediate feedback.

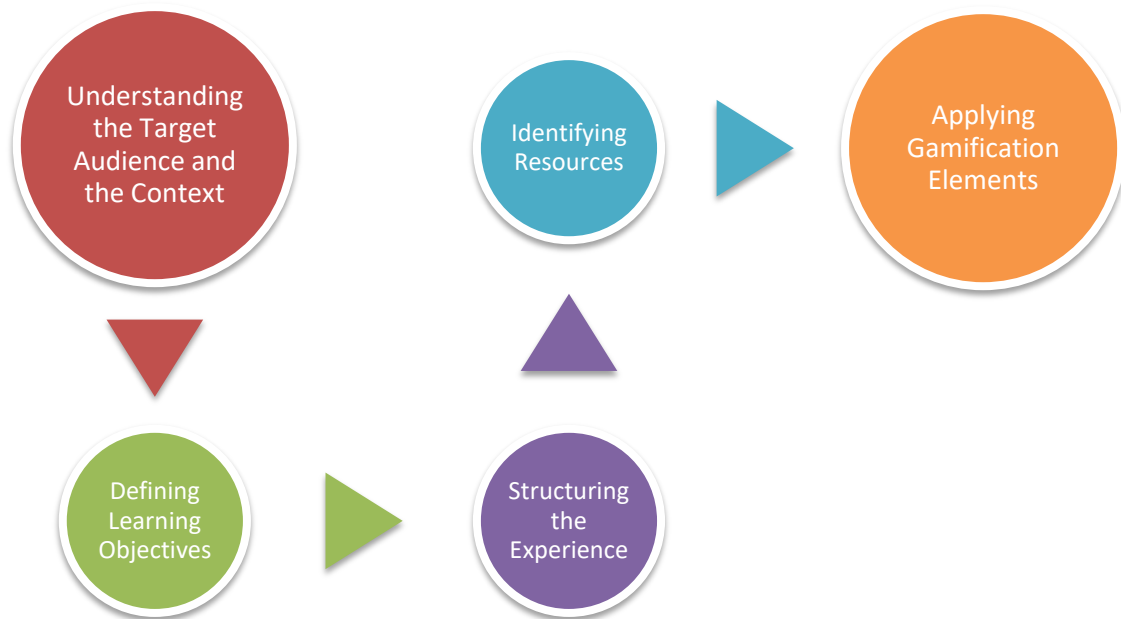
Hence, the research aims to study the effectiveness of online quizzes in teaching English grammar and how each online quizzes impact the learners in acquiring the grammar knowledge. The conceptual framework presents three different online learning quizzes which are positioned opposite to each other, signifying the differences among the three types of online learning quizzes.



**Figure 1.8.1:** Conceptual framework

Based on the Figure 1.8.1, in the context of gamification, the researcher will adopt Huang and Soman's five steps process of gamification (Huang & Soman, 2013) to implement the three online quizzes as formative assessment as illustrated in Figure 1.8.2. In order to gamify a concept or the lesson effectively, the researcher will apply a five-step process as follows:





**Figure 1.8.2:** Five-step process of gamification (Huang & Soman, 2013)

First and foremost, in order to understand more about the participants, a short pre-test which contains ten multiple questions are distributed to the participants. The questions that the researcher asked will be relating to English grammar. Due to MCO period, educators have started to implement online teaching and learning in our teaching practices. The major methodology of teaching for content delivery is no longer the traditional way of teaching in the classroom. Therefore, the researcher uses this golden opportunity to carry out a study on the effectiveness of the quizzes on the students' performance in the respective field which is English. The pre-test will be containing ten questions relating to English grammar and the content will be proven and validated by at least three teachers who have been teaching English in primary school for at least 5 years or above.

Secondly, the learning objectives have been defined and arranged at the beginning of the semester and thus, the researcher will not change it in the middle of the year. Nevertheless, the researcher might revisit and revise the learning objectives by adjusting the lessons including the formative assessments. Next, a continuous and intermittent assessment will be carried out by the researcher which is the online quizzes. The researcher has chosen the online quizzes instead of the dull paper-and-pen test in order to aid in the structuring of the students' experience in gamification.

