APPLE CLASSROOM: MANAGING TERTIARY ENGLISH CLASSES WITH IPADS

BY

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Abstract

The objectives of this study were to (1) compare the vocabulary skills development of tertiary English students in lessons utilizing Apple classroom with those without the use of Apple Classroom, and to (2) compare the learning satisfaction of students in lessons with Apple classroom compared to lessons without. A mixed-method approach was used in one class which was randomly sampled and consisted of 31 students. Six 150-minute lessons were developed in two sets of three lessons. Quantitative data was collected through pretests and posttests which were given at the beginning and end of each set of three lessons (1-3 and 4-6), and qualitative data was collected through a student questionnaire, a semi-structured interview with the students, as well as classroom observations. The posttest comparison results between lessons 1-3 and lessons 4-6 showed a significance value of .335 indicating that the result was not statistically significant, and consequently that the use of Apple Classroom did not increase students learning achievement. The results of the qualitative analysis demonstrated significant satisfaction with the use of Apple Classroom where more than 75% of students believed Apple Classroom (1) helped students learn more, (2) reduced cheating, and (3) would ultimately be their preference for lessons if they were given the choice.

(Total 166 pages)

Keywords: Apple Classroom, Tertiary English Classes, iPad, Vocabulary Development Skills, Learning Achievement, Learning Satisfaction

Student's Signature …….……Thesis Advisor's Signature ……...….....

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ABBREVIATIONS

Abbreviations	Meaning
AC	Apple Classroom
AR	Action Research
BYOD	Bring Your Own Device
EFL	English being learnt and taught as a Foreign Language
MDM	Mobile Device Management
OS	Operating System

CHAPTER 1

INTRODUCTION

This chapter presents the background and the rationale of the study, research objectives, research questions, research framework, and the definition of terms.

1.1 BACKGROUND AND RATIONALE OF THE STUDY

Spain wins the world cup in Johannesburg, Swine flu hits the US, and Obama completes his first year as US President. The year is 2010 and for many of us, our digital lives are about to be forever changed by the introduction of Apple's iPad. In only a few short years headlines would then be confirming the iPad's perceived tablet world dominance, and to many it appeared titanic-ally too big to fail. Fast forward a decade and not only is the infamous iPad still with us, but as a global community we now have over 3.9 billion unique mobile internet subscribers - over 51% of the world's population (Broadband Commission for Sustainable Development, 2019). We have never seen such a digitally connected world.

In this digital age technology is playing an ever-growing role in our lives, and it seems classrooms are no escape. However, has this digital shift in classrooms been a development or a disruption? Some educators claim it has significant opportunity "mobile technologies possess the same educational potential today as television did 45 years ago" (Eppard et al., 2019, p.51). Although others have found that "more often than not, devices are being used to disengage rather than engage in learning or not being used altogether" (Willis, 2019, p.22). Clearly, technology in the classroom presents obvious benefits but how should it be best managed?

"They haven't used it" (Bilton, 2014) was the surprising and thought-provoking response Steve Jobs gave when asked about his children's use of the original iPad

following its release. He went on to explain that contrary to the thoughts of the interviewer, he actually limited how much technology his children used at home. Such attitudes very strikingly illustrate the need to balance caution with excitement when considering technology in the classroom. As noted by Elphick (2018), the enthusiasm and personal technology skills which educators possess do not necessarily translate into effective use of such technology in the classroom. In fact, while technology can provide the classrooms of 2020 with practicalities, there are also messy realities (Willis, 2019, p.22).

Like the smartphone, the mass-adoption of tablets throughout the world has impacted all areas of our lives, but most significantly tablets and smartphones have changed the way we communicate. Over the last decade portable computers have changed enormously and tablets have become commonplace. Due to a continually changing landscape of technology, as every day goes by more and more classrooms are being filled with digital devices of all kinds. It could be said that if the microwave changed the way we cook, and the smartphone changed the way we take photographs, then the tablet is certainly changing the way we teach and learn. At the very least, the availability now of communication functionality such as internet access, and multimedia functionality such as audio and video recording in these devices have made themselves very useful in certain settings and positive results have been seen. (Boehm et al., 2017; Ferguson et al., 2017; Perez, 2017;).

As much as some tertiary educators may hate to admit it, long gone are the days of whiteboards, markers, and photocopiers - smartboards, tablets, and projectors are the weapons of choice for many university and college teachers in 2020. The last decade has seen an enormous shift in computing power from the traditional desktop computer to the mobile device. Where previously we had large desktop devices connected to a phone line, we now have watches with comparable connective capabilities. James Bond, anyone? The introduction of the iPhone in 2007 revolutionized the way we communicated and accessed the world wide web. The iPad, which followed in 2010 continued this trend and classrooms have never been the same. Where previously

computer labs had to be utilized or laptops where resources allowed, tablets now provide a practical way to get most of the computing power of a 'real computer' in a very portable format which could almost be likened to a smartphone. There is no doubt that the introduction of the iPad helped instigate a massive change in classrooms, even if it wasn't so apparent at the time.

From a cost perspective, tablets have continued to become more and more affordable, whilst also delivering increasingly high levels of performance – to a point now where in 2020, a tablet can be seen to deliver comparable performance to a laptop in many if not all but the most professional of situations at a much lower cost. This has been a significant opportunity for those in education, as computers have traditionally been too cost-prohibitive to be used in many situations in 'ordinary' classrooms of the past. Additionally, the cost of IT acquisition and management, combined with the relatively short lifespan of computers has historically created a large expense which was challenging to justify. Consequently, the situation in 2020 where a brand-new iPad can be purchased for close to US$300 (Everymac.com, 2019) is certainly one which excites some educators. However, all this excitement has not been met with appropriate amounts of research, which leaves the obvious question of how to best use the device in the classroom?

While tablet and smartphone adoption has increased exponentially in the general population, a lack of data exists on the most effective ways to utilize this technology in the classroom (Kalonde, 2017; Minty-Walker et al., 2017; Wakefield et. al., 2018). The lack of research into effective usage of tablets in classrooms is an understandable challenge with newly adopted technology but it is an issue which has been regularly highlighted. The current research has even been described as "chaotic" (Eppard et al., 2019, p.51). While in the consumer world, technology and its advancements may be quickly adopted by the public on release without question, this success does not automatically translate into the classroom. This creates a difficult situation for teachers as there is often little guidance on how to use new technology

(Ditzler, 2016; Perez, 2017), and a subsequent need for best teaching practices to be established.

Additionally, technology moves at a rapid pace. Historically, little else has kept up with the innovation and development which computers have seen in the last 50 years. 2020 is no exception; by most observations technology is changing at an ever-increasing rate with seemingly 'no limits'. The challenge now, is to be able to select the most appropriate educational technology which will continue to be effective for as long as possible. As the tertiary institution in Thailand where the researcher teaches provides iPads to every student, this 'technology selection' has already been made. Such a situation will clearly differ from institution to institution.

While iPads may be viewed as fairly standard digital devices, there is a major difference between the way they are used in 'school issued' situations, as opposed to 'bring your own device' (BYOD) situations. In the former, a school generally provides students with iPads which have already been 'set up' by the school to allow very high levels of iPad management, with control and monitoring capabilities built into iPad school-management software provided by Apple (Apple, Inc., 2020). This is productive as it provides an appropriate device with an education-specific ecosystem "Apple Schoolwork and Classwork Apps" for the teacher, student, and the school IT administrators. In this situation, students typically return their iPads to the school upon completion of their studies. On the other hand, it is not uncommon for tertiary institutions to have a BYOD policy (Willis, 2019) which may allow students to bring a device of any kind (laptop, tablet, etc.) from any manufacturer. This creates a very real challenge for teachers who wish to maintain some level of control over the 'digital behavior' of the students in their class. It is almost physically impossible to be able to gain the level of control Apple offers with its Schoolwork and Classwork Apps compared to situations where devices of different kind, operating system, and manufacturer are used. This brings us to Apple "Classroom".

Apple Classroom is device-management software built into the Operating System (OS) of all recent iPads (however the teacher must download an Apple App), which allows temporary connections / network to be set up over a local Wi-Fi network providing a 'classroom' environment (Apple, Inc., 2018). This classroom environment allows a teacher to be able to monitor the screen of any student's iPad, lock a student into a particular App (a test App, for example), and to even see a 'time record' of the way the device was used during the lesson. This record allows the teacher to see how much time was spent on different Apps by each student during the lesson. Apple Classroom is nowhere near as powerful as its big brother Apple Schoolwork/Classwork. It does, however, provide the flexibility of short-term device management which is specifically aimed at personally owned devices used in educational-BYOD situations. As mentioned, the researcher currently teaches in classroom situations where every student has their own iPad (1:1 ratio), however these are not 'managed or set up' by the school. As such, the usage of iPads in the researcher's classrooms is in a BYOD situation.

While having an iPad ratio of 1:1 in the classroom may be considered ideal for many educators, without appropriate management these devices can simply be powerful distractions. Access to the internet is valuable for many tasks in a tertiary classroom, however this access also comes with distractions such as games, social media, or even adult content. The researcher feels that great freedoms come with great responsibilities, and if we allow students the freedom to go wherever they feel 'digitally' during class time, then a significant responsibility exists for that behavior to be managed. Aside from a very mature class, this responsibility usually lies with the teacher, and is a very challenging task. How can one supervise and control the behavior of students on iPads effectively? How much internet freedom should be given in a tertiary class in 2020? What digital activities should be permitted in such a class (especially if a student finishes their work early)? These are all hard-enough questions to answer hypothetically, let alone trying to actually limit these actions in a practical sense. With all of this in mind, and the fact that there is relatively little academic work published on effective use of tablets in the classroom despite their prominence, the researcher believes research into

Apple Classroom is critical and lacking. Consequently, the researcher has decided to undertake a study to determine the effectiveness of Apple Classroom in managing student iPads in a BYOD environment.

English language teaching at a tertiary level in Thailand presents common challenges found in many countries across the globe, especially where English is not widely spoken. General challenges exist, such as the need to equip students with the skills to enter the 21st century workforce (Wattanavorakijkul, 2019, p.34), as well as specific issues to Thailand such as a need to increase its ranking in English proficiency (Wattanavorakijkul, 2019, p.36), in addition to students having a lack of exposure to English and an insufficient background of the language (Noom-ura, 2013, p.146). Learners report needing to develop all language skills - Reading, Writing, Listening, and Speaking (Piamsai, 2017, p.91), teachers report issues with mixed abilities in large class sizes and a need for professional development, (Noom-ura, 2013, p. 139) while as a nation, Thailand needs to improve its citizens' English skills in order to compete with other nations in this new era of globalization (Kaur, 2016, p.345). These hurdles may be a challenge; however they also present an opportunity for both learners and educators alike to best-leverage new tools which can help effectively develop students' English language skills.

Additionally, the researcher believes their research will contribute to learning achievement through a better understanding of student preferences when utilizing digital devices for English language instruction. (Kaur, 2016, p.357) reports that while Thai students have limited opportunities to practice English in an informal environment, there are several opportunities presented in the form of print media, the internet, radio and television. All of these are easily managed through a device such as the iPad. While effectiveness is important, ultimately student acceptance of new technology, systems, and requirements plays a large role in their motivation and desire to learn. The researcher believes they will gain critical insights into student behavior while using iPads with Apple Classroom in a tertiary English teaching environment – particularly if a change of digital behavior can be observed when students are aware that their screens

can be easily monitored remotely by the teacher. As has been mentioned, such information is lacking in general, and the institution the researcher is employed at is no exception. The researcher hopes the research will contribute to much-needed best practices for the utilization of digital devices in tertiary English teaching environments in general, and especially in Thailand at the institution the researcher is employed at.

As a result, the research the researcher is proposing will contribute to teaching English as a foreign language through the testing of the use of a critical low-cost teaching tool (Apple Classroom), the measurement of student performance (vocabulary development) using such an aid, the qualitative feedback given by the participants in the study, as well as observations by the teacher. The researcher hopes to contribute to the field of EFL teaching by providing teachers with a solid fundamental framework regarding how to manage iPads using Apple Classroom.

All of this will lead to a clearer understanding of the value of Apple Classroom in English language classes with iPads, and the most effective use of this tool in tertiary English language classrooms in Thailand.

1.2 RESEARCH OBJECTIVES

1.2.1 To examine the effectiveness of using Apple Classroom to improve tertiary students' English language learning achievement.

1.2.2 To investigate tertiary students' learning satisfaction of using Apple Classroom in an English language class.

1.3 RESEARCH QUESTIONS

1.3.1 Would the use of Apple Classroom improve tertiary students' English language learning achievement?

1.3.2 Would there be any learning satisfaction for tertiary students when using Apple Classroom in English language classes?

1.4 RESEARCH FRAMEWORK

English has become the most important and widespread language of instruction across the higher education landscape (Breeze, 2017, p.v), and this has certainly changed many of the ways institutions around the world educate their students. A number of trends have emerged in many countries; more and more universities in non-Anglophone settings have set up degree programs taught wholly or partially in English (Breeze, 2017, p.v), university English class sizes are seen to be increasing in Japan (Nevara, 2017, p.10), and there is no doubt that language teachers need to ensure that they understand how to utilize digital technology and the cloud to enhance their practice (O'Neill, 2015, p.57). Such an environment presents many new and exciting opportunities, but also creates challenging situations for the teacher. How can a teacher maintain effective student-teacher interaction in large class sizes? How can a teacher ensure that academic English is being appropriately developed when students are exposed to a broad range of 'real English' through social media? Without effective instruction, the development of students' English skills can result in incorrect English – where aspects of another language may become fused with 'proper English', and can result in situations such as 'Singlish' in Singapore (Shegar, 2015, p.186). In such an environment of change, it is critically important for best practices to be established and the researcher believes this requires greater analysis of digital device usage in tertiary English classrooms.

The overall concept of this research was to determine if utilizing free, already-existing, built-in iPad OS software functions (Apple Classroom) will improve the academic utilization of iPads in tertiary EFL classes. As the tertiary institution where the researcher is employed requires all students to possess an iPad, the utilization of such a device is critical in determining how to best manage classrooms, develop curriculum, and even develop policies to guide device usage for both teachers and students. The fact that such policies are currently lacking combined with an enormous need for more academic research into effective use of iPads in the classroom, leads the researcher to believe that research into effective use of iPads in tertiary BYOD classrooms, and Apple's Classroom software in particular, is both extremely important and urgent.

1.4.1 Variables

This study consisted of two variables; independent and dependent variables. The independent variable was the use of Apple Classroom, while the dependent variables were learning achievement and learning satisfaction.

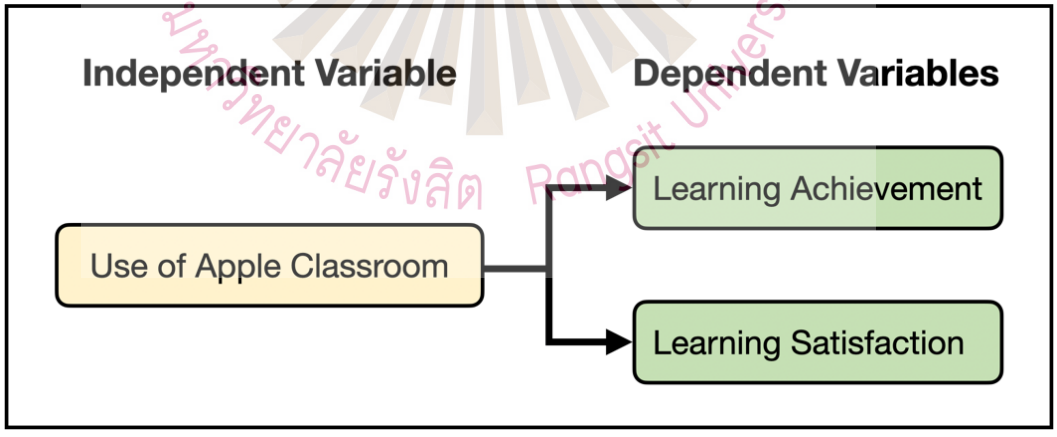

Figure 1.1 Independent and dependent variables

1.5 SCOPE OF THE STUDY

1.5.1 Population and sample

The population of the study consisted of 120 students at the International College of a private university in Thailand who were enrolled in a variety of courses requiring study in English. Convenience sampling was employed to select an appropriate class of students.

Through Convenience sampling, a class of students who took the subject 'English in Technology, Entertainment, and Design' (TED) were selected. The age range of students was 19 – 23 and the students were of balanced gender and mixed nationality. Approximately 30% were Thai nationals while the rest were from foreign countries.

1.5.2 Content of the study

In this study, the researcher taught six lessons of TED which consisted of three technology-related modules, and three entertainment-related modules. Each set of three lessons involved a vocabulary pretest and posttest. The aim of the subject was to build students' vocabulary and proficiency when discussing topics related to technology, entertainment, and design in English. This study focused on the vocabulary aspect of this subject. In order to conduct the study, the researcher carried out the first three classes without the use of Apple Classroom (no treatment), while the second three classes included the use of Apple Classroom (treatment).

1.5.3 Apple Classroom

A functional overview of the use of Apple Classroom to manage iPad activity.

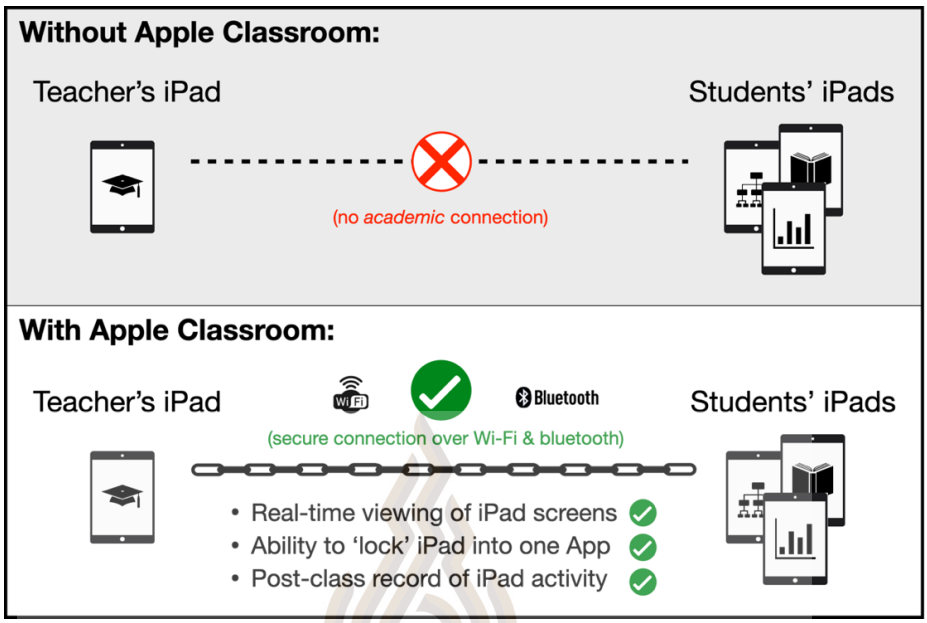

Figure 1.2 Apple Classroom Functional Overview

Source: Original Illustration by the Researcher, 2020

Figure 1.3 Apple Classroom Post-class Usage Record – Example

Source: Apple Classroom Screen Capture by the Researcher, 2020

1.6 Limitations of the Study

1.6.1 The study was carried out with only one group of 31 students. While it was a diverse and representable sample, research carried out on multiple groups where a much larger number of students are included may gain greater insights into the usage of Apple Classroom.

1.6.2 Research was conducted over a period of six weeks. This enabled the researcher to investigate three weeks of treatment after three weeks without. However, it may be beneficial to conduct similar research over a much longer period to enable initial findings to be further explored.

