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The Role of Smart Boards in Improving the Motivation and Academic Performance of EFL University Students of Saudi Arabia

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Abstract

With the advent of smart boards, the traditional teaching pedagogy of EFL class rooms has become more appealing and interesting for the students as well as the teachers. In order to motivate the students of Saudi Arabia to acquire English language skills, technology which includes smart boards is introduced in the class room. Many studies show that Saudi students lack motivation to learn English due to various reasons. The present study aims at identifying the impact of smart boards on improving the motivation and performance levels of EFL students of Prince Sattam Bin Abdulaziz University. After identifying and classifying two groups of students, smart board is used for experimental group and the white board is used for control group. The treatment was given for eight weeks. A questionnaire was given and the student responses were taken from the experimental group after the study. A group discussion was held with the students of experimental group to understand deeply about the impact of smart board on their motivational levels and performance in the exams. The results showed that there is a significant difference in the experimental group in terms of motivation and grades.

Keywords: *education, English as a Foreign Language, motivation, smart board, teaching English with technology*

I. Introduction

Technical gadgets like smart phone, laptop, and tablet played a major role in changing our lives. They have influenced teaching and learning the language in and outside the classroom. Education influences technology and vice versa (Farooq and Javid, 2012). The present trend is to introduce technology in education and particularly in language teaching. The language teachers are making use of technology as much as possible since it is offering multiple opportunities to deliver language skills ((Seljan et al, 2006). In fact, the Ministry of Education supports the usage of technology in departing language skills (Alresheed, Leask and Raiker, 2015). In this connection, modern equipment such as smart boards is provided to many schools and universities. The College of Business

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Administration in Sattam University is provided with smart boards in every class room. These smart boards contain an electronic board named Flow! Works Pro V2.0 which can be utilized in multiple ways and in multiple colors. This software has a number of tools which can be used in the language classroom. The tools such as multiscreen, scoreboard, timer, fill, clock, magnifier, table, curtain, spotlight, keyboard, calculator ruler…etc help students to learn by actively engaging themselves in the classroom activities. The board has touch screen and can be zoomed in and out as per the need. It can be saved and retrieved later when the students want to review the lessons. The podium also has a computer desktop with internet facility, and speakers with mikes. Thus, it incorporates most of the teaching aids in the class room (Yanez & Coyle, 2011). The smart board provides many options to the language teachers and makes the language class creative, interesting and motivating. As Hockly (2013) feels smart boards are considered to be necessary technical gadgets in the class room by the educational institutions and the governments.

In the activity of teaching and learning the language, motivation plays a vital role. It is described as the engine that drives the system (MacIntyre, MacKinnon, and Clement, 2009). In order to keep the motivation levels of students in learning the language, technology helps a lot. Technology makes an EFL class room more interesting and stimulating. Technology has various features such as ubiquity, spontaneity, personalization, reachability and mobility and it is used to impart language skills (Wu, ChenHsieh and Yang, 2017).

English is considered a world language as it is the lingua franca of the world (Crystal, 2003). In fact, in some Asian countries English has gained bigger importance than the native languages. Development and success are equated with the expertise of English language (Krashen, 2003). It is widely used as official language in the academic institutions and business contexts even in Saudi Arabia. As per Saudi Gazette (2012), there is a positive response to learning English from the Saudi citizens. The youth have realized the growing importance of English and so a good number of them are going to England and America to have firsthand experience of English. This way, they are acquiring English language skills faster. The conversion of Arabic medium to English medium in many schools and colleges depicts how teaching and learning English is undertaken seriously in a big manner. The English language expertise has become a route to economic prosperity.

II. Literature Background

In Saudi Arabia, students possess the best available iphones and smart phones. The language teachers could make use of these technical gadgets in their teaching. In this connection, Önal, N. (2017) says that there is a need to make changes in the areas of teaching and learning for the new generation students because they have the advanced technology in their hands in the form of smart phones which have become part of their lives. As these information and communication gadgets have become indispensable components of their lives, they can be used for teaching and learning. In these modern times, children also should possess knowledge and skills to use these advanced technologies.