After that, the researcher goes to explore and identify the resources available for the types of online quizzes. In this context, the researcher manages to find a lot of online quizzes such as Socrative, Google Quiz, WordWall, Kahoot!, Quizizz and many more. The researcher was introduced and recommended to Kahoot!, Google Quiz and Quizizz in a discussion with his supervisor and decided to test the significant differences among the three types of quizzes. All the features in online quizzes chosen have the components of game mechanics which are appealing, enjoyable, instructional and really easy to be applied (Kriel, 2015). Moreover, the quizzes have feature that helps the educators to document and record the learners' performance in regards to their individual scores which can be downloaded into an excel file format and even produced graphs and charts.

Last but not least, after the identification and choosing the right type of online quizzes, the researcher creates questions through Quizizz, Kahoot! and Google Quiz for several topics on Grammar. For each topic, the researcher plan to construct 10 questions. The researcher plans to carry out the formative assessments through online quizzes for a period of eight weeks. In the end, the researcher will conduct another post-test on the participants of the study to examine their performance in English grammar.

## **1.9 Significance of Study**

First and foremost, the primary school students in this research are from primary school in Malaysia. The students here refer to Year 5 students specifically and the research is aim at this target group. Year 5 students are chosen mainly because they have much more knowledge on grammar as compared to Year 4 students. It is interesting to look into Year 5 student's perception on the different online learning quizzes after a year of learning grammar in Year 4. A much more precise knowledge can be studied into the students' perceptions and preference on the types of online quizzes in Malaysia's education today. Besides that, this study

will help in enhancing the students' capability to learn grammar effectively. It also helps the students to develop self-awareness and self-efficacy on their satisfaction towards the implementation of technology into their learning process.

Secondly, the primary school teachers in this research are from primary schools in Malaysia. The teachers have experiences in teaching the English subject ranging from 4 years to approximately 25 years. There are among them who had dedicated their entire career in teaching the English subject to the primary school students and have vast experiences in doing so. These findings from the study will contribute to a better understanding to the teachers regarding the use of online quizzes on students' performance in their English grammar. Upon perceiving these online quizzes as online learning tools, the teachers will be able to design a lesson that purveys to different students' requirements and assist them in grasping English grammar. Teachers can also find the solutions to the particular weaknesses of each quizzes arising during the process of conducting the online learning tools through the students' satisfaction.

Last but not least, based on the findings, it will provide a higher level of understanding of diverse online learning tools and how to properly use them in online teaching and learning. Additionally, even in primary education nowadays, many educators are continuously in search of approaches to drive the learners and enhance their performance. Conclusively, this research may also bring advantages to educational researchers and the insights could be utilized to make development for forthcoming studies. As these online quizzes are interconnected to other online learning tools, this study might be the foundation to spark the interest of other researchers to carry out their future inquiries concerning to this area too.

#### **1.10 Definition of the terms**

The following definition and terms will be applied throughout this research.

### **1.10.1 English Grammar**

It is a way in which meanings are encoded into wordings in the English language and includes the structure of words, phrases, clauses, sentences and the structure of whole texts. (Harmer,1987)

### **1.10.2 Online teaching and learning**

It is defined as the creation and proliferation of the personal computer, the globalization of ideas and other human acts, and the use of technology in exchanging ideas and providing access to more people. (Desmond, 1988)

### **1.10.3 Gamification**

It is the use of game metaphors, game elements and ideas in a context different from that of the games in order to increase motivation and commitment and to influence user behaviour (Marczewski, 2013)

### **1.10.4 Educational games.**

Games designed for learning

### **1.10.5 Game elements.**

The elements of games, which make the game pleasing and enjoyable (Dichev et al, 2015)

### **1.10.6 Online quizzes**

It is defined as a game or brain teaser to test knowledge with the element of games.

### **1.10.7 Google Quiz**

It is described as quiz created using the Google Form features which is also suitable as questionnaires for survey as it can easily produce immediate results and gather responses from a large group of participants.

### **1.10.8 Kahoot!**

It is defined as a game-based learning platform that makes it easy to create, share and play learning games or trivia quizzes in minutes.

### **1.10.9 Quizizz**

It actually consists of a free creative software with quizzing tools balancing meme-fuelled with useful features.