1.6.3 The impact in the education sector, particularly with regard to international students, was heavily disrupted in 2020 due to the global pandemic. Consequently, the research setting changed as there were significant disruptions to the researchers class schedule and student base. This ultimately resulted in a significant majority of potential research candidates (students) being shifted to online learning. As Apple Classroom requires student iPads to be in physical proximity with each other, this immediately eliminated all but one potential class for this research.

1.7 Definition of Terms

Table 1.1 Definition of Terms

Apple Classroom	refers to software used in Tertiary EFL classes
Apple Schoolwork & Classwork	refers to software developed by Apple for use by institutions on Apple devices such as iPads and Computers.
Digital learning device	refers to an iPad or Apple Mac computer which is being used in a tertiary level classroom with the potential to be used with Apple Classroom.
Learning achievement	refers to the achievement of learning new target-vocabulary as measured by mean pretest/posttest change.
Learning satisfaction	refers to the level of satisfaction gained by the students while completing the lesson content, assessments, and performance of learning as measured by qualitative analysis.
MDM software	refers to software which can enable an educational institution to appropriately manage their students' mobile devices.
Tertiary level classroom	refers to classrooms in which students are studying first-year college courses at an international college at a private university in Thailand.
Tertiary level students	refers to students studying first-year college courses at an international college at a private university in Thailand.

CHAPTER 2

LITERATURE REVIEW

This chapter provides a theoretical background to this study through the review of related literature. In addition, it contains specific information on the use of tablets in education, the current challenges faced when using tablets in a classroom, and the need for greater understanding on how to best utilize these devices.

2.1 THE HISTORY OF TEACHING AND LEARNING ENGLISH AS A FOREIGN LANGUAGE (EFL)

The value of an education is one which can hardly be understated. There are few practices which support the growth and development of an individual to the extent that a quality education does. (Taylor, 2008, p.1) suggests "the goal of education is to assist all children in becoming competent and well-adjusted individuals, now and in the future, by creating an atmosphere that supports learning". As the world changes, education has been forced to adjust to continue be able to produce students with appropriate skills. This section will look at a basic overview of the recent history of teaching and learning English as a foreign language.

2.1.1 Basic Overview of the History of EFL

It has been estimated that in 2020, more than half of the world's population (Ansaldo et al., 2008, p.540) is multilingual, and in addition there are now significantly more speakers of English as a second or foreign language than those whom English is their native language. From both a contemporary and historical perspective, bilingualism or multilingualism is the norm rather than the exception (Richards, 2001, p.3). Richards then goes on to state that it is fair then, to say that throughout history foreign language learning has always been an important practical concern. It is an

understatement to say that English is very complex structurally, and it comes as no surprise that “the diversity of cultures that find expression in English is a reminder that the history of English is a story of cultures in contact during the past 1,500 years” (Baugh, 2002, p.1). Anthony (as cited in Celce-Murcia, 2014, p.2) was one of the first applied linguists to distinguish the terms; approach, method, and technique as they apply to language teaching. (Richards, 2001, p.33), also provides a framework to allow the discussion of teaching methodology categorizing the approach, design, and procedures of different methods of teaching. While discussions of key method terminology and its development can provide critical insights into the development of the teaching and learning of EF, the researcher feels greater value can be gained from the analysis of the key periods of education in recent times, and what developments occurred as a result.

Howatt (2014, p.78) identifies four key stages of modern language teaching in Europe in the last 250 years; the Classical Period, the Reform Period, the Scientific Period, and the current Communicative Period. This brief analysis of these key periods allows us to gain a greater understanding of the changes which have occurred through recent teaching history, compared to a simple examination of various terminology and its historical developments.

Stage I: Modern Language Teaching in Europe (1750–1920)

1. The Classical Period	**1750–1880**	
Core Concern:	Emulating the teaching of classical languages	
Associated Teaching Methods:	[The Grammar-Translation Method]	
	[The Classical Method]	
2. The Reform Period	**1880–1920**	
Core Concern:	Teaching the spoken language	
Associated Teaching Methods:	[various Reform Methods]	
	(*see Jespersen, 1904: 2–3*)	
	The Natural Method (*Heness, Sauveur*)	
	The Berlitz Method	
	The Direct Method	

Stage II: English Language Teaching beyond and within Europe (1920–2000+)

3. The Scientific Period (1920–70)	
Core Concern:	Scientific basis for teaching
Associated Teaching Methods:	The Oral Method (*Palmer*)
	The Multiple Line of Approach (*Palmer*)
	The Situational Approach (*Hornby*)
	The Oral Approach (*Fries*)
	The Audiolingual Method
4. The Communicative Period (1970–2000+)	
Core Concern:	Aiming for 'real-life communication'
Associated Teaching Methods:	Communicative Language Teaching
	Task-based Language Teaching

Table 2.1 Four key stages of language teaching

Source: Howatt, 2014

Generally speaking, the Classical period saw a focus on Classical methods with grammar translation as a key skill to be mastered. This style of teaching emulated the teaching of classical languages, with an overarching aim to give learners the skills to be able to read literature in foreign languages, and to subsequently benefit from the associated mental discipline and intellectual development (Richards, 2001, p.5).

The Reform period was among the most effective periods of change in language history, and reflected a growing interest in the spoken language (Howatt, 2014, p.82). This period also saw the founding of the International Phonetic Association in 1886,

and its creation of the International Phonetic Alphabet (IPA) (Richards, 2001, p9). Such an alphabet is a clear example of the shifting needs of foreign language learners where an 'international standard' was now required. The above-listed Natural Method and Berlitz Method both represented a dramatic change from the translation-based approach they replaced – favoring natural oral conversations over the comprehension of written literature. For various reasons, the 'Direct Method' label became the umbrella term which was increasingly used after the turn of the century for this style of instruction (Howatt, 2014, p.82).

The Scientific period saw language theorists keen to justify their ideas according to insights from new social sciences such as linguistics and psychology. Teaching drills and exercises were often 'scientifically selected', and in British classrooms, "a Situational approach was taken where new learning was contextualized in classroom 'situations' reminiscent of Gouin and Berlitz" (p.85).

Finally, the Communicative period, which reflects 1970 until the present day saw the rise of Tasked-based Language Teaching and Communicative Language Teaching to address a need for 'real-life' communication. Howatt goes on to state that there was no doubt that there were plenty of new ideas in this period, however the lesson sequences of Presentation, Practice, and Production continue to be represented in coursebooks regardless (p.85).

In conclusion, the development of English teaching and learning as a foreign language has progressed from the teaching focus of fundamental written comprehension, to a focus on conversation, then to specific situational language, and finally to a point where by the 1990s, many applied linguists and language teachers had moved away from the belief that newer and better approaches and methods are the solution to problems in language teaching (Richards, 2001, pp.15-16). We now may be in a period where 'getting back to basics' in terms of language teaching often trumps 'the latest and greatest new thing'.

2.2 EFL IN THAILAND

Thailand has a long tradition of literacy and education dating back centuries primarily as the result of the Sangha (Buddhist order) (Fry, 2002, p.4). While English has never been given the status of an official language, it has remained one of the dominant foreign languages in Thailand with its beginnings dating back to the era of Rama III (1824–1851) (Kaur, 2016, p.347). This section will cover a brief history of the teaching and learning of English as a foreign language in Thailand, the current challenges, as well as an outlook for the future.

2.2.1 Brief History of EFL in Thailand

Developments toward an adoption of the English language in Thailand began with English-speaking Protestant missionaries in the reign of Rama III, and then continued through Rama IV who spoke English fluently and appointed an English governess (Anna Leonownes – whose story was fictionalized in "The King and I") to teach the royal court (Kaur, 2016, p.347). However, it was Rama V, King Chulalongkorn (1868-1910) who recognized that human resource development is critical to a nation's economic success and prosperity (Fry, 2002, p.5). Fry also notes that over 100 years ago, there was already awareness of Siam's central location in Asia and Southeast Asia, in terms of trade and commerce – stating there already existed a "need to have individuals with skills in both commerce and English" (p.7). It is unsurprising, then, that Rama V is credited with the introduction of modern education in Thailand (Kaur, 2016, p.347). Kaur also notes that Rama V desired to equip his people with the needed linguistic skills to facilitate trade with foreigners after receiving his education abroad which resulted in his reforms favoring foreign languages (p.347).

From this era the development of English being taught as a foreign language continued with political shifts, student uprisings, and educational reforms marring the 20th century (Fry, 2002, p.12). The end of the 1900s saw educational reform based more on international standards, where in the mid-1990s, one focus was to make English a

compulsory subject for all primary grades (Kaur, 2016, p.348). Kaur then goes on to note that educational reform of the National Education Act (NEA) of 1999 was driven by the demand for economic recovery following the Thai baht collapse in 1998, as well as a changing education paradigm (p.348). These reforms were expected to help to improve standards while also contributing to the much-needed economic recovery by being able to 'globally' compete with other nations (p.348). These reforms continued with Basic Education Curriculum (BEC) in 2001 and 2008. Given the number and significance of recent reforms, it is valuable to look at the developments which they resulted in as well as the continuing challenges which are faced when Teaching and Learning English in Thailand.

2.2.2 Current EFL Challenges in Thailand

While students in Thailand may spend twelve years of their academic life studying English in primary and secondary schools, the results are far from ideal when compared to some of its ASEAN neighbors. When compared to these neighboring countries, Thais' English proficiency is relatively low with Thailand ranked 116 out of 163 in a 2010 Test of English as A Foreign Language (TOEFL), trailing far behind Indonesia, Malaysia, the Philippines, and Singapore (Noom-ura, 2013, p139). Given the already-mentioned developments over the previous 150 years, why is this the case? (Dhanasobhon, 2006) lists several challenges to English language teaching in Thailand:

1) The Education Act (which allows for decentralization however access to quality programs is not universal)

2) Lack of qualified teachers

3) Challenge of teaching 'spoken English' effectively in classroom settings

4) Perception of low importance of grammar

5) Lack of learner motivation

6) Learning outcome expectations not being met (University graduates unable to speak English proficiently)

Noom-ura (2013, p.146) finds that Thai teachers view problems involving themselves, curricula and textbooks, assessment, and other factors supporting teaching success at a moderate level. Noom-ura continued to state that Thai teachers see a high level of problems resulting from students' lack of exposure to English and an insufficient background of the language. Additionally, it is mentioned that students' lack of perseverance when practicing or seeking more opportunities to practice the language also contributes to their lack of confidence in using language for communication (p.146).

All of this leads to a very challenging situation – continued systematic efforts have been made to improve English language teaching and Thai students' proficiency, but results are yet to materialize. Compared with several ASEAN neighbors, Thailand is clearly behind in terms of English proficiency and this has both educational and economic impacts when considering the world of global commerce. There certainly is incentive to learn English simply due to perceived financial benefits, but so far the system appears not to have met expectations. There must be future strategies which can be put in place to improve the situation.

2.2.3 EFL in Thailand Outlook for the Future

Despite the challenges mentioned, generally speaking there are enormous opportunities for improvements in English language teaching in Thailand. As Thailand continues to develop, it sees more exposure to English through commerce, tourism and other activities, but how can this situation be best utilized? Through a case study of EFL teachers at the tertiary level, (Syamananda, 2017, p.128) found that teachers were mostly motivated by intrinsic factors as well as autonomous extrinsic factors. Demotivation was found to be the result of extrinsic factors such as a heavy workload, salary, and working conditions. These are all issues which can be addressed with appropriate policy, but ones which obviously take time to correct or develop. (Kaur, 2016, p.357) summarizes the situation well stating that Thailand will be at a disadvantage unless it can meet the international English language standards required

for international communication and commerce. Despite numerous reforms and policy changes, progress has been less than ideal, and several strategies are suggested:

1) The development of informal English
2) Teachers' direct involvement in national educational planning
3) Training the local workforce
4) Experimentation before implementation
5) An expansion of bilingual schools
6) The recognition of English speakers in key Thai government posts

While all great these suggestions and potential solutions to challenges sound positive, few of them represent anything particularly innovative or ground-breaking. It will take time to see if this current period of communicative English language teaching can be improved through efforts in the areas previously mentioned. Thailand certainly has the opportunities and access to resources at the planning level – whether significant improvements can be made or not will be up to the developments to come in the early 2020s.

2.3 EFL AT A TERTIARY LEVEL

Since the turn of the millennium English-medium academic instruction in non-Anglophone settings has seen exponential growth (Breeze, 2017, p.v). In fact, no language in the history of mankind has spread with the virility of English (Birch, 2004, p.93). And it could certainly be said that this spread shows no kind of stopping, and teaching English as a Foreign Language (EFL) is right at the heart of this dramatic expansion. This section will briefly cover the current situation of EFL at a tertiary level, the general needs of EFL teachers & learners, and an outlook for the future of EFL.

2.3.1 The Current Situation of EFL at a Tertiary Level

The last two decades have seen an enormous shift in the EFL classroom and a dramatic increase in its numbers. Thailand is not alone in the EFL developments it has put forward in during this time – as has been seen, many other Southeast Asian countries have also invested in efforts to improve the English proficiency of their citizens, and this trend continues across the globe. More and more universities now offer degree programs taught wholly or partly in English for home, international and exchange students, and Universities based in English-speaking countries are setting up transnational overseas campuses operating entirely in English (Breeze, 2017, p.v). This growth is resulting in increased tertiary EFL class sizes in many places including Japan (Nevara, 2017, p.3), as well as increased diversity where students from all over the globe now gather in the EFL classes of International Programs at countless universities.

With such an enormous number of institutions teaching EFL in ways specific to their educational environment, content differences arise. An example may be the speaking of Singlish in academic environments which would be completely acceptable in Singapore, but not in, Australia. Or where other slight geographical or cultural differences impact EFL content. When looking at textbooks, for example, we can see that material produced in an Inner Circle country carries with it the imprint of the Inner Circle culture which is manifested through the cultural contexts presented in the textbook (Birch, 2004, p.100). Given the fact English is spoken far more widely as a second language than a first language, such cultural promotion (British or American, for example) may or may not be appropriately received.

Consequently, the tertiary EFL classrooms of today are the first of their kind; enormous growth in number and diversity, enormous choice of institutions for students, but with increasingly large class sizes and EFL content which may vary depending on the culture it is taught in. In fact, (Birch, 2004) sees TESOL [EFL] as a vehicle for cultural invasion – a 21st Century Trojan Horse – which is invited across national

boundaries on the pretext of giving access to what is undoubtedly the most powerful lingua franca the world has ever seen (pp.100-101).

2.3.2 The General Needs of EFL Teachers & Learners

First-of-their-kind classrooms have consequent first-of-their-kind needs for both the learners of English as a foreign language and their teachers. While it can very productive to have a large amount of diversity in the classroom, these international students with differing linguistic backgrounds still clearly need to possess the competencies to cope with academic daily life in English (Breeze, 2017, p.v). This can be a challenging situation as institutions push to attract students and ensure learning outcome expectations are met. There is also much debate regarding the related issues of; entry requirements, assessment, standards, varieties, academic literacies, resources and support where students' English language skills are concerned (Breeze, 2017, p.v).

To further focus in on the key needs of tertiary EFL classrooms, (Guinda, 2017, p.1) has put forward four essential competencies of higher education; critical thinking, creativity, learner autonomy, and motivation. Critical thinking, as researched in (Moore, 2017) can be summarized as follows. Critical thinking is a broad term strongly related to the methods and worldviews of particular disciplines. Student judgements are subject to significant variation, and the quality of students' critical judgements appears strongly related to. The degree of knowledge they already possess on a particular topic (p.29). (Maley, 2017) concludes that in the tertiary EFL setting, "We should think of creativity as permeating every aspect of what we do" (p.95). He lists examples such as class management where students may be given some teaching responsibility, taking advantage of relevant expert local speakers who may be able to speak to the class, and being able to provide creative responses to the variety of situations which may arise in tertiary EFL classrooms. 'Enemies' of creativity are also listed by Maley which include fear of change among teachers and University administrators, predictable teacher programs, conservatism, apathy, and finally, settling for less than 100%. (Little, 2017) poses that the exercise of responsible autonomy entails self-management, which means

that the educational process must be based on self-learning (p.147). And this certainly connects back to the days of the Direct / Berlitz Method through the reform years of the teaching of English where 'self-discovery' was critical to student learning of foreign languages. Finally, we have motivation where (Woodrow, 2017, p.244) lists her 'ten commandments' for motivating learners in tertiary EFL classrooms:

1) Set a personal example with your own behavior
2) Create a pleasant, relaxed atmosphere in the classroom
3) Present tasks properly
4) Develop a good relationship with the learners
5) Increase the learners' linguistic self confidence
6) Make the language classes interesting
7) Promote learner autonomy
8) Personalize the learning process
9) Increase the learner's goal-orientedness
10) Familiarize learners with the target-language culture

These are all useful and productive, but critical thinking, creativity, learner autonomy, and motivation are hardly innovative concepts. It seems that in order to motivate learners in tertiary EFL classrooms of 2020, we as teachers first need to do 'what we already know best to do' better.

In summary, current tertiary EFL classrooms have grown in number and become increasingly diverse, and have consequent needs. The above-mentioned four essential competencies of critical thinking, creativity, autonomy, and motivation are a practical illustration of the current needs of tertiary EFL classrooms. While the elements of these essential competencies for tertiary EFL classrooms reflect the need to manage increased diversity in a rapidly-globalizing world, the researcher feels that such competencies underscore the need to go 'back to basics' and focus on the fundamentals of adequate goal-setting, tailoring to changing student needs, and ensuring that learning outcome expectations are appropriately met – not merely 'pushed through'.

2.3.3 An Outlook for the Future of EFL

Despite the ever-changing tertiary EFL environment having its challenges, there is certainly opportunity. Never before have we had such a connected world to teach in, where 'target language content' is available at the tip of one's fingers in the blink of an eye. The increased diversity of tertiary EFL classrooms presents inherent challenges but also the opportunity for genuine discussion based on cultural differences and experiences, for example. The concern now is to nurture our own students' capacities to engage effectively with their academic and professional discipline areas through English and their capacities to continue developing their skills and knowledge (including English skills and knowledge) in response to changing needs and circumstances in the future (Breeze, 2017, p.v). Content has been discussed as a challenge in tertiary EFL classrooms as it may be less appropriate in some situations, due to cultural issues, for example. In addition to this, (Ruegg, 2018) asserts that well-designed instructional methods and well-designed materials go hand-in-hand. It is only with a combination of strong materials and strong instructional methods that truly strong education can take place (p.191). Ruegg goes on to state that commercially available textbooks introduce problems into the classroom such as cultural opacity, contravention of conventions, and a lack of 'tailoring' to the learners each of us has in the classroom. She also postulates that while commercial textbooks save teachers time in lesson planning, additional time is lost in the classroom due to the problems mentioned above (p.191). This is an interesting point, as looking forward with a growing number of tertiary EFL learners from increasingly diverse backgrounds and a need to develop content consistency – this time-performance issue should be addressed. Should we as tertiary teachers invest time and energy in developing new content and material to match the changing EFL landscape, or would that time and energy be better invested in in-class content management?

2.4 TECHNOLOGY AND EDUCATION

Technology and education have a long history together, and like in any long relationship there have been sunny days and cloud days - developments and disruptions. There is no doubt we are currently immersed in a digital age, and (Bates, 2015) notes that this immersion combined with massive recent technological developments has changed our economy, our interaction, and our learning (p.13). This section will help define technology in education and look at a brief history of its developments, as well as a brief analysis of the current situation of technology in education.