Teachers should integrate technology in teaching and learning activities of education by using all the available technologies (Hew and Brush, 2007). Students also really enjoy using the gadget in their hands to acquire the language skills.

One of the best tools to be used in the language classroom is a smart board. It is called smart board because Smart Technologies Company manufactured it in 1991. Later in 1992, Microsoft Company invested in interactive white boards and all its associated equipment (Momani, Alshaikhi & Al-Inizi, 2016). There has been a great development in technological media and its application in education; smart board is one such invention of technological media which contributes to learning and teaching in the classrooms. Walker (2003) says that smart boards increase teaching time and allow the teachers to present efficiently from different sources. As many tools are available in the smart board, it is easy to select the tools and use them on a single screen. This facility will reduce the teacher's effort and save a good amount of time. Walker (2002) says that the teachers can use materials from internet or from different websites. They can save and print what is written on the board and review it easily at a later stage. Teachers can save, record and review their own presentations through the use of smart board. This feature enables the students to review the lessons before exams. Studies show that smart boards are more advantageous than the plain white boards in the learning and teaching activities (Beauchamp, 2004; Bunch, Robinson & Edwards, 2012). In some studies, the opinions of the teachers are considered to judge the usefulness of the smart board in the classrooms (Beauchamp, 2004; Lau, 2011).

Jamey Windener and Fabienne Gerard (2000) studied the role of smart boards in the language acquisition and how they influence learning and teaching in Cary Academy School in Raleing, North Carolina**.** The results were positive towards the use of smart board in the classrooms. Abu Elbah (2012) examined the effect of smart boards in developing the drawing skills of electrical diagrams among the 9^{th} grade students of Gaza. The study shows that the students participated actively when smart boards are used in the class. In the state of Ohio, America, a study was conducted in the areas of language and Mathematics by Swan et al. (2008) for the 3^{rd} grade to 8^{th} grade students. The results revealed that smart boards became a key factor in improving reading and math skills of students.

Similarly, Smith et al. (2006) conducted a study to see how smart boards improve the interactions between the students and teachers. The teachers of primary school who taught 184 classes for two years were examined. The results showed that the introduction of smart boards greatly influenced the interaction between the teachers and students. Similarly, a study was conducted by Hasballah (2002) for the students of Mathematics to find out whether they accept or reject smart boards. A pre and post test model was employed. The results of the post test were better than the pre test. The students were positive towards the use of smart boards in the Mathematics class. In 2009, Marzano and Haystead studied the effect of smart boards in the academic achievement of students. The study included 85 teachers and 170 classrooms. A series of lessons were taught using smart boards in some classes and in the other classes, white boards were used. The results showed an increment of 16% where smart boards are used. The results are in favor of using smart boards in the classes.

Torff and Tirotta (2010) studied the effect of smart boards on improving the motivation levels of school students in Mathematics from 3^{rd} to 6^{th} grade. The experimental group involved 458 students and the control group

consisted of 315 students. The students of the experimental group and the teachers who taught them displayed higher levels of motivation. A survey research conducted by Wall et al. (2005) had 80 students answer the questions regarding their opinions of smart boards. Out of 1568 responses, 883 were positive 494 neutral and 191 negative. The positive responses were categorized into two parts namely motivation and fun. The researchers proved that the students considered smart boards to be motivational and contribute to have fun. The students were happy to use smart boards and were delighted to see their work projected on them.

Smith et al (2005) carried out a study which portrays that it is easy to use the smart boards and they play an important role in developing positive attitude of the students. In addition, Mathews-Aydinli and Elaziz (2010) administered a questionnaire and conducted a study in the language classrooms to identify the responses of EFL learners and their teachers towards smart boards. The researchers concluded that the students and the teachers possessed positive attitude towards the use of smart boards. The students and teachers involved in the study made a strong recommendation to use the smart boards in the language classes. In a similar study conducted by Duran and Cruz (2011) that used smart board for the selected tasks, revealed that the learners favored the classes where smart board was used. The students felt excited and motivated to participate in the classes.

