

Applying Digital Technology in ESL- Learning to Enhance Student Engagement and Learning Outcomes for K3 Students at Bangkok Bilingual School, Thailand

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Abstract

This quantitative research aimed to apply digital technology in ESL- learning to enhance student engagement and learning outcomes for K3 students at Bangkok Bilingual School, Thailand. There were 2 research objectives. To create a set of learning activities via Digital Technology to Enhance Student Engagement and Learning Outcomes for K3 Students at Bangkok Bilingual School' and 'To evaluate the effectiveness of the proposed set of learning activities via Digital Technology in terms of (1) Student Engagement and English communication skills and (2) parent satisfaction of applying Digital Technology in ESL learning activities.' There were 21 mixed-ability students, participating in 6 weeks of ESL classes using technology, tested by a pre and post-test, and their parents assessing the homework activity, giving satisfaction feedback via a questionnaire. 5 experts in the relevant fields evaluated and validated the tools. The results showed that the use of technology enhances student engagement and learning outcomes, displaying improvement from the results from both the pretest and posttest, showing that technology can be used in the ESL classroom effectively. The mean result compares the pre-and post-tests, showing that the post-test results were 4 points greater on average than the pretest results. The post-test data had a higher standard deviation of 3.69. For the ESL activity, parents showed utmost satisfaction with the homework learning activity. They expressed satisfaction with their children being active and overall enjoyment. The results showed that the mean and standard deviation of parent satisfaction were satisfied at a high level.

Keywords: ESL-Learning, Digital Technology, Student Engagement, Parent Satisfaction

1. Introduction

The tradition of English language teaching has been through a huge change, this is evident throughout the twentieth century. (Brown, H. D, 2000) The English language has had more changes than any other discipline, while the teaching of class subjects like Mathematics or Physics, has remained the same, but you can't say the same about English or language teaching in general. ESL-Learning has a lot of benefits, but that doesn't mean it's perfect, there are a lot of weaknesses too. If we can learn to recognize these weaknesses then we can find solutions to them, which may need assistance from digital technology. Here are some problems ESL learners have and how they could be solved. (Korneev. M. 2020). English is one of the most used languages in the world, and learning it as a second language can be difficult especially when you're learning it later in life. There are a lot of countries around the world that do adopt English as a second language and therefore it is important that they learn it from a young age. (Early Childhood Language Program, n.d.). The use of technology in early childhood education is very important for various reasons today. The main reason includes helping young children see ICT as tools designed for specific purposes and to enhance learning (Hilkemeijer. M. 2023). One of the challenges of using technology in preschool is the impact it has on social skills. Some children may develop poor social skills, which can impact their well-being. Educators need to use best practices for technology integration in preschool.

2. Research Problem

Exploring the impact of digital technologies in ESL-learning on student engagement and learning outcomes for K3 students' at Bangkok Bilingual School in Bangkok, Thailand.

3. Research Objectives

3.1 To create a set of learning activities via Digital Technology to Enhance Student Engagement and Learning Outcomes for K3 Students at Bangkok Bilingual School.

3.2 To evaluate the effectiveness of the proposed set of learning activities via Digital Technology in terms of (1) Student Engagement and English communication skills and (2) parent satisfaction of applying Digital Technology in ESL learning activities.

4. Hypothesis

The student engagement and communication skills of K3 Students at Bangkok Bilingual School in Bangkok after using the digital technology learning approach in ESL-Class are higher than in the former period.

5. Importance of the Study

The significance of the study is to find out if digital technology can enhance students' engagement and learning outcomes in and out of the classroom. It is important to find out whether digital technology is indeed effective rather than standardized classroom teaching, especially as a lot of Thai schools still use blackboards to teach them, mixed in with rote learning that doesn't promote creativity and critical thinking. Other countries tend to make the most of digital technology to teach them, most notably countries such as Japan, Sweden, New Zealand etc. as an example; in Japan they use tablets to remote learn from home if they are not available to attend class.

6. Review of Literature

6.1 How to use digital technologies in the Classroom

The use of information and communication technology (ICT) in schools has increased greatly through recent years. This has been shown by the acknowledgement that students need to be skilled in the use of technology in order to take part effectively in an increasingly digital world; there is also a growing awareness of the benefits of digital technology for learning; and approaches and programs work towards increasing students' access to and use of ICT, such as the government-funded Digital Education Revolution (DER) reform package (2008–13) and school 'Bring Your Own Device (BYOD) programs'.

