

Faculty of Education Curriculum and Instruction Dept.

# Enhancing EFL Grammatical Competence Among Secondary Stage Students Using Gamification- Based Strategy

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#### **Abstract**

The research aimed at enhancing EFL grammatical competence among first year secondary school students through using gamification- based strategy. It adopted the quasi-experimental design. The participants of the study were 60 first year secondary stage students enrolled in Sidi Salem Secondary School for Girls, Kafr El-Sheikh Governorate. The participants were divided into two groups, one control group (taught using the traditional method) and another experimental group (taught using gamification-based strategy). The two groups received pre- and post- administration of the study instruments. To fulfill the purpose of the study, the following instruments were designed and used by the researcher: An EFL Grammatical competence checklist required for first year secondary school students; A pre/ post grammatical competence test to measure students' grammatical competence. The experimental treatment was conducted during the first semester in the academic year 2020/2021. Results revealed that gamification-based strategy was effective in developing EFL secondary stage students' grammatical competence. This can be assured by these points: (a) The experimental group students outperformed the control group students in the post administration of the grammatical competence test, (b) The experimental group students' mean score in the post administration of the grammatical competence test were much better than their mean score in the pre-administration.

#### **Key words:**

EFL Grammatical competence, gamification-based strategy

#### Introduction

Grammatical Competence is one of the four communicative competences (grammatical competence, sociolinguistic competence, discourse competence and strategic competence). It refers to knowledge of syntax, meaning, vocabulary, and mechanics. This type of competence is important because it provides skills and knowledge so that students can learn to be understood in speaking and writing and learn to understand in listening and reading. The goal is to acquire the knowledge and the ability to use forms of expression that are grammatically correct and accurate. Grammatical competence acts to promote accuracy and fluency in second/foreign language production and increases in importance as the learner advances in proficiency (Stern, 1983; Díaz-Rico and Weed, 2010).

According to Canale and Swain (1980), grammatical competence is mainly defined in terms of linguistic competence that is why some theoreticians use the term linguistic competence for grammatical competence. Thus, grammatical competence is concerned with mastery of the linguistic code (verbal or non-verbal) that includes vocabulary knowledge as well as knowledge of morphological, syntactic, semantic, phonetic and orthographic rules. This competence enables the speaker to use knowledge and skills needed for understanding and expressing the literal meaning of utterances.

Moreover, Helwa (2013) clarified that grammatical competence is the ability to perform the grammatical well-formedness, recognize the lexical, morphological, syntactic and phonological features of a language to form words and sentences. It refers to the knowledge of the language that accounts for students' ability to produce sentences in a language and the knowledge of building blocks of sentences (e.g., parts of speech, tenses, phrases, clauses, and sentences patterns and how sentences are formed). It is an important dimension of language learning and the ability to understand and produce the language correctly. It is concerned with producing grammatical utterances.

Developing EFL learners' grammatical competence has become a learning objective of its own. The learning of grammatical structures and forms is found significant in language learning which includes the study of rules governing the usage of language. It is the core of a language without which it becomes meaningless (Pushpanathan, 2019). The grammar also enables students to express themselves accurately and fluently during using the language and to improve their communicative competence. So, in formal education, it is inevitable for teachers who teach foreign languages to teach grammar as it plays a substantial role in governing the use and application of language as well as it gives the user the structure to build complete and meaningful sentences (Song, 2007; Wang, 2007)

In spite of the importance of grammatical competence, the previous literature showed that EFL students still face many difficulties to master grammatical competence. There are some related studies that addressed the gap in teaching EFL grammatical competence aspects such as Nguyen, (2017), Ali, Joshi, & Hareesh, (2018), Shehata, (2019), Tsutada, (2019), Pushpanathan, (2019) and AbdelGawad, (2019). Based on the previous studies, it is obvious that grammatical competence is crucial to foreign language learning.

The advanced development of Information and Communication Technology has provided excellent opportunities for teachers and students to experience English language teaching and learning activities beyond their traditional classrooms. Ringelová (2017) stated that there is a difference between the contemporary generation of students and the previous ones; that contemporary students are believed to be digital natives who are used to technology from early childhood, who use it all the time, and for whom technology is an indivisible part of their lives. The field of education should accept this fact and work with these students in new ways, using new learning tools. In addition to the face-to-face mode of instruction, students now receive instruction through teleconferencing, online and/or web-based instruction, e-learning, and other advancements currently taking place with telecommunications technologies. (Kearsley, 2000). Online gamification can become such a new tool motivating the contemporary students (Deterding, Dixon, Khaled, &Nacke 2011).

What exactly is gamification? According to Deterding et al., (2011), gamification can be defined as the use of game design elements in non-game contexts. These elements include, for example, the use of points, badges, avatars, storytelling, feedback, levels, reward structures, challenges and many more in a basic online learning tool. The primary purpose of adding these elements to nongame environments is to make the non-game tasks more enjoyable and motivating for the participants. In October 2010, gamification as an innovative new trend emerged in the media that aimed to improve the participation of students in classroom activities and promote behaviors, and since then it has been spreading into various other fields (Radoff, 2011).

According to Dicheva and Dichev (2015), gamification in education can be defined as "the introduction of game elements and

gameful experiences in the design of learning processes". The popularity of implementing gamification in educational contexts has been based on the belief that it can foster motivation in learners, change their behavior in a desirable way, encourage competition and cooperation (Dicheva&Dichev,2015). It has been also suggested that it can increase students' engagement and enhance their learning through integration of design elements or activity patterns traditionally found in games into educational contexts (Buckley & Doyle, 2016).

Gamification proprieties are related to the "addictive" or "engagement" component of games. Gamification tries to apply the mechanics of the games in other settings, such as the educational environment. This concept is not directly related to game design but seeks to engage the user through small doses of challenges and rewards in order to get that the user perform certain actions in different environments. Gamification works to satisfy some of the most fundamental human desires: recognition, reward, status, achievement, competition, collaboration, self-expression, altruism. Gamification taps directly into this (González &Area, 2013).

According to Michos (2017), gamification has several benefits in learning process as it increases students' feelings of happiness, improves motivation and increases attention, increases students' attention in classroom activities, provides breaks from learners' fatigue, stimulate a goal-oriented activity and it generally makes learning fun. In the same context, Çeker and Özdamli, (2017) assured that gamification can be used to adopt some boring work to more manageable entertaining ones, transfer hard work

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responsibilities to more enjoyable tasks, help to be able to focus more easily, increase participation, provide motivation and satisfaction, help individuals increase the use of media tools in order to achieve some objectives and satisfy their need.

Given that importance to gamification, there are several previous studies that investigated the effect of gamification on EFL learning. Some of these studies are Mchucha, Ismail and Tibok, (2017), Munteanu (2011), Flores (2015) Tan, Ganapathy and Kaur(2018), AbdeRahman(2021), ElKhalyfa(2019), Alsawaier(2018), Lister(2015). These studies asserted that using different forms of gamification is effective in language learning.

Based on the aforementioned studies, the believes that the use of gamification- based activities in English classrooms can transform grammatical competence lessons which was considered as a boring and torturing one to be an interesting and relaxing one and change EFL learners' negative perspectives to positive ones. Furthermore, as games can be used to give practice in all language skills and in many types of communication, using game-based activities in grammatical competence learning is hoped to help promote students' language skills, particularly their communicative one.

#### **Context of the Problem**

It can be stated that the low level of grammatical competence itself through the Egyptian studies such as (Abdel-Gawad,2019; Soliman,2008; Abd-Elrazek, 2016; Naeem,2010; Hegazy,2008; Helmy,2008; Salem, 2004; Sallam,2013) which indicated that grammatical competence is essential for the mastery of a language, but there is a low standard of students' grammatical competence.

Also, there is a lack in the current Egyptian English language curricula in producing teaching with enough opportunities to practice grammar in communicative situations. Moreover, they argued that the poor grammatical competence of secondary stage lies in the lack of attention given to its teaching and that students' grammatical mistakes are so common and their grammatical competence are unintelligible. Therefore, students are only taught the basic information that can help them to pass their exams and they are likely to commit many grammatical mistakes when they are requested to interact in a situation although they were taught these grammatical competence rules.

According to the researcher experience, EFL secondary stage students face challenges and difficulties with learning grammatical aspects such as vocabulary grammar, spelling, pronunciation and word formation. They also have a difficulty in using grammatical rules in communicative situation. This may be due to the traditional way of teaching or they do not have a motivating way for learning and sufficient opportunity to practice the acquired knowledge. When the content in a student book is presented in a boring way, it becomes very difficult to stimulate the interest of learners.

To get a documented idea about the students' level in grammatical competence, the researcher conducted a pilot study through applying a grammatical competence test. Participants were 50 secondary stage students. The pilot study consisted of a grammatical competence test. The test comprises of five questions to assess students' ability in using grammatical rules, vocabulary and correct pronunciation, see appendix(A). The results of the pilot study revealed that about 80% of the students did not master these aspects. As well as, the

researcher assessed students' learning motivation through applying Hussein's (2019) learning motivation scale, see appendix(B). The results showed the students have a low level of motivation. In attempt to provide a solution to a research problem, the researcher attempts to use gamification-based strategy to develop EFL grammatical competence and learning motivation among first-year students at secondary stage.

#### Statement of the problem

In spite of the importance of EFL grammatical competence, there is a deficiency in EFL grammatical competence among first-year secondary stage students and a lack of motivation for learning. Therefore, the present study is an attempt to use gamification-based strategy to develop their grammatical competence and enhance their learning motivation.

#### **Questions of the Study**

To investigate this problem, the present study will attempt to answer the following questions:

- 1- What are The EFL Grammatical Competence aspects required for first- year at secondary school students?
- 2- What are the features of the proposed gamification-based strategy?
- 3- What is the effectiveness of using gamification-based strategy in developing EFL secondary stage students' grammatical competence?

#### **Hypothesis of the Study**

The study attempted to verify the following hypotheses:

- 1. There is a statistically significant difference between the mean scores of the experimental and the control groups in the post administration of the EFL grammatical competence test, in favor of the experimental group.
- 2. There is a statistically significant difference between the mean scores of the experimental group in the pre and post administrations of the EFL grammatical competence test in favor of the post administration.
- 3. The gamification- based strategy has a positive effect on improving EFL grammatical competence.

#### **Design of the Study**

The present study adopted a two- group quasi- experimental design wherein the participants were divided into an experimental group and a control group. The experimental group's students used the proposed gamification-based strategy while the control group's students received no other treatment except for the regular way of learning. Students in both groups were exposed to the pre-post grammatical competence test.

#### Participants of the Study

Participants of the study were 60 first grade secondary stage students. The age of these participants ranged from (15- 16 yrs.). The participants were two intact classes from Sidi Salem Secondary School for Girls in Kafrelsheikh Governorate.

#### **Instruments of the Study**

To achieve the purpose of the study, the researcher constructed and use the following instruments:

- 1- A checklist of EFL grammatical competence aspects required for first year secondary stage students.
- 2- A pre-post grammatical competence test to measure students' achievement level before and after the treatment.

#### **Content of the proposed intervention**

The proposed intervention consisted of 15 sessions: the first was devoted to the pre-test. The second was an interview with the study's participants and an orientation session about the suggested strategy and how to use it. The remaining sessions were instructional sessions through which EFL grammatical competence (grammatical, vocabulary, and phonology) aspects were developed among the participants of the study using a suggested strategy based on gamification. The last session was the post-test.

Each session contained four main stages:

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**Introduction stage**: The instructor introduces the objectives of the session to the students through PowerPoint presentation.

**Presentation stage:** Using a PowerPoint presentation, the instructor gives illustration of the target new vocabulary/ explanation of the new grammatical rule/ phonological rule

**Practice stage**: The students practice the newly learned words/grammatical rule/pronunciation in teams through a quest created by the instructor via gamification- based platform with the implementation of the gamification elements and another quest created by the researcher via online digital games.

**Assessment stage:** The instructor assesses students' understanding through an offline gamified activity (inside classroom) and an online gamified activity (outside classroom).

#### **Results**

To determine whether students' Overall EFL Grammatical Competence improved after implementing the experimental treatment using the Gamification based strategy, the hypotheses of the study were tested by using the Statistical Package for Social Sciences (SPSS version 26) Program.

#### **Hypothesis** (1):

The first hypothesis states that "There is a statistically significant difference between the mean scores of the experimental and the control groups in the post administration of the EFL Grammatical competence test, in favor of the experimental group".

To verify this hypothesis, the researcher used the Independent sample t-test to compare the mean scores of the experimental group students who used a Gamification based strategy with those of the control group students who used the traditional method, in the post-test. The results are presented in the following table.

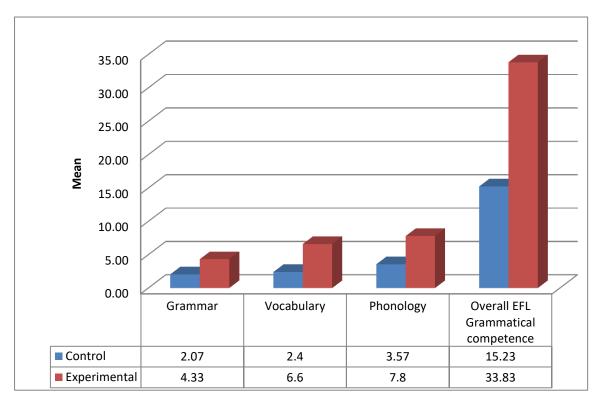
**Table (1):** post t-test results of the control and the experimental groups in Grammar, Vocabulary, and Phonology and Overall EFL Grammatical competence.

Aspect	Group	N	M	S.D	D. f	t-value	sig
1- Grammar	Control	30	۲.۰۷	٠.٦٤٠		١٤.٠٨	0.000
	experimental	30	٤.٣٣	٠.٦٠٦			
2- Vocabulary	Control	30	۲.٤٠	٤١٨.٠		19.59	0.000
	experimental	30	٦.٦٠	٠.٨٥٥	58		
3- Phonology	Control	30	٣.٥٧	۸۲۷.۰		19.77	0.000
	experimental	30	٧.٨٠	•.971			
	experimental	30	٧.٠٠	•.9 £ ٧			
Overall EFI Grammatical	Control	30	10.77	٣.٠٨	58	۲۷.۳۱	0.000
competence	experimental	30	٣٣.٨٣	7.11			

The table above indicates that the mean scores of the experimental group students are higher than those of the control group in the Overall EFL Grammatical competence and its sub-competences, where t-value is,  $(\Upsilon V. \Upsilon V)$  for overall communication skills,  $(\Upsilon V. \Upsilon V)$  for Grammar,  $(\Upsilon V. \Upsilon V)$  for Vocabulary,  $(\Upsilon V. \Upsilon V)$  for Phonology which is significant at 0, 01 level of significance. Therefore, this hypothesis

was confirmed. These differences can be attributed to a Gamification based strategy.

The following figure shows the differences between the experimental and the control groups in the post test of Overall EFL Grammatical competence and its sub-competences.



**Figure (1)**: The mean scores of the control and the experimental groups in EFL Grammatical competence sub-competences and EFL Grammatical competence, in the post-test.

The previous figure shows that the mean scores of experimental group students are higher than those of the control one in the post-test in EFL Grammatical competence

#### Hypothesis (2):

The second hypothesis states that "There is a statistically significant difference between the mean scores of the experimental group in the pre and post administrations of the EFL Grammatical competence test in favor of the post administration."

To verify this hypothesis, the researcher used the paired sample t-test to compare the mean scores of the experimental group who used a Gamification based strategy in the pre and post-test. The following table includes the results.

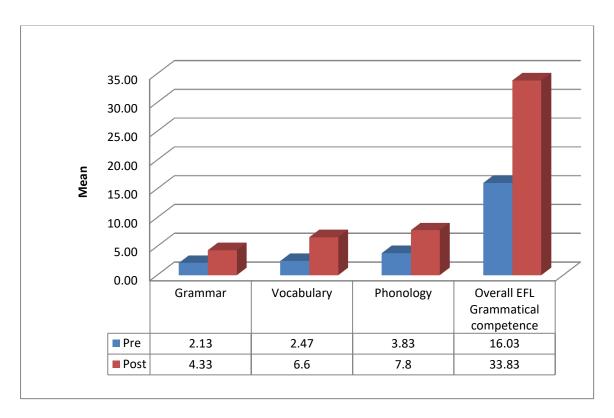
**Table (2):** post t-test results of the experimental group pre and post Grammar, Vocabulary, Phonology and Overall EFL Grammatical competence.

Skill	Test	N	M	S.D	D. f	t-value	sig
1- Grammar	Pre	30	2.13	0.571		16.86	0.000
	Post	30	4.33	0.606			
2- Vocabulary	Pre	30	2.47	0.629		19.40	0.000
	Post	30	6.60	0.855			
3- Phonology	Pre	30	3.83	0.699		20.37	0.000
	Post	30	7.80	0.961	58		
Overall EFI	Pre	30	16.03		58	30.89	0.000

Grammatical	Post	30	33.83		
competence	1 050				

The table above indicates that the mean scores of the experimental group students are higher in the post test than those of the pre-scores in the EFL Grammatical competence and its sub-competences, where t-value is, (30.89) for overall EFL Grammatical competence, (16.86) for Grammar, (19.50) for Vocabulary, (20.37) for Phonology, which is significant at 0, 01 level of significance. Therefore, this hypothesis was confirmed. These differences can be attributed to a Gamification based strategy.

The following figure shows the differences between the experimental in the pre and post test of overall EFL oral communication skills and its sub-skills.



**Figure (2)**: The mean scores of the experimental groups in oral communication sub-skills and Overall EFL Grammatical competence, in pre and post-test.

The previous figure shows that the mean scores of experimental group students in post test are higher than those in the pre-test in Overall EFL Grammatical competence.

#### **Hypothesis (3):**

The third hypothesis states that "The Gamification based strategy has a positive effect on improving EFL Grammatical competence"

To verify this hypothesis, the researcher calculated the effect size by using the paired sample t-test to compare the scores of the

experimental group in EFL Grammatical competence in the pre and the post test using Cohen's formula

Cohen's formula = 
$$\eta^2 = \frac{t^2}{t^2 + df}$$

$$d=Es=\sqrt{\frac{\eta^2}{-\eta^2}}$$

Where 
$$\eta^2 = Etasquare$$

T= t test value

Df = degree of freedom

D = Es = effect size

Table (3): The referential framework for identifying the effect size for T- test value.

Effect size	Interpretations		
From 0.1 till less than 0.4	Small		
From 0.5 till less than 0.8	Median		
More than 0.9	Large		

Table (4): The effect size of the experimental group in EFL Grammatical competence as a whole in the pre and the post test.

Skill	Test	N	M	S.D	Т	Eta square	Effect size
1- Grammar	Pre	30	2.13	0.571	16.86	0.783	١.٧
	Post	30	4.33	0.606			Large
2- Vocabulary	Pre	30	2.47	0.629	19.40	0.887	۲.۸
	Post	30	6.60	0.855			Large
3- Phonology	Pre	30	3.83	0.699	20.37	0.852	۲.۳
	Post	30	7.80	0.961			Large
	Pre	30	16.03	2.31	30.89	0.944	٤.١
Grammatical competence	Post	30	33.83	2.10			Large

#### Significant at (0, 01)

Table (4) indicates that the effect size of the experimental group students in the post test are greater and higher than those of the prescores in the EFL Grammatical competence, where the effect size is (£.\) for overall EFL Grammatical competence, (\\.\) for Grammar, (\(\cdot\.\)) for Vocabulary, (\(\cdot\.\)) for Phonology, which is significant at 0,01 level of significance. Therefore, this hypothesis was confirmed. These differences can be attributed to a Gamification- based strategy.

According to the findings of Cohen's formula and the interpretations of the effect size, the percentage '.' indicated that a Gamification based strategy had an effect on improving the students' EFL Grammatical competence.

#### **Conclusions**

Based on the findings and results of the present study, it can be concluded that the participants' EFL grammatical competence of the present study were developed as a result of using the gamification-based strategy. The effectiveness of this suggested strategy may be due to depending on one of the recent trends that has gained prominent importance recently. In addition to one of the most widely accepted approaches for developing EFL grammatical competence.

In the light of the findings of the present study, the following conclusions can be imbedded: the study participants showed a great development in EFL grammatical competence with their three main aspects; grammatical, vocabulary, phonology aspects. In addition, the study participants were able to know and use they have learned fluently. Consequently, it can be concluded that the suggested gamification- based strategy is effective in developing EFL grammatical competence among secondary stage students.

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