### **1.10.10 Motivation**

It is a process in which an individual self-regulates his/her action depending on the degree of his/her needs satisfaction (Sun et al, 2017 p.278)

## **1.11 Summary**

As a conclusion, due to the social distancing implemented in almost all of the countries, there is a rising demand for online education. As a consequence, there will be an increase in the number of instructors teaching online and starting to use online learning tools such as online games and even online quizzes. Educators nowadays need to have purposeful planning and continuous adjustment in order to successfully implement gamification in education in which includes the online quizzes. Nevertheless, students' reflection and feedback on the online quizzes are equally important in order to change the content delivery from a mundane task into an addictive learning experience. However, have the educators prepared themselves and what are their students' perceptions towards the online quizzes given by the educators?

## REFERENCES

- Abdulmir, A. S., & Hafidh, R. R. (2020). The Possible Immunological Pathways for the Variable Immunopathogenesis of COVID--19 Infections among Healthy Adults, Elderly and Children. *Electronic Journal of General Medicine*, 17(4).
- Adam, A. M. (2020). Sample size determination in survey research. *Journal of Scientific Research and Reports*, 90-97.
- Aldana, I. L. (2020). The Effects of Review Games Using Kahoot! On Students' Quiz Scores. *Online Submission*.
- Alim, A. N. A. H., Rahmayanti, H., Husen, A., Ichsan, I. Z., Marhento, G., & Alamsyah, M. (2020). Environmental Disaster Education at University: An Overview in New Normal of COVID-19. *Online Submission*, 2(8), 714-719.
- Al-Mekhlafi, A. M., & Nagaratnam, R. P. (2011). Difficulties in teaching and learning grammar in an EFL context. *Online Submission*, 4(2), 69-92.
- Alshenqeeti, H. (2014). Interviewing as a data collection method: A critical review. *English linguistics research*, 3(1), 39-45.
- Al-Shujairi, Y. B. J., & Tan, H. (2017). Grammar Errors in the Writing of Iraqi English Language Learners. *International Journal of Education and Literacy Studies*, 5(4), 122-130.
- Andriamiarisoa, R. (2018). Impact of gamification on student engagement in graduate medical studies.
- Andzik, N. R., Gist, C. M., Smith, E. E., Xu, M., & Neef, N. A. (2019). The Effects of Gaming on University Student Quiz Performance. *Journal of Effective Teaching in Higher Education*, 2(1), 109-119.
- Arslan, A. (2020). Reliability and validity of instruments measuring English teachers' TPACK. *International Journal of Assessment Tools in Education*, 7(3), 343-360.
- Atherton, P. (2018). More than just a quiz: how Kahoot! can help trainee teachers understand the learning process. *Teacher Education Advancement Network Journal*, 10(2), 29-39.
- Bai, Y., Yao, L., Wei, T., Tian, F., Jin, D. Y., Chen, L., & Wang, M. (2020). Presumed asymptomatic carrier transmission of COVID-19. *Jama*, 323(14), 1406-1407.