Australian teachers appear to have included the use of educational technology in their classrooms. The LSAC data show that, in primary school classrooms, computers were most frequently used to assist students to develop their skills in specific academic areas; while in secondary school English classrooms, ICT was regularly used to practice basic skills, prepare written text and correspond with others. Educational technology became more commonly used as students got older. This increase in technology use is likely to have resulted from a variety of factors, including an increase in the availability of educational technology over the study period, age-related factors such as differing curriculum requirements for ICT use in different year levels, and differing expectations of older and younger students' ICT capabilities. In general, teachers had positive views about the use of educational technology in their schools. A huge majority of teachers reported that their school administration saw educational technology as a priority, and that teachers were interested in using ICT and integrating it into their teaching. However, insufficient infrastructure and technical support were seen as an issue for a large minority. Teachers' use of technology varied significantly with student age, teacher experience, the school sector and geographic location. More experienced teachers were more likely to integrate technology into their classroom activities. (Bui, T. H. 2022)

6.2 English as a Second Language (ESL) Learning: Setting the Right Environment for Second Language Acquisition

There are several factors that contribute to the success of Second Language Acquisition (SLA). The environment and setting have been recognized as an important one for learners (Castello, 2015). Other than home, schools are the place where English as a Second Language (ESL) learners learn English.

According to the observation conducted, it is seen that the school has a good environment for the students. The place is calming and has all of the facilities that help students to have a perfect learning environment. In regards to acquiring language for secondary students, it is seen that the school has the perfect environment for students to acquire English as their second language. The school is famous for its highly proficient students who are fluent in English.

Based on the findings of this present study, school has been proven as one of the mediums for students to gain experiences, especially when it comes to a sense-of-belonging and confidence in the process of acquiring ESL, suggesting that students need to believe that they would likely get enough practice for learning the English language. This study also shows based on the findings, that there are co-relations between school settings and routines with students' performance on ESL learning. The connection of these two relations would be

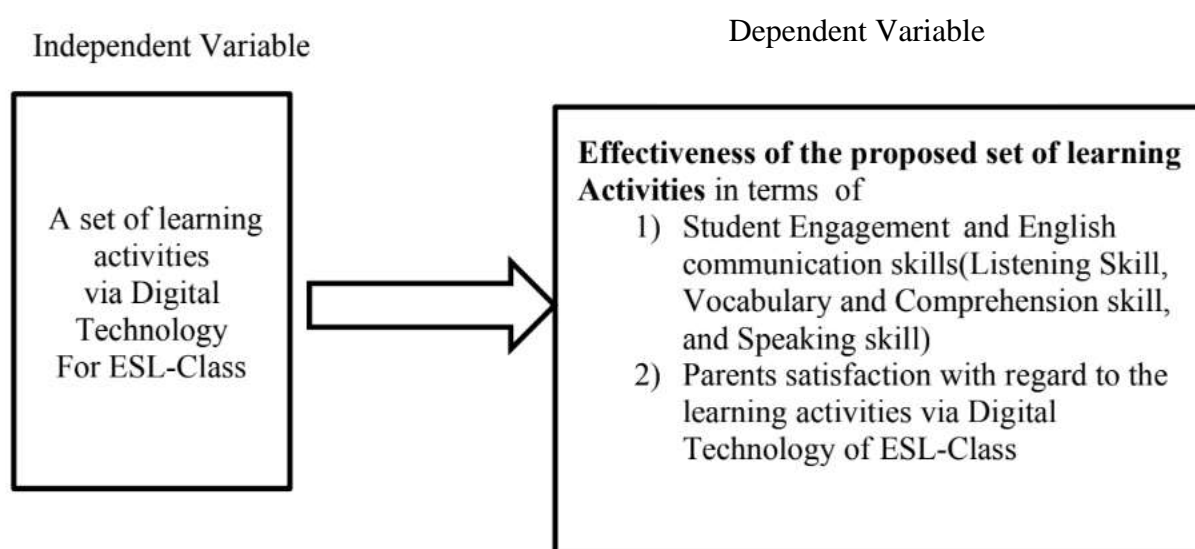
the motivation of the students as we can always enhance and improve students' willingness to acquire ESL learning through motivations which can always be provided by the school with the help of the teachers and the settings of the school. It has also been shown that the school setting and routines help students to have confidence, a sense of belonging and help them to maintain their sense of optimism in their process of ESL learning and acquiring language. It is seen that the findings of this study can help both future and current teachers to benefit from gaining general ideas on how to help ESL learners in acquiring L2 outside the classroom by creating the right and suitable environment in helping learners to acquire L2. Although, there is no exact measure to what extent school settings, and routines influence secondary students' learning on ESL as there are other possible issues that might contribute to the matter of acquiring language among secondary students. Therefore, it is hoped for future researchers to have further research on related factors that might help to contribute to ESL learning among ESL learners.

6.3 Kindergarten teachers and 'sharing dialogue' with parents

The results found that literature and educational practice present double standards in regards to partnerships between teachers and parents. In theory, partnerships with parents are known as important for guaranteeing the best interests of the child, however, in practice, such partnerships are difficult to implement. Therefore, regardless of attempts, the development of a process that may lessen mutual distrust has been delayed (Oppenheim-Shachar, S., & Berent, I. 2021).

In summary, to evade conflict as a typical expression, as the teacher sees herself as an 'expert', she tries to establish a buffer between dialogue of other staff members and parents, and to separate between the roles of parents and the roles of the academic staff, believing that contribution of the parent is not only unnecessary for the child's best interests but also fraught with trouble trying. Therefore, the trainees learn how to avoid conflict through differentiating between the different roles needed in order to run a kindergarten properly.

7. Conceptual Framework



8. Methodology

8.1. Research Design

It's a quantitative research, focusing on experimental research, which is appropriate for experimenting on Ss' reaction to digital technology in the classroom.

This study uses pre-experimental design in the form of one-group Pretest- Posttest design using a quantitative approach.

Y1	X	Y2
Pretest	Treatment	Posttest
	(Independent Variable)	(Dependent Variable)
	Using Digital Technology Learning Approach in ESL	Test Scores speaking and listening skills, vocabulary and comprehension skill

8.2 Population of Study

The participants of this research are a mixed K3 class consisting of 21 students, of mixed abilities, in the 2nd semester of the academic year 2023 of Bangkok Bilingual School. The students come from various ethnic backgrounds, Thailand, Myanmar, China etc. Also the parents of the Ss' will also be participating in order to find out their satisfaction level.

8.3 Research Equipment

Instructional instruments was divided into two categories: (1) the lesson plans based on Cambridge Global English students and workbooks, this has the core content for the topics being taught and (2) Digital technology and online resources, such as the use of a projector, and online material like google forms, YouTube videos etc. Other **research instruments** used in this case was a pre and posttest that the Ss' did in order to test development over 6 weeks using digital technology. Also questionnaires were handed out to the parents to record their satisfaction level towards activities sent home by the teacher.

8.4 Data collection instruments

There were 2 data collection instruments: (2.1) ESL pre-test and post-test and (2.2) Parents' satisfaction questionnaire.

8.5 Data Analysis

Data analysis is an important part of this research, and it was done by collecting the data and triangulating the data from the pre and posttest, as well as the questionnaires. I used Microsoft Excel to analyze the data from both the pre and post exams that shows the knowledge

acquisition of using technology in the classroom over 6 weeks, then compared to parent satisfaction level for the activity sent home.

Pre-test and post-test analysis

The t-test value is calculated to analyze the pre-test and post-test of the study. The level of significance will be 0.01. The mean with standard deviation was calculated by using the Calculation Program. The Pre-test and post-test measured speaking and listening skills, vocabulary and comprehension, and knowledge acquisition.

Analysis of questionnaire

The questionnaire was analyzed to investigate the satisfaction of the parents. The mean (with standard deviation) was used in the analysis by using the Calculation Program.

9. Results and Findings

9.1 To create a set of learning activities via Digital Technology to Enhance Student Engagement and Learning Outcomes for K3 Students at Bangkok Bilingual School.