2.4.1 A Brief History of Educational Technology

Before we discuss technology and its role in education, we must begin with a definition of technology from the perspective of education. Where did it begin? We could look to the pen and notepad as educational technology, or go back to quill and ink or other natural instruments used around the world. In fact, the humble poking of one's finger in the sand may logically have been the first examples of educational technology (the use of dynamic sand). However the researcher believes this may be going too far. (Huang, 2019) defines educational technology as the use of tools, technologies, processes, procedures, resources, and strategies to improve learning experiences in a variety of settings (p.4). Others, such as (Schifter, 2010) add that technologies that mediate the teacher-student experience have been present in educational settings for centuries, long before their electronic and digital transformation (p.3). For the purposes of this section the researcher believes it practical to begin technology in education with the chalkboard or blackboard.

Bumstead's 1841 book The Blackboard in the Primary School (as cited by Krause, 2000, p.11) states that "the inventor or introducer of [the blackboard] deserves to be ranked among the best contributors to learning and science, if not among the greatest benefactors of mankind". Once again, the researcher believes this is going too far, however the key point is that new tools, devices, and technology for education can

certainly create excitement and productivity, but they can also be a distraction and a tool which may need to be used sparingly. In this discussion then, we can look at educational technology as devices used in education from the introduction of the slate and chalk mentioned above to the electronic tablet and accompanying stylus we now see in classrooms of today. The previously mentioned quote demonstrating the enormous excitement generated by the new educational technology of the chalkboard could be said to mirror the excitement many educators today feel when new technology developments arrive. But how have we gotten from the slate to the tablet, and what has been learned in between?

Throughout this period from the slate to the tablet, there have been those who have viewed technological developments such as the radio, the television, the computer, and the internet as 'magical' for education, but in contrast others violently oppose new technology (Dede, 2010, p.xvii). While developments such as the radio would have had an amazing impact in regular classrooms where news from afar and current information could be readily accessed, this technology also allowed 'unique' schools such as the famous 'School of the Air' in outback Australia to actually exist. Television, and then recorded visual media have taken that situation one step further allowing students to visualize the 'virtual place' they are being taken to – such as a newsroom or an outdoor location. From here we moved to computers and the early internet, to a point now where personal technology devices such as tablets and laptops exist to some degree in virtually every classroom throughout the world.

How then, do we find the right balance between excitement and caution? How much should we allow the classrooms of today to replicate the 'real world'? Consider the fact that social media such as Facebook may be commonplace and even mandatory in some workplace environments, but would generally be discouraged from use in the classroom. Or even smartphones themselves, which are possessed by most adults in the developed world but devices which most educators would view with great caution regarding classroom implementation with their students. These are hard questions to

answer, and ones which require an examination of the current situation with regards to technology in education.

2.4.2 A Brief Analysis of the Current Educational Technology Situation

The current situation of technology in education is one where rapid change is being enabled, if not driven by the speed of technological developments. (Shifter, 2010) states that the major transformation in the form and capacity of technologies used in education has resulted in teaching and learning technologies becoming more sophisticated in their ability to present subject matter vividly, seamlessly, and interactively (p.3). Wherein the 1980s and '90s the most advanced multisensory and interactive technology in the history of education entered some educational arenas– virtual reality or VR (Markaridian Seleverian 2010, p.261), we now have equivalent and more advanced technology (such AR functionality) embedded in commonly used smartphones such as the latest and greatest iPhone. (Markaridian Seleverian, 2010) concludes by stating that the success of virtual social learning networks depends on their success at creating "rich" social interactions (p.269). In other words this new world of technology will never be a true replacement unless a 'true and genuine' educational (social) environment can be created virtually. The researcher believes this to be a challenging task, if not an impossible proposition.

This example of trying to create 'virtual education' illustrates how technology is changing the way we teach and learn. Despite all the opportunity which may have been seen in new educational technologies, if we consider the past (Shifter, 2010) states that teachers were typically not the ones suggesting the purchase of reel-to-reel projectors or putting televisions in classrooms, and the same was true for computers (p.6). (Shifter, 2010) goes on to mention that educators in the 1980s who took on a new unproven medium – the microcomputer, were those who were willing to take a chance (p.6). The same can be said with regard to much of today's educational technology involving devices such as laptops and tablets - teachers aren't often in control of the big decisions to implement technology into classrooms. While there appear to be an infinite

number of educational apps available, this abundance of unproven options is great for those willing to take a chance but less so for those wanting empirical evidence. There often just isn't time for lengthy examination in the world of today's rapidly changing technology. Clearly stated, the educational institutions of today were built in and for the industrial age, not our current digital age (Bates, 2015, p.13). The ultimate question here may be how we can best integrate technology, new or otherwise, into the education landscape of today given the landscape was built in another time – almost in another world.

2.5 TECHNOLOGY IN THE EFL CLASSROOM

The use of technology in the teaching and learning of foreign languages like English has long dominated pedagogical debates and discussions (Alsied, 2013, p.44). In order to offer and create successful classes, language teachers utilize different audio-visual tools to aid their teaching (Bajrami, 2016, p.502). Optimists will be quick to jump into new opportunities which developing technology may present the educational world with, while those who are more conservative may be reluctant to change until they see concrete results. While these two ends of the spectrum are understandable, technology is now changing at such a rate that the option of waiting for proven results can itself prove too costly a choice. This section will look at a brief history of technology in the EFL classroom, as well as an examination of current practices and opportunities.

2.5.1 A Brief History of Technology in the EFL Classroom

As previously mentioned, it may be useful to look to the blackboard as one of the first examples of educational technology, and no doubt this development was a valuable addition to EFL classrooms. However, if we were to look at technology that specifically benefited the learning of English as a foreign language then computers certainly come to mind, where the integration of computer technology into the domain of foreign language education began in the 1950s (Alsied, 2013, p.45). However, we can go back even further than the 1950s if we look at the picture books which would

have been used to reference ideas and situations in the Natural / Berlitz Method of the Reform Period of EFL education in the late 1800s. However, the researcher believes the technological development of radio to be the most appropriate starting point. Due to its cost performance and wide network of distribution, radio was able to bring the world of English into the classrooms of non-native speakers with relative ease. India is an example, where radio has played an important role in English teaching where it could be seen as "the electronic magic red carpet that has the capacity to transport educational opportunities from far-away places" (Lalima, 2013, p.67).

Radio would have given students the much-needed exposure to natural language, but would have been challenging in that it was generally not able to be easily repeated or controlled – students would have to wait for use of the tape/CD player before easily repeatable audio was available. Following the radio, EFL students would have been introduced to video material such as television from the 1950s, and more recently recorded video, films, songs, and TV programs etc. A great advantage of video materials is that they provide original and authentic input as they are produced for native speakers (Bajrami, 2016, p.503). Once again, video content generally has excellent cost performance when used in EFL classrooms which makes it a very practical option. Following on the heels of television was the computer, and much has certainly been written about its impact in educational arenas. Unlike radio and television, computers did not come with the same practical cost performance. In fact, in many cases an enormous focus was put on the justification of what was a significant investment in an as yet unproven form of educational technology. Cuban, in his 2001 book Oversold and Underused: Computers in the Classroom, explained that for those who make the decisions to buy new computers for schools, it is now time to ask themselves how such monies can achieve the larger social and civic goals? (p.197).

Clearly the adoption of computer technology in the classroom was not as smooth as radio and television, if not only due to the expense and complexity involved. However, much has progressed in the world of educational technology in the last 20 years and the growth of mobile technology from 1G to 5G has certainly illustrated the

drastic functional leaps which new technology has allowed. Computers are also a great example; where in the past EFL classes may have had limited access to a computer(s), most EFL classes of today would include students with not one, but multiple 'computing devices' such as a smartphone, tablet, laptop, and smartwatch. In summary, the use of sound with radio and tape/CD player, as well as video with television and movies has helped transform EFL classrooms over the past half-century by allowing easy access to target-language content not locally available. While computers and mobile devices have taken this transformation one step further, they present far more challenging issues; with cost performance, variation, and complexity all being limiting factors.

2.5.2 Current EFL Practices and Opportunities Regarding Technology

Current practices and opportunities regarding technology in EFL classrooms will vary enormously worldwide. Quite simply, financial restrictions and the level of development of a particular country will all affect the type and way technology is used in EFL classrooms. In developing countries such as Thailand, where the population has not experienced land-line connected telephones and wired-internet, its citizens consequently favour mobile devices such as smartphones and tablets, while many students at western universities may greatly favor the laptop as their tool of choice. In this heavily mixed environment, (Alhamami, 2019) suggests 4 key points when considering the utilization of technology in an EFL environment; whether the technology provides an actual benefit over traditional methods, whether it is the most efficient and effective means of delivery, whether this technology is actually constructive (as opposed to fashionable), and finally the simple concept of whether a rapidly changing and unproven option should replace the status quo (p.600). The situation regarding the best use of technology in classrooms is far from clear. The researcher wishes to state that they believe the humble tape recorder / CD player / mp3 player to be by far the most effective technological tool in the EFL classroom of the past. This simple device could quickly and accurately, repeatedly deliver the much-needed native English audio content to a student without any distraction and very minimal complexity.

The question the researcher wishes to pose at this point, is how to achieve the same simplicity and effectiveness that a recording of relevant target-language speaking could provide instantly via CD, with modern educational technology such as an iPad. For example, (Manowong, 2016, p.155) found that with regard to the use of the educational App "Edmodo", students perceived its features positively, and that the app made learning convenient and accessible. However, Manowong then continued to state that it appeared that the app could be time-consuming for students who were not good at technology (p.155). This example illustrates the area of concern for the researcher as they believe class time should be devoted as much as possible to creating learning environments, and not poorly utilized solving the ever-increasing range of technological problems which affect daily life in 2020 (Wi-Fi access, internet connection strength, device and software compatibility etc.). Regardless of these challenges, however, (Alsied, 2013, p.49) notes that the use of computer technology for practicing English has many advantages in Libya where EFL learners have few opportunities to practice English. Such findings are a logical conclusion in many if not all countries where English is not officially spoken. (Alsied, 2013) also more conclusively states that "with many practical benefits for both EFL learners and teachers today, the use of computer technology in EFL teaching and learning has achieved great popularity" (p.45). But what is the computer technology of today in EFL classrooms – is it a big clunky desktop computer, a small smartwatch, or maybe something in between like an iPad? And how then do educators go about developing the most efficient and effective EFL utilization of such technology?

2.6 IPADS FOR TEACHING AND LEARNING EFL

Half a billion is a large number, more than the reported population of north America in fact (UNdata, 2020), but according to market estimations Apple has shipped roughly this many iPads in total, as of mid-2020 (Reisinger, 2020; Statista, 2020). Impressive for a device which was released just under a decade ago. With such an enormous market penetration in the global population, it comes as no surprise that iPads

are spotted in EFL classrooms in 2020. However, despite being available for EFL classrooms for just under a decade, little research has been published on the benefits of using iPads in education in general, and even less in the realm of ESL (Morgana, 2018, p.3). This is understandable as both the introduction of technology and the publishing of academic work take time, however it does make the implementation of iPads something of a classroom gamble for the educator. Additionally, comparisons of practical learning performance are difficult considering the development in hardware and software in the iPad over almost 10 years. More research is certainly needed in the area of iPad utilization in EFL, and education in general (Kalonde, 2017; Minty-Walker, 2017; Souleles, 2017). The researcher hopes their research will contribute to this need. This section will cover a brief history of iPads in the classroom, current usages and challenges, as well as opportunities for the future. The section will close with an explanation of Apple Classroom (of which there is practically no published research about) and its usage in tertiary EFL classrooms with iPads.

2.6.1 A Brief History of iPads in the Classroom

The now infamous Apple iPhone paved the way for the introduction of the iPad in 2010. The iPad was released to much fanfare and naturally generated excitement among educators who were often eager to adopt iPads (Nguyen, 2014, p.8). Not long before the introduction of 4G, January 27th 2010 saw the release of the first generation of iPad which is now, as of 2020, generally accepted to be in its seventh generation in basic form (Everymac.com, 2020). Even back in 2010, (Meurant) was suggesting the great importance of digital media for EFL learners in Korea, proposing saturating campuses with Wi-Fi access, ensuring all classrooms have high-speed internet access, a projector, and a printer, and a situation where all students would be provided with a cellular-enabled iPad and relevant software on enrolment (p.232).

Positive reports were found in early studies conducted not long after the release of the iPad. (Morgana, 2015, p.2) noted that students were able function autonomously, improve their creativity, and collaborate well with the devices. (Wario 2016, p.97) found

that students' initial perceptions were that the iPad was a good tool, and using iPads for activities which require information sharing was reported to greatly increase student involvement in the lessons (Mang, 2012, p.315). Naturally, there was reason for teachers and students alike to be excited and optimistic about this new portable technology. The iPad represented a new access point for personal mobile access to digital information which had previously been limited in functionality and performance by the smartphone, and mobility with the traditional laptop computer. This early optimism was balanced with a sense of caution as educators reported that users first needed to build confidence with the device before being productive (Wario, 2016, p.97), and that students needed to see the teacher as an expert (Mang, 2012, p.315). Additionally, the need for pedagogical guidelines and appropriate and meaningful instructional design were highlighted by teachers at this early stage (Nguyen, 2014, p.8; Souleles, 2016, p11). So, while there was reason for excitement, there was also a need to be cautious of this new technology. (Rosenthal, 2015, p.39) found that the faculty was hesitant to incorporate new technology, and there was a need for concrete evidence regarding the effectiveness of the iPad in the classroom. At this early stage, the most critical issues were the lack of research regarding surrounding the iPad in education, as well as a lack of knowledge of educations about how to best utilize the device in terms of creating content, conducting activities, and being academically proficient with its use.

In summary, riding on the back of the popular iPhone, the iPad has had no trouble generating notoriety and a generally positive reputation. However its development in educational settings appears to have been very much trial and error, due to the lack of published research regarding educational uses. In addition, the variation between technology and features of the so-far seven generations of iPad also makes it difficult to make clear comparisons between iPad research conducted in different years – the relatively recent addition of the Apple pencil adding functionality to the device is an example of this. A look then, at current practices and challenges will help us gain further insight into the development of the use of the iPad in the classroom, to help us better answer the question of its value in a tertiary EFL classroom.

2.6.2 Current Usages and Challenges Using iPads in the Classroom

More recently, (Morgana, 2017) found that iPads are appropriate tools to develop speaking and writing proficiency of EFL students (p.157), while (Kayapinar, 2019) noted that students in their study were able to utilize online exercises to practice grammar points with less reliance on the teacher (p.187). Access to the internet for general research, reading books, language learning exercises, and collaboration is extremely valuable, and the aforementioned recent results suggest that the use of iPads in classroom activities promotes student autonomy and allows them to work at their own pace. Speaking and listening skills are being improved through the use of voice communication and audio recording functionality, and the ability for an EFL student to hear the native pronunciation of a word at their fingertips is also very valuable. (Morgana, 2016) summarizes some of the key ways in which iPads have been utilized in EFL classrooms with the following list: collaboration, annotation, watching and listening, presentations, organizing ideas, searching, and vocabulary building (p.207). (Stone, 2016) adds to this list with teachers distributing lecture notes, and performing routine quizzing of students. While all of these activities could be completed without the use of an iPad, it would be fair to say that the much more could be expected to be achieved with one device providing the needed functionality for all of the ways listed by Morgana above.

To sum up, the current challenges to the effective use of iPads in an EFL classroom lay in two main areas; the lack of academic research into the iPad, and the lack of technical knowledge about the device of both teachers and students. Firstly, the fact that the iPad is only ten years old means there has been little time to conduct appropriate research, and consequently academic research into the effective use of iPads in education is lacking (Minty-Walker, 2017; Souleles, 2017). This creates a situation of uncertainty for educators who may not always be involved in the original selection of new technology such as the iPad. Teachers may be relying on very early research findings which may have lost relevance due to the evolution of the iPad, or having to take a gamble based on their perceptions of the potential benefits the iPad may bring to

their lessons. Additionally, teachers need to be seen as experts in the usage of new technology, as well as being able to build user confidence with the devices before actual tasks are to be completed. Interruptions and issues with device usage could lead to distractions and unmotivated students. As has been previously mentioned, personal proficiency with a device does not always translate into skills in the classroom, and with the constant change and development of both iPad hardware and software it can be a challenging task for educators to stay up to date. All of this requires teachers to ensure they keep up to date with relevant best practices to meet the current changing technological needs of students (Auquilla, 2017, p.714).

2.6.3 Future Opportunities for use of iPads in the Classroom

While challenges exist, there are certainly enormous opportunities for the use of iPads in the classroom. From fundamental actions such as a student looking up an odd phrase such as an idiom, proverb, or slang expression, to complicated digital collaboration tasks made simple through software functionality in Keynote presentation software, for example. There is reason to be optimistic, but how far should this optimism go? (Kayapinar, 2019) provides yet another confirmation of this stating that the integration of tablets in teaching English as a second language has been popular in recent years, however there is limited evidence to prove the effect of tablet use on the acquisition of specific language skills (p.178). Consequently, this section will look at three key opportunities for iPads in classrooms; increased research, improved digital infrastructure, and increased educator experience with iPads in the classroom.

Firstly, the need for additional research into iPads in the classroom and specifically EFL classes has been mentioned ad infinitum throughout this paper (Minty-Walker, 2017; Morgana, 2018: Wakefield, 2018). The simple reason for this is that this lack of academic research is the biggest challenge, or opportunity which is faced when considering using iPads in EFL classrooms. The researcher does, however, believe that this situation is an opportunity to continue to explore the best educational practices associated with the iPad. Currently, the great variation in the way EFL classrooms

operate across different cultures and countries makes results hard to compare and conclusions difficult to draw. One thing which can be seen regularly in current findings is the need for models of implementation (Nguyen, 2016, p.158). As has been discussed, while teachers often have great freedom in the classroom, they are rarely heavily involved in high-level decisions to integrate technology into institution. This can put them in a challenging situation when presented with a need to adopt new technology such as iPads into the classroom. However, a clear method of implementation combined with adequate training would alleviate some of this concern. In short, greater academic research is the first opportunity for improved future use of iPads in the classroom as it will allow teachers to make far more informed decisions which would ultimately lead to a better learning experience for their students.

Secondly, improved digital infrastructure is the second opportunity to improve the utilization of iPads in the classroom. Looking at the recommendations of Meurant from 2010 again, we can see that his desire to have a campus saturated with Wi-Fi, fast internet in classrooms along with projectors and printers, and every student with an iPad (p.232) is one which could still hold true today. Internet connectivity is an issue for most who rely on it at some point in our daily lives, and this also occurs in the classroom (Stone, 2016, p.1). While Wi-Fi networks can be expanded to a point, they have limitations like everything else and all things being equal there will be significant change in this area with the coming 5G. Certainly, the issue of fast and reliable internet access is one which goes hand-in-hand with usage of the iPad, and is a very important opportunity for development if educators seek to get the most out of the device. Functionality such as screen sharing with computers (Apple Sidecar), as well as connecting to projectors and displays (Apple TV) is all very useful in the classroom – until there are internet issues, as all such connections rely heavily on Wi-Fi connection and stability. Ensuring that the internet offering is correct is an important opportunity for the usage of iPads to ensure they are able to be fully utilized by students.

