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**The effectiveness of smart board activities in
developing international primary stage pupils' EFL
grammar and motivation**

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Abstract

This study was conducted to investigate the effectiveness of using smart board activities in developing grammar learning skills and motivation towards them for primary school pupils in international schools. The study adopted a quasi - experimental design employing two groups control group and experimental group. The participants of the study were 28 pupils in 6th grade at Creative International School (Girls' Section) in Dammam, Saudi Arabia. Each group consisted of 14 pupils. The experimental group was taught through smart board activities to develop primary pupils' English grammar skills and increase their motivation towards learning them as well while the control group was taught through the conventional method. For this purpose, a grammar test was prepared and applied as an instrument to assess pupils' level of grammar learning skills before and after the experimental treatment. A motivation scale was also used as another instrument to assess pupils' motivation to learn grammar. Results revealed that the experimental group outperformed the control group in both the grammar test and motivation scale. This was indicated also via the effect size of the treatment on the pupils' grammar learning skills and their motivation to learn.

Key Words: Grammar, motivation, smartboard, Primary stagernational

Introduction

Recent advances in many different fields have a significant impact on teaching, particularly in terms of the application and use of information and communication technology. This has rendered conventional methods, which formed the basis of teaching, inadequate in getting students involved and engaged in their education. These methods rely highly on rote learning and concentrate mainly on the theoretical aspects rather than the practical ones. This is not enough in teaching English, specially to beginners and elementary learners, who depend mainly on both the practical and theoretical aspects of language learning.

In today's classrooms, it is not surprising to see smart boards. These new technologies will be a monotony of the daily life. Smart boards provide unique dynamic classrooms by incorporating the power of computer technology with the indispensability of traditional blackboards. There are many studies in the literature explaining that this mixed technology contributes to academic achievement and that this contribution can be further consolidated (Levy, 2002)

These contributions come to enable pupil interaction, have positive motivational effects on pupils, provide different instructional materials for teachers to use, place teachers to a more effective position, help students in shaping the topics in their minds by encouraging imagination, making lessons more exciting and enabling saving the lessons on the board (Korkmaz & Cakil, 2013). In addition, providing various learning materials for English learners enhance their motivation by providing visual, audio and interaction lesson material.

According to Al -Saleem (2012), smart boards support the language learning process in supporting interaction and communication in class, helping in the presentation of new cultural and linguistic items and improving speaking abilities. Last but not least, there are numerous and various ways to use the smart board in the area of language arts in all grade levels. It can be used for phonics work, sight words, vocabulary, writing, grammar, interactive reading and reading comprehension.

Review of Literature

Grammar Skill

People around the world speak their mother tongue without studying grammatical rules. Young children start to speak without being aware of grammar. But if people want to use a foreign language, grammar is important in a way of learning the language more quickly and efficiently. If people know grammatical rules and structures, they can understand things themselves. So, grammar is an essential language skill and it is important for learning a foreign language (Povjalova, 2012).

Grammar is a system of meaningful patterns and structures that are dominated by specific pragmatic constraints. (Larsen-Freeman, 2008). Grammar is the basis of communication, which helps in understanding the meaning and intention of a message. Correct grammar is important. Proper grammar keeps from being misunderstood and allows us to effectively express our thoughts and ideas. (Praise 2015). Since all languages follow grammatical patterns, correct grammar is fundamental to understanding

English as a foreign language as well as for learning a new language (Johnson, 2014)

Linguistics define grammar as the set of structural rules that control the composition of clauses, phrases and words in any given natural language. The term also refers to the study of such rules (Katamba, 1996). It is the system of a language including syntax and morphology and sometimes also phonology and semantics (Huddleston & Pullum, 2005). Radford explained grammar, as "Grammar is the study of the rules which govern the formation and interpretation of words, phrases, and sentences" (Ejeba, 2016).