- Barna, B., & Fodor, S. COMPLEX GAMIFICATION PLATFORM BASED ON MOODLE SYSTEM. *COGNITION AND EXPLORATORY LEARNING IN THE DIGITAL AGE (CELDA 2019)*, 409.
- Basilaia, G., & Kvavadze, D. (2020). Transition to online education in schools during a SARS-CoV-2 coronavirus (COVID-19) pandemic in Georgia. *Pedagogical Research*, 5(4).
- Basuki, Y., & Hidayati, Y. (2019, April). Kahoot! or Quizizz: the Students' Perspectives. In *ELLiC 2019: Proceedings of the 3rd English Language and Literature International Conference, ELLiC, 27th April 2019, Semarang, Indonesia* (p. 202). European Alliance for Innovation.
- Buhagiar, T., & Leo, C. (2018). Does Gamification Improve Academic Performance?. *Journal of Instructional Pedagogies*, 20.
- Buhagiar, T., & Leo, C. (2018). Does Gamification Improve Academic Performance?. *Journal of Instructional Pedagogies*, 20.
- Bustami, Y., Syafruddin, D., & Afriani, R. (2018). The implementation of contextual learning to enhance biology students' critical thinking skills. *Jurnal Pendidikan IPA Indonesia*, 7(4), 451-457.
- Can, M. E. S. E., & Dursun, O. O. (2019). Effectiveness of gamification elements in blended learning environments. *Turkish Online Journal of Distance Education*, 20(3), 119-142.
- Carney, A. (2015). Differentiation in the classroom using Chromebooks and Google Applications.
- Chauhan, B. S., Matloob, A., Mahajan, G., Aslam, F., Florentine, S. K., & Jha, P. (2017). Emerging challenges and opportunities for education and research in weed science. *Frontiers in plant science*, 8, 1537.
- Cohen, D., & Sasson, I. (2016). Online quizzes in a virtual learning environment as a tool for formative assessment. *JOTSE*, 6(3), 188-208.
- Debata, P. K. (2013). The importance of grammar in English language teaching-A reassessment. *Language in India*, 13(5), 482-486.
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011, September). From game design elements to gamefulness: defining "gamification". In *Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments* (pp. 9-15).
- Dimitrov, D. M., & Rumrill Jr, P. D. (2003). Pretest-posttest designs and measurement of change. *Work*, 20(2), 159-165.



- Dobson, J. L. (2008). The use of formative online quizzes to enhance class preparation and scores on summative exams. *Advances in Physiology Education*, 32(4), 297-302.
- Eastwood, J. (1994). *Oxford guide to English grammar*. Oxford University Press.
- El Tantawi, M., Sadaf, S., & AlHumaid, J. (2018). Using gamification to develop academic writing skills in dental undergraduate students. *European Journal of Dental Education*, 22(1), 15-22.
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics*, 5(1), 1-4.
- Fulton, J. N. (2019). Theory of Gamification--Motivation. *Online Submission*.
- Gardner, R. C. (2004). Attitude/motivation test battery: International AMTB research project. *Canada: The University of Western Ontario*.
- Grein, J., Ohmagari, N., Shin, D., Diaz, G., Asperges, E., Castagna, A., ... & Flanigan, T. (2020). Compassionate use of remdesivir for patients with severe Covid-19. *New England Journal of Medicine*, 382(24), 2327-2336.
- Halim, M. S. A. A., Hashim, H., & Yunus, M. M. (2020). Pupils' Motivation and Perceptions on ESL Lessons through Online Quiz-Games. *Journal of Education and E-Learning Research*, 7(3), 229-234.
- Hassan, Z. A., Schattner, P., & Mazza, D. (2006). Doing a pilot study: why is it essential?. *Malaysian family physician: the official journal of the Academy of Family Physicians of Malaysia*, 1(2-3), 70.
- Hung, A. C. Y. (2018). Gamification as Design Thinking. *International Journal of Teaching and Learning in Higher Education*, 30(3), 549-559.
- Husband, G. (2020). Ethical Data Collection and Recognizing the Impact of Semi-Structured Interviews on Research Respondents. *Education Sciences*, 10(8), 206.
- Ichsan, I. Z., & Rahmayanti, H. (2020). HOTSEP: Revised Anderson's Taxonomy in Environmental Learning of COVID-19. *European Journal of Educational Research*, 9(3), 1257-1265.
- Jaffri, H., & Talib, R. (2017). Using gamification to increase students' motivation: our experience in teaching research methodology class. *The scholarship of teaching and learning 2017*.
- Jalani, N. A. B. M., & Hashim, H. B. Quizziz: ESL Students' Perceptions in rural school.
- Ju, S. Y., & Adam, Z. (2018). Implementing Quizizz as game based learning in the Arabic classroom. *European Journal of Social Science Education and Research*, 5(1), 194-198.