Increased educator experience is the final opportunity to improve the usage of iPads in classrooms of the future. A need for professional development has been

identified (Ferguson, 2017, p.74) and this is a natural obstacle for any new tech, however this situation is far more complex than the introduction of the MicroBee in the 1980s, for example. The current situation requires leadership within the institution that supports digital devices, with ongoing professional development for teachers (Willis, 2019, p.23). (Nguyen, 2014) adds that there is a lack of innovative pedagogical guidelines on how to best use the iPad to improve the academic process (p.8). Once teachers have the appropriate experience with new technology, they will then be able to be 'experts' which will in turn allow them to perform more effectively and innovatively with the new devices – in this case iPads. All of this will result in greater respect from their students and a more efficient class. The main hurdle here is time and resources. Even when there is a budget for the professional development of teachers, it is reported that teachers often don't have enough time to attend training or to conduct independent research on how to improve iPad usage (Elphick, 2018, p.9). If only there were more hours in the day, or we had a simpler, hassle-free system – enter Apple Classroom.

2.6.4 Apple Classroom in a Tertiary EFL Classroom

The key, (Mang) found back in 2012, is to ensure students remain academically engaged with iPads on a regular basis so they become accustomed to its use (p.301). While much has changed with the iPad in the last eight years, this principle remains true. Tertiary EFL students have enormous exposure to smartphones, tablets, and laptops or desktop computers. However, this massive exposure in one's personal life doesn't necessarily translate into useful skills in the classroom, and this can be especially true for educators (Elphick, 2018, p.11). This section will demonstrate how Apple Classroom with iPads in a Bring Your Own Device (BYOD) environment can greatly contribute to tertiary EFL classes by discussing three key points; consistency and simplicity, supervision and control, and cost-performance. (see Chapter 1 for information on the issue of iPads being used in a BYOD environment versus a school-issued one).

2.6.4.1 Consistency and simplicity with Apple Classroom

A level playing field in a classroom is very important, and students need devices with the same capacity and the same software (Willis, 2019, p.23). Apple Classroom operates as built-in software in the OS of all recent Apple iPads. This provides a very consistent platform to begin with, where both the hardware and software are controlled by the same company and designed with consistency and simplicity in mind. Arguments over the 'best' software and/or hardware can be subjective and never-ending, however the key point here is that Apple produces both the hardware (iPad and accessories) and the software (iPadOS) which the device requires. This will greatly reduce digital issues in class caused by inconsistent hardware (Apps not behaving the same way), as well as ensuring digital instructions apply equally to all devices (which is not possible with a range of operating systems and versions etc.).

Apple Classroom also brings a great deal of simplicity into the equation. Even if a teacher has no experience with the iPad, chances are they have come across an iPhone which has a very similar OS. In addition, Apple Classroom is already built-in to the iPad OS meaning there is no need to download anything or rely on third-parties to update or support. In fact, complete support for the hardware and software of the device is available from one source which is an ideal situation. The process is not much more complicated than setting up a new Wi-Fi connection or opening a new email account in the opinion of the researcher. Apple Classroom provides the teacher with a very simple platform to manage their students' iPads, and this consistent digital space allows the teacher much greater freedom in developing activities, and a much lower amount of time spent on digital issues, than with a classroom full of devices of different manufacture. In the end, this simplicity allows a teacher to say "open this App, or open this program", and everyone can do it (Willis, 2019, p.23).

2.6.4.2 Supervision and control with Apple Classroom

Secondly, supervision and control are enormous benefits to using Apple Classroom. A class full of iPads being used in a BYOD situation can be challenging to manage. The researcher regularly teaches classes with between 20 to 50 students, and sometimes more. In each case, every student has been issued with an iPad, however it is up to the teacher to make use of this device. Without Apple Classroom, the student will be able to use the device for whatever purpose they decide (learning or something else), and the only way the teacher can monitor this is by physically looking at their screen. With a small class of less than 10 this may not be a challenge, but when student numbers are over 50 it is practically impossible to look at the screen of every student. Not a problem with Apple Classroom as it has built-in student screen monitoring functionality. This enormously powerful feature lets a teacher monitor the screen of any student at will to determine if their activity is appropriate.

In addition, control is another important benefit. In the days of the past, teachers could control students' efforts to cheat by limiting what they could bring into a test environment, however this is difficult to do on an iPad in a BYOD situation (quite different to a school-issued/controlled situation). If a teacher wants students to use a test App such as Socrative with their iPads, then it is difficult to limit the BYOD iPad to not be able to access Google, for example. This may only be achieved through additional 3rd party Apps or websites and would certainly add complexity to an already stressful situation (test). However, Apple Classroom provides a simple 'lock' feature which can easily and quickly lock one or more of their student's iPads into an App. Once again, if students were to take a test using an App such as Socrative, then Apple Classroom would allow the teacher to lock them into the Socrative App, thus restricting cheating. Another function allows the teacher to quickly gain the attention of any or all students by just locking their screens, which is useful for important announcements and reminders. Apple Classroom then allows the teacher to focus on delivering their lesson more smoothly, or giving a test without having to waste extra energy curbing cheating efforts.

2.6.4.3 Cost performance and Apple Classroom

Cost performance is always an issue with any technology, but in a tertiary EFL classroom this may be especially true. Tertiary-level students often have limited budgets and while $10 may be an insignificant amount for an App in the US, it would be a significant amount for a tertiary student in a developing country. Apple Classroom is free software built into the operating system of iPadOS (formerly iOS) which is the standard operating system of Apple iPads. This means there is no out-of-pocket expense for either the students or the institution. Once connected, the EFL teacher can then take advantage of any number of free target-language media aids, such as YouTube, Webpages, and Blogs all while being confident that they have the digital tool (Apple Classroom) to appropriately monitor and guide the process the learners are being taken through on their iPads.

2.7 SATISFACTION IN TEACHING AND LEARNING EFL

For most of us, happiness is preferable to unhappiness and satisfaction is preferable to dissatisfaction. But what exactly is satisfaction, how can it apply to learning in an EFL environment, and is it even a relevant concern when teaching English as a foreign language? According to (Lane, 2009) researchers have demonstrated a fairly robust positive relationship between teacher clarity, student satisfaction, student motivation, and student achievement (p.225). EFL Teachers also seek job satisfaction, and are often motivated by a combination of intrinsic, and autonomous extrinsic factors. (Syamananda, 2019, p.128). It would seem then that the answer is yes, satisfaction is certainly is important in EFL classes. This section will look at a definition of learning satisfaction, the importance of learning satisfaction in EFL classrooms, and why satisfaction is important for this research.

2.7.1 Learning Satisfaction Definition

For many of us, the phrase “I can’t get no satisfaction…” brings to mind the 1965 song from English rock band the Rolling Stones. Putting aside his grammatical prowess, what exactly was Keith Richards banging on about? Generally speaking, it seems happiness and gratification contribute significantly to satisfaction when we consider customer, job, life, or even patient satisfaction. (Oliver, 2010) notes that satisfaction is the degree of fulfillment provided by the experiences in life, regardless of how frequently they are encountered (p.13). While quite broad in scope, the key takeaway here is the use of the words ‘fulfillment’ and ‘experience’. In the realm of EFL, particularly at the tertiary level, the students are certainly engaged in a significant experience and have a need for their expectations to be met – regardless of what those expectations are. So what makes then happy and provides them with a feeling of gratification? If we look specifically at the tertiary environment, student satisfaction can be defined as the students perception of the college experience and perceived value of the education they receive Astin (as cited in Bolliger, 2004, p.62). Tough (as cited in Huang, 2012, p.141) also suggested that learner satisfaction was formed through a combination of learners’ attitudes, expectations, or perceptions toward certain events. Once again, we have the keyword of ‘experience’ here, and some sort of ‘expectation’ or ‘fulfillment’. The researcher believes the elements of experience and expectation fulfillment to be critical in achieving learning satisfaction in a tertiary EFL environment. In summary, learning satisfaction can be achieved through the creation of an appropriate learning experience which meets the experiential expectations of the EFL learner.

2.7.2 The Importance of Learning Satisfaction in EFL Classrooms

The importance of learning satisfaction in the EFL classroom life differs in the fact that compared to other subjects, EFL depends a lot more on the ‘experience’ which can be created than a maths class for example. This target-language experience helps learners more easily think in the target language which is necessary for learning in

methods such as the Natural/Berlitz Method of the late 1800s. The question then, is how can educators effectively fulfill the learning experience expectation their students have?

Firstly, educators need to recognize the importance of learning satisfaction. Research has continually highlighted a clear link between learner satisfaction and academic performance (Wu, 2012, p.56), as well as an equally clear link between learner satisfaction and the level of motivation a learner may possess (Wu, 2012, p.57). It can be said with confidence that students who have high levels of learning satisfaction also have good academic performance (Asakereh, 2015, p.347; Ko, 2014, p.18). Understanding the expectation of the participants in an activity is very important, and an EFL classroom is no exception. Secondly, it may be useful for educators to understand the major causes of learning satisfaction. (Ko, 2014) found that the quality of teachers has a significant impact of the learning satisfaction of students (p.18), while (Qutob, 2018) found that teachers, materials, and acquired speaking skills all contributed to learning satisfaction (p.121). Finally, (Ng, 2006) found that learners who are active in self-assessment have more effective learning outcomes than learners who come to class and engage in few self-learning processes (pp.226-227). In summary, understanding the contribution of learning satisfaction to academic performance is critical for educators wishing to effectively develop their students.

2.7.3 The Importance of Learning Satisfaction for this Research

So it would seem that there is certainly reason to focus on learner satisfaction, and the benefits it can bring to the academic performance of students. Consequently, when analyzing the usage of Apple Classroom in this research, the researcher hoped to gain valuable insights into the learning satisfaction of the students in the study. While the finding of an increase in critical skills such as vocabulary range, or reading skills would be beneficial, in the context of this research the researcher believed learning satisfaction to be the most critical indicator of success. As has been discussed, satisfied learners have been proven to perform better academically, so the key is to start with appropriate levels of learner satisfaction.

2.8 RELATED LEARNING THEORIES

The decision to explore the utilization of Apple Classroom in tertiary classes where students use iPads in a BYOD situation rests on three fundamental theories; Behaviorism, Constructivism, and Humanism.

2.8.1 Behaviourism

"Where there is great power, there is great responsibility" was the famous quote by Winston Churchill in 1906, and over 100 years later this still remains true - especially in the tertiary classrooms of 2020. The iPads used in the researcher's classrooms have great educational power for the students, but they also have the power to be enormously detrimental to learning if used improperly. Learning in the context of behaviorism can be defined as the acquisition of a new behavior or the modification of behavior as a result of teaching, training or tutoring. (Woollard, 2010).

As learning occurs through reward and punishment that lead to a change in behavior, it is very important to ensure that appropriate rewards and punishments are given in classrooms. However, unlike the traditional classrooms of the past, classrooms full of students using iPads are very difficult to adequately supervise. The use of Apple classroom provides a very simple tool to enable a teacher to have a high degree of supervision over the 'digital behavior' of students in their class. Such supervision should, in theory, lead to greater levels of accurately delivered rewards and punishments, which in turn should lead to increased levels of learning and desired behavioral changes. Ultimately, self-discovery is a critical element of effective learning and Apple Classroom has the potential to help achieve this through its monitoring functionality, while still allowing the student the freedom to discover new content elements themselves.

2.8.2 Constructivism

'Information Overload' is a phrase very relevant to most of us in our modern lives, but it was originally coined in 1964 by Bertram Gross in his work - The Managing of Organizations (Interaction Design Foundation, 2020, "Information overload: why it matters and how to combat it"). This concept is nothing new, but in today's digital world the overloading is being taken to the extreme. It seems that part of the challenge for today's tertiary learners is not simply the accessing of appropriate information, but actually the filtering of all the bad to get to the good. Gross elaborated on information overload saying "Information overload occurs when the amount of input to a system exceeds its processing capacity. Decision makers have fairly limited cognitive processing capacity. Consequently, when information overload occurs, it is likely that a reduction in decision quality will occur." Gross (1964, p.856). A major concern with that statement is the reduction in decision quality – this should not be the outcome of any educational tool.

Pritchard (2010) defines a constructivist learning theory as one "based on the central notion that as learners we construct our own understanding of the world around us based on experience as we live and grow. We select and transform information from past and current knowledge and experience into new personal knowledge and understanding." (p.8). This is very relevant as the environment that tertiary learners operate in involves a significant amount of personal digital technology – in the researcher's case, iPads. While it is great for students to have internet access on their iPads, the overwhelming amount of information at their fingertips presents a challenge as it represents part of the experience they use to learn. If students are overloaded when they learn, then this will likely contribute negatively to their understanding of the topic. The information overload will actually hinder their development, and consequently needs to be well-managed. The use of Apple Classroom allows the teacher to continually monitor where and when students are accessing the internet from their iPads. This in turn gives the teacher greater control over the learning environment the students are using to construct their new knowledge.

2.8.3 Humanism

Boundaries in general are important parts of the classroom. The behavior of students has an obvious and direct impact on the classroom environment and learning potential, and according to Bates (2015, p.29) we are living in very diverse times where "probably nothing has changed more in higher education over the last 50 years than the students themselves". Boundaries are hard enough to set in a very homogeneous situation, and far more difficult when considering the increase in student diversity. In addition, things get even more challenging when considering tertiary students who are of late-teens and early-twenties ages. Like any tools used in the classroom, iPads must be regulated in some way by the teacher or school, but tertiary students are not elementary-age - they are young adults. A degree of autonomy must be left with them, which then brings us back to the issue of supervision and guidance.

From a humanistic perspective, when guiding and supervising students, the teacher needs to consider the broad needs of the students, including the social and emotional needs as well as cognitive needs, Duchesne (2016, p. 263). Part of considering what a student 'needs' includes considering student boundaries - in particular, to limit what they can do with their iPad in class. A tertiary-level teacher is entrusted to guide and mentor their students, and most parents would not be happy to hear that their son or daughter was allowed to play games, use Facebook, or watch Netflix during class. But where is the line? Should Facebook be banned or utilized? Should Netflix be avoided or used to teach languages? Should selfies be discouraged or used in class presentations? These are difficult questions, but educators at the tertiary level need to be able to send a clear message to their students about what digital behavior is appropriate, and what is not. There is no simple solution and the regulation of an unlimited number of Apps is not feasible, neither is the regulation of students' access to webpages in most cases. Apple Classroom does, however, provide a mechanism to help manage this situation. An enormous level of control and monitoring is afforded when using Apple Classroom with student iPads. This allows the teacher to better guide and

develop their student's learning not just in terms of class content, but also in terms of their social and emotional needs.

2.9 PREVIOUS RESEARCH AND STUDIES

The relative newness of the iPad in the educational world, combined with the reasonably specific use-case of Apple Classroom (in a BYOD environment) has contributed to a lack of research and studies on the topic. In fact, not one single academic paper was identified by the researcher in the English language as of June 2020. While this lack of research in-part prompts the researcher to engage in this research, they understand the importance of being able to accurately compare results to the greater body of work in a particular area. As a result, the researcher will attempt to relate their research in Apple Classroom to ten previous studies which most closely compare to the usage and applications of Apple Classroom, despite Apple Classroom 'not' being used in those studies.

Morgana (2018) conducted a study which aimed to examine the role of the mobile devices, such as the iPad, as mediating tools in EFL. The study focused on the use of the iPad in designing and performing speaking tasks by teachers and learners, posing the question "How does the iPad as a mediating tool support speaking skills?". The study followed an action research approach with qualitative research such as observations. The research instruments included initial quantitative data on student and teacher perceptions, as well as interviews, surveys, and open-ended questions relating to specific tasks. The participants of the study included 43 Italian 16-year-old secondary students and two English teachers. The study found that learners were able to take advantage of the audio recording functionality to record their speaking, listen to it then revise and improve it. Morgana found that this action created a collaborative habit with teachers and learners working together. The main conclusion drawn by the study was that if the teacher were able to identify key mediational features of the tool (iPad), and present it to the class, then learners are likely to benefit from the use of the tool for specific language tasks.

Kayapinar (2019) carried out a study to determine the effect of tablet use on students' success in an EFL classroom. The researcher focused specifically on the grammatical success of learners. A mixed-method research design was used where quantitative and qualitative data were obtained from a true experimental design. The research instruments used were a pretest and a posttest, as well as a questionnaire. The study's sample size was 56 EFL students at a private university in Turkey. The participants were equally split with 28 in the control group and 28 in the experimental group. The results showed that there was no significant difference between the grammar achievement scores of the students in both groups. In this case, the results indicated that students found the tablets to be supplementary, but that they should not replace basic course materials such as textbooks and workbooks.

Alzaidiyeen (2017) conducted a study to determine the attitudes of EFL learners towards the utilization of iPads in language learning. In this study a quantitative research design was used to examine the attitudes of EFL students towards the use of iPads, while a cross-sectional questionnaire was conducted to obtain data from the participants. Student variables included gender, age, and the students' academic year. The research instruments included a questionnaire focusing on 1) general attitudes, and 2) the attitudes towards iPads in language learning. The participants of the study were 109 male and female English-major students from a Majmmah University. The findings suggested that the participants had positive attitudes with regard to using iPads in language learning. The researcher also concluded that the positive attitudes about the iPad held in general by the participants lead to higher intentions to integrate this technology in their language learning.

Cavalcanti (2019) carried out a study to explore tertiary teachers' experience of implementing iPads into their lessons. The study hoped to determine the ways in which teachers accounts of change (in this case the introduction of iPads) explained their perceptions of their professional identity and how they coped with the experience. The methodology included open-ended survey questions and individual interviews, as well as classroom observations and written reflections. The 38 participants were all

volunteers who were teachers at a college of higher education in the Middle East in a preparatory program. The findings indicated that the teachers employed a wide range of strategies to respond to the sudden change presented by the introduction of iPads into their classes. The researcher also noted that positive outcomes could still be achieved as a result of experiential learning, even when a perceived lack of planning, information, and preparation exist.

Perez (2017) conducted a study to determine the perceptions and experiences of teachers while using the Apple iPad as an instructional tool. The main focus for this research was to find how secondary school teachers perceived the iPad, if they felt that the iPad was a valuable tool in the classroom, and if so, how? The researcher focused on qualitative research through interviews, utilizing open-ended questions to gain in-depth topic information. The findings from this study were gathered from data collected from three participant high-school teachers. In summary, four key findings were made: iPad use has added value in the classroom, iPad use supports teacher to student engagement, iPad use does not come with professional development, iPad use fosters a paper free environment. The main conclusion could then be summarized as iPad use having a positive effect in the classroom.

Scibora (2018) carried out a study to determine the influence of iPads on course performance and student perceptions. The focus was to assess student attitudes and the perceived learning gained by the students. The researcher had assumed that student engagement and motivation for learning had been found to be positively associated with iPad use. A quasi-experimental research design was used to assess the effect of iPad-integrated active and collaborative learning activities compared to complementary traditional activities in terms of knowledge acquisition, student perceptions, and learning expectations and outcomes. Pretest and posttests were utilized, along with student questionnaires employing a six-point Likert scale. The participants comprised of 45 college-level Anatomy students in the United States enrolled in a range of courses. The findings indicated that the students without iPads had a higher attainment of course objectives (human anatomy factual knowledge, principles and theories, and the

application of material). iPad users also reported lower levels of course engagement, however both groups showed similar gains based on test scores and final grades.

Zhonggen (2018) conducted a study to determine the student satisfaction, learning outcomes, and cognitive loads with a mobile learning platform in China. The aim of this study was to determine if a mobile learning platform could significantly improve the proficiency of English as an EFL student, increase learner satisfaction and reduce the cognitive loads on the learner. The researcher began with the assumption that as a result of possessing mobile devices in the classroom, students tended to ignore lecture content, instead concentrating on chatting, news, movies, music, and gossip on their smartphones. Experimental research design was employed utilizing quantitative multivariate analysis and qualitative interview data analysis, as well as the use of specific scales to determine satisfaction, learning outcomes, and cognitive loads. The participants comprised of 169 undergraduates in group A, and 171 undergraduates in group B, all of which were sophomore students who had undergone TOEFL testing. The study found that the experimental group who used the new mobile learning platform were more satisfied than those who didn't, as well as having improved academic performance and lower cognitive loads.