The studies of Schmid & Schimmack (2010) and Xu & Moloney (2011) show that smart boards help increase creativity and motivation by involving students in the class activities. Similar findings were recorded by Barber et al (2007) who reported that smart boards were instrumental in improving the interest of the students and encourage and motivate them for better learning. In Spain, in a British Primary School, Yanez and Coyle (2011) conducted a survey which shows that the students preferred interaction with the smart boards. The features of the smart board were engaging for the non-native speakers. In spite of all these studies, there is a need to increase the awareness of the connection between technology and pedagogy in the aspect of using smart boards in classes (Glover, Miller, Averis and Door, 2005).

In general, a good number of studies have shown that Saudi students lack motivation and there are several reasons for this (Mahboob and Elyas, 2014; Baker, Sulaiman, and Rafaai, 2010). If we carefully observe, we understand that the role of smart boards on the motivation level has not been studied much. This is the reason for the present study. The study is guided by the following research questions:

1. Can the academic performance and motivation levels of EFL students be improved by using the smart board?
2. Is there any difference between teaching with smart board and teaching with plain white board?
3. Do the language instructors and the EFL students have positive opinion about using smart board?

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III. Methodology

The present study involved a mixed method of quantitative and qualitative data collection. This eclectic method was suitable to find out the impact of using smart board on improving the motivation levels of EFL stu dents of Saudi Arabia. In the classroom context, using the mixed method is appropriate to consider the issues and problems and to carry out teaching and learning (Suter, 2006). The researchers analyzed the pre and posttests results using the quantitative data. It helped to find out the students' attitude towards using smart board. The quasi-experimental method was employed. This method helps to identify the impact of any specific treatment on selected learners (Creswell, 2009). The method involved a pretest for both groups, conduction of experiment to experimental group and a posttest for both control and experimental groups. The questionnaire helped to find out the reaction of the experimental group students towards using the smart board and how they benefited from it. The group discussion conducted for experimental group found out in a deep manner the effect of smart board on students and their response to it.

3.1 Characteristics of the participants

The EFL students of Prince Sattam Bin Abdulaziz University come from Al Kharj, Riyadh, Dhilam and Al Hota. A few students also study in the university from far places like Abha. A few foreign students from Yemen, Syria, Sudan, and Burma also study here. The students of Level 2 Technical Writing in Business (NAJM 167) course are the participants of the present study. These students have already studied three courses such as Grammar, Reading and Writing in the first semester.

From the course Technical Writing in Business, two sections were selected randomly. One section was termed as the experimental group and the other as the control group. The experimental group had 42 students and the control group had 34 students. The sample of the study includes 76 students of these two sections. The experimental group was taught using the smart board while the control group was taught using the normal plain white board. The treatment was given for the first eight weeks.

Table 1. Sample Selection of control and experimental groups

Group	**Students' Age**	**Frequency of Students**	**Percentage**
Control Group	17-18 years	7	20.58
	18-19 years	21	61.77
	19-20 years	6	17. 64
Total		**34**	**100%**
Experimental	17-18 years	8	19.04%

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Group			
	18-19 years	27	64.28%
	19-20 years	7	16.66%
Total		**42**	**100%**

The homogeneous sections under study have the average age of eighteen to nineteen (18-19) years. All these students have already completed Level 1 courses, but there are 6 (14.28%) repeaters from the experimental group and 4 (11.76%) repeaters from the control group. All the students in both the groups were EFL students with almost similar background and similar standard of English.

The present study was conducted in order to investigate the effect of using smart board on the performance and the motivation levels of EFL Saudi university students. Smart board with all its features was used to teach the course Technical Writing in Business to the experimental group and the control group was taught the course using the plain white board. The treatment was given in the first eight weeks.

3.2 Data Collection Tools

The required data were collected through pre and posttests, a questionnaire and a group discussion.

Pre and posttests: A pretest was conducted for both the groups before applying the experiment. After conducting the experiment for eight weeks, a posttest was conducted to both the groups with the similar questions.

Questionnaire: A questionnaire was prepared and was given to the experimental group students after completing the program to find out their attitudes towards the use of smart board. The questions reveal the response of the students towards using smart board in the classroom.

Group Discussion: At the end of the program after the eighth week, a group discussion was conducted in the experimental group which was lead by the researchers. It was conducted mainly to understand the students' unique experiences and problems while doing the program. The discussion was recorded and analyzed by the researchers. Many points were discussed freely which include the following:

- The best thing I like about using smart board in the classroom
- The worst drawback of smart board
- The most difficult problem I face during the program.
- My response towards doing exercises and practices on the board

3.3. Materials and Procedure

The program was conducted in Level-2 Technical Writing in Business Course with 76 students. The course has two text books namely, Academic Writing from Paragraph to Essay by Dorothy E Zemach & Lisa A Rumisek and Business Correspondence – A Guide to Everyday Writing by Lin Lougheed. The main objective of the first text book is to teach different types of sentences in a paragraph. A number of exercises are given to teach the topic sentence which usually comes at the beginning of a paragraph and possesses a topic and a main idea. The supporting sentences explain the topic sentence by providing details. The concluding sentence usually comes at the end and summarizes the paragraph or repeats the topic sentence with different words. Exercises are provided to students from various sources to write these three types of sentences. Writing a paragraph is the ultimate goal of the book. The second text book focuses on letter writing for various purposes in the work place.

Smart board with all the features is used in the experimental group to teach the syllabus. Students used the smart board to do the exercises along with the teacher. The soft copy of the text book was displayed on the board and students wrote their answers on the book and practiced as per the instructions of the teacher. The screen was saved and used in the upcoming classes to avoid wastage of time. Various resources in the computer like YouTube, Google, Microsoft Word are used to deliver the class. At times, three students worked on the smart board simultaneously.

For the control group, the researchers used a plain white board like a traditional classroom. The students made their notes from the white board and when the board was full, it was erased by the instructor. The researcher wrote the points again on the board in the next class as there was no facility to save the board. Students did the exercises in their own note books but some students who could write with the marker wrote their answers on the board occasionally.

3. 4. Data Analysis

Before doing the experiment, a pretest was conducted in both control and experimental groups. The answer scripts were evaluated by the researchers following a custom made rubric and the average of the evaluations was taken as the final score. After the experiment, a posttest was conducted in both the groups and the scripts were evaluated by the researchers following the same rubric. The average of the evaluations was considered to be the final score. By using the SPSS 16.0, an independent t-test was conducted to check whether there is any significant difference between the scores of control and experimental groups.

After the conduction of the program, a questionnaire was given to the experimental group to find out their attitudes and reaction to the smart board. The items of the questionnaire were analyzed taking the percentage of each item.

After receiving the questionnaires from the students of experimental group, a group discussion was conducted for 100 minutes with the students of experimental group to find out the students' attitudes in a deep manner. This qualitative data helped the researchers to understand the personal experiences of students.

IV. Findings

Smart board played a major role in improving the grades and motivation levels of EFL students. To describe the scores, the mean and standard deviation were calculated as in table 2.

The first hypothesis to be tested is:

Null Hypothesis: There is no significant difference in the mean scores of control group pretest and experimental group pretest.

Alternate Hypothesis: There is a significant difference in the mean scores of control group pretest and experimental group pretest.

Table 2. Difference between control and experimental groups before the experiment

Group Statistics					
	VAR00006	N	Mean	Std. Deviation	Std. Error Mean
CGEGPRETEST	1	34	5.4412	1.35269	0.23198
	2	42	5.5476	1.53341	0.23661

Independent Samples Test								
		t-test for Equality of Means						
		T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
CGEGPRETEST	Equal variances assumed	-0.317	74	0.752	-0.1064	0.3358	-0.77554	0.56266
	Equal variances not assumed	-0.321	73.42	0.749	-0.1064	0.3314	-0.76678	0.5539

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As the above table 2 shows an independent sample t-test was conducted. The results show that there is no significant difference between the mean scores of the control and experimental group before doing the experiment. The p-values associated with t-statistic are more than 0.05 (0.752; 0.749) hence the null hypothesis of no significant difference in the mean scores of control group pretest and experimental group pretest. This implies that both the samples were similar to each other before the conduction of the experiment.

4.1. The difference between the teaching methods

A paired sample t-test was conducted to find out the difference between control and experimental groups before doing the experiment.

The second hypothesis to be tested is:

Null Hypothesis: There is no significant difference in the mean scores of control group pretest and control group posttest.

Alternate Hypothesis: There is a significant difference in the mean scores of control group pretest and control group posttest.

Table 3. Difference between the pretest and posttest of the control group

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	CGPRETEST	5.4412	34	1.35269	0.23198
	CGPOSTEST	6.2059	34	1.493	0.25605

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	CGPRETEST & CGPOSTEST	34	0.554	0.001

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	CGPRETEST - CGPOSTEST	-0.7647	1.34972	0.23148	-1.2357	-0.2938	-3.304	33	0.002

The above table shows that there is a significant difference in the mean scores of control group pretest and control group posttest as the p-value associated with the t-statistic is too small (0.002). This indicates that there has been some improvement in the score, despite no experiment done for the control group. The class room teaching with the plain white board brought a slight improvement in the scores of the students. The scores increase from 5.44 to 6.20.

The third hypothesis to be tested is:

Null Hypothesis: There is no significant difference in the mean scores of experimental group pretest and experimental group posttest.

Alternate Hypothesis: There is a significant difference in the mean scores of experimental group pretest and experimental group posttest.

Table 4. Difference between the pretest and posttest experimental group

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	EGPRETEST	5.5476	42	1.53341	0.23661
	EGPOSTEST	7.5238	42	1.27333	0.19648

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	EGPRETEST & EGPOSTEST	42	0.774	0

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	EGPRETEST - EGPOSTEST	-1.9762	0.97501	0.15045	-2.28	-1.6724	-13.14	41	0

Table 4 depicts that after using the smart board in experimental group, the students have improved their grades and motivation levels. There is a significant difference between the mean scores of pretest ($\bar{x}$ = 5.54, SD= 1.53) and posttest ($\bar{x}$ = 7.52, SD= 1.27) of the experimental group. The t-value is -13.14 and p-value is 0. The t-test shows that the posttest scores have a considerable improvement in the experimental group ($p < 0.05$). The difference is probably because of using the smart board in the class.

There is a difference between the pre and post scores of both control group and experimental group. Hence, the researchers feel the need to study the difference between the two groups in terms of the difference in the pre and post scores of control group with the pre and post scores of experimental group. The fourth hypothesis to be tested is:

Null Hypothesis: There is no significant difference in the post minus pre mean scores of control group and post minus pre mean scores of experimental group.

Alternate Hypothesis: There is a significant difference in the post minus pre mean scores of control group and post minus pre mean scores of experimental group.

Table 5. Post minus pre mean scores of control and experimental groups

Group Statistics					
	VAR00012	N	Mean	Std. Deviation	Std. Error Mean
PREPOSTDIFF	1	34	0.7647	1.34972	0.23148
	2	42	1.9762	0.97501	0.15045

Independent Samples Test								
		t-test for Equality of Means						
		T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
PREPOSTDIFF	Equal variances assumed	-4.538	74	0	-1.21148	0.26696	-1.74342	-0.67955
	Equal variances not assumed	-4.388	58.384	0	-1.21148	0.27607	-1.76402	-0.65895

The p values associated with t statistics for both assuming equal variances and assuming no equal variance are less than 0.05. Hence, the null hypothesis of no significant difference in the post minus pre mean scores of control group and post minus pre mean scores of experimental group is not accepted. The mean difference is greater in experimental group (1.47) than the mean difference (0.76) in control group. This implies that there is a significant difference in student grades after doing the experiment. The experiment in this case is the usage of smart boards in teaching.

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4.2. Experimental group students' responses towards using Smart board in the class

To find out the students' attitudes towards Smart board, the frequency and the percentage of each item in the questionnaire is calculated as presented in the following table 6.

Table 6. The students' attitudes towards Smart board from the questionnaire

N	Items	Disagree		Can't say		Neutral		Agree		Strongly agree	
		F	%	F	%	F	%	F	%	F	%
1	Smart boards help in making classes convenient, enjoyable and interesting.	2	4.76	4	9.52	5	11.90	23	54.74	8	19.04
2	Smart board helps all the types of learners: auditory, visual and kinesthetic.	2	4.76	9	21.42	8	19.04	18	42.85	5	11.90
3	Smart board provides major contribution to my learning process and largely helps in reification.	5	11.90	5	11.90	12	28.57	11	26.19	9	21.42
4	I feel that when I answer the questions on smart board, it boosts my confidence.	0	0	0	0	4	9.52	25	59.52	13	30.95
5	I feel that I am learning a lot as the teacher teaches from many sources.	2	4.76	1	2.38	4	9.52	23	54.74	12	28.57
6	I like to stand in front of the class and do the exercises on the board.	9	21.42	8	19.04	8	19.04	11	26.19	6	14.28
7	It's easy to use the smart board by every student.	0	0	3	7.14	10	23.80	21	50	8	19.04

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8	Smart boards save a considerable amount of time.	2	4.76	4	9.52	3	7.14	18	42.85	15	35.71
9	More students can use the smart board at the same time.	0	0	5	11.90	6	14.28	20	47.61	11	26.19
10	Smart boards help us to use of all kinds of videos and photos in computer as educative materials.	0	0	0	0	10	23.80	9	21.42	23	54.74
11	I like to write on the smart board, manipulate text and image, match, drag and drop objects.	0	0	4	9.52	8	19.04	10	23.80	20	47.61
12	Smart board helped me improve my grades.	4	9.52	4	9.52	3	7.14	14	33.33	17	40.47
13	Using the smart board made this course less stressful.	5	11.90	7	16.66	4	9.52	20	47.61	6	14.28
14	Smart board captures our attention and encourages our involvement in the subject.	3	7.14	7	16.66	5	11.90	15	35.11	12	28.57
15	Smart board should be used in all the classes.	0	0	3	7.14	4	9.52	13	30.95	22	52.38
Average		2.26	5.39%	4.26	10.15%	6.26	14.91%	16.73	39.79%	12.46	29.67%

The above table 6 shows 15 items regarding how smart boards contribute to the growth of students in terms of motivation to learn and acquire good grades. The items focus on fun involved in using smart boards, how smart boards address the needs of different learners, how smart boards make it a possibility to make use of various resources as teaching and learning material, the ease of using smart boards, various features of smart boards incorporating technology into classroom teaching, how smart boards contribute to improve the grades of students,

how students are encouraged more to involve in classroom activities and how smart boards can save a considerable amount of class room time.

On an average 29.67% of students strongly agree and 39.79% of students agree on the positivity of the smart boards. Around 70% of the students benefited considerably from the smart boards and the improvement in their grades prove this point. In the group discussion conducted later on, the students of the experimental group enunciated the positive wave created by the smart boards.

On an average only 14.91% of students selected neutral, 10.15% can't say and 5.39% disagree. As it is an EFL context, some students feel shy to face the class and are reluctant to do the exercises on the board. A few students have expressed during the group discussion that they are afraid of making mistakes in front of everyone; so, they were uncomfortable to do the exercises on the board. The students who disagreed (5.39%) for the items of the questionnaire expressed themselves in the group discussion that the content of the course is above their comprehension level and that they were finding it difficult to do the exercises in the class. They needed more scaffolding from the teacher and support from the peers which was provided to them later. As a whole, the responses of the questionnaire show that majority of the students got motivated and improved their grades due to the introduction of the smart boards.

Along with the questionnaire, a group discussion was conducted with the experimental group to find out individual unique experiences of the students at a deeper level. During the discussion, the students revealed the following observations.

Table 7. Responses of students towards Smart board from Group Discussion

Area	Points	F	Items Supported
Creates fun and provides motivation	Students feel comfortable	8	1
	Students enjoy doing exercises on the board	16	4, 6, 7
	The board can be saved and retrieved later	5	8, 11
Addressing all types of learners	Learning by listening (auditory)	8	2, 3, 15
	Learning by seeing (visual)	6	
	Learning by doing (kinesthetic)	24	
Wide variety of teaching material	Many resources in computer environment become teaching material	17	5

	PDF version or soft ware version of the text book can be displayed on the board.		
	Videos from YouTube and pictures from Google can be used easily.	5	
Improving performance	Improves grades	4	9, 12, 13, 14,
	Less stressful	4	
	Participation of students improves	3	
Problems faced	Unawareness among students to use all the features of the smart board		-
	Shyness and lack of confidence to face the class		
	Technical problems with computer and the board		

The above table 7 depicts that during the group discussion the students revealed four major areas in which they have benefited. The table also gives a clear picture of the frequency of students who expressed the points under each major category and the items of the questionnaire supported by these points. One major breakthrough of this discussion is that it enabled the researchers to understand the problems faced by the students during the experiment. A few students were not aware of using all the features of the board, so they felt uncomfortable to use it. A few students suffered from shyness and lack of confidence to face the class and do the exercises on the board. Finally, at times there were some technical problems with malfunctioning of the computer and the smart board which were fixed by the technicians in a few minutes. As a whole, most of the points expressed by the students in group discussion were matching with the items of the questionnaire.

V. Discussion

The study demonstrates that after using the smart board, the students became more active, motivated and enthusiastic in the classroom. There is a little improvement in the grades of the control group students, where as the experimental group students scored high marks. The grades of the experimental group's posttest show that they

made a drastic improvement in their academic performance. They cultivated high levels of motivation to participate in the class room activities. Thus, the research question 1 is answered positively.

Teaching with smart board has brought many additional advantages like saving the class time, reviewing the previous classes, displaying multiple texts, utilizing various sources as teaching material, making students do the exercises and practices as a group and storing the presentations and sharing them. Thus, the research question 2 is answered that smart boards have a good number of additional academic benefits.

After analyzing the questionnaire and the group discussion, it is understood that the experimental group students and the instructor possess positive opinion about using smart board in the classroom. Thus, the research question 3 is answered positively.

The studies of Mahboob and Dlyas (2014) and Baker et al (2010) have shown that Saudi students lack motivation and they have shown several reasons for this. The present study provides the best solution for this problem. The results prove that Saudi students can be motivated by using smart boards in the class rooms. The results are in alignment with Jamey Windener and Fabienne Gerard (2000) who studied the role of smart boards in the language acquisition and how they influence learning and teaching in Cary Academy School in Raleing, North Carolina. In the present research also the results are positive towards the use of smart board in the classrooms.

Similarly, they are in line with the findings of Abu Elbah (2012) who examined the effect of smart boards in developing the drawing skills of electrical diagrams among the school students of Gaza. As proved in the case, the present study also shows that the students participated actively when smart boards are used in the class.

As the introduction of the smart board improved the reading and math skills of students in the study conducted by Swan et al (2008) in the state of Ohio, America, for the 3rd grade to 8th grade students, the present experiment improved the grades and motivation levels of EFL students of Saudi Arabia. The studies are also in accordance with Smith et al. (2006) who conducted a study to see how smart boards improve the interactions between the students and teachers. The results showed that the introduction of smart boards greatly influenced the interaction between the teachers and students. In fact, students became the centre of the class and wrote exercises on the smart board and practiced well.

Similarly, the findings are in line with Hasballah (2002) who did the experiment for the students of Mathematics to find out whether they accept or reject smart boards. The results of the post test were better than the pre test. Same as the students of Mathematics, in the present study the students are positive towards the use of smart boards in the language class. The present research is similar to the research of Marzano and Haystead (2009) who studied the effect of smart boards in the academic achievement of students. In this study the results showed an increment of 16% where smart boards are used and the results are in favor of using smart boards in the classes. In the present study also the academic performance of the students improved significantly and the students were motivated to participate in the class room activities.

The studies are also in accordance with Torff and Tirotta (2010) who studied the effect of smart boards on improving the motivation levels of school students in Mathematics from 3rd to 6th grade. In both the studies, the

students of the experimental group and the teachers who taught them displayed higher levels of motivation. The results of the questionnaire and the group discussion are in line with a survey research conducted by Wall et al. (2005) In both the cases, the researchers proved that the students considered smart boards to be motivational and contribute to have fun. The students were happy to use smart boards and were delighted to see their work projected on them.

The students of the present research have opined that the smart board played a significant role in developing positive attitude as it is easy to use. Similar were the findings of Smith et al (2005). The results agree with the findings of Mathews-Aydinli and Elaziz (2010), and Duran and Cruz (2011) who conducted a study which proved that the students and the teachers are positive towards the usage of smart boards in the class. As in the present case, the students and teachers involved in the study made a strong recommendation to use the smart boards in the language classes.

In the aspect of improving creativity and motivation of the students by involving them in the class activities, the current study is in line with Schmid & Schimmack (2010), and Xu & Moloney (2011). As in the present case, similar findings were recorded by Barber, Cooper, and Meeson (2007) who reported that smart boards were instrumental in improving the interest of the students and encourage and motivate them for better learning.

When it comes to the interaction with the smart board, the EFL students of Saudi Arabia are no different from the students of a British Primary School in Spain where Yanez and Coyle (2011) conducted a survey which shows that the students preferred interaction with the smart boards. The features of the smart board were engaging for the non-native speakers and motivated them to learn the language by having fun. As per the research findings and advice of Glover, Miller, Averis and Door (2005) who said that there is a need to increase the awareness of the connection between technology and pedagogy in the aspect of using smart boards in classes, the current study is conducted with the EFL students of Saudi Arabia and positive results were drawn in the aspects of motivation and academic performance.

VI. Conclusions and Recommendations

To summarize the present study involves first year graduate students of Prince Sattam bin Abdulaziz University from Saudi Arabia. Two sections of Technical Writing in English Course were selected randomly and one section was termed experimental group and the other control group. A pretest was conducted for both the groups before applying the experiment. The experimental group was taught the course using the smart board and the control group was taught using the plain white board. The experiment took place for eight weeks. A post test was conducted after the experiment and the results were analyzed. The results showed that the experimental group students performed better in the tests. In order to understand the experimental group students' reaction to using smart board in the classroom, a questionnaire was circulated and the responses were studied. The responses reveal that students enjoyed using the smart board in the class and they were excited and motivated to acquire the language by using the smart board. To understand the students' reaction more deeply, a group discussion was conducted with ten students

from the experimental group. The group discussion also revealed that students were interested in using the board in doing the exercises. The students confirmed that they had fun in using smart board and did the exercises as a game without feeling stress.

The aim of the study is to investigate the effect of smart board on improving the motivation levels and the academic performance of EFL Saudi graduate students. The results and motivation levels of the experimental group have improved to a considerable level; where as there is a little difference in results and motivation levels of the control group who were taught with the traditional white board. The experiment is conducted only for two groups of students who are studying the same course. It can be conducted for more number of students who are studying other courses also. The experiment can also be conducted in other universities who have similar conditions like Sattam University. As the on line classes have replaced the regular face to face classes during the Covid 19 pandemic, a research can be done on the impact of boards available in the on line classes applications such as Zoom and Blackboard Collaborate Ultra.

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