Found that:

The lesson plans from week 6 - week 11 (6 lesson plans in total) that were used and implemented during the research period. There were 5 experts, ranging from experts in digital technology to early learning teaching, to evaluate the lesson plans in order to make a decision to determine the content validity of the lesson plans and give each item a point based on their decision. The criteria for the lesson plans used the Likert scale and were from 1 to 5. 1 being 'Not suitable', 2 referred to as 'Less suitable', 3 was 'Not Sure', 4 was 'Suitable' and 5 referred to as 'Very suitable'.

The average result for each lesson plan evaluated by the experts. 5 sections of the lesson plan were evaluated, 'grade appropriate content', 'clear learning objectives', 'learning content aligning with the objectives', 'clearly specifies the assessment' and 'the learning activities are age appropriate'. Both the 'grade appropriate content' and 'the learning content aligning with the objectives set' showed the average result as '5', which in the evaluation referred to as very acceptable, so all 5 experts were satisfied with these sections of the lesson plans created for the ESL classes. The 'learning content aligns with the objectives set' and 'learning activities are age appropriate' both showed an average of 4.66, and lastly 'Clearly specifies the assessment' had an average of 4.

The standard deviation shows '0' for both 'grade appropriate content' and 'the learning content aligning with the objectives set', which means that all the values in the dataset are the same, and consequently have no deviation from the average. This was also the case for the section 'Clearly specifies the assessment' which also recorded '0' for standard deviation. The 'learning content aligns with the objectives set' and 'learning activities are age appropriate' both showed a standard deviation of 0.57, which means that it is to the right of mean on a bell curve. In the end the suitability level was recorded as 'Very suitable' and 'Suitable', and shows that there were no problems with the lesson plans created. Note that all 6 were evaluated the same and so produced the same result.

9.2 To evaluate the effectiveness of the proposed set of learning activities via Digital Technology in terms of (1) Student Engagement and English communication skills and (2) parent satisfaction of applying Digital Technology in ESL learning activities. Found that:

Table 1 Means and Standard Deviation for evaluate a difference of pretest and posttest by set of learning activities via Digital Technology

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	pre - post	-4.57143	3.69556	.80644	-6.25363	-2.88923	-5.669	20	.001

**p<.01

Table 1 shows that there is a significant difference between pretest and posttest by the set of learning activities via Digital Technology, the student engagement and communication skills of K3 Students at Bangkok Bilingual School in Bangkok after using the digital technology learning approach in ESL-Class are higher than in the former period. The means shows the comparisons between the pre and posttest, and shows that the posttest results were over 4 points greater on average than the pretest results. The posttest data show that there is a higher standard deviation at 3.69, which tells me that the posttest point data is more dispersed than the pretest point data.

9.3 To evaluate parent satisfaction of applying Digital Technology in ESL learning activities.

Table 2 Mean and standard deviation parent satisfaction with the homework activity for K3 students' at Bangkok Bilingual School.

Number	Evaluation Questions	<u>X</u>	S.D.	Satisfaction level
1	Satisfaction of the explanation of the activity.	4.38	0.6	good
2	Satisfaction of the vocabulary words.	4.44	0.51	good
3	Satisfaction of the enjoy ability of the activity.	4.66	0.48	very good
4	Satisfaction with the use of technology.	4.11	0.83	good
5	Satisfaction of the overall activity.	4.33	0.48	good
Total Average		4.38	0.58	good

Table 2 shows that the mean and standard deviation of parent satisfaction with the homework activity for K3 students' at Bangkok Bilingual School, were satisfied at a high level (\bar{X} = 4.38, S.D. = 0.58), highest level is Satisfaction of the enjoy ability of the activity is very good level (\bar{X} = 4.66, S.D. = 0.48), Lowest level is satisfaction with the use of technology (\bar{X} = 4.11, S.D. = 0.83).

10. Summary

10.1 The average result for each lesson plan evaluated by the experts. 5 sections of the lesson plan were evaluated, 'grade appropriate content', 'clear learning objectives', 'learning content aligning with the objectives', 'clearly specifies the assessment' and 'the learning activities are age appropriate'. Both the 'grade appropriate content' and 'the learning content aligning with the objectives set' showed the average result as '5', which in the evaluation referred to as very suitable, so all 5 experts were satisfied with these sections of the lesson plans created for the ESL classes. The 'learning content aligns with the objectives set' and 'learning activities are age appropriate' both showed an average of 4.66, and lastly 'Clearly specifies the assessment' had an average of 4.