Qutob (2018) presented a study to determine the relationship between EFL learners' satisfaction with the classroom environment and their speaking skills. The study aimed to find out how satisfied students were with their acquired speaking skills based on materials used in the classroom environment. The research instruments included a Likert-scale questionnaire based on student satisfaction with speaking classes. The participants of the study comprised of 60 female grade ten students at a private school in Jeddah, and were randomly sampled. This study found that students were highly satisfied with their acquired speaking skills, materials, and language teacher. Additionally, a positive correlation was found between the students' acquired speaking skills with materials, and the teacher.

Alkaabi (2017) compiled a study on social network misuse in the classroom and its impact on male student population in tertiary education. The focus of this research was on the addictive nature of social networks and their impact on student motivation. The study followed a qualitative descriptive method designed to acquire firsthand student feedback. Focus groups and individual interviews were utilized to achieve this. A cohort of 83 male EFL students formed the participants of this study at several university campuses in the UAE. The findings were summarized as that social network addiction had an impact on student class performance and in some cases led to failure.

Ko (2014) conducted a study to determine the effect of teaching quality on the student satisfaction and academic performance of hospitality students at universities in Taiwan. The focus of the study was to see if academic performance and student satisfaction related to teacher quality. The research employed the qualitative usage of questionnaires to focus on the quality of the teacher as the independent variable. The participants consisted of the 406 respondents who submitted valid questionnaires. The findings of the research indicated that there was a positive correlation between teacher quality and the academic performance of students and their learning satisfaction.

In summary, this modest selection of studies has showed a largely positive outcome in findings regarding the use of iPads in the classroom. The iPad was found to increase collaboration and student engagement, as well as fostering closer teacher-student relations and reducing paper. However, several studies did find that iPad use came with challenges; such as social media addiction and the subsequent lack of engagement, and the fact that iPads should be supplementary and not replace traditional tools such as textbooks and workbooks. Overall, the use of the iPad in classrooms was found to be positive with a limited number of concerns. Consequently, this research into Apple Classroom as a means of improving the learning satisfaction and academic performance of EFL students has a solid foundation from which to begin. Studies have shown iPads have a positive effect, however challenges such as the distractions of social media and the effective utilization of the device in order to be able to replace traditional

materials were highlighted. Apple Classroom directly meets these challenges as it provides excellent digital supervision and control, as well as being a simple and effective platform which is easily able to incorporate traditional as well as new ‘digital’ content.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter explains the methodology which was used to explore the research questions. It explains the research instruments used for the data collection of the research. It describes the research design, the population, the samples, the data collection process, and the instruments used for data collection and analysis. Critical aspects such as instrument reliability and validity are also covered in this chapter.

3.1 RESEARCH DESIGN OVERVIEW

Cresswell (2013) claims that researchers bring three philosophical assumptions to their study; the procedures of inquiry (research designs), the specific methods of data collection and analysis (research methods) and approach which has been determined based on the key issue being addressed (research approach) (p.48). This section will focus on these three critical components of this study.

3.1.1 Research Design

In this study the researcher wishes to place a strong emphasis on the qualitative feedback gained from the participants, but still begins with the assumption that the use of Apple Classroom will result in improved learning achievement, as well as learning satisfaction. According to (Mertens, 2009, p.133), such an assumption effectively makes use of the One-group pretest-posttest research design which has been chosen by the researcher. The figure below illustrates the overall research design of this study.

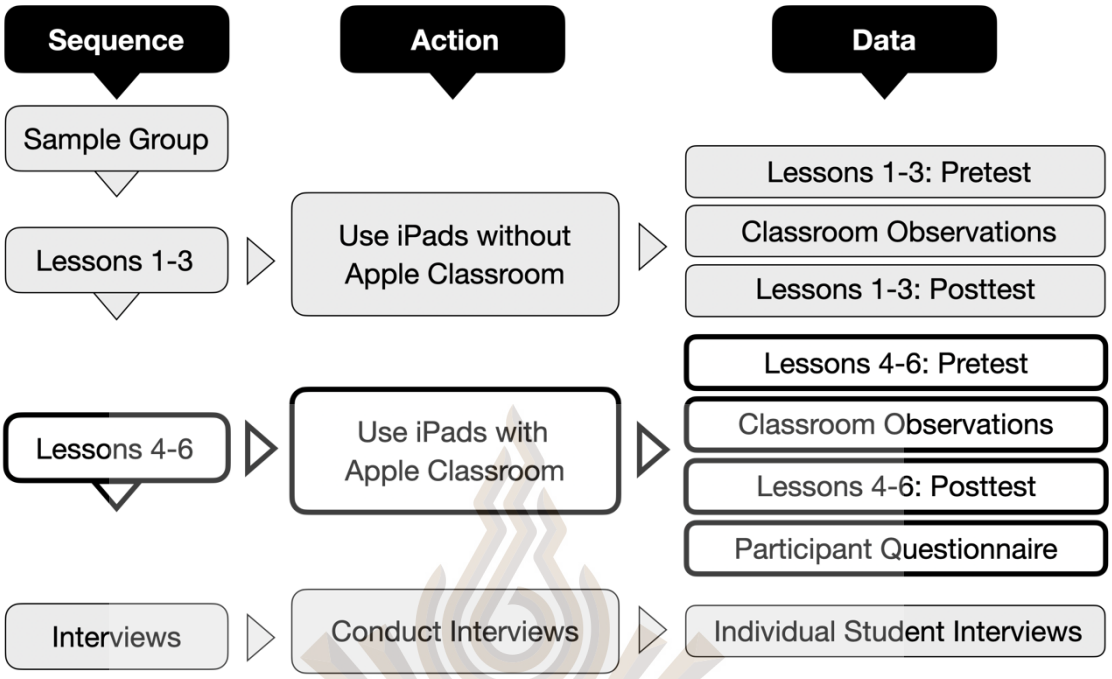

Figure 3.1 Research Design of the Study

3.1.2 Research Methods

The research methods carried out in a study refer to the specific ways in which data is collected, analyzed, and interpreted (Creswell, 2013, p.48). An action research method incorporating a mixed-method approach has been selected by the researcher. Burns (2009) states that action research involves taking a self-reflective, critical, and systematic approach to exploring your own teaching contexts (p.2). Burns continues to state that in action research, the teacher becomes an investigator at the same time as being a participant. The reasons for selecting an action research model for this study include the fact that it is uniquely suited to researching and supporting change, it reflects both practical and theoretical results, and that it is an appealing way to look more closely at challenging classroom issues (Burns, 2009, p.6; Given, 2008, p.4). In summary, the ability for the researcher to be able to do research for themselves (Kemmis, 2014, p.4), and also be a participant in the research is very attractive for the researcher. Action research can be said to close the gap between studying an issue and engaging in action to influence the issue (Neuman, 2013, p.30). The often-referenced 1988 Kemmis and

McTaggart model below will be utilized throughout the research and highlights the four key action research steps. Kemmis (as cited in Burns, 2009, p.9).

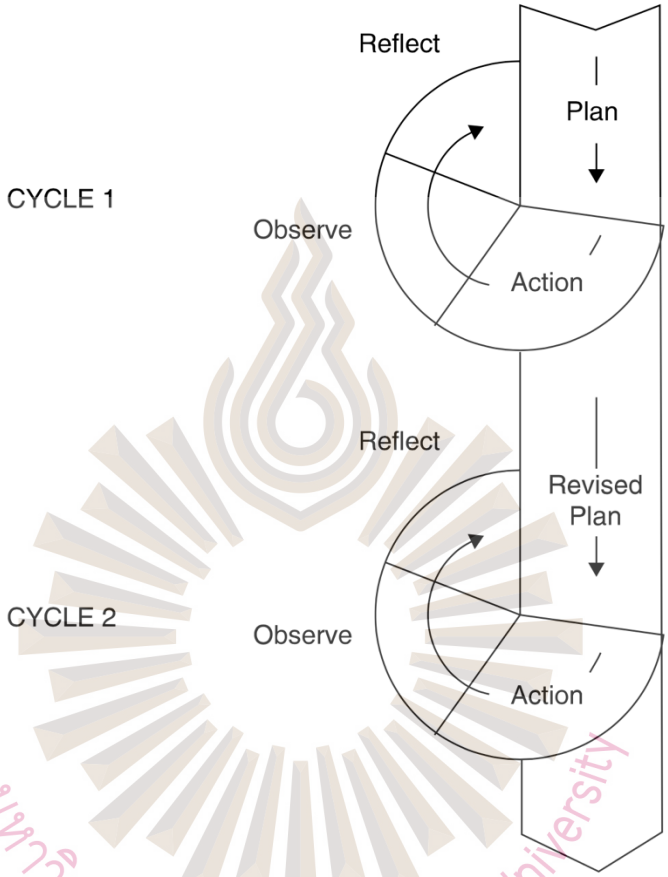

Figure 3.2 The Kemmis and McTaggart cyclical Action Research model

This model is incorporated into the researchers lessons in several areas. The first is Planning. As the researcher must teach a wide variety of students in a range of levels, effective planning becomes critical. Certain plans work well, while others need improvement. This model shows how the researcher plans, and then is able to revise their plan based on post-class reflections. This results in the continual fine-tuning of content and lesson delivery much like the famous Japanese phrase Kaizen (continual improvement) which is a well-respected concept in the business community. While the classroom is not a factory, the researcher believes it is still an environment which needs continual development in order to maintain its effectiveness. The second area is Action.

The researcher believes the way they ‘act’ or teach in the classroom as well as the way the students ‘act’, are very relevant in an EFL class. Much language learning happens when new and relevant contexts are presented in a variety of ways. For example, the restriction of a class to ‘target-language only’ may work brilliantly with smaller groups of students from a range of language backgrounds, however it will not be as easy to achieve with a very large group of students all from the same language background. Through observation and reflection, the researcher can then fine-tune the actions they carry out, as well as the way in which they expect their students to behave. While close to common sense, the researcher believes the fundamental process of observing, reflecting, and then revising is critical in the continual improvement of their teaching.

3.1.3 Research Approach to the Problem

A mixed-method approach was selected based on the idea that the combination of both the quantitative approach and the qualitative approach offer a more complete understanding of the research problem than either approach alone (Creswell, 2013, p.51). Additionally, this study focused on the subject of utilizing Apple Classroom with iPads in tertiary EFL classes which is relatively new, and apparently (as of June 2020) untested in the English academic world. Consequently an exploratory approach was selected by the researcher (Neuman, 2013, p.38). Neuman goes on to explain the value of this type of approach when wanting to become familiar with the facts, create a general mental picture of the conditions, formulate and focus questions for future research, create new ideas, conjectures, or hypotheses, determine the feasibility of conducting research, and to develop techniques for measuring and locating future data (p.38). All of these are considered valuable insights into the usage of Apple Classroom with iPads in the current environment the researcher teaches in, given the lack of any existing research.

3.2 POPULATION OF THE STUDY

The population of the study consisted of 120 students. The college level English students are enrolled in a range of undergraduate degree courses at the International College of a private university in Bangkok, Thailand. This college has approximately 300 students enrolled at the undergraduate level.

The nonprobability Sampling technique of Convenience Sampling was employed in this study, as the primary criteria for selecting these cases is that they are readily available (assigned to be taught by the researcher) during the research period. The 31 participants were sampled from the population of 120. Their ages ranged from 18 – 21, and they were students from Thailand and abroad, with an approximate mix of 30% Thai and 70% non-Thai.

3.3 RESEARCH INSTRUMENTS

In this study, the researcher employed a mixed-method approach utilizing both qualitative and quantitative research instruments. As has been mentioned, such a technique is applicable as the use of Apple Classroom is fairly new, and consequently the researcher hoped to gain a greater 'overall picture' of the study than would be produced by either quantitative or qualitative instruments alone. The figure below summarizes the instruments.

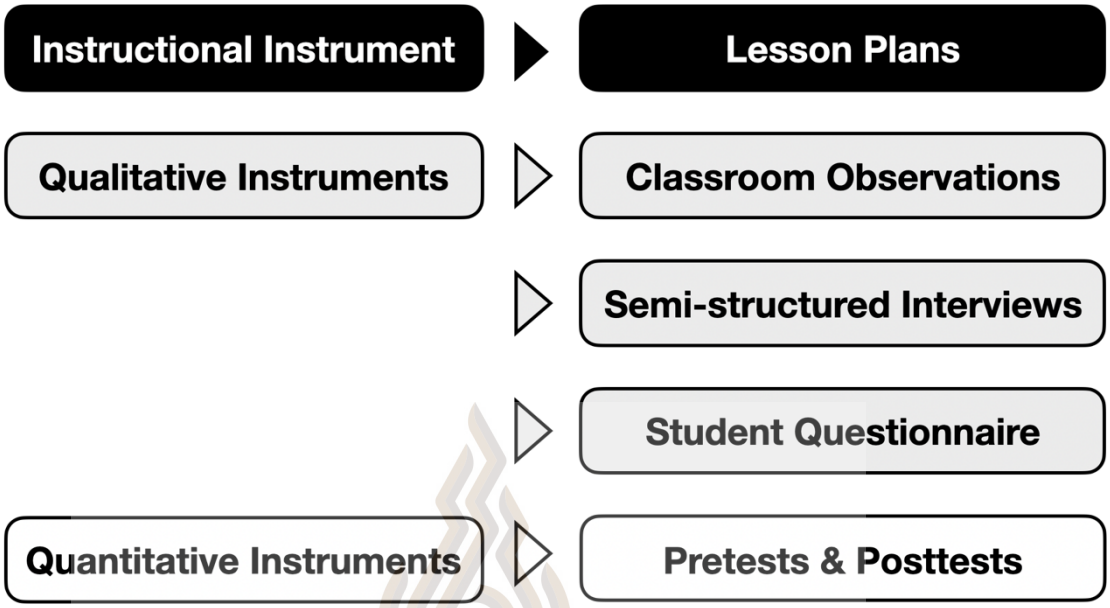

Figure 3.3 Research Instruments

3.3.1 Instructional Instrument

3.3.1.1 Lesson Plans

Planning is critically important to achieving good results, and this stays true in education where Haynes (2010) has identified three key steps of teaching; planning and preparation, activities in the classroom, and lastly activities which take place after the completion of the lesson (p.1). The model below, which the researcher feels is not too dissimilar to the afore-mentioned Kemmis and McTaggart illustrates these steps.

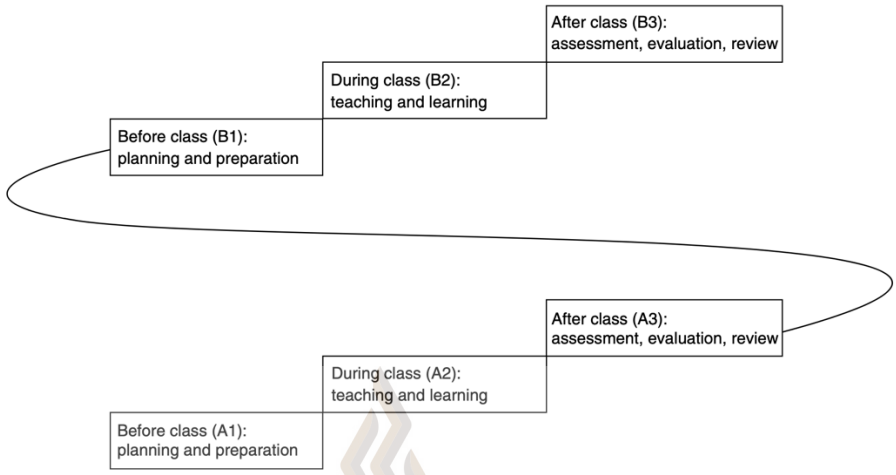

Figure 3.4 The Three-step approach to teaching

Source: Haynes, 2010

As can be seen, planning and preparation form the beginning of the teaching journey and, just like building a house, requires a solid foundation. Haynes (2010) continues by describing four cornerstones of planning and preparation; Educational aims, needs analysis, context, and the structure of recognition (p.4). The participants in this study were studying the subject "English in Technology Entertainment and Design (TED)" which was summarized as having the aim of building TED-related vocabulary, and developing the confidence and proficiency of speaking on these topics. This was to allow their overall language skills to progress, while exposing them to the language related to topics which would be useful in their future lives. The key needs of the participants here were vocabulary development and speaking skill improvement. The content in the lesson plans had been developed to address these needs, however it was always tailored to the specific situational needs of the group of students being taught. Cognition, or knowledge acquisition focused on the functional final production of the use of newly-acquired vocabulary in targeted TED speaking tasks.

Consequently, these four cornerstones have combined to produce content for this study which seeks to fulfill the vocabulary and speaking development

aims, appropriately meets the needs of the students, is delivered in a tailored context, and allows for the production of skills confirming knowledge acquisition. This content has been designed in an effort to maximize iPad utilization. A total of six lesson plans were created, each of which was 150 minutes. The researcher taught one lesson per week for six weeks. The six weeks (lessons 1-6) were separated into two of the three key themes of TED; Technology, and Entertainment. The figure below outlines this process including related activities.

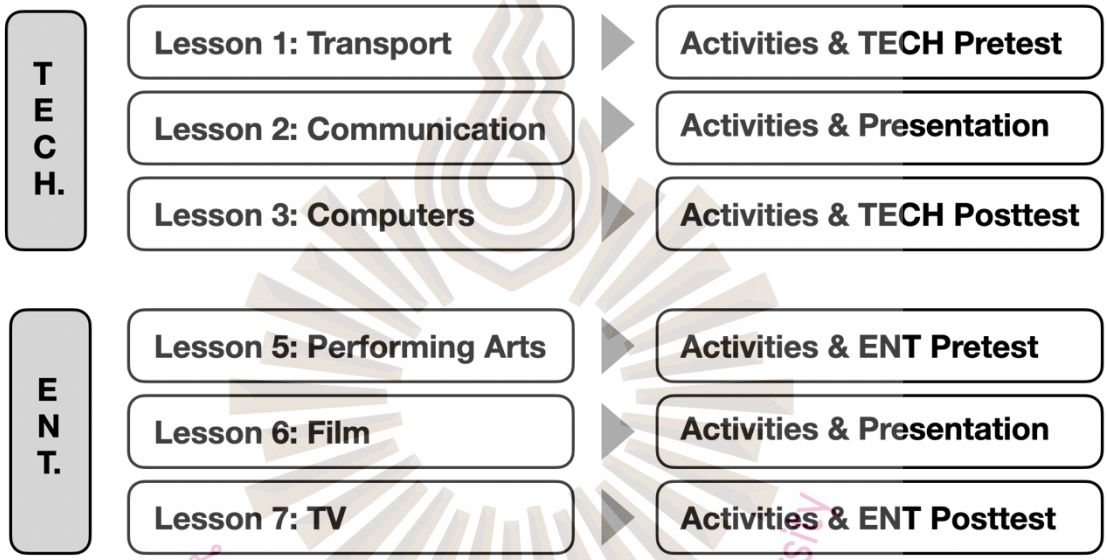

Figure 3.5 Lesson plan overview

3.3.2 Qualitative Instruments

3.3.2.1 Classroom Observations

Kemmis (2014) notes that written records include a variety of forms which are used in different ways depending on their application. Kemmis (2014) goes on to note three kinds of written records; field notes, anecdotal records, and event sampling (p.180). The researcher utilized all three of them to gain a comprehensive and balanced understanding of the research.

3.3.2.2 Semi-structured Interviews

Kemmis (2014) continues to note that there are relevant three kinds of interviews; informal conversations, planned but unstructured, and structured (p.181). The researcher used a semi-structured interview format for consistency, while recording any unplanned communication in appropriate field notes. The researcher believes that they gained valuable insight into some of the key issues presented in the study, while allowing the participants the opportunity to expand and go into detail where appropriate.

3.3.2.3 Questionnaire

According to Creswell (2013), a questionnaire design provides a quantitative or numerical description of trend, attitudes, or opinions of a population by studying a sample of that population (p.343). The obvious goal here for the researcher was to be able to then generalize based on the results which can be applied to the greater population. Kemmis (2014) notes that there are three general types of surveys or questionnaires; closed or multi-choice, ratings (Likert scales etc.), and open questions (p.184). The researcher used a simple combination of all three types of questions to enable a balanced response. The researcher notes that multi-choice questions provided an efficient way of gathering basic information about specific opinions and judgements, while ratings-style questions provided a very fast way of establishing agreement or disagreement, and finally open-ended questions were used to explore and expand on a limited scope of content to allow for customized feedback.

3.3.3 Quantitative Instruments

3.3.3.1 Pretest and Posttest

A pretest and posttest were employed to determine the dependent variable of using Apple Classroom. To achieve this both a pretest and a posttest were given for each set of three lessons (lessons 1-3 & lessons 4-6) with the pretest occurring

prior to the lessons, and the posttest occurring after the completion of the respective set of three lessons. This allowed for comparison between the lessons without the use of Apple Classroom (lessons 1-3), and those using Apple Classroom (lessons 4-6). This study made use of the one-group pretest-posttest design (Neuman, 2013, p.293). A 20-question vocabulary learning achievement multi-choice pretest-posttest test was developed based on the previously-mentioned four cornerstones (Haynes, 2010). The pretest determined the participants' level of learning before the lessons, while the posttest allowed for the examination of any significant difference in the learning achievement following the lessons. Both sets of three lessons (lessons 1-3 & 4-6) were then able to be compared. The researcher used the same test items for both the pretests and the posttests to ensure that it was a consistent evaluation. While learning achievement is important, the researcher believes that the process of understanding the learning satisfaction of students using Apple Classroom, as well as classroom observations are of greater research value and importance.

3.4 VALIDITY AND RELIABILITY OF INSTRUMENTS

Validity of Instruments

The researcher had the instruments validated by three experts from the International College where the research took place. Each member will have at least five-year's experience at the college and was PhD qualified. They are experts in teaching EFL at a tertiary level to a wide variety of student levels and backgrounds.

Reliability of Instruments

This particular study is unable to be conducted remotely with online students as the functioning of Apple Classroom required devices to be in physical proximity with one another. Consequently, this group of 31 students were the only group possible for sampling and study and thus the researcher utilized their three expert IOC reviews of

the pretests and posttests. These reviews were critical in confirming the reliability of the instruments, given the current research environment.

3.5 DATA COLLECTION PROCEDURE

3.5.1 Ethical Consideration

Approval

The researcher sought approval from both the International College and the university itself before commencing the data collection (COA. No. RSUERB2020-095). Participant consent was gathered prior to data collection.

Anonymity of the Participants

The researcher has ensured that the anonymity and confidentiality of the participants' data was maintained throughout all steps of the research. The participants of the research study were identified through a numbering system so as to ensure data protection and confidentiality. All data will be ceremoniously destroyed upon completion of the study.

3.6 DATA ANALYSIS

The data analysis of the study focused on two areas.

Firstly, a statistical test-score analysis was used to examine the effects of Apple Classroom on learning achievement in TED vocabulary.

Secondly, open thematic coding was employed to analyze the semi-structured interviews, the questionnaire responses, and finally the structured observation field notation regarding satisfaction toward the use of Apple Classroom in TED. The thematic

coding allowed the data to be reduced to focus on the key areas of importance within the data set. The researcher found the categories of satisfaction, supervision, control, and distraction to be key areas requiring analysis. As these themes are closely related, the researcher believes they were able to make useful generalizations from this thematic coding.

CHAPTER 4

DATA ANALYSIS

This chapter presents the results of the analysis of the data collected utilizing the following instruments; four learning achievement tests, a student questionnaire, a semi-structured interview, and finally five classroom observations. The data collected through the learning achievement tests was analyzed using a quantitative method, while the data collected through the semi-structured interviews, the student questionnaire, and the classroom observations was analyzed using a qualitative method.

4.1 QUANTITATIVE DATA ANALYSIS

Quantitative data was collected from two sets of student learning achievement tests, one set for lessons 1-3 (no treatment) and a second set for lessons 4-6 involving the treatment.

4.1.1 Data Analysis of Student Learning Achievement Tests

To answer the first research question 1.3.1., "Would the use of Apple Classroom improve tertiary student's learning achievement?", two sets of pretests and two sets of posttests were used. The first set included a pretest and a posttest with the same questions given prior to and at the completion of lessons 1-3 without the use of Apple Classroom. The second set also included a pretest and a posttest with the same questions, and was given prior to and at the completion of lesson 4-6 where Apple Classroom was used.

4.1.1.1 Lessons 1-3 Pretest and Posttest Results

Table 4.1 Lessons 1-3 student pretest and posttest scores

Student No.	Pretest Score	Posttest Score	Score Improvement
1	77	93	16
2	77	97	20
3	50	90	40
4	60	97	37
5	80	83	3
6	77	97	20
7	73	67	-6
8	43	90	47
9	97	97	0
10	93	93	0
11	37	70	33
12	50	83	33
13	53	93	40
14	87	97	10
15	63	100	37
16	73	93	20
17	77	97	20
18	50	97	47
19	37	90	53
20	77	97	20
21	67	97	30
22	70	77	7
23	77	100	23
24	73	83	10
25	53	100	47

Table 4.1 Lessons 1-3 student pretest and posttest scores (Cont.)

Student No.	Pretest Score	Posttest Score	Score Improvement
26	20	90	70
27	60	100	40
28	60	97	37
29	70	97	27
30	60	90	30
31	67	100	33
Mean	64.77	92.00	27.23

Table 4.1 shows the student pretest and posttest scores for lesson 1-3 as well the improvement made. The mean ($\bar{x}$) of the pretest scores was 64.77 while the posttest score mean ($\bar{x}$) was 92.00. This resulted in a mean ($\bar{x}$) score difference of 27.23. The improvement scores ranged from -6 to 70 with only one student showing negative improvement and two students showing zero improvement. The results showed the posttest scores were higher than the pretest scores.

4.1.1.2 Lessons 1-3 Pretest and Posttest Results Analysis and Comparisons

Table 4.2 Lessons 1-3 student pretest and posttest score statistical analysis

Paired Samples Statistics				
	Mean	N	σ	$\sigma_{\bar{x}}$
Pretest	64.77	31	17.101	3.071
Posttest	92.00	31	8.556	1.537

Table 4.2 Lessons 1-3 student pretest and posttest score statistical analysis (Cont.)

Paired Samples Correlations			
	N	Correlation	Sig.
Pretest & Posttest	31	.208	.260

Paired Samples Test								
	Paired Differences					t	df	Sig. 2-tailed
				95%CI				
	Mean	σ	$\sigma_{\bar{x}}$	Lower	Upper			
Pretest & Posttest	-27.226	17.454	3.135	-33.628	-20.824	-8.8685	30	.000

The lessons 1-3 student pretest and posttest scores were analyzed using a paired-samples t-test, in terms of the mean ($\bar{x}$), standard deviation (σ), t-value, and significance value. Table 4.2 above shows a mean difference of 27.226 and a significance value of .01 demonstrating that the result was statistically significant.

4.1.1.3 Lessons 4-6 Pretest and Posttest Results

Table 4.3 Lessons 4-6 student pretest and posttest scores

Student No.	Pretest Score	Posttest Score	Score Improvement
1	67	100	33
2	63	97	34
3	43	80	37
4	73	87	14
5	47	90	43
6	60	83	23
7	33	53	20

Table 4.3 Lessons 4-6 student pretest and posttest scores (Cont.)

Student No.	Pretest Score	Posttest Score	Score Improvement
8	83	80	-3
9	60	90	30
10	63	57	-6
11	37	47	10
12	53	63	10
13	70	90	20
14	83	93	10
15	57	73	16
16	40	60	20
17	63	100	37
18	53	93	40
19	67	87	20
20	50	83	33
21	83	90	7
22	60	60	0
23	63	100	37
24	27	43	16
25	40	87	47
26	33	63	30
27	70	93	23
28	90	100	10
29	90	97	7
30	90	93	3
31	73	90	17
Average	60.77	81.35	20.58

Table 4.3 shows the student pretest and posttest scores for lesson 4-6 as well as the improvement made. The mean ($\bar{x}$) of the pretest scores was 60.77 while the posttest score mean ($\bar{x}$) was 81.35. This resulted in a mean ($\bar{x}$) score difference of 20.58. The improvement scores ranged from -6 to 47 with only two students showing negative improvement and one student showing zero improvement. The results showed the posttest scores were higher than the pretest scores.

4.1.1.4 Lessons 4-6 Pretest and Posttest Results Analysis and Comparisons

Table 4.4 Lessons 4-6 student pretest and posttest score statistical analysis

Paired Samples Statistics				
	Mean	N	σ	$\sigma_{\bar{x}}$
Pretest	60.77	31	17.778	3.193
Posttest	81.35	31	16.936	3.042

Paired Samples Correlations			
	N	Correlation	Sig.
Pretest & Posttest	31	.670	.000

Paired Samples Test								
	Paired Differences							
				95%CI				Sig. 2-tailed
	Mean	σ	$\sigma_{\bar{x}}$	Lower	Upper	t	df	
Pretest & Posttest	-20.581	14.113	2.535	-25.757	-15.404	-8.119	30	.000

The lesson 4-6 student pretest and posttest scores were analyzed using a paired-samples t-test, in terms of the mean ($\bar{x}$), standard deviation (σ), t-value, and

significance value. Table 4.4 above shows a mean difference of 20.581 and a significance value of .01 demonstrating that the result was statistically significant.

4.1.1.5 Pretest Results for Lessons 1-3 and Lessons 4-6

Table 4.5 Pretest Score Comparison Between Lessons 1-3 and 4-6

Student No.	Pretest (1-3)	Pretest (4-6)	Score Difference
1	77	67	-10
2	77	63	-14
3	50	43	-7
4	60	73	13
5	80	47	-33
6	77	60	-17
7	73	33	-40
8	43	83	40
9	97	60	-37
10	93	63	-30
11	37	37	0
12	50	53	3
13	53	70	17
14	87	83	-4
15	63	57	-6
16	73	40	-33
17	77	63	-14
18	50	53	3
19	37	67	30
20	77	50	-27
21	67	83	16
22	70	60	-10

Table 4.5 Pretest Score Comparison Between Lessons 1-3 and 4-6 (Cont.)

Student No.	Pretest (1-3)	Pretest (4-6)	Score Difference
23	77	63	-14
24	73	27	-46
25	53	40	-13
26	20	33	13
27	60	70	10
28	60	90	30
29	70	90	20
30	60	90	30
31	67	73	6
Average	64.77	60.77	-4.00

Table 4.5 shows the student pretest and scores for lesson 1-3 compared with lessons 4-6 as well the difference. The mean ($\bar{x}$) of the lesson 1-3 pretest scores was 64.77, while the lesson 4-6 pretest score mean ($\bar{x}$) was 60.77. This resulted in a mean ($\bar{x}$) score difference of -4.00. The score differences ranged from -46 to 40, and the results showed that the pretest scores for lessons 1-3 were higher than that of lessons 4-6 on average.

4.1.1.6 Pretest Results Analysis and Comparisons for Lessons 1-3 and 4-6

Table 4.6 Pretest Score Comparison Between Lessons 1-3 and 4-6 statistical analysis

Paired Samples Statistics				
	Mean	N	σ	$\sigma_{\bar{x}}$
Pretest 1-3	64.77	31	17.101	3.071
Pretest 4-6	60.77	31	17.778	3.193

Table 4.6 Pretest Score Comparison Between Lessons 1-3 and 4-6 statistical analysis (Cont.)

Paired Samples Correlations			
	N	Correlation	Sig.
Pretest 1-3 & Pretest 4-6	31	.152	.414

Paired Samples Test								
	Paired Differences					t	df	Sig. 2-tailed
				95%CI				
	Mean	σ	$\sigma_{\bar{x}}$	Lower	Upper			
Pretest 1-3 & Pretest 4-6	4.000	22.716	4.080	-4.332	12.332	.980	30	.335

The pretest score comparison between lessons 1-3 and lessons 4-6 was created using a paired-samples t-test, in terms of the mean ($\bar{x}$), standard deviation (σ), t-value, and significance value. Table 4.6 above shows a mean difference of 4.000 and a significance value of .335 demonstrating that the result was not statistically significant.

4.1.1.7 Posttest Results for Lessons 1-3 And Lessons 4-6

Table 4.7 Posttest Score Comparison Between Lessons 1-3 and 4-6

Student No.	Posttest (1-3)	Posttest (4-6)	Score Difference
1	93	100	7
2	97	97	0
3	90	80	-10
4	97	87	-10
5	83	90	7

Table 4.7 Posttest Score Comparison Between Lessons 1-3 and 4-6 (Cont.)

Student No.	Posttest (1-3)	Posttest (4-6)	Score Difference
6	97	83	-14
7	67	53	-14
8	90	80	-10
9	97	90	-7
10	93	57	-36
11	70	47	-23
12	83	63	-20
13	93	90	-3
14	97	93	-4
15	100	73	-27
16	93	60	-33
17	97	100	3
18	97	93	-4
19	90	87	-3
20	97	83	-14
21	97	90	-7
22	77	60	-17
23	100	100	0
24	83	43	-40
25	100	87	-13
26	90	63	-27
27	100	93	-7
28	97	100	3
29	97	97	0
30	90	93	3
31	100	90	-10
Average	92.00	81.35	-10.65

Table 4.7 shows the student posttest and scores for lesson 1-3 compared with lessons 4-6 as well the difference. The mean ($\bar{x}$) of the lesson 1-3 posttest scores was 92.00, while the lesson 4-6 posttest score mean ($\bar{x}$) was 81.35. This resulted in a mean ($\bar{x}$) score difference of -10.65. The score differences ranged from -40 to 7, and the results showed that the posttest scores for lessons 1-3 were higher than that of lessons 4-6 on average.

4.1.1.8 Posttest Results Analysis and Comparisons for Lessons 1-3 and 4-6

Table 4.8 Posttest Score Comparison Between Lessons 1-3 and 4-6 statistical analysis

Paired Samples Statistics				
	Mean	N	σ	$\sigma_{\bar{x}}$
Posttest 1-3	92.00	31	8.556	1.537
Posttest 4-6	81.35	31	16.936	3.042

Paired Samples Correlations			
	N	Correlation	Sig.
Posttest 1-3 & Posttest 4-6	31	.710	.000

Paired Samples Test								
	Paired Differences							
				95%CI				Sig. 2-tailed
	Mean	σ	$\sigma_{\bar{x}}$	Lower	Upper	t	df	
Posttest 1-3 & Posttest 4-6	10.645	12.419	2.231	6.090	15.201	4.772	30	.000

The lesson 1-3 and lessons 4-6 student posttest scores were analyzed using a paired-samples t-test, in terms of the mean ($\bar{x}$), standard deviation (σ), t-value, and significance value. Table 4.8 above shows a mean difference of 10.645 and a significance value of .01 demonstrating that the result was statistically significant.

4.1.1.9 Student pretest and posttest score increase summary

In summary, the results demonstrated that there was more learning achievement without the use of Apple Classroom than was found when classes were delivered with the use of Apple Classroom. This comparison is illustrated by the figure below.

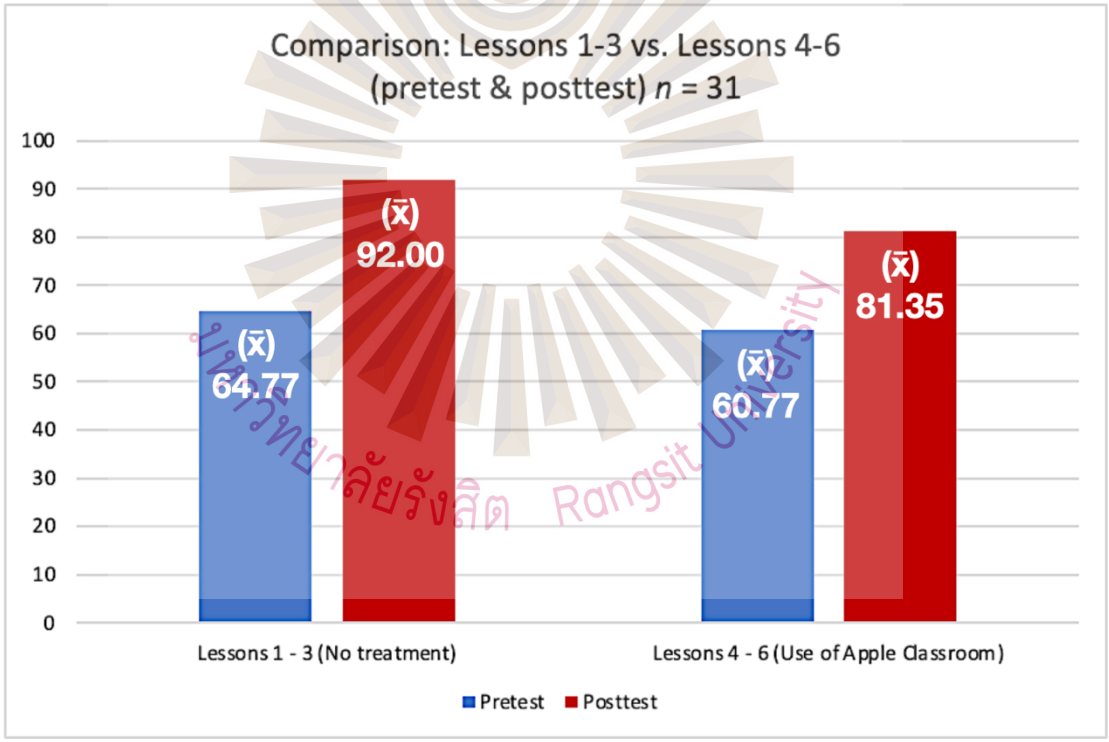

Figure 4.1 Comparison of Average Student Pretest and Posttest Scores for lessons 1-3 compared with lessons 4-6

4.2 QUALITATIVE DATA ANALYSIS

Qualitative data was collected throughout both sets of lessons (1-3 and 4-6). To answer the second research question 1.3.2., “Would there be any learning satisfaction for tertiary students when using Apple Classroom?”, a questionnaire, interviews and observations were used. The student interviews were also held on the completion of lesson six and included eight key questions. Finally, the lesson observations were conducted by a selection of relevant experts as well as the researcher throughout lessons 1-3 and lessons 4-6.

4.2.1 Data Analysis of Student Questionnaire

The student questionnaire was given on completion of lesson 6 (after experiencing three lessons with no treatment and three lessons of treatment where Apple Classroom was used) and included fourteen questions of mixed-type split into three sections.

4.2.1.1 Student questionnaire – Section 1: Satisfaction

The first section of the questionnaire consisted of five questions asking the students their level of satisfaction regarding elements of the class. The students were asked to respond with one of the following choices; completely agree, somewhat agree, neutral, somewhat disagree, and finally completely disagree.

55% of the 31 students responded ‘completely agree’ to the first question 1) which asked if the students felt the “lesson content and activities were interesting and relevant”, a further 29% responded that they’ somewhat agreed’, and the remaining 16% responded neutrally. Zero students responded with any disagreement. The second question 2) asked students if they felt that their “iPads were useful for TED classes”, to which 77% responded that they ‘completely agreed’, while 19% said they ‘somewhat agreed’, and the remaining 3% said they were neutral on the question. Zero

students responded with any disagreement. The third question 3) asked if "iPads helped students learn more in class", to which 65% responded 'completely agree', 32% answered 'somewhat agree', and the remaining 3% were neutral. Zero students responded with any disagreement. The fourth question 4) asked students if they felt that "Apple Classroom helped the teacher manage the classroom properly" and 68% of student responded with 'completely agree', 23% of students responded with 'somewhat agree', and the remaining 10% of students were neutral. Zero students responded negatively. Finally, the fifth question 5) asked students if they felt that "Apple Classroom reduced cheating', to which 52% responded with 'completely agree', 35% said they 'somewhat agreed', 6% were 'neutral', and the remaining 6% said they 'somewhat disagreed'. Zero students completely disagreed.

4.2.1.2 Student questionnaire – Section 2: English Skills

The second section of the questionnaire consisted of five questions asking the students their opinions regarding how much different elements of the class developed their various English skills. The students were asked to respond with one of the five choices; speaking, listening, researching, writing, and presenting. The fifth question had adjusted responses to cater for 'activities' instead of 'skills'.

The sixth question 6) asked students which of their English skills the lessons helped improve most, to which 52% responded 'researching', 45% said 'listening', and the remaining 3% said 'presenting'. Zero students responded with 'speaking' or 'writing'. The seventh question 7) asked students which of their English skills the lessons helped improve least, to which 39% said 'writing', 29% responded with 'presenting', 19% said speaking, and the remaining 13% said researching. Zero students responded with 'listening'. The eighth question 8) asked students which of their English skills is helped most through the use of their iPads, to which 74% responded with 'researching', 13% said 'presenting', 10% said writing, and the remaining 3% answered 'listening'. Zero students responded with 'speaking'. The ninth question 9) asked students which English skill they wanted more class time to be devoted to, and

32% responded with ‘speaking’, 23% answered ‘writing’, 19% said ‘presenting’, 16% said ‘researching’, and the remaining 10% answered with ‘listening’. Finally, question ten 10) asked students which type of activities they would like more of in class, and 39% responded with ‘vocabulary building activities’, 35% said ‘discussions’, 13% said presentations, and 6% responded with both ‘video activities’ and ‘researching’.

4.2.1.3 Student questionnaire – Section 3: Open ended questions

The third section of the questionnaire consisted of four questions asking the students their opinions about the class in the form of open-ended questions. The students were encouraged to expand and provide reasoning in their answers. The responses have been thematically coded to between three to five themes per question response.

The eleventh question 11) asked students which part of the lessons they enjoyed most and why, to which 48% responded with ‘activities 1 & 2’, 23% said ‘discussions’, 19% said the video activity, 6% said the presentations, and the remaining 3% answered ‘quizzes’. The enjoyment found in “filling in the blanks” was a common reason given for selecting ‘activities 1 & 2’. The twelfth question 12) asked students if they used their iPads more in these (TED) classes than other classes and why, to which 77% answered ‘yes’, 23% were ‘not sure’, and no students answered ‘no’. The common reasons given for yes were; class activities, internet searches, and quizzes, while those who said no commonly reported that the iPad was “used the same as in other classes”. The thirteenth question 13) asked students if they thought Apple Classroom helped them learn more in TED classes and why, to which 77% said ‘yes’ and 23% were ‘not sure’, with 0% of students answering ‘no’. The main reasons given for yes answers included Apple Classroom helping students to focus, concentrate, and learn more, as well as giving the teacher control and reducing cheating. Ease-of-use, efficiency, and convenience were also mentioned here. Those who answered ‘not sure’ were largely positive, but had just not given it much thought, or had no strong feeling on the matter. Finally, the fourteenth question 14) Asked students if there was anything that they would

change, and why, to which 39% responded with ‘nothing’, 19% ‘more discussions, 16% ‘more presentations’, and 3% with more ‘videos’. The remaining 23% mentioned a variety of issues including class timing, increased level of vocabulary difficulty, a removal of tests, and greater levels of discussion control.

4.2.1.4 Student questionnaire summary

In summary, the results of the first section of the questionnaire showed students were very satisfied with the class content, iPad usage, and Apple Classroom usage and its ability to reduce cheating with between 52% and 77% of students ‘completely agreeing’ in all of the five satisfaction-related questions.

The results from the second section of the questionnaire which asked about skill development showed that researching (mentioned by 52%) and listening (mentioned by 45%) were believed to have been improved the most, while writing (mentioned by 39%) and presenting (mentioned by 29%) were seen to have had the least improvement. iPads were seen to help researching skills as mentioned by 74% of students, while students requested more speaking (mentioned by 32%), writing (mentioned by 23%), and presenting (mentioned by 19%). Lastly, the results showed that 39% of students would like more vocabulary activities, and another 35% would like more discussion activities.

Lastly, the results of the third section of the questionnaire showed that 48% of students found activities 1 & 2 to be the most enjoyable followed by discussions (23%), and the video activity (19%). Most students (77%) reported using their iPads more in TED classes than others due to its usefulness for internet searches, completing worksheets, and quizzes. The same percentage (77%) also reported that Apple Classroom helped them learn more as it helped student focus and concentration, teacher control, a reduction in cheating, and was convenient and easy to use. Finally, 39% of students answered that they would change ‘nothing’ if they had the chance, while 19% would add more discussions, 16% would add more presentations, and 23% would adjust

a variety of sundry issues including class timing, vocabulary difficulty levels, a removal of tests, and greater levels of discussion control.

4.2.2 Data Analysis of Semi-structured Interviews

The semi-structured interviews were held on completion of lesson 6 (after experiencing three lessons with no treatment and three lessons of treatment where Apple Classroom was used) and included eight questions related to the class content, iPad usage, Apple Classroom, and cheatings and distractions. Each question prompted the student to expand on their opinions.

The first question 1) asked if students enjoyed TED classes and 100% of the students responded with a 'yes'. Common reasons for this were that they felt the topics to be interesting, lessons were fun and engaging, the students learned new things, and the lesson was not too stressful. The second question 2) asked students how well they thought TED made use of their iPads in class. 100% of students reported that they felt TED lessons made very good use of their iPads. The reasons listed included the following common points; iPads are good for google research, student usage can be controlled, smooth communication with the teacher, and that graphic-based lesson content was a good match for the iPad. The third question 3) asked students which activities they enjoyed most, and why. 87% of students responded with either activity 1, activity 2, or both, with reasons given being that researching for answers and filling in vocabulary blanks was enjoyable. The fourth question asked students what their opinion was about Apple Classroom after the six lessons. 84% of students reported a positive opinion, highlighting reasons such as it being a good way for the teacher to have control, helping students to focus, reducing / preventing cheating, and being easy to use. The remaining 16% of students reported a neutral opinion with comments like "Apple Classroom is a bit scary, but it's ok" being mentioned. Zero students reported a negative opinion regarding Apple Classroom.

The fifth question 5) asked students if they felt Apple Classroom made TED lessons more productive. 87% of students responded ‘yes’ that Apple Classroom did make the lessons more productive, due to it helping students to focus, facilitate collaboration, provide control and supervision, and being easy to use. 10% of students responded that they were unsure, and 3% responded that they felt Apple Classroom did not make the lessons more productive. The sixth question 6) asked students if they felt that Apple Classroom reduced distractions in TED classes, and why or why not. 84% of students reported that ‘yes’ they felt Apple Classroom reduced distractions due to; the teacher being able to monitor student screens, being locked into an App and the teacher being able to lock all iPads if needed, and finally preventing the playing of games. 10% of students reported that they were unsure if Apple Classroom reduced distractions, and 6% said they felt that Apple Classroom did not reduce distractions because distractions exist outside the iPad (smartphones, for example). The seventh 7) question asked students if they felt that Apple Classroom reduced cheating during TED quizzes, and why or why not. 77% of students reported that they felt Apple Classroom reduced cheating in quizzes. The main reasons given were the ability for the teacher to lock the tablet into an App / lockout other Apps and to view students’ iPad screens. One student summed it up strongly stating, “Yes, we absolutely can’t cheat”. 19% of students said they were not sure, citing they fact that they could still cheat through their phones or other methods if need be. The final 3% of students responded no, also claiming that it was still possible to cheat. Finally, the eighth question 8) asked students if they would prefer to take TED classes with Apple Classroom or without, and why. 84% of students responded that they would prefer to take TED classes with Apple Classroom. The main reasons given were the control of cheating and limiting of distractions, the increased perceived focus and concentration the students had, and because it worked well and wass easy (the teacher controls the device, opens the app, ends the test etc.). 13% of students responded that they were not sure, with the main feeling reported being ‘indifference’. The remaining 3% of students answered no, stating that they were afraid of the supervision even if they had nothing to hide.

4.2.2.1 Semi-structured interviews summary

In summary, the results of the semi-structured interviews showed that students were very satisfied with Apple Classroom, with 84% holding a positive opinion. In addition, 77% of students reported that they felt Apple Classroom reduced cheating, and finally 84% of students reported that they would prefer to take TED lessons with Apple Classroom (as opposed to without), given the choice.

4.2.3 Data Analysis of Classroom Observations

The classroom observations were carried out over various points throughout lessons 1-3 and lessons 4-6 by three experts in the field, as well as three observations by the researcher. The observations differed in the fact that they observed different parts of the lesson such as regular class activities, quizzes, discussions, or a video activity.

The first question 1) asked the lesson observer if the learners actively made use of their iPads when completing TED tasks, to which 100% of observations responded yes. The second question 2) asked the observer if the learners actively utilized iPads for internet searches and language definitions, to which 100% of observations responded yes. The third question 3) asked the observer if the learners actively utilized their iPads for video activity viewing, to which 33% of observations responded with yes, and 66% with no. The fourth question 4) asked the observer if the learners actively utilized their iPads for presentation collaboration work, to which 33% said yes, and 66% said no. The fifth question 5) asked the observer if learners actively used iPads for presentation delivery, to which 100% of observations responded no. The sixth question 6) asked the observer if iPad use encourages distractions such as social media, to which 100% of observations responded yes. The seventh question 7) asked the observer if iPad use increases student focus and attention on the teacher, to which 83% of observations responded with yes, and 17% with no. The eighth question 8) asked the observer if iPad use encouraged cheating during the quizzes, to which 33% of observations responded yes, and 67% of observations responded no.

In summary, 100% of lessons were observed to make good use of iPads where learners were seen to be actively using the devices for research and language definitions. 0% of lessons observed saw learners using their iPads for presenting tasks, and 100% of observations reported that iPad use encouraged distractions such as social media and games.

4.2.4 Summary of Qualitative Data Analysis

In summary, the concluding results from the questionnaire can be highlighted through the finding that 77% of students believed Apple Classroom helped them learn more in TED classes. The concluding results from the semi-structured interview are well represented by the finding that 84% of students reported that they would prefer to take TED classes with Apple Classroom, and that 77% of students reported that they felt Apple Classroom reduced cheating. Finally, 100% of lesson observations found that learners actively used their iPads in TED classes. These points are illustrated by table 4.9 below.

Table 4.9 Summary of Qualitative Data Analysis

Qualitative Instrument	**Summary Finding**
Student Questionnaire	**77%** of students believed Apple Classroom helped them learn more in TED classes
Semi-structured Interviews	**84%** of students reported that they would prefer to take TED classes with Apple Classroom **77%** of students reported that they felt Apple Classroom reduced cheating
Classroom Observations	**100%** of lesson observations found that learners actively used their iPads in TED classes

CHAPTER 5

CONCLUSION, DISCUSSION AND RECOMMENDATION

This chapter presents the conclusion from the results of the data analysis, the discussion of the findings, as well as recommendations for future studies.

5.1 CONCLUSION

The objectives of this study were:

1) To examine the effectiveness of using Apple Classroom to improve tertiary students' English language learning achievement.

2) To investigate tertiary students' learning satisfaction of using Apple Classroom in an English language class.

In order to achieve these objectives quantitative data was collected through two sets of learning achievement tests, and qualitative data was collected through a student questionnaire, semi-structured interviews with students, and classroom observations.

5.1.1 The Results of the Learning Achievement Test Data Analysis

The first objective was to examine the effectiveness of using Apple Classroom to improve tertiary students' English language learning achievement. In order to determine the effectiveness of using Apple Classroom, two sets of pretests and posttests were conducted over six lessons delivered to 31 tertiary EFL students. The first pretest & posttest was conducted prior to and upon completion of lessons 1-3 without the use of Apple Classroom (no treatment), while the second pretest & posttest was conducted prior to and upon completion of lessons 4-6 where Apple Classroom was used (treatment).

For the first set of lessons (1-3) the mean ($\bar{x}$) of the pretest scores was 64.77, while the posttest mean ($\bar{x}$) score was 92.00 (sig. of .001). This showed a score improvement of 27.23. The second set of lessons (4-6) resulted in a pretest mean ($\bar{x}$) score of 60.77 and a posttest mean ($\bar{x}$) score of 81.35. The score improvement in this case was 21.58. The key result here is that the score improvement was greater in classes with no treatment (lessons 1-3) than it was in classes with the treatment of Apple Classroom (lessons 4-6).

These findings suggest that 'no' the use of Apple Classroom would not actually improve the learning achievement test scores of the students.

5.1.2 The Results of the Student Questionnaire Data Analysis

The purpose of the student questionnaire was to gather qualitative data to address the second objective which was to investigate tertiary students' learning satisfaction of using Apple Classroom in an English language class. Overall, the results showed that 77% of students reported that Apple Classroom helped them learn more due to it helping focus and concentration, reduce cheating, provide control for the teacher, and its ease-of-use.

These findings contribute to answering the second research question which asked if there would be any learning satisfaction for tertiary students when using Apple Classroom in English language classes.

5.1.3 The Results of the Semi-Structured Student Interviews Data Analysis

The objective of the semi-structured interviews with the students was to gather qualitative data in an open-ended manner to also address the second objective regarding learning satisfaction. The overall results showed that 84% of students would prefer to

take TED classes with Apple Classroom as opposed to without (given the choice), and that 77% of students reported that they felt Apple Classroom reduced cheating.

These findings contribute strongly to the second research objective regarding student learning satisfaction with Apple Classroom.

5.1.4 The Results of the Classroom Observation Data Analysis

The objective of the classroom observations was to gather additional qualitative data from the instructional perspective to help address the second learning satisfaction objective. The observed lesson components included student group work, video viewing, presentations, and quizzes – however, for a variety of reasons, no single observation contained all of these elements together. The overall results showed that 100% of lesson observations reported students to be making active use of iPads, while also reporting that 100% of lessons involved situations where iPad use did encourage distractions such as social media and games.

These findings contribute to answering the second research objective about learning satisfaction while using Apple Classroom.

5.2 DISCUSSION

The study had two major findings. The first was that the use of Apple Classroom did not significantly improve the learning achievement of students based on their pretest and posttest quantitative data. The second finding was that a large majority of students would prefer to take TED classes with Apple Classroom.

5.2.1 Use of Apple Classroom Did Not Demonstrate Increased Learning Achievement

This initial finding was no surprise to the researcher. The learning achievement mean ($\bar{x}$) test score improvement without Apple Classroom was 27.23, or 42% of the pretest mean ($\bar{x}$) score, whereas the learning achievement mean ($\bar{x}$) test score improvement with Apple Classroom was 21.58 or 36% of the pretest mean ($\bar{x}$) score. This means that the use of Apple Classroom did not significantly increase students learning achievement, in fact it was reduced under the treatment of Apple Classroom. Cheating is a variable the researcher believes has played a large part in this situation. Apple Classroom provides robust methods of limiting digital cheating, and the issue of cheating, and its reduction through the use of Apple Classroom is mentioned repeatedly in the qualitative data gathered from students. Despite this, it can be said that the study has found that students are not likely to score higher in terms of learning improvement simply by using Apple Classroom in classes.

5.2.2 Students Love Apple Classroom

84% of students reporting to prefer to take TED classes with Apple Classroom was a significant finding for this study. It suggests there are very high levels of student satisfaction with using Apple Classroom. The reasons listed for this preference were expanded upon by the students in the semi-structured interviews and include; the fact that 1) Apple Classroom helps focus and concentration as students do not need to waste time and energy trying to cheat, 2) Overall cheating is perceived to be greatly reduced when using Apple Classroom, 3) It provides control for the teacher meaning students don't actually have to do anything - to start quizzes for example, and class time is saved as the attention of all students can be gained in an instant, and 4) the ease-of-use for the student of Apple Classroom as it operates similar to a Wi-Fi hotspot – instantly connecting students to the class. Consequently, it can be concluded that the results of the quantitative data analysis are to some degree misleading, given the issue of cheating being raised so often. This repeated direct referencing from students would suggest that

it is reasonable to assume that the pretest and posttest conducted without Apple Classroom saw a degree of cheating.

5.3 RECOMMENDATIONS

The study found that Apple Classroom was well received by students with a very high satisfaction rate. While pretest and posttest results did not suggest that Apple Classroom increased learning achievement, it must certainly be noted that a large number of students mentioned cheating as an issue which was controlled/reduced by Apple Classroom. Thus, it could be said that Apple Classroom has certainly shown that it improved the learning satisfaction of students, and partly as a result, it has also shown to be preferred in terms of learning achievement – if the desire to reduce cheating is taken into account.

As such, it is recommended that further studies be carried out to confirm the value added by Apple Classroom. It must be noted, however, that this study was conducted in an environment where University-issued iPads were used by students in a BYOD (Bring your own device) environment. Institutions which issue and also retain ownership of mobile devices would likely have MDM (Mobile device management) software functionality which may make Apple Classroom redundant.

5.3.1 Recommendation for Further Practice

It is strongly recommended that any EFL teachers wishing to utilize iPads in BYOD classrooms use Apple Classroom, especially in the case of online tests using Apps such as Socrative (even if the rest of the classwork does not involve the use of iPads).

5.3.2 Recommendation for Further Studies

As at the time of this study no academic research on the use of Apple Classroom in tertiary BYOD settings was identified by the researcher, further research is recommended. Increasingly-digital classrooms are becoming commonplace in our increasingly-digital lives and iPads appear to be practical choices in many situations. Where they are used in BYOD tertiary educational settings, further research is recommended to add to the results of this study and provide a greater perspective to the issue of controlling student-owned iPads in a tertiary classroom environment.

5.3.3 The ABCs of Using Apple Classroom with iPads in BYOD Tertiary English Classes

Finally, the researcher wishes to create a simple foundational model for the use of Apple Classroom in Tertiary English classes where a BYOD system is in place. It centers on the ideas of ensuring that students are aware of the supervision functionality of Apple Classroom, that the teacher is committed to developing content which will make specific use of iPad functionality, and finally that the use of Apple Classroom is consistent throughout all lessons in order to create a 'stable digital environment'.

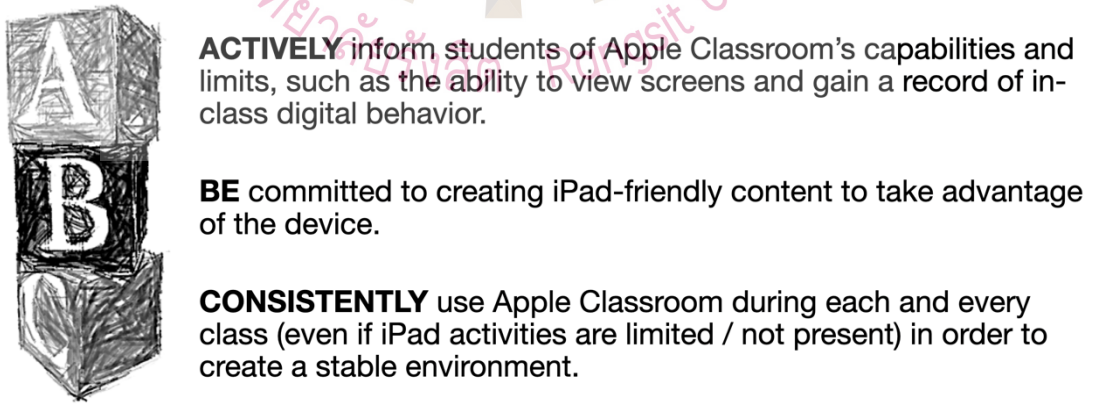

Figure 5.1 The ABCs of Using Apple Classroom with iPads in BYOD Tertiary English Classes

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APPENDICIES

APPENDIX A
CERTIFICATE OF APPROVAL

COA. No. RSUERB2020-095

Certificate of Approval
By
Ethics Review Board of Rangsit University

COA. No.	COA. No. RSUERB2020-095
Protocol Title	Apple Classroom: Managing Tertiary English Classes with iPads
Principle Investigator	Tim Boundy
How to review	Expedited Review
Affiliation	International College, Rangsit University
Approval includes	1. Project proposal 2. Information sheet 3. Informed consent form 4. Data collection form/Program or Activity plan
Date of Approval:	30 / 11 / 2020
Date of Expiration:	30 / 11 / 2022

The prior mentioned documents have been reviewed and approved by Ethics Review Board of Rangsit University based Declaration of Helsinki, The Belmont Report, CIOMS Guideline and International Conference on Harmonization in Good Clinical Practice or ICH-GCP

Signature.....

(Supachai Kunaratnpruk, M.D.)

Chairman, Ethics Review Board for Human Research

APPENDIX B

PARTICIPANT INFORMATION

RSU-ERB.004-1 เอกสารชี้แจงผู้เข้าร่วมการวิจัยอายุ 18 ปีขึ้นไป–ไทย
(Participant Information Sheet 18+)

✓ ต้นฉบับ ☐ การปรับเปลี่ยนครั้งที่ _____ วันที่ Edited: November 2020

ในเอกสารนี้อาจมีข้อความที่ท่านอ่านแล้วยังไม่เข้าใจ โปรดสอบถามหัวหน้าโครงการวิจัย หรือผู้แทนให้ช่วยอธิบายจนกว่าจะเข้าใจดี ท่านจะได้รับเอกสารนี้ 1 ฉบับ นำกลับไปอ่านที่บ้านเพื่อปรึกษาหารือกับญาติพี่น้อง เพื่อนสนิท หรือผู้อื่นที่ท่านต้องการปรึกษา เพื่อช่วยในการตัดสินใจเข้าร่วมการวิจัย

ชื่อโครงการ(ภาษาไทย) Apple Classroom: Managing Tertiary English Classes With iPads

ชื่อผู้วิจัย Timothy Boundy – Contactable 24hrs on 093 147 1498

สถานที่วิจัยสถานที่ทำงานและหมายเลขโทรศัพท์ที่ติดต่อได้ทั้งในและนอกเวลาราชการได้ตลอด 24 ชั่วโมง

52/482-5 Ek Rhaksin 5 Street, Lak Hok, Mueang Pathum Thani District, Pathum Thani, 12000, Thailand

ผู้ให้ทุน Scholarship Student

This research has been certified by the Research Ethics Office Of Rangsit University, 52/347 Building 1, 5th floor , Room 504 Amphoe Muang Lak Hok Pathum Thani 12000, Tel : 02-791-5728, Fax : 02-791-5704, Email : rsuethics@rsu.ac.th . The Office can be contacted for any inquiries relating to this research. I wish to conduct this study as the use of iPads in Tertiary English classes is relatively new and untested. I am looking for general data which can be used to apply to future courses. This will not be data specific to students, and the data will be kept on an encrypted hard disk on the researchers laptop and destroyed at the completion of the study. The researcher is contactable 24hrs a day on 093 147 1498 if any additional information is required.

The participants are all undergraduate students who are studying a range of courses in English in the International College of a private university in Thailand.

ท่านจะได้ประโยชน์ทางตรงจากงานวิจัย หรือ อาจจะไม่ได้รับประโยชน์จากงานวิจัยนี้โดยตรง กล่าวคืองานวิจัยนี้ได้ผลดีจะเป็นประโยชน์ คือ The benefits of. The study will be 1) to better understand the implications of students using Apple Classroom with their iPads, and then be able to develop a solid framework which can be applied in future curriculum.

งานวิจัยนี้จะมีผู้เข้าร่วมการวิจัยนี้ทั้งสิ้นประมาณ 31 คน

ระยะเวลาที่ใช้ในเข้าร่วมการวิจัย 6 weeks (ชั่วโมง/นาที/วัน/ครั้ง)

The interviews were held for a maximum of 5 minutes per student, and the student questionnaires took approximately 7 minutes to be completed and were collected by staff member and then given to the researcher. The questionnaires did have the student ID number present simply for validation purposes and was not connected to any other student information.

ความเสี่ยงที่อาจจะเกิดขึ้นเมื่อเข้าร่วมการวิจัย *กรณีท่านอาจรู้สึกอึดอัด ไม่สบายใจ เครียด กับบางคำถาม ท่านมีสิทธิ์ที่จะไม่ตอบคำถามเหล่านั้นได้ หรือหากท่านรู้สึกว่าเป็นการเสียเวลา ใช้เวลาไม่เหมาะสม ท่านสามารถขอหยุดการเก็บบันทึกข้อมูลได้ตลอดเวลา*

หากท่านไม่เข้าร่วมในการวิจัยนี้ก็จะไม่มีผลต่อ *class grades and assessments*

กรณีที่รู้สึกไม่สบายกาย หรือมีผลกระทบต่อจิตใจของท่านเกิดขึ้นระหว่างการวิจัยท่านจะแจ้งผู้วิจัยโดยเร็วที่สุดและหากท่านมีข้อข้องใจที่จะสอบถามที่เกี่ยวข้องกับการวิจัย หรือหากเกิดเหตุการณ์ไม่พึงประสงค์จากการวิจัยกับท่าน ท่านสามารถติดต่อได้ที่ Timothy Boundy หมายเลขโทรศัพท์ 083 147 1498 ได้ตลอด 24 ชั่วโมง

หากมีข้อมูลเพิ่มเติมทั้งด้านประโยชน์และโทษที่เกี่ยวข้องกับการวิจัยนี้ ผู้วิจัยจะแจ้งให้ทราบโดยรวดเร็วไม่ปิดบัง

RSU-ERB.009 เอกสารชี้แจงผู้เข้าร่วมการวิจัยสำหรับการวิจัยด้วยแบบสอบถาม (Self-administered questionnaire) -ไทย

☐ ต้นฉบับ ☐ การปรับเปลี่ยนครั้งที่..... วันที่...../...../.....

เรียน ผู้ตอบแบบสอบถามทุกท่าน

ด้วยดิฉัน/กระผม……TIMOTHY BOUNDY……นักศึกษาปริญญาโทสาขา.....M.Ed (C & I)..... คณะ.....Faculty of Education..... มหาวิทยาลัยรังสิต มีความประสงค์ทำวิทยานิพนธ์เรื่อง “Apple Classroom: Managing Tertiary English Classes with iPads.....” ซึ่งประโยชน์ที่คาดว่าจะได้รับคือ .....This research will provide a greater understanding regarding the effective use of tablets in EFL classrooms.

ท่านได้รับเชิญให้เข้าร่วมการวิจัยนี้เพราะ .....The participants are all undergraduate students who are studying a range of courses in English in the International College of a private university in Thailand. ในการนี้ผู้วิจัยมีความจำเป็นต้องเก็บรวบรวมข้อมูลโดยใช้แบบสอบถามเรื่อง “Apple Classroom: Managing Tertiary English Classes with iPads.” ซึ่งประกอบด้วยคำถาม3……. ส่วนจำนวน .....14.....ข้อ ดังนี้

1. **Student Questionnaire Questions:**

(multi-choice)

1. The TED content activities are interesting and relevant
2. iPads are useful for TED classes
3. iPads help students learn more in TED classes
4. Apple Classroom helps the teacher manage the class properly
5. Apple Classroom reduces cheating
6. TED classes help me improve my _____ the most.
7. TED classes help me improve my _____ the least.
8. iPads help me most in TED classes with my _____.
9. I would prefer more TED class time to be spent on _____.
10. I would prefer more _____ activities in class.

(open-ended)

11. N/A
12. What part of TED lessons do you enjoy doing the most? Why?
13. Do you use your iPads more in TED classes than other classes? Why?
14. Do you think Apple Classroom in TED helps you learn more? Give reasons
15. If you could change something about the TED lessons, what would you change and why?

APPENDIX C

EXPERTS WHO VALIDATED INSTRUMENTS

Name of Experts who Validated the Instruments

Sl. No.	**Name**	**Position Title**	**Institute**
1	Edward Devere Bacon	Head of General Education	Rangsit University (RIC), Thailand
2	Dr. Bruce Weeks	Senior Lecturer	Rangsit University (RIC), Thailand
3	Gary Torremucha	Lecturer	Rangsit University (RELI), Thailand

APPENDIX D

IOC OF LESSON PLANS

Item Objective Congruence (IOC) for Lesson Plans by the Experts

Sl. No.	Attributes	Ratings by Experts			IOC Average	Remarks
		#1	#2	#3		
1	Lesson Plan 1	+1	+1	+1	+1	Accepted
2	Lesson Plan 2	+1	+1	+1	+1	Accepted
3	Lesson Plan 3	+1	+1	+1	+1	Accepted
4	Lesson Plan 4	+1	+1	+1	+1	Accepted
5	Lesson Plan 5	+1	+1	+1	+1	Accepted
6	Lesson Plan 6	+1	+1	+1	+1	Accepted
Average					+1	Accepted

APPENDIX E

LESSON PLANS & CONTENT

Lesson 1:

Lesson Plan: 1 **Lesson time:** 2.5 hrs (150 mins)

Subject: English in Technology Entertainment & Design (TED)

Topic: Lesson #1 Technology: Transportation

Lesson Goal: For students to be able to proficiently present their academic opinion regarding a chosen transportation issue

Lesson Objectives:
- to build transportation-related English vocabulary & comprehension skills
- to develop internet searching skills relating to transportation in English
- to develop discussion skills relating to transportation in English
- to develop academic presenation skills regarding transportation in English

Time	Lesson Component	Teacher Activity	Learner Activity
50 mins (pre-task)	(i) Introduction	Greeting & topic introduction	Greeting
	(ii) Activity 1 - Vocab. warm-up	Activity lead in and example questions	Complete vocabulary activity 1
	(iii) Activity 2 - Vocab. development	Activity lead in and example questions	Complete vocabulary activity 2
	(iv) Activity 3 - Group discussion	Focus group discussion on video content	Watch video and discuss topic
85 mins (task)	(v) Activity 4 - Group presentations	Provide guidance and direction	Create & deliver presentation
15 mins (post-task)	(vi) Lesson summary & feedback	Summarize key learning, give feedback	Confirm learning goals have been met

Lesson 2:

Lesson Plan: 2 **Lesson time:** 2.5 hrs

Subject: English in Technology Entertainment & Design (TED)

Topic: Lesson #2 Technology: Communication

Lesson Goal: For students to be able to proficiently present their academic opinion regarding a chosen communication issue

Lesson Objectives:
- to build communication-related English vocabulary & comprehension skills
- to develop internet searching skills relating to communication in English
- to develop discussion skills relating to communication in English
- to develop academic presenation skills regarding communication in English

Time	Lesson Component	Teacher Activity	Learner Activity
50 mins (pre-task)	(i) Introduction	Greeting & topic introduction	Greeting
	(ii) Activity 1 - Vocab. warm-up	Activity lead in and example questions	Complete vocabulary activity 1
	(iii) Activity 2 - Vocab. development	Activity lead in and example questions	Complete vocabulary activity 2
	(iv) Activity 3 - Group discussion	Focus group discussion on video content	Watch video and discuss topic
85 mins (task)	(v) Activity 4 - Group presentations	Provide guidance and direction	Create & deliver presentation
15 mins (post-task)	(vi) Lesson summary & feedback	Summarize key learning, give feedback	Confirm learning goals have been met

Lesson 3:

Lesson Plan: 3 **Lesson time:** 2.5 hrs

Subject: English in Technology Entertainment & Design (TED)

Topic: Lesson #3 Technology: Computers

Lesson Goal: For students to be able to proficiently present their academic opinion regarding a chosen computer issue

Lesson Objectives:
- to build communication-related English vocabulary & comprehension skills
- to develop internet searching skills relating to communication in English
- to develop discussion skills relating to communication in English
- to develop academic presenation skills regarding communication in English

Time	Lesson Component	Teacher Activity	Learner Activity
50 mins (pre-task)	(i) Introduction	Greeting & topic introduction	Greeting
	(ii) Activity 1 - Vocab. warm-up	Activity lead in and example questions	Complete vocabulary activity 1
	(iii) Activity 2 - Vocab. development	Activity lead in and example questions	Complete vocabulary activity 2
	(iv) Activity 3 - Group discussion	Focus group discussion on video content	Watch video and discuss topic
85 mins (task)	(v) Activity 4 - Quiz # 1	Provide guidance and preparation	Complete Quiz # 1 - Technology
15 mins (post-task)	(vi) Lesson summary & feedback	Summarize key learning, give feedback	Confirm learning goals have been met

Lesson 4:

Lesson Plan: 4 **Lesson time:** 2.5 hrs

Subject: English in Technology Entertainment & Design (TED)

Topic: Lesson #4 Entertainment: Performing Arts

Lesson Goal: For students to be able to proficiently present their academic opinion regarding a chosen performing arts issue

Lesson Objectives:
- to build communication-related English vocabulary & comprehension skills
- to develop internet searching skills relating to communication in English
- to develop discussion skills relating to communication in English
- to develop academic presenation skills regarding communication in English

Time	Lesson Component	Teacher Activity	Learner Activity
50 mins (pre-task)	(i) Introduction	Greeting & topic introduction	Greeting
	(ii) Activity 1 - Vocab. warm-up	Activity lead in and example questions	Complete vocabulary activity 1
	(iii) Activity 2 - Vocab. development	Activity lead in and example questions	Complete vocabulary activity 2
	(iv) Activity 3 - Group discussion	Focus group discussion on video content	Watch video and discuss topic
85 mins (task)	(v) Activity 4 - Group presentations	Provide guidance and direction	Create & deliver presentation
15 mins (post-task)	(vi) Lesson summary & feedback	Summarize key learning, give feedback	Confirm learning goals have been met

Lesson 5:

Lesson Plan: 5 **Lesson time:** 2.5 hrs

Subject: English in Technology Entertainment & Design (TED)

Topic: Lesson #5 Entertainment: Film

Lesson Goal: For students to be able to proficiently present their academic opinion regarding a chosen film issue

Lesson Objectives:
- to build communication-related English vocabulary & comprehension skills
- to develop internet searching skills relating to communication in English
- to develop discussion skills relating to communication in English
- to develop academic presenation skills regarding communication in English

Time	Lesson Component	Teacher Activity	Learner Activity
50 mins (pre-task)	(i) Introduction	Greeting & topic introduction	Greeting
	(ii) Activity 1 - Vocab. warm-up	Activity lead in and example questions	Complete vocabulary activity 1
	(iii) Activity 2 - Vocab. development	Activity lead in and example questions	Complete vocabulary activity 2
	(iv) Activity 3 - Group discussion	Focus group discussion on video content	Watch video and discuss topic
85 mins (task)	(v) Activity 4 - Group presentations	Provide guidance and direction	Create & deliver presentation
15 mins (post-task)	(vi) Lesson summary & feedback	Summarize key learning, give feedback	Confirm learning goals have been met

Lesson 6:

Lesson Plan: 6 **Lesson time:** 2.5 hrs

Subject: English in Technology Entertainment & Design (TED)

Topic: Lesson #6 Entertainment: TV

Lesson Goal: For students to be able to proficiently present their academic opinion regarding a chosen TV issue

Lesson Objectives:
- to build communication-related English vocabulary & comprehension skills
- to develop internet searching skills relating to communication in English
- to develop discussion skills relating to communication in English
- to develop academic presenation skills regarding communication in English

Time	Lesson Component	Teacher Activity	Learner Activity
50 mins (pre-task)	(i) Introduction	Greeting & topic introduction	Greeting
	(ii) Activity 1 - Vocab. warm-up	Activity lead in and example questions	Complete vocabulary activity 1
	(iii) Activity 2 - Vocab. development	Activity lead in and example questions	Complete vocabulary activity 2
	(iv) Activity 3 - Group discussion	Focus group discussion on video content	Watch video and discuss topic
85 mins (task)	(v) Activity 4 - Quiz # 2	Provide guidance and preparation	Complete Quiz # 2 - Entertainment
15 mins (post-task)	(vi) Lesson summary & feedback	Summarize key learning, give feedback	Confirm learning goals have been met

LESSON 1

TECHNOLOGY
ENTERTAINMENT
DESIGN

Transport

ENL / ILE 126
Lesson 1 / 15

1. Activity (I)

"A smooth sea never made for a skilled sailor"
Franklin D. Roosevelt

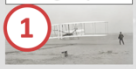
a) Introduction - What is the meaning of transport? Complete the definition below:

1. Transport: *Noun* (U) - The movement of GOODS or PEOPLE from one P _ _ _ _ to another.

b) The history of transport has been driven by technological innovation. Connect 3 transport examples below to each country on the left:

1. USA
2. Germany
3. Russia / USSR:
4. UK:
5. Japan:

Wright Flyer — 1



SŽD Eel2 Locomotive — 3

0 Series Bullet Train

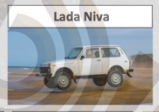
Antonov AN-225 *Mriya*

USS *Nautilus*

Electric Car - *Model X*

Porsche 901

Lada Niva



LZ-129 *Hindenburg*

Aircraft Carrier *Höshō*

Electric Car - T. Parker

Mamachari Bicycle

De Havilland *Comet 1 Prototype*

Daimler *Reitwagen*

Segway PT X2

TECHNOLOGY
ENTERTAINMENT
DESIGN

Transport

ENL / ILE 126
Lesson 1 / 15

3. Activity (II)

a) Transport forms - Complete the sentences:

1. A) Container SHIPS have been used since the 1950 s, transporting goods in TEU or TWENTY-foot equivalent units.

2. A) In the early 1900s in the US, 40% of cars were powered by STEAM, 38% by ELECTRICITY _ , and 22% by petrol.

3. A) Early trains were STEAM-powered, but most modern trains are DIESEL or ELECTRIC powered.

4. A) In 1903 the Wright brothers first flew the Wright FLYER. It was flown in NORTH CAROLINA, (US).

B) The busiest port in the world is S _ _ _ _ _ _ _, in C _ _ _ _ . In 2019, over 43.3 million T _ _ s passed through the port.

C) As of 2019, the Symphony of the Seas is the biggest C _ _ _ _ _ ship in the world. It can carry 6 , _ _ _ people and 2 , _ _ _ crew.

B) According to JATO, over 86 million cars were sold in 2018, with the top 3 brands being T _ _ _ _ _ , V _ _ _ _ _ _ _ _ _ , and F _ _ _ .

C) RHT or R _ _ _ _ - H _ _ _ T _ _ _ _ _ _ is used in 1 _ _ countries and territories while L _ _ is used in the remaining 7 _ .

B) The railway speed record is held by the L _ series M _ _ _ _ _ train from J _ _ _ _ (2019). It can reach speeