Article

https://doi.org/10.52696/RVJQ1108
Reprints and permission:
The Malaysian English Language Teaching Association
✉ Thivilojana Perinpasingam Thivilojana.Perinpasingam@taylors.edu.my

Evaluation of Students' Experience on Usage of Interactive Whiteboard for Verbal Presentation in An English Language Classroom

P.Thivilojana S.Perinpasingam
School of Education,
Faculty of Social Sciences & Leisure Management
Taylor's University, Selangor,
Malaysia

Mahmoud Danaee
Department of Social and Preventive Medicine,
Faculty of Medicine,
University of Malaya, Kuala Lumpur,
Malaysia

ABSTRACT

The purpose of this study is to develop and evaluate a module using Interactive White Board (IWB) as an interactive presentation tool in a Foundation classroom. The English 1 Foundation module conducted at a private institution of higher education, in the Klang Valley was selected for this study. A development research method based on ADDIE's model was [selected] the methodology adopted. This development research process is divided into three phases namely i) analysis, ii) design and development, and iii) implementation and evaluation. This study focuses on the data collected for the third phase, which is the implementation and evaluation phase. Data were collected from surveys done by the students from two groups: the dependent group (presentation with PowerPoint) and the independent group (presentation with Interactive WhiteBoard). The data gathered were analyzed using Exploratory Factor Analysis to identify the students' perceptions about using Interactive WhiteBoard, as a presentation tool. Five factors were extracted based on Eigen value greater than 1. The findings indicated that generally, students' perceptions about IWB as a presentation tool, were positive. Overall, it is suggested that for English 1 oral presentations, the use of Interactive WhiteBoard could enhance interactive presentations and 21st century learning skills among students.

KEYWORDS: Module Evaluation; Interactive Whiteboard and Technology Integration in Classrooms.

INTRODUCTION

Educational technology at present is beyond the use of classroom computers; It also includes a much wider range of tools to heighten teaching and learning approaches as mentioned by What in *Assistive Technology* (2012). With the school's support and training, technology can become an integral instructional resource when teaching various subjects and topics. For instance, the Interactive WhiteBoard (IWB) is an appliance, favored as a visual presentation and interactive teaching aid for multimedia instruction (Ritella & Sansone, 2020). The IWB [Interactive WhiteBoard] also allows for student participation which is not offered by other presentation modes such as chalkboards, or overhead projectors or screens. As suggested, by Fallah (2016) IWB [Interactive WhiteBoards] is a relatively simple new type of technology that teachers can use in the classroom as instructional aids. It can improve the learning environment by engaging students in the instruction (Wang et. al., 2019). Furthermore, these boards allow students to interact with each other, the teacher, and the board by utilizing visual, verbal, and tactile modalities (Isman et. al., 2012). They can also incorporate a range of multimedia and other digital resources to enhance content, support interactive and collaborative learning; and foster greater student control of learning. Best practice literature supports interactive learning to increase participation and motivation levels among learners with varied instructional approaches in classrooms. (Samsonova, 2021).

PROBLEM STATEMENT

Wong et. al., (2020) highlighted that using the IWB [Interactive WhiteBoard] in classroom instruction will increase students' enthusiasm to learn, even if it is carried out in a traditional classroom approach. This is because IWB advocates interaction among students; regardless of teacher-directed or group-based learning, thus creating experiential learning, which (Fallah,2016) concurs with. Apart from that, a module will not be effective without a proper pedagogical aspect and instructional design (Islam, 2015). The development of an interactive module using the IWB [Interactive WhiteBoard] as a presentation tool in a Foundation classroom is a relatively new area of research in Malaysia. This study will contribute to the body of knowledge of educational technology and interactive verbal communication instructions in private institutions of higher learning. Hence, there is a necessity to develop appropriate pedagogical guidance, specifically for technology integrated modules on the usage of IWB as a presentation tool in Foundation classrooms to encourage teachers to use it as a presentation tool in Malaysian higher learning institutions. The aims of the study include the following: to explore the perceptions of students on the usability of IWB and to conduct a comparative study of the module on integrating IWB as a presentation tool in a Foundation classroom among English 1 students.

LITERATURE REVIEW

Interactive WhiteBoard as an instructional tool.

The interactive presentation is gaining popularity in higher learning institutions. Wang et. al., (2019) cited that IWB (Interactive WhiteBoard) supports a presentational approach to learning in a higher learning institution, particularly in English language classrooms. Samsonova, (2021) highlighted that IWB can influence the audience and engage the whole classroom as it can be used as a discussion tool during the delivery of a lesson or for presentations. According to Chen et. al., (2020), IWB [Interactive Whiteboard] enhances the motivation level, commitment, and engagement among students. Furthermore, IWB allows for two-way communication among the teachers and students as mentioned by (Shams et. al., (2016). Furthermore, Fallah (2016) have suggested that the IWB allows learners to acquire a pertinent skill which is to receive feedback

and give constructive opinions which is an essential skill they may not acquire even though they use other types of technology. Another study done by Vasbieva (2014) using the IWB encourages students to be more confident learners as it allows them to come forward and present their work and at the same time, display their capabilities of comprehending the knowledge gained and showcasing their hands-on ability in an interactive learning environment. For these reasons, the IWB is a preferred multimedia instructional tool, due to its visual presentation and interactive attributes.

Assessment[s] tasks with Interactive WhiteBoard

Assessment will possibly respond to two corresponding functions: formative and summative evaluations to monitor learners' improvements. A formative evaluation is done mainly for the enhancement of a module or a program in a learning environment. It provides feedback to teachers on their students' ability to master a particular aspect of knowledge. This in return will assist teachers in making apt instructional decisions to enhance pedagogical instructions (Perinpasingam et. al., 2016) & (Richey & Klein, 2007).

Summative evaluation, on the other hand, involves the gathering of data after implementing a particular instruction. These evaluations analyze a wider perspective of students' achievements as well as gauge the effectiveness of learning materials. This also will facilitate educators in making decisions on any new intervention necessary. The change this study brings enables students to improve their understanding of the content and presentation skills as integrating IWB [Interactive Whiteboard] into a learning environment promotes collaborative, learner-controlled, and inquiry-based learning (Kühl & Wohninsland,2022). Even though various studies have been done on technology integration in the classroom, there is inadequate research done on module development in integrating the IWB as a presentation tool in a Foundation classroom at private higher learning institutions in Malaysia. The usage of the IWB [Interactive White Board] started to gain popularity in the 1990s and it was developed by SMART Board for use in the corporate sector. Interactive WhiteBoards are gaining popularity within the last several years as educational instructional tools in classrooms, especially in Malaysian private higher learning classrooms (Perinpasingam et. al., 2014). The current study was aimed at exploring the perception of students on the usability and to conduct a comparative study for the English 1 module on the integrating of IWB as a presentation tool in a foundation classroom.

Research questions

The present research set out to answer this question:

1. What is the opinion of students about using Interactive WhiteBoard for presentation skills in comparison to the conventional PowerPoint presentation method?

METHODOLOGY

This study is a part of a large experimental study based on ADDIE's model namely needs analysis, design and development and implementation and evaluation. This study focused on the evaluation phase of students' experiences on the effectiveness of integration of IWB compared to conventional PowerPoint for the English 1 module as part of the intervention to enhance interactive presentations in classrooms as well as the challenges faced by these participants. The evaluation phase is mainly done to decide if aims have been met and to identify if alternative measures may be needed to further achieve the intended target. As mentioned by Morrison (2010), Instructional Designers aim to restructure, update or edit the course in order for it to be delivered effectively.

The data collection was divided into two phases: namely before the execution of the final presentation and after the execution of the final presentation. There are two groups of students for this study. One group was exposed to instruction without IWB use, and the other group was exposed to instruction with IWB use. Since these are semester one Foundation students, the same presentation question was given to these two groups. Both groups worked on this study for five weeks and their presentation-related activities and gathered responses were used for the module's evaluation process. After the students have completed their respective final presentations, a survey form was used for data collection.

Participants

The participants for the final phase, which is the implementation and evaluation stage, were selected based on a purposive sampling approach. These students were selected because the study required a comparison of the experiences obtained from students who used Powerpoint slides and the Interactive Whiteboard for the intervention group for their presentations. All 145 students were from the Foundation in Built Environment programme at a private higher learning institution in the Klang Valley. They were from two separate intakes and were selected to participate in this investigation. For this study, the English 1 module which is a compulsory module for all semester one Foundation students was selected. Before the implementation process, all participants were briefed about the use of the interactive module and the intended outcomes. In addition to that, all participants were required to complete the consent form to take part in this study. Finally, all instructions and prerequisites were given and explained to the students.

The subjects, aged 18-21, were the students assigned to classes of the participating researcher. They are in Semester 1 of the Foundation programme in a private higher learning institution in Malaysia. The students were divided into two separate groups. One group with 71 students used PowerPoint slides, which was the control variable, while the other group with 74 students, used the IWB as an intervention to conduct their visual presentations. All students signed a consent form before the commencement of this research. The study was conducted over a five-week period during the first semester of the Foundation program of the school year. Before the commencement of their presentations, a needs analysis survey was conducted to obtain their perceptions about using the Interactive WhiteBoard and PowerPoint slides. In addition to that, the experimental and control group completed a survey regarding their respective use of technology namely PowerPoint slides and Interactive WhiteBoard to share on their perceived levels of enjoyment and engagement when using these tools for a verbal presentation session.

Study instrument

A 22-item questionnaire was adopted from a survey that was developed for a quasi-experiment from a doctoral study done by Morgan (2008). The questionnaire was pre-tested and tested for reliability For the summative evaluation, the questionnaire on the perception of technology usage in the classroom for teaching and learning was subjected to a reliability test. The analysis was done separately for the usage of IWB and non-usage of IWB with a total of 30 respondents each. It was found that, for IWB usage, the Cronbach's alpha was 0.860 whereas, for non-usage of IWB, the Cronbach's alpha was 0.715. Hence, the questions can be used as part of the study to analyze the integration of IWB as an instructional tool.

Data analysis

Data were summarized using descriptive statistics which included frequencies, percentages, mean, standard deviation (SD), median and inter-quartile range (IQR), organized into tables, independent sample T-tests was conducted to test the mean difference between pre-test scores of PPT and IWB group as well as post-test scores of both the groups. In addition, domains for technology use in teaching and learning, presentations and the activities and assignment were estimated from the exploratory factor analysis (PC-EFA). The factors were extracted using principal component (PC) method and were rotated with Varimax rotation. As a rule of thumb, the Keiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) is 0.6 or greater and Barlett's Test of Sphericity is statistically significant ($p<0.05$) to verify that the data set is suitable for factor analysis (Dipnall et. al., 2014).

The author played the role of a teacher-researcher who attempted a practical action research in a tertiary Malaysian classroom to design RMO2P which was implemented in a classroom for 13 weeks. Practical action research provides a systematic framework for the practitioner to reflect upon practice (Mills, 2014).

FINDINGS AND DISCUSSION

Results

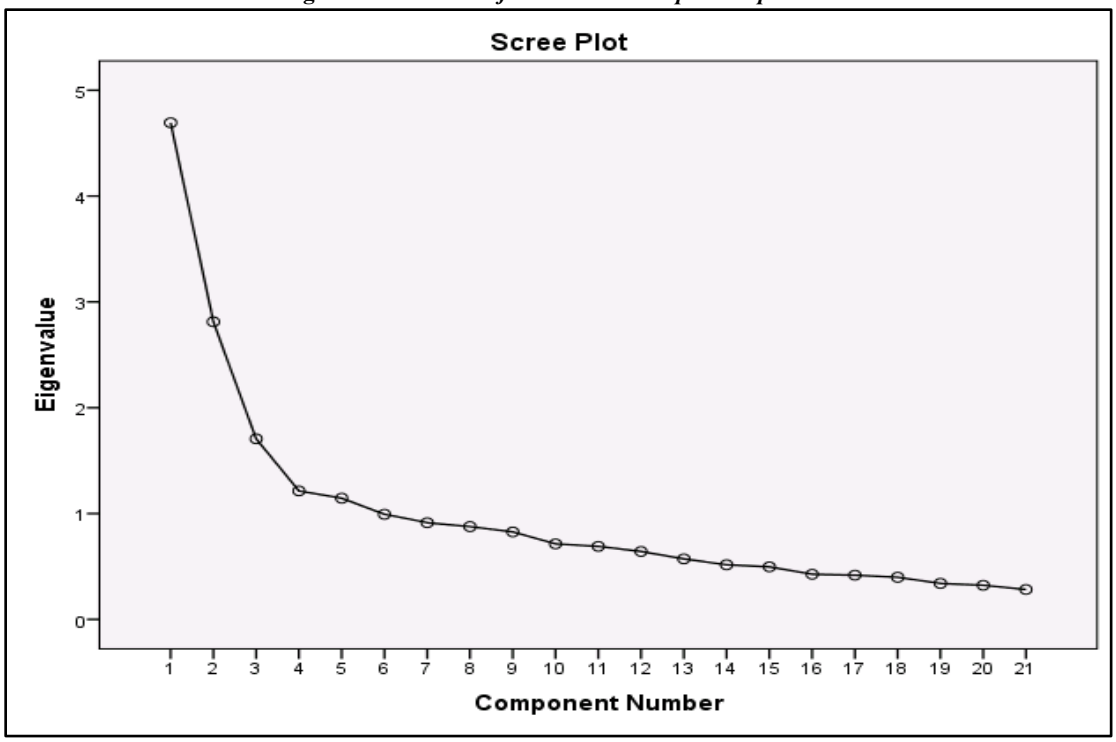
Exploratory Factor Analysis (EFA)

Inferential statistics were used to conclude data that might not be immediately obvious and to support the findings of this study. It included common tests such as t-tests, ANOVA tests, ANCOVA test, and factor analysis to validate the findings of the current study. A principal component factor analysis was computed to determine the factor structure among 22 items related to the perceptions of students on the technology used in the classroom. The identified factors were tested for factorability of correlation using several criteria. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.802, above the suggested value of 6 with a significant Bartlett's test of sphericity ($\chi^2_{(210)} = 839.22$, $p < 0.0001$).

Initial commonalities which estimate the variance in each variable showed that all the variables had acceptable extraction with the above threshold of 0.30 (range: 0.36 - 0.66). The anti-image correlation had diagonals above 0.5, which indicated that each item fitted into a factor analysis. The correlation matrix indicated that each item was moderately associated or correlated with each of the other items. The correlation matrix showed no extreme multicollinearity or singularity within the items. The determinant was equivalent to 0.02 which was greater than 0.0001 indicating no multi-collinearity. Scree plot showed that there were five factors extracted at Eigenvalue greater than 1 (Figure 1). Table 1 gives the Eigenvalue, variables extracted under each factor, and the respective factor loadings.

Each factor corresponds to one domain. Items with < 0.25-factor loadings for each factor were eliminated for simplicity. The larger the loading of a given item to the factor, the greater the contribution of that item to a specific factor.

Figure 1: ***Scree Plot of Extracted Principle Components***



Based on Table 1, of the 22 variables, 20 were extracted into five factors, explaining 55.1% of the total variance in students' perceptions. The first factor with an Eigen value of 4.693, extracted five items related to drawbacks of technology used for presentation and named Domain 1: shortcomings of presentation with technology. The loadings showed a strong correlation between the items extracted. The second PC with an Eigen value of 2.812 also extracted five items but related to advantages of technology usage in teaching and learning and as a presentation tool named Domain 2: effectiveness of using technology to enhance a presentation. The loadings showed a moderate to strong correlation between the items extracted.

The third factor, with an Eigen value of 1.706, extracted three items that were related to technology use in assignments and presentations named Domain 3: engaging presentation tool.
The loadings showed a strong correlation between the items extracted. The fourth factor, with an Eigen value of 1.214, extracted four items. The items were related to psychological acceptance of technology usage and named Domain 4: perceptions on effectual of communication tool. The loadings showed a moderate to strong correlation between the items extracted. Lastly, the fifth factor with an Eigen value of 1.145 extracted three items that were also related to students' acceptance in teaching and learning as well as in doing assignments and were named Domain 5: perception of students' enthusiasm when using technology. The loadings showed a moderate to strong correlation between the items extracted.

Table 1. Principle Component Analysis with Varimax rotation for 22 items related to students' perception, Eigen Value, Factor Loading, and the Domain

No	Items	Components					Communality
		D1	D2	D3	D4	D5	
1	Presentations take a long time using a computer.	.740					.660

No	Items	Components					Communality
		D1	D2	D3	D4	D5	
2	Using the technology tool/computer is difficult for doing a verbal presentation.	.729					.529
3	Can learn more from books than from watching a presentation using a computer.	.720					.577
4	Act like doing assignments in class, especially if instructions are not understood.	.697					.542
5	Tired of using technology in the classroom.	.672					.505
6	Enjoy classroom instruction using technology.		.729				.661
7	Can get a good job if able to use technology/computer for presentations.		.719				.381
8	Gain more opportunities to learn new things.		.696				.520
9	Would work harder if technology is used more often for presentations.		.609				.444
10	It is important to be able to use technology for presentations.		.554				.505
11	It is important to do the best in all assignments given that good presentation skills are acquired.			.719			.583
12	Pay attention during a presentation if it is interesting and easy to understand with the aid of technology or a computer.			.690			.488
13	Always try to complete assignments.			.654			.634
14	Using the computer for a presentation is not scary.				.689		.628
15	Not nervous when using the computer for a presentation.			.	.595		.614
16	Comfortable when using the computer for a presentation.				.569		.356
17	Want to work with technology whenever possible?				.549		.604
18	Can concentrate better on the lesson with technology use in a presentation.					.683	.625
19	Would enjoy my studies better especially for verbal presentation skills if technology is used for presentation.		.			.572	.629
20	Would work harder on presentation assignments if technology is often used.					.515	.579
21	Understand the lesson better with technology use in a presentation.						.506
	Eigen value	**4.693**	**2.812**	**1.706**	**1.145**	**1.214**	

Table 2 to Table 11 reveal the statistics of the pre-test and post-test scores of the survey on students' perceptions. Students were requested to identify the feelings that best describe the statements given. The responses were categorized as 1 (strongly disagree), 2 (disagree), 3 (agree), and 4 (strongly agree).

Domain 1: Shortcomings of presentation with technology

Table 2 shows the pre-test survey results for shortcomings in presentation with technology while Table 3 shows the post-test survey results. During the pre-test, most of the students of both the PPT and IWB groups strongly disagree their lessons took a long time using technology, using

technology is difficult for presentation, they can learn more from books, or that they just act as if they are working in the class, especially when they do not understand the instructions given and that they are tired of using technology in the classroom, (mode = 1.0). Mann-Whitney U-test showed the PPT group disagreed significantly more than the IWB group that it is difficult to use technology for presentation (p=0.035), can learn more from books (p=0.042), and using technology in the classroom is tiring (p=0.021). During post-test, similar to pre-test, most students of both PPT and IWB groups strongly disagree that they are tired of using technology in the classroom, their lessons took a long-time using technology, using technology is difficult in learning, and they can learn more from books or that they just act as if they are working in the class (mode = 1.0). None of the perceptions significantly differed between the 2 groups.

Table 2. Analysis of Pre-test Survey for Domain 1

	PPT Group (n=74)			IWB Group (n=71)			
	Median (IQR)	Mean ± SD	Mode	Median (IQR)	Mean ± SD	Mode	p-value
Presentations take a long time using a computer.	2.0 (2.0)	2.0 ± 1.03	1.0	2.0 (2.0)	2.2 ± 1.05	1.0	0.277
Using the technology tool/computer is difficult for a verbal presentation.	1.0 (1.0)	1.6 ± 0.83	1.0	2.0 (1.0)	1.9 ± 0.93	1.0	0.035*
Can learn more from books than from watching a presentation using a computer.	2.0 (1.0)	1.8 ± 0.91	1.0	2.0 (2.0)	2.1 ± 1.06	1.0	0.042*
Can pretend to be doing an assignment in class, especially if instructions are not understood.	1.0 (2.0)	1.8 ± 1.03	1.0	1.0 (1.0)	1.8 ± 0.93	1.0	0.967
Tired of using technology in the classroom.	2.0 (1.0)	1.6 ± 0.71	1.0	2.0 (2.0)	2.1 ± 1.04	1.0	0.021*

*** Significant p-value at 0.05**

Table 3. Analysis of Post-test Survey for Domain 1

	PPT Group (n=74)			IWB Group (n=71)			
	Median (IQR)	Mean ± SD	Mode	Median (IQR)	Mean ± SD	Mode	p-value
Presentations take a long time using a computer.	1.0 (1.0)	1.7 ± 1.05	1.0	1.0 (1.0)	1.5 ± 0.88	1.0	0.257
Using the technology tool/computer is difficult for a verbal presentation.	1.0 (0)	1.3 ± 0.78	1.0	1.0 (0)	1.4 ± 0.79	1.0	0.832
Can learn more from books than from watching a presentation using a computer.	1.0 (1.0)	1.5 ± 0.86	1.0	1.0 (1.0)	1.4 ± 0.69	1.0	0.311
Act like doing an assignment in class, especially if instructions are not understood.	1.0 (0)	1.5 ± 0.89	1.0	1.0 (0)	1.3 ± 0.68	1.0	0.257
Tired of using technology in the classroom.	1.0 (1.0)	1.4 ± 0.51	1.0	1.0 (1.0)	1.3 ± 0.60	1.0	0.768

Domain 2: Effectiveness of using technology to enhance the presentation.

Table 4 shows the pre-test survey results for the effectiveness of using technology to enhance the presentation while Table 5 shows the post-test survey results. During the pre-test, for the PPT

group, at least half of the students strongly agree that they enjoy classroom instruction using technology with a median of 4.0 (IQR=1.0) and a mean of 3.6 (SD=0.66). The students also strongly feel that they will be able to get a good job if they know how to use technology in their presentations [in learning]; median (IQR) = 4.0(1.0) and mean±SD = 3.6±0.64. They [~~do~~] strongly believe that it is important for them to be able to use technologies such as computers in learning and preparing assignments; median (IQR) = 4.0(1.0) and mean±SD = 3.5±0.53. Most of them also agree [d] (mode = 3.0) and strongly agree[d] (mode = 4.0) that they work harder if technology is used more often for presentations and they will gain more opportunities to learn things with technologies, respectively.

At least half of the students in the IWB group strongly believe that using technology in teaching and learning gives them more opportunities to learn new things (median (IQR) = 4.0(1.0); mean±SD = 3.5±0.37). Similar to the PPT group, most students in the IWB group also strongly agree (mode = 4.0) that they enjoy classroom instruction using technology. At least half of the IWB [~~group~~] students agree [~~d~~] (median = 3.0) that they can get [a] good jobs and would work harder if technology is incorporated into presentations, and they need to use technology in presentations. Mann-Whitney U-test for pre-test showed the PPT group [~~to~~] agreed significantly more than the IWB group that they enjoy classroom instruction using technology (p=0.011), can get a good job if able to use technology/computer for presentations (p=0.001) and it is important to be able to use technology for presentations (p=0.018).

The post-test findings, for the PPT group, were consistent with those of the pre-test. At least half of the students strongly agree that they enjoy classroom instruction using technology; median (IQR) = 4.0(1.0); mean±SD = 3.5±0.53 as well as feel [s] that they will be able to get a good job if they know how to use technology; median (IQR) = 4.0(1.0) and mean±SD = 3.4±0.66. In addition, the students feel that they gain more opportunities to learn new things when they use PPT slides and computers for presentation; median (IQR) = 4.0(1.0) and mean±SD = 3.5±0.37.

In contrast to the pre-test, a positive perception was observed among the IWB group after the intervention. At least half of the students strongly agree that they enjoy classroom instruction using technology; median (IQR) = 4.0(0); mean±SD = 4.0±0.20. The majority of students now feel that it is important to be able to use various technologies; median (IQR) = 4.0(1.0); mean±SD = 3.7±0.48. In contrast to the pre-test score, Mann-Whitney U-test showed that IWB agreed significantly more than the PPT group that they enjoy classroom instruction using technology (p<0.001**), and can get a good job if able to use technology/computer for presentations (p<0.001**) and it is important to be able to use technology for presentations (p=0.026).

Table 4. ***Analysis of Pre-test Survey for Domain 2***

	PPT Group (n=74)			IWB Group (n=71)			
	Median (IQR)	Mean ± SD	Mode	Median (IQR)	Mean ± SD	Mode	p-value
Enjoy classroom instruction using technology.	4.0 (1.0)	3.6 ± 0.66	4.0	3.0 (1.0)	3.4 ± 0.68	4.0	0.011*
Can get a good job if able to use technology/computer for presentation.	4.0 (1.0)	3.6 ± 0.64	4.0	3.0 (1.0)	3.2 ± 0.76	3.0	0.001*
Gain more opportunities to learn new things.	3.5 (1.0)	3.3 ± 0.54	4.0	4.0 (1.0)	3.5 ± 0.37	4.0	0.841

Would work harder if technology is used more often for presentation.	3.0 (1.0)	3.1 ± 0.78	3.0	3.0 (1.0)	3.2 ± 0.68	3.0	0.690
It is important to be able to use technology for presentation.	4.0 (1.0)	3.5 ± 0.53	4.0	3.0 (1.0)	3.3 ± 0.63	3.0	0.018*

*** Significant p-value at 0.05**

Table 5. Analysis of Post-test Survey for Domain 2

	PPT Group (n=74)			IWB Group (n=71)			
	Median (IQR)	Mean ± SD	Mode	Median (IQR)	Mean ± SD	Mode	p-value
Enjoy classroom instruction using technology.	4.0 (1.0)	3.5 ± 0.53	4.0	4.0 (0)	4.0 ± 0.20	4.0	<0.001**
Can get a good job if able to use technology/computer for presentation.	4.0 (1.0)	3.4 ± 0.66	4.0	4.0 (1.0)	3.9 ± 0.38	4.0	<0.001**
Gain more opportunities to learn new things.	4.0 (1.0)	3.5 ± 0.37	4.0	3.5 (1.0)	3.5 ± 0.43	4.0	0.298
Would work harder if technology is used more often for presentation.	3.0 (1.0)	3.4 ± 0.69	3.0	3.0 (1.0)	3.3 ± 0.73	3.0	0.642
It is important to be able to use technology for presentation.	3.0 (1.0)	3.5 ± 0.53	3.0	4.0 (1.0)	3.7 ± 0.48	4.0	0.026*

*** Significant p-value at 0.05; ** Significant p-value at 0.001**

Domain 3: Engaging presentation tool

Table 6 shows the pre-test survey results for the engaging presentation tool domain, while Table 7 shows the post-test survey results. During the pre-test, at least half of the students of both groups strongly agree that they believe it is important to do the best in all assignments given especially that good presentation skills are acquired; median (IQR) = 4.0 (1.0).

Similarly, at least half of the PPT and IWB group students agree that they pay attention during a presentation if it is interesting and easy to understand with the aid of technology or a computer; median (IQR) = 3.0 (1.0) vs 3.0 (0) respectively. Most of them strongly agreed that they always try to complete assignments (mode = 4.0). None of these perceptions differed significantly for the groups ($p>0.05$).

During post-test, it was found that use of IWB was able to draw students' attention during a presentation; median (IQR) = 4.0(1.0); mean±SD = 3.5±0.50. The students also strongly agree [~~d~~] that it is important for them to do the best in all assignments (median (IQR) = 4.0(0); mean±SD = 3.8±0.38) and they would always try to complete the assignments (median (IQR) = 4.0(1.0); mean±SD = 3.6±0.48). The first two perceptions were significantly higher than those of their PPT counterparts ($p = 0.016$ and $p<0.001$ respectively).

Table 6. Analysis of Pre-test Survey for Domain 3

	PPT Group (n=74)			IWB Group (n=71)			
	Median (IQR)	Mean ± SD	Mode	Median (IQR)	Mean ± SD	Mode	p-value
It is important to do the best in all assignments given especially if good presentation skills are acquired.	4.0 (1.0)	3.5 ± 0.62	4.0	4.0 (1.0)	3.6 ± 0.60	4.0	0.258
Pay attention during a presentation if it is interesting and easy to understand	3.0 (1.0)	3.2 ± 0.73	3.0	3.0 (0)	3.1 ± 0.64	3.0	0.058

with the aid of technology or a computer.							
Always try to complete assignments.	4.0 (1.0)	3.5 ± 0.58	4.0	3.0 (1.0)	3.4 ± 0.63	4.0	0.478

Table 7. Analysis of Post-test Survey for Domain 3

	PPT Group (n=74)			IWB Group (n=71)			
	Median (IQR)	Mean ± SD	Mode	Median (IQR)	Mean ± SD	Mode	p-value
It is important to do the best in all assignments given especially if good presentation skills are acquired.	4.0 (1.0)	3.6 ± 0.56	4.0	4.0 (0)	3.8 ± 0.38	4.0	0.016*
Pay attention during a presentation if it is interesting and easy to understand with the aid of technology or a computer.	3.0 (1.0)	3.1 ± 0.65	3.0	4.0 (1.0)	3.5 ± 0.50	4.0	<0.001**
Always try to complete assignments.	4.0 (1.0)	3.6 ± 0.49	4.0	4.0 (1.0)	3.6 ± 0.48	4.0	0.512

*** Significant p-value at 0.05; ** Significant p-value at 0.001**

Domain 4: Perceptions of the effectual communication tools

Table 8 shows the pre-test survey results for students' perceptions of the effectual communication tools while Table 9 shows the post-test survey results. The pre-test and post-test had similar scores for both groups. Overall, most of the students agree that (mode=3.0) using the computer for presentation does not scare them, they are not nervous when using the computer for [a] presentations but are comfortable using it and want to work with technology whenever possible.

Table 8. Analysis of Pre-test Survey for Domain 4

	PPT Group (n=74)			IWB Group (n=71)			
	Median (IQR)	Mean ± SD	Mode	Median (IQR)	Mean ± SD	Mode	p-value
Using the computer for a presentation is not scary.	3.0 (0)	3.0 ± 0.70	3.0	3.0 (0)	3.0 ± 0.55	3.0	0.703
Not nervous when using the computer for a presentation.	3.0 (1.0)	3.0 ± 0.77	3.0	3.0 (0)	3.0 ± 0.53	3.0	0.559
Comfortable using the computer for presentation.	3.0 (1.0)	3.3 ± 0.74	3.0	3.0 (0)	3.1 ± 0.64	3.0	0.070
Want to work with technology whenever possible?	3.0 (0)	2.9 ± 0.82	3.0	3.0 (1.0)	3.1 ± 0.75	3.0	0.327

*** Significant p-value at 0.05**

Table 9: Analysis of Post-test Survey for Domain 4

	PPT Group (n=74)			IWB Group (n=71)			
	Median (IQR)	Mean ± SD	Mode	Median (IQR)	Mean ± SD	Mode	p-value
Using the computer for a presentation is not scary.	3.0 (0)	3.0 ± 0.61	3.0	3.0 (0)	3.1 ± 0.58	3.0	0.255
Not nervous when using the computer for a presentation.	3.0 (0)	3.0 ± 0.75	3.0	3.0 (1.0)	3.1 ± 0.72	3.0	0.256
Comfortable using the computer for presentation.	3.0 (1.0)	3.4 ± 0.51	3.0	3.0 (1.0)	3.5 ± 0.56	3.0	0.335

Want to work with technology whenever possible?	3.0 (1.0)	3.0 ± 0.85	3.0	3.0 (0)	3.0 ± 0.62	3.0	0.817

Domain 5: Perceptions of student enthusiasm when using technology.

Table 10 shows the pre-test survey results for the perception of student enthusiasm for using technology while Table 11 shows the post-test survey results. The pre-test test shows that at least half of students from each group perceived that they could concentrate better on the lesson with technology use in a presentation, median (IQR) = 3.0 (1.0). At least half of the students of the PPT and IWB group strongly agree [d] and agree [d] respectively that they would enjoy studies better especially for presentation skills, if technology is used for presentation (median (IQR) = 4.0 (1.0) vs 3.0 (1.0)). They also agreed they would work harder on presentation assignments if technology is used more often; median (IQR) = 3.0 (1.0). Mann-Whitney U-test for pre-test showed the PPT group to agree significantly more than the IWB group that they would enjoy studies better, especially for presentation skills, if technology is used for presentations (p = 0.018).

For post-test, at least half of the PPT group students agree [d] that they can concentrate better on the lesson, would enjoy studies better, and work harder on presentation assignments if technology is used; median (IQR) = 3.0 (1.0). For the IWB group, while at least half agree [d] that they would enjoy studies better and work harder on presentation assignments if technology is used; median (IQR) = 3.0 (1.0), they strongly agree [d] that they can concentrate better on the lesson; median (IQR) = 4.0 (1.0). In contrast to the pre-test, post-test results revealed that significantly more IWB group students [significantly] perceived that they could concentrate better on the lesson with technology use in presentations (p<0.001).

Table 10. Analysis of Pre-test Survey for Domain 5

	PPT Group (n=74)			IWB Group (n=71)			
	Median (IQR)	Mean ± SD	Mode	Median (IQR)	Mean ± SD	Mode	p-value
Can concentrate better on the lesson with technology use in the presentation.	3.0 (1.0)	3.1 ± 0.83	3.0	3.0 (1.0)	3.3 ± 0.48	3.0	0.174
Would enjoy my studies better especially for [verbal] presentation skills if technology is used.	4.0 (1.0)	3.5 ± 0.53	4.0	3.0 (1.0)	3.3 ± 0.63	3.0	0.018*
Would work harder on presentation assignments if technology is used more often.	3.0 (1.0)	2.8 ± 0.68	4.0	3.0 (1.0)	2.9 ± 0.76	3.0	0.277

*** Significant p-value at 0.05**

Table 11. Analysis of Post-test Survey for Domain 5

	PPT Group (n=74)			IWB Group (n=71)			
	Median (IQR)	Mean ± SD	Mode	Median (IQR)	Mean ± SD	Mode	p-value
Can concentrate better on the lesson with technology use in the presentation.	3.0 (1.0)	3.2 ± 0.97	3.0	4.0 (1.0)	3.7 ± 0.48	4.0	<0.001**
Would enjoy my studies better especially for presentation skills if technology is used.	3.0 (1.0)	3.4 ± 0.55	3.0	3.0 (1.0)	3.5 ± 0.56	4.0	0.838

Would work harder on presentation assignments if technology is used more often.	3.0 (1.0)	2.8 ± 0.77	4.0	3.0 (1.0)	2.9 ± 0.71	3.0	0.457

**** Significant p-value at 0.001**

DISCUSSION

In the evaluation phase, the implementation and evaluation of the appropriateness of the interactive presentation for the module were done. The respondents were 145 students from the Foundation program. Data were collected from a pre-test and a post-test survey from two different groups: namely 71 students from the controlled group and 74 students from the experimental group. The analysis of students' opinions on the usage of the Interactive WhiteBoard as a presentation tool for conducting an interactive presentation in an English classroom that was done according to 5 domains.

Five main domains were identified in this study for the use of technology in the classroom. The first domain highlighted the shortcomings of doing presentations with technology. More respondents from the PPT group significantly disagreed that it is difficult to use technology for presentations, that they can learn more from books, and using technology in the classroom is tiring before getting exposure to technology. After being introduced to technology, both groups showed improvement; however, the degree of improvement is not significant. This showed that both PPT and IWB have improved their shortcomings in presentation with the use of technology. This was supported by Perinpasingam et. al., (2021). The authors stated that exposure to technology in the classroom encouraged an alternative approach and indirectly can improve their achievement. Wong et. al., (2020) in their study found the usage of technology in the classroom was well accepted due to the benefits of this interactive tool IWB.

The second domain emphasized the effectiveness of using technology to enhance a presentation. More than half of the respondents, especially those from the PPT group, strongly agreed that they enjoy classroom instruction using technology, can get a good job if they can use technology/computer for the presentation and it is important to be able to use technology when giving presentations. After exposure to IWB or PPT, the degree of agreement increased more among the IWB group in all three aspects. Kostikova et. al., (2019) supported the current findings that the usage of educational technology may enhance the instructional program as well as visual presentation skills. At the same time, the usage of technology enhanced interactive teaching and learning, particularly in higher learning institutions in Malaysian classrooms. (Wong et. al., (2020)

The third domain highlighted the aspects of engaging presentation tools. The study found that after the usage of technology, the students also significantly and strongly agreed that it is important for them to do their best in all assignments, and they would always try to complete their projects. The finding was supported by Ritella and Sansone (2020) that the usage of IWB promotes collaborative, learner-centered, and inquiry-based learning and hence improves their understanding. In Malaysia, Perinpasingam et. al., (2014) stated that students are more likely to engage presentation tools such as SMART Board as educational instructional tools in classrooms.

The fourth domain highlighted the perception of the effectiveness of these communication tools. The study found that students' perceptions that IWB can be used as an effective communication tool were significantly more favourable. The finding was supported by Birova and Vasbieva

(2016), where proficiency in English can be achieved when the technological approach has been developed. Perinpasingam and Allagappar (2019) found that ICT tools played a strong role in enhancing teaching and learning and improving students' problem-solving skills. It is generally agreed that effective use of ICT enhances teaching and learning as well as improves students' problem-solving skills.

The final domain emphasized the perception of students' enthusiasm for using technology. After the technology was introduced in the classroom, more IWB group students significantly perceived that they could concentrate better on the lesson with technology in a presentation. Similarly, (Samsonova, 2021). in their study, found the use of technology in the classroom using a workshop approach enhanced the attention of students in the classroom. Few studies have supported the findings about integrating technology using creative ways such as graphics and pictures to attract the students' attention and improve their attention span. (CITT, 2016).

Within these domains, IWB was significantly effective in enhancing the presentation in the English 1 classroom. Based on the post test results, it revealed that IWB students enjoyed the classroom instructions, and was able to use this technology to produce interactive presentations which was interesting and catered for multimodalities of learning as compared to using PPT for the presentations. These findings are further supported by Vasbieva (2014) that the integration of the Interactive WhiteBoard in classrooms allows for an extra appealing learning experience because of its graphic [s] features and hypermedia capabilities such as moving pictures, vibrant colours and illustrations.

CONCLUSION

Overall, the participants felt that the presentation module using the Interactive WhiteBoard was effective. As a result, these participants were able to produce improved presentations. Furthermore, the participants were motivated to use the module to produce an interactive presentation as they were able to make their presentations more interesting. Based on the findings, it is recommended that the Oral Presentation module, using the Interactive WhiteBoard, can be used for the learning of English, and integration of the Interactive WhiteBoard as a presentation tool may also be introduced for instruction and learning of other subjects.

Additionally, these respondents said that this module is suitable and could be used in an English classroom, especially for presentation purposes. Most of the respondents did not have difficulties using the Interactive WhiteBoard as a presentation tool in their classrooms. In contrast, a small number of students mentioned that they needed more technical support and training to use the tools available on the Interactive WhiteBoard. In Malaysia, the literature has shown inadequate attention to module development especially for development methods related to interactive modules, particularly for [in] teaching students at private institutions of higher learning in Malaysia (Perinpasingam et. al., 2016; Perinpasingam, et. al., 2021). Therefore, the findings from this study can be used as a guide for educators to develop interactive modules that can be used in their respective classrooms including for English Language Teaching. In a study carried out by Schmid and Whyte (2014), they created a website to share their lesson plans designed for language teachers on the integration of the Interactive WhiteBoard to support and motivate more teachers to discover new possibilities of integrating the Interactive WhiteBoard as an interactive teaching and learning tool.

In this study, the English 1 module which used the IWB encouraged interactive and engaging teaching and learning. This digital lesson has brought a collaborative and active learning approach into the English Language Teaching spaces with the help of the interactive features available on the board together with graphics, clipart, and videos that were integrated within the module. In summary, the impact of IWBs in English Language Teaching are to promote multimedia language practice that enhances the integrating of various literary skills like listening and speaking skills that supports and interactive and engaging learning experience. Therefore, the Interactive Future studies involving more advanced technologies and skills are needed to evaluate the intensity of technology use in the classroom. One area that can be looked at for future studies is to investigate the opinion and involvement of learners with different learning styles, different proficiency levels, and varied group sizes. Future studies should include an evaluation of sensitivity, specificity and predictive values of IWB usage in the classroom as well as a cost-benefit evaluation of this technological tool, and the practicality of its potential use in schools.

REFERENCES

Birova, J., Ocovay, J., & Vasbieva, D. G. (2016). Implementation of new teaching technologies during the action research by experienced language teachers. *International Electronic Journal of Mathematics Education*, *11*(8), 3089-3103.

Chen, I. H., Gamble, J. H., Lee, Z. H., & Fu, Q. L. (2020). Formative assessment with interactive whiteboards: A one-year longitudinal study of primary students' mathematical performance. *Computers & Education*, *150*, 103833. https://doi.org/10.1016/j.compedu.2020.103833

CITT (2016). *Gagne's Nine Events of Instruction. Best Practices in Course Development. University of Florida*. Available at http://citt.ufl.edu/tools/gagnes9-events-of-instruction/

Dipnall, J. F., Pasco, J. A, Meyer, D., Berk, M., Williams, L. J., Dodd, S. (2014). The association between dietary patterns, diabetes and depression. *J. Affect. Disorders*, *174*, 215–224 http://dx.doi.org/10.1016/j.jad.2014.11.030

Fallah, M. (2016). The role of technology in EFL classroom: The case of smart board. *Internafional Journal of Modern Language Teaching and Learning*, *1*(3), 90-98. https://doi.org/10.1016/j.jad.2014.11.030

Isman A, Abanmy FA, Hussein HB, Al Saadany MA (2012). Saudi Secondary School Teachers Attitudes' Towards Using Interactive Whiteboard in Classrooms. *The Turkish Online Journal of Educational Technology*, *TOJET, 11*(3), 286-296.

Islam, K. A. (2015). *Exploring Teacher Readiness for Incorporating ICT in Secondary Level English Classes of Bangladesh: A Case Study* (Doctoral dissertation, BRAC University).

Kostikova, I. I., Gulich, O. O., Holubnycha , L. O., & Besarab ,T. P. (2019). Interactive whiteboard use in English lessons: from university students to young learners. *Revista Espacios*, *40*(12).

Kühl, T., & Wohninsland, P. (2022). Learning with the interactive whiteboard in the classroom: Its impact on vocabulary acquisition, motivation and the role of foreign language anxiety. *Education and Information Technologies*, *27*(7) 1-18 http://dx.doi.org/10.1007/s10639-022-11004-9

Morgan, G. L. (2008). *Improving student engagement: Use of the interactive whiteboard as an instructional tool to improve engagement and behavior in the junior high school classroom.* Doctoral Thesis. ProQuest. Retrieved from http://digitalcommons.liberty.edu.

Morrison, Gary R. (2010). *Designing Effective Instruction, 6th Edition*. New York: John Wiley & Sons.

Perinpasingam, T & Allagapar, M. (2019) Online Discussion Board to promote Critical Thinking in a language classroom. In Alagappar, P., Yee, M.T.W., Mohd Nur, S.N., *Approaches Through Blended Learning for Teaching and Learning*. 89-110.

Perinpasingam, T., Lee, Cheah, Lee & Arumugam. N. (June 2014). Interactive White Board Module in an Architectural Classroom: *An Evaluation. International Review of Basic and Applied Sciences*, *2*(6), 73-79.

Perinpasingam, T., Peng, N. F., Hussain, N. H., & Arumugam, N. (2016). Design and Development of Experiencing Malaysian Architecture Module Through MOOCs. *Journal of Interdisciplinary Research in Education (JIRE) 6*(1*),* 53-62.

Perinpasingam, P. T., Ling, C. H., & Supramaniam, K. (2021). Needs Analysis of Student Use of Technology Focusing on Interactive Whiteboard During Classroom Presentations.In *Higher Education Challenges in South-East Asia*, 135-149. IGI Global.

Richey, R. C., & Klein, J. D. (2007). *Design and development research: Methods, strategies and issues*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

Ritella, G., & Sansone, N. (2020). Transforming the space-time of learning through interactive whiteboards: the case of a knowledge creation collaborative task. *Qwerty-Open and Interdisciplinary Journal of Technology, Culture, and Education*, *15*(1), 12-30.

Samsonova, O. (2021). Educational technology in Abu Dhabi public schools: teaching with interactive whiteboards (IWBs). *International Journal of Technology Enhanced Learning*, *13*(1), 60-77.

Shams, N., Dabaghi, A., & Shahnazari-Dorcheh, M. (2016). Iranian Students' Attitudes towards Utilizing Smart Boards in EFL Classrooms. *Iranian Journal of Applied Language Studies*, *8*(1), 139-172. https://doi.org/10.22111/ijals.2016.3024

Schmid, E. C., & Whyte, S. (Eds.). (2014). *Teaching Languages with Technology: Communicative Approaches to Interactive Whiteboard Use*. Bloomsbury Publishing

Wang, X., Dostál, J., & Bucková, H. (2019). The Use of Interactive Whiteboards for English Foreign Language Education. In *CSEDU, 1*, 169-174. http://dx.doi.org/10.5220/0007720601690174

"What is Assistive Technology (AT)?" (2012). *ATNetwork: Assistive Technology Tools for Living.* Retrieved from http://atnet.org

Wong, K.T., Muhammad, M. & Abdullah, N. (2020). Exploring the Drivers of Intention to Use Interactive Whiteboards among Malaysia University Students: Does Technology Self efficacy Matter? *International Journal of Emerging Technologies in Learning (iJET), 15*(1), 163-175. http://dx.doi.org/10.3991/ijet.v15i01.11497