10.2 There is a significant difference between pretest and posttest by the set of learning activities via Digital Technology, student engagement and communication skills of K3 Students at Bangkok Bilingual School in Bangkok after using the digital technology learning approach in ESL-Class are higher than in the former period. The means shows the comparisons between the pre and posttest, and shows that the posttest results were over 4 points greater on average than the pretest results. The posttest data show that there is a higher standard deviation at 3.69, which tells that the posttest point data is more dispersed than the pretest point data.

10.3 The mean and standard deviation of parent satisfaction with the homework activity for K3 students' at Bangkok Bilingual School, were satisfied at a high level, highest level is Satisfaction of the enjoy ability of the activity is very good level, Lowest level is satisfaction with the use of technology.

11. Discussion

There is a significant difference between pretest and posttest by the set of learning activities via Digital Technology, the student engagement and communication skills of K3 Students at Bangkok Bilingual School in Bangkok after using the digital technology learning approach in ESL-Class are higher than in the former period. Seeing the Thai students show improvement in all the aspects, such as; speaking, listening, vocabulary and comprehension, was very rewarding and shows that Thai students can do as well as the international students when given the opportunity, especially when using digital technology learning approach. We are in the era of technology and need to embrace technology and develop both teachers and students ICT skills, as the future will depend on us understanding and cooperating with technology. 'How to use digital technologies in the Classroom' mentions that in their findings that computers were most frequently used to assist students to develop their skills in specific academic areas; and that in English classrooms, ICT was regularly used to practice basic skills, prepare written text and correspond with others. Educational technology became more commonly used as students got older. So it backs up the fact that technology needs to be used early on, especially when there will be more and more technology used in schools and skills that will need to be learnt by both students and teachers.

12. Conclusions

12.1 Students' showed definite improvement in 6 weeks, being taught with the use of technology, such as; projectors, PowerPoint slides, YouTube videos, google forms (pre/posttest) etc. I found that using PowerPoint slides increased student engagement and allowed them to take in the information easier than if the teacher used regular flashcards. Also the students' enjoyed participating in using google forms as a platform to take the test, even though it was 1 on 1 they still got to navigate the mouse and choose the options, this is different from the standard paper tests that they are used to taking. The downside of this is that it is time consuming for the teacher and requires a lot of planning and patience, it would be ideal for older students who have a general grasp of the internet, whereas K3 students have only just started to grasp how to navigate the computer tools, such as; using the mouse and keyboard.

12.2 Parents showed a very good amount of satisfaction with the learning activity set for homework. The Scavenger Hunt assigned to the students, was a great way to integrate the 'City Places' unit of the 'Cambridge Global English' books, and I believe that helped the students to remember the words for the upcoming posttest that was given to them a few weeks later. Parents' hadn't had the opportunity to help participate in their child's activity before, and this was a fun way to bond with their child. I believe that this activity was a success, as parents' from other classes who weren't chosen to participate in the activity asked the Thai teachers' why their child was not participating in the activity. It shows that activities like this would be appropriate in the future.

13. Recommendation

The following recommendations are made to assist, support, equipped, educate, and improve teachers of Bangkok, Thailand on the following:

13.1 Teachers should integrate digital technology in teaching and learning by reviewing

and assessing the curriculum development plan. Direction is needed to integrate technology into all subjects and inspire teachers to develop their digital technology skills in order to improve teaching and student learning.

13.2 Digital Technology Training Seminar for Teachers at all Levels. It could be an event in or out of the school premises. Identify digital technology experts at school, who could be the speakers or trainers for those staff or teachers that are in need of proper training.

13.3 Maintaining and managing proper Technology Facilities in every school, which should be made available for all teachers.

13.4 Allocate a budget for Digital Technology Facilities in every school and encourage teachers to use technology in teaching and learning with the use of small incentives.

13.5 Create a schedule for teachers to learn to develop new technology skills or enhance it by looking for ways to improve themselves.

14. Further Study

The researcher also would like to conduct further research on digital technology and how it affects students' learning outcomes in an ESL classroom.

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