Based on the previous definitions come the importance and the advantages of grammar in a language use. The first advantage according to Rutherford (2014) by understanding grammar we can make words dynamic and become the basic of our own communicative environment. This states that grammar creates the effective communication and delivers the meanings properly. The second advantage according to Close (1992), grammar is helping us to keep an eye on and remember the facts, the linguist arranges them methodically and, where possible, draws general rules from them, perhaps explaining historically how they came to be what they are. This draws that grammar is important and should be recognized as a part of fact. The third advantage according to Thornbury (1999), is that grammar is a process for making speaker's or writer's meaning clear when contextual information is lacking. This clarifies that when the contextual information is lacking in an expression, the present grammar structure in this expression will deliver the intended meaning. Therefore, it cannot be ignored that grammar has important role in making and conveying the meaning and intent of a message. In addition, grammar is thought to furnish the basis for a set of language skills: listening, speaking, reading, and writing. In listening and speaking, grammar plays a fatal part in apprehending and expressing spoken language (e.g., expressions) since learning the grammar of a language is taken to be essential to acquire the ability to produce grammatically acceptable utterances in the language (Widodo, 2004). In reading, grammar allows learners to realize sentence interrelationship in a paragraph, a passage, and a text. In writing, grammar enables the learners to use their ideas to make intelligible sentences so that they can succeed to communicate in a written form. Last but not the least, in the case of vocabulary, grammar paves a way to learners to combine some lexical items into a good sentence so that meaningful and communicative statements or expressions can be formed (Widodo, 2006). In other words, by

learning grammar pupils can express meanings in the form of phrases, clauses, and sentences (Doff, 2000). So it cannot be ignored that grammar plays a major role in the four language skills and vocabulary to found communicative tasks. The explanations above declare that grammar helps to create acceptable sentences, deliver the speakers or writers' meaning or intent of messages properly and clearly, helps us to be master in our communicative environment as well. In addition, grammar is an important part of a language, and it has important role in both oral and written language.

Despite all the previous facts concerning the importance of grammar in learning English, there are many students have difficulties in understanding grammar (Ameliani, 2019). This is proved by some previous studies. A study by Ameliani (2019) students' difficulties in grammar of seventh grade junior high school 1 Magelang shows that students have difficulties in grammar involves tenses, plurality, article, preposition and pronoun. There are also some factors that cause students' difficulties in grammar such as negative interlanguage and intralingual transfers in the forms of adverb interference, copulative verb interference, word-order interference, tense-form interference, overgeneralization, ignorance of rule restriction, and incomplete application of rules.

Another study by Gala (2018) problems met in learning grammar recommended that the students and the teacher should utilize the output of the study, which was a module in correct grammar usage, that focus on parts of speech, subject verb agreement, that was integrated in the teaching and learning process. This module also served as remediation for some of the students who were not so proficient in English.

One more study made by Al Makhlafi & Nagaratnam (2011) difficulties in teaching and learning grammar in an EFL context¹ in which they stated that both teachers and students invariably face serious difficulties with regard to EFL grammar instruction particularly students. They also pointed out that students should be taught with various methods and approaches that suit their learning styles, and educators should consider students' attitudes and perceptions when making decisions about how to teach grammar. Moreover, they recommended that EFL teachers would keep their learners' concerns into consideration when planning their lessons and classroom activities, and use supplementary materials, if necessary, to help learners cope with the difficulties.

It is obvious that teaching grammar is always a controversial subject as the method and material adopted in teaching it. L1 learners learn their mother tongue intuitively but for L2 learners, teaching grammar becomes inevitable in order to acquaint them with the norms of the target language (Mishra, 2010). That's why the research in this current study used smart board technology and designed some smart notebook activities in an attempt to develop primary pupils' English grammar skills.

Smart board in Education

Raihan and Lock (2010) stated that with a well-planned classroom setting, learners learn how to learn effectively. Technology-enhanced teaching environment is more dynamic than lecture-based class. Teachers should find methods to apply technology as a beneficial learning instrument for their learners though they have not learnt technology and cannot use it like a computer expert.

As the smart board is one of the most important technologies that is recently appeared, using it in the classroom is of a great benefit not only for pupils but also for teachers. It is an interactive electronic whiteboard. This board is connected to a computer and to a projector that displays the image of a computer screen. Smart board works through a piece of software that allows the users to use SMART Board for different purposes. According to Shenton & Pagett (2000); Smart board is first produced in 1991. It began to be used in education in late 1990s (Beeland, 2002). However, it has been given several names, e.g. Interactive White Board, Electronic White Board or smart board (Turel & Demirli, 2010).

Using the smart board in the classroom is one of the most important technology tools you can use. Not only does the usage of the smart board benefit the students but it also has benefits for the teacher as well (Springer 2011). According to Al-Saleem (2012), a smart board supports the language learning process. There are three reasons for that. Firstly, it supports interaction and communication in class. Secondly, it helps in the presentation of new cultural and linguistic items. Thirdly, it improves speaking abilities.

Povjakaloas (2012) conducted a study to investigate teaching grammar to young learners using interactive whiteboard. The main aim of his thesis is to design teaching objects for interactive whiteboard to teach English grammar in the 5th grade of primary school. He has confirmed that teaching using the interactive objects met the expectations in the field of pupils' motivation and effectivity of the educational process".

Sen & AGir (2014) examined in their study the effects of using an interactive white board in teaching English on the achievement of primary school students. Findings showed that the use of IWB increases the students' English academic success when compared to the use of blackboard and using IWB in teaching English affects primary school students positively.

Another study for Amiria & Sharifi (2014). It was conducted to investigate the influence of using Interactive Whiteboard on writings of EFL students regarding adverbs. This study wanted to determine the influence of using Interactive Whiteboards in teaching writing to EFL students and how it affects the use of adverbs in their writing. The findings of the study indicated students used the adverbs more accurately in their writing when interactive Whiteboard was used to teach.

Alfahadi (2015) examined the effectiveness of using smart board technology in teaching English as a foreign language to preparatory year students at Tabuk University. Findings of the study showed that the use of the smart board results in the improvement of preparatory year students' attitudes towards English.

Alshaikhi & Al-Inizi (2016) explored the learning benefits of using a smart board in teaching English. The findings of the study showed that according to teachers, the most prominent benefits of smart boards are that they address more sense organs, provide visuality and make major contributions to the process of learning, provide time- saving, enable the use of all kinds of visuals in computer environment as teaching tools and make the topics easy, enjoyable and interesting.

Based on these studies, the smart board is proved to be a powerful and useful tool in improving English as a second or foreign language, it can enhance pupils' motivation to learn English and it can be used to develop all English language skills as well.

Motivation

Motivation is one of the most influential elements for both teachers and students and has an important role in clarifying failures and successes in foreign language learning (Dornyei, 2001). However, it is very tough to define. Some scholars as Elliott, Kratochwill, Cook & Tavers (2000), observed motivation as internal state that arouses one to action, pushes one in a particular direction, and keeps one engaged in certain activities.

Also, it is defined as "the attribute that moves us to do something or not to do something" (Broussard & Garrison, 2004). Ormrod (2015) viewed

it as something that directs behavior towards particular goals; it gets students moving, guides them to a particular direction, and preserves them going. Hadfield & Dornyei (2013) defined motivation as "The willingness of a person to achieve a goal at a physical or mental level".

Many studies focused on EFL motivation such as Farag (2015) who used a computer mediated program for developing EFL primary stage pupils' speaking skills and motivation. The participants are six grade primary school. Findings indicated that computer mediated program led to significant improvement in pupils speaking skills, and enhancement in their motivation towards EFL speaking. One more study is Tolba (2016) who examined using Digital Storytelling to Improve Preparatory Stage Pupils' Speaking Skills and motivation. Findings indicated that digital storytelling is recommended to be used as a framework for developing listening skills and it can be adapted to develop other language skills.

Beeland's study (2002) was to determine the effect of the use of interactive whiteboards as an instructional tool on student engagement. A total of ten middle school teachers and 197 students took part in the study. In each of the ten classes, the teacher introduced a lesson using an interactive whiteboard. After the lesson, students were given a survey, and some students finished a questionnaire. Teachers also completed a survey and questionnaire. The results of the surveys and questionnaires declared a strong priority for the use of interactive whiteboards in the classroom. The results will be used to make further technology spending decisions at our school.

Parameter (2012) examined how smart boards encourage student learning engagement in reader's workshop. Using technology in the classroom will motivate and engage students throughout a lesson. The findings suggest there are many benefits for educators who incorporate the smart board into daily instruction. Increased student engagement, increased peer collaboration, and strengthening of comprehension are some of those benefits. The implications determined that educators should consider using the smart board to provide students with an engaging outlet of instruction.

Based on what has been previously mentioned, it is clear that motivation has its necessary role in the teaching- learning process. (Ali, 2019). It is claimed to be one of the most essential factors in achieving success in a second or a foreign language and it is an important variable that determines self-directed learners' intentional use of language learning strategies (Hyte, 2002).

Statement of the problem

Based on the previous literature review and the related studies, the problem of this study can be stated as “6th grade primary pupils needed to improve some grammatical structures through adopting a modern, attractive and motivational tool. In addition, they needed to be motivated to learn grammar. Thus, the current study attempted to use some smart board activities for developing some grammatical structures and motivation for 6 th grade pupils.

Questions of the study

The present study attempted to answer the following questions:

- (1) What is the effectiveness of using smart board activities in developing EFL grammar learning skills for primary school pupils in international schools?
- (2) What is the effectiveness of using smart board activities in developing primary school pupils’ motivation in international schools?

Purpose of the study

The researcher sought to achieve the following purposes:

1. Identifying the effectiveness of using smart board activities on developing EFL grammar learning skills for primary school pupils in international schools
2. Identifying the effectiveness of using smart board activities on developing primary school pupils’ motivation in international schools

Hypotheses of the Study

The current study attempted to verify the following hypothesis:

- (1) There is a statistically significant difference at 0.05 level between the mean scores of the control group and those of the experimental group on the post administration of the grammar test in favor of the experimental group.
- (2) There is a statistically significant difference at 0.05 between the mean scores of the experimental group pre-post administration of the grammar test in favor of the post application.
- (3) There is a statistically significant difference at 0.05 between the mean scores of the control and those of the experimental group on the post administration of the motivation scale in favor of the experimental group.
- (4) There is a statistically significant difference at 0.05 between the mean scores of the experimental group pre-post administration of the motivation scale in favor of the post administration.

Method

Participants:

The participants were a group of 28 grade six pupils at Creative International School for girls in Dammam, Saudi Arabia, enrolled in the 2nd term of the school year (2018/2019). This grade was chosen to apply the study instruments as the students can understand how to use smart board, its strategies and how to apply these strategies. Those participants were divided into experimental group (n= 14) and control group (n=14).

Design

This study adopted the quasi-experimental design using two groups: a control group that was taught through the conventional method and an experimental group that was taught through the smart board activities in teaching grammar. Both groups received the pre-post administration of the grammar test and the motivation scale. The following figure illustrates the design of the study:

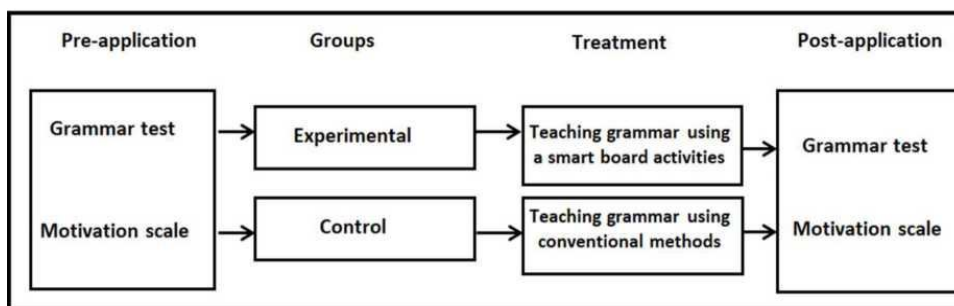


Figure (1)The experimental design of the study

Instruments of the Study

To achieve the purposes of the study, two instruments were developed and implemented:

- 1- A grammar test to assess pupils' grammar level before and after the treatment.
- 2- A motivation scale to assess pupils' motivation towards learning English grammar before and after the treatment.

Procedures of the study

1. Reviewing the related literature and previous studies related to the variables of the study in order to set the theoretical background of the study and design its instruments.
2. Designing the instruments (grammar test and motivation scale)

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3. Establishing the validity and reliability of the instruments.
 4. Preparing the smart board activities for improving pupils' EFL grammar
 5. Selecting the appropriate sample of the study from (grade six) in one of international schools in Dammam.
 6. Administering the instruments before conducting the treatment.
 7. Training the experimental group and teaching the grammar rules using smart board activities and the control group through the regular method.
 8. Administering the instruments after conducting the treatment.
 9. Analyzing data statistically.
 10. Providing results and discussing them.
 11. Presenting conclusions and recommendations.

Definitions of Terms Grammar:

- The language resources used to organize words into structural patterns that make the meanings in sentences. (Humphrey S, Draga L, Feez S, 2012)
- In this study the researcher defines grammar as: It is the study of a set of rules suitable for grade six pupils to improve some grammatical mistakes that they have and their use of language.

Motivation

- "It is the willingness of a person to achieve a goal at a physical or mental level". (Hadfield & Dornyei, 2013)
- In this study, the researcher defines motivation as: The desire and interest that grade six pupils show when they are learning or being taught.

Smart board

- A SMART Board is one kind of interactive whiteboard. At its simplest, an interactive whiteboard permits you to project a picture and 'interact' with it by writing on it or moving it around. The SMART Board is connected to a computer and works with a projector. The projector shows what is open on the computer and, rather than using a mouse or keyboard (although you can use those also), the SMART Board is a touch screen, which permits you to manipulate anything on the screen using your fingers. It is like how you would use a tablet or iPad. A smart board includes special pens to make writing in different colors fast and easy. (Bouchillon)

- Smart Board is an interactive electronic whiteboard. This board is connected to a computer and to a projector that displays the image of a computer screen. It works through a piece of software that allows the users to use smartboard for different purposes. (Mohammed, A.,E.& Yaghi , E., T. & Bataineh , B., O., 2016)

Results of the Study

The results of the study are statistically analysed in terms of its hypotheses and they are discussed in the light of the theoretical background and related studies. Results of the study were reported as follows:

Testing the first hypothesis

The following table shows results concerning the first hypothesis which addressed the differences between the mean scores of the control group and those of the experimental group on the post administration of the grammar achievement test.

Table (1) Results of the first hypothesis

variables	Groups	N	Mean Rank	Sum of Ranks	U	Sign.
Grammar Test	Experimental	14	18.82	263.5	37.5	0.01
	Control	14	10.18	142.5		

The Mann-Whitney test was used to determine the significant difference between the mean scores of the experimental and control groups on the post administration of the grammar achievement test which illustrates that there is a significant difference between the two groups in the test in favor of the experimental group. The following figure shows the difference between the two groups.

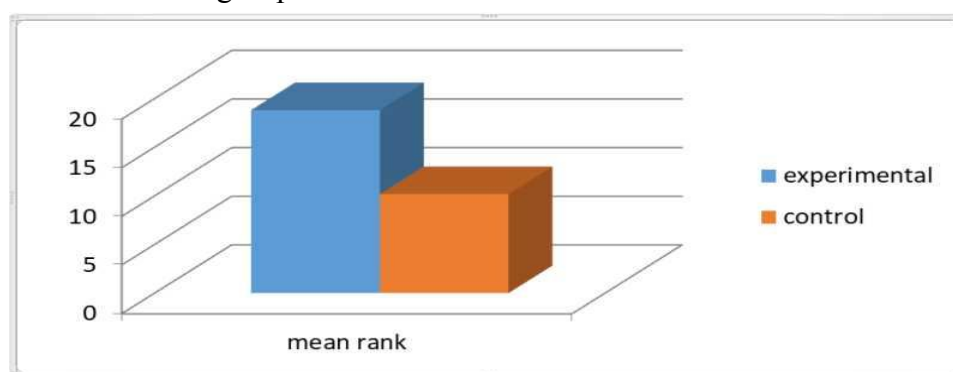


Figure (2) Results of first hypothesis

Testing the second hypothesis

Wilcoxon test was used to determine the second hypothesis concerning the significant difference between the mean scores of the experimental group pre-post administration of the grammar test as a prelude to calculate the value of η^2 to determine the effect size of experimental treatment on the development of learning grammar and the following table illustrates:

Table (2) Results of second hypothesis

variables	Mean Ranks		Sum of Ranks		Z	Sign.	η^2	Effect size
	(W-)	(W+)	(W-)	(W+)				
Grammar Test	0	7.5	0	105	3.3	0.001	0.88	Great

Results in the above table illustrate that there is a statistically significant difference between the pre post administration of the test in favor of the post application, as it becomes clear that the effect size was 0,88, which means that the experimental treatment contributes 88% to the variation in the cognitive aspect of the grammar.

Testing the third hypothesis

Results of testing the third hypothesis which handled the differences between the mean scores of the control group and those of the experimental group on the post administration of the motivation scale are shown in the following table.

Table (3) Results of third hypothesis

variables	Groups	N	Mean Rank	Sum of Ranks	U	Sign.
Motivation	Experimental	14	21.5	301	00	<u>0.01</u>
	Control	14	7.5	105		

The Mann-Whitney test was used to determine the significant difference between the mean scores of the experimental and control groups on the post administration of the motivation scale. It indicates that there is a significant difference between the two groups in the motivation scale in favor of the experimental group.

The following figure shows the difference between the two groups

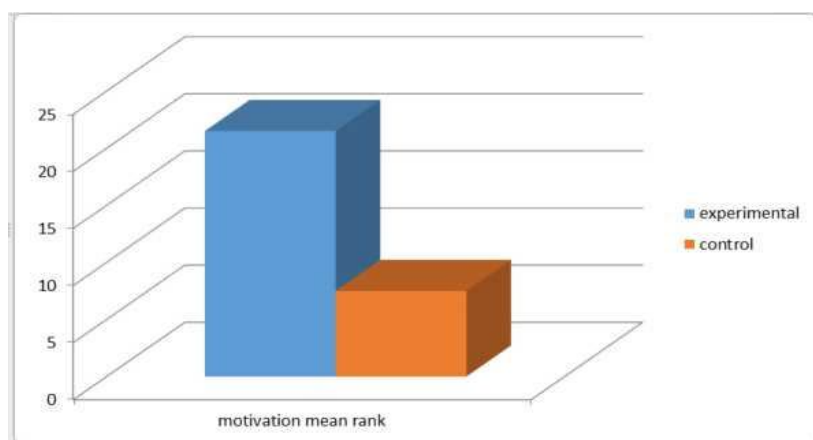


Figure (3) Results of third hypothesis

Testing the fourth hypothesis

Wilcoxon test was used to determine the fourth hypothesis which addressed the differences between the mean scores of the experimental group pre and post administration of the motivation scale as a prelude to calculate the value of “ η^2 ”, the following table shows its results.

Table (4) Results of fourth hypothesis

variables	Mean Ranks		Sum of Ranks		Z	Sign.	η^2	Effect size
	(W-)	(W+)	(W-)	(W+)				
Motivation	0	7.5	0	105	3.301	0.001	0.88	Great

Based on the previous table, there is a statistically significant difference between the pre and post administration of the scale in favor of the post application, as it turns out that the effect size was 0,88, which means that experimental treatment contributes 88% to the variation in the motivation towards studying and learning the grammar.

Discussion

The main concern of the present study was to investigate the effectiveness of using smart board activities in developing EFL grammar learning skills and motivation towards them for primary school pupils in International Schools. The previously mentioned results indicate that using smart board activities was highly effective. Such results can be resorted to the various learning experiences provided for the target participants.

The effect of such activities and different kinds of assessment whether it is game based activities or quiz-based activities is profound and

significant. It gives the participants the opportunity to be more active and engaged. It motivates them to solve problems and make decisions since the focus was to deeply understand and apply the activities rather than taking just factual knowledge

The present study was consistent with the findings of many studies such as Hasan & Ibraheem (2018) which supported the use of Interactive Whiteboard as it has a positive influence on the grammatical competence of the learners. Davidovitch & Yavich, (2017) in their study indicated that the use of smart boards contributes to the student's success and to improving the student's learning process. It is a significant criterion of good teaching. One more study for Jelyani, Janfaza &. Soori (2014) that revealed the positive effect smart boards have on student engagement, motivation, learning styles, and the capability of enhancing the students' understanding.

The target participants in this current study suggested using this modern tool Smart board especially smart notebook in all subjects reclaiming that learning will be more enjoyable, interesting and integrating. This perception is parallel with the suggestions of the students in another study that showed their positive views on smart board use by advocating the implementation on their use in the whole school system to integrate various teaching and learning activities (Istifci et al., 2018). This can improve the productions of their oral language, which can also be associated with the increase in collaboration among learners). (Schmid,2010).

The target participants in the current study enjoyed using smart board as well as the teacher and this is parallel with a study made by Istifci, Ilknur & Keser, Ayşe & Alan, Bülent & Akkaya, meriç & Serpil, Revan & Türkyılmaz, Sinem. (2018) which was about exploring the perceptions of the students and teachers in AUSFL on using smart boards in learning English. It was suggested that both teachers and students enjoyed using interactive boards in the class and these lessons were fun. Also, it was stated that students' participation and motivation increased in the classes where smart boards were used.

These results also went in line with these studies (Gursul &Tozmaz, 2010; Manny et al., 2011; Mathews & Elaziz, 2010) which declared that pupils feel positive about the lessons in which smart boards are used, and teachers discovered that their lessons were more effective.

Based on these studies, it became clear that using smart board in teaching language in general and grammar in particular is beneficial **and**

fruitful. In addition, the results of the present study are consistent with most analyzed studies

Conclusion

Results of the current study and discussion led to the conclusion that Smart board activities such as quiz- based assessment, game- based activities, videos, songs and images led to the improving the experimental group pupils 'learning grammar skills and their motivation than their colleagues of the control group. Moreover, using smart board activities were effective than regular methods on developing EFL grammar learning skills and motivation towards them for primary school pupils in international schools.

Recommendations

Based on the previous results, the current study recommends the following:

- (1) Technology such as Smart board should be used at schools in order to facilitate teaching and provide fun opportunities for pupils to learn all skills of English language.
- (2) Smart board should be used at schools in order to facilitate teaching and provide fun opportunities for pupils to learn all different subjects.
- (3) Teachers should prepare themselves for the use of technology such as smart board.
- (4) Teachers should have a clear idea of how a traditional classroom is different from classroom equipped with a Smart Board.
- (5) Not only English language teachers but all subject teachers also should share ideas, resources and experiences to help develop professionally.
- (6) Provide specific training courses to prepare teachers to easily use smart boards in classrooms.
- (7) Conduct further action research and studies on educational integration of smartboard

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