- Kelly, D., Harper, D. J., & Landau, B. (2008). Questionnaire mode effects in interactive information retrieval experiments. *Information processing & management*, 44(1), 122-141.
- Ling, L. T. Y. (2018). Meaningful Gamification and Students' Motivation: A Strategy for Scaffolding Reading Material. *Online Learning*, 22(2), 141-155.
- Lopez, E. (2019). Teaching the English article system: Definiteness and specificity in linguistically-informed instruction. *Language Teaching Research*, 23(2), 200-217.
- Maguire, M., & Delahunt, B. (2017). Doing a thematic analysis: A practical, step-by-step guide for learning and teaching scholars. *All Ireland Journal of Higher Education*, 9(3).
- Majumder, M. S., & Mandl, K. D. (2020). Early in the epidemic: impact of preprints on global discourse about COVID-19 transmissibility. *The Lancet Global Health*, 8(5), e627-e630.
- Masson, M. E. (2011). Collecting student perceptions of feedback through interviews. *Hong Kong, August 8th–10th. The Chinese University of Hong Kong*. Accessed June, 24, 2016.
- McDonald, M. L. (2008). *Teachers' and Students' Perceptions of Reading Motivation and Observable Classroom Practices: Investigating the Relationships* (Doctoral dissertation, Bowling Green State University).
- Meng, C. K., Nasir, J. S. B. M., Ming, T. M., & Choo, K. A. (2019). A Gamified Classroom with Technical and Vocational Education and Training (TVET) Students using Quizizz. *International Journal of Education, Islamic Studies and Social Sciences Research*, 4(1).
- Milliner, B., & Flowers, S. (2015). Form technology for language teachers: How do you like your monkey. *The Language Teacher*, 39(3), 24-27.
- Mohamad, S. N. M., Sazali, N. S. S., & Salleh, M. A. M. (2018). Gamification approach in education to increase learning engagement. *Int. J. Humanit. Arts Soc. Sci*, 4(1), 22-32.
- Mohammad Almatarneh, A. H., Ab Rashid, R., & Yunus, K. (2018). The academic writing experience of Jordanian postgraduate students at a university in Malaysia. *Arab World English Journal (AWEJ) Volume*, 9.
- Muangsrinoon, S., & Boonbrahm, P. (2019). Game Elements from Literature Review of Gamification in Healthcare Context. *Journal of Technology and Science Education*, 9(1), 20-31.
- Muangsrinoon, S., & Boonbrahm, P. (2019). Game Elements from Literature Review of Gamification in Healthcare Context. *Journal of Technology and Science Education*, 9(1), 20-31.

- Nanda, S. R., Abdul, N. B., & Daddi, H. (2018). The Use Of Quizizz Application In Improving Students' Reading Comprehension Skill At SMKN 3 Takalar. *An Experimental Research*, 1(2).
- Okmawati, M. (2020). The use of Google Classroom during pandemic. *Journal of English Language Teaching*, 9(2), 438-443.
- Palma, L. O., Tobías, P. J. B., Prieto, M. C., León, F. J. M., & Ruiz, Á. A. M. (2018, August). Use of Kahoot and EdPuzzle by smartphone in the classroom: the design of a methodological proposal. In *International Workshop on Learning Technology for Education in Cloud* (pp. 37-47). Springer, Cham.
- Pektas, M., & Kepceoglu, I. (2019). What Do Prospective Teachers Think about Educational Gamification?. *Science Education International*, 30(1), 65-74.
- Picciano, A. G. (2017). Theories and frameworks for online education: Seeking an integrated model. *Online Learning*, 21(3), 166-190.
- Qutob, M. M. (2018). The Relationship between EFL Learners' Satisfaction within the Classroom Environment and Their Speaking Skills. *English Language Teaching*, 11(7), 116-124.
- Rajaretnam, T. (2004). Using online grammar quizzes for language learning. *The Internet TESL Journal*, 10 (8).
- Raju, N., & Joshith, V. P. (2018). Krashen's Theory of Second Language Acquisition: A Practical Approach for English Language Classrooms. *International Journal of Innovative Knowledge Concepts*, 6(12), 179-184.
- Rasch, S. L. (2016). *Students' Perception of Grammar Instruction. A study of the relation between students' perception of grammar instruction and their multiple intelligences* (Master's thesis, UiT Norges arktiske universitet).
- Rivas, E. S., Palmero, J. R., & Rodríguez, J. S. (2019). Gamification of assessments in the natural sciences subject in primary education. *Educational Sciences: Theory & Practice*, 19(1).
- Ross, M., Perkins, H., & Bodey, K. (2016). Academic motivation and information literacy self-efficacy: The importance of a simple desire to know. *Library & information science research*, 38(1), 2-9.
- Sahin, M. D., & Öztürk, G. (2019). Mixed Method Research: Theoretical Foundations, Designs and Its Use in Educational Research. *International Journal of Contemporary Educational Research*, 6(2), 301-310.
- Salzberger, B., Glück, T., & Ehrenstein, B. (2020). Successful containment of COVID-19: the WHO-Report on the COVID-19 outbreak in China.
- Santana, I. (2019). Advanced English Students' Perceptions on Grammar Usage. *Online Submission*.

- Saracoglu, G., & Kocabatmaz, H. (2019). A Study on Kahoot and Socrative in Line with Preservice Teachers' Views. *Educational Policy Analysis and Strategic Research, 14*(4), 31-46.
- Sartini, S. (2020). Kahoot in Maritime English Teaching: Its Impact on Nautical Science Cadet's Oral Reproduction and Vocabulary. *English Language Teaching Educational Journal, 3*(1), 41-51.
- Schifter, C. (2002). Perception differences about participating in distance education. *Online Journal of Distance Learning Administration, 5*(1).
- Sedgwick, P. (2013). Convenience sampling. *Bmj, 347*, f6304.
- Seifert, T. A., Pascarella, E. T., Erkel, S. I., & Goodman, K. M. (2010). The importance of longitudinal pretest-posttest designs in estimating College impact. *New Directions for Institutional Research, 2010*(S2), 5-16.
- Shaikh, A. A., & Likhite, A. Awareness, Perception and Safety Practices about COVID-19 in School Children of 6-16 Years using COVID-19 Quiz.
- Singh, C. K. S., Singh, A. K. J., Razak, N. Q. A., & Ravinthar, T. (2017). Grammar Errors Made by ESL Tertiary Students in Writing. *English Language Teaching, 10*(5), 16-27.
- Stone, J. A. (2015). A Study on Scientific Writing: The Pilot Study. *The Journal of Acupuncture and Oriental Medicine, 2*(1), 25-27.
- Sutiah, S., Slamet, S., Shafqat, A., & Supriyono, S. (2020). Implementation of distance learning during the covid-19 pandemic in faculty of education and teacher training. *Cypriot Journal of Educational Science, 15*(1), 1204-1214.
- Toquero, C. M. (2020). Challenges and Opportunities for Higher Education Amid the COVID-19 Pandemic: The Philippine Context. *Pedagogical Research, 5*(4).
- Valiente, J. D. B., Cazevieille, F. O., & Jover, J. M. N. (2016). On-line quizzes to evaluate comprehension and integration skills. *Journal of Technology and Science Education, 6*(2), 75-90.
- Williams, J., & Rebuschat, P. (2016). *Implicit learning and second language acquisition*. Evanston, IL, USA: Routledge.
- Wornyo, A. A. (2016). Attending to the Grammatical Errors of Students Using Constructive Teaching and Learning Activities. *Journal of Education and Practice, 7*(7), 23-32.
- Xavier, C. A., Hong, H. M., & Renandya, W. A. (2020). Grammar in Writing: Teachers' Reflections. *PASAA: Journal of Language Teaching and Learning in Thailand, 60*, 199-221.
- Yarbrough, J. R. (2018). Wiki Based Dynamic Quizzes: A Bridge between Online Students and Instructors?. *Journal of Instructional Pedagogies, 20*.

- Yürük, N. (2020). Using Kahoot as a skill improvement technique in pronunciation. *Dil ve Dilbilimi Çalışmaları Dergisi*, 16(1), 137-153
- Zarzycka-Piskorz, E. (2016). Kahoot it or not? Can games be motivating in learning grammar?. *Teaching English with Technology*, 16(3), 17-36.
- Zhao, F. (2019). Using Quizizz to Integrate Fun Multiplayer Activity in the Accounting Classroom. *International Journal of Higher Education*, 8(1), 37-43.
- Zucker, L., & Fisch, A. A. (2019). Play and Learning with KAHOOT!: Enhancing Collaboration and Engagement in Grades 9-16 through Digital Games. *Journal of Language and Literacy Education*, 15(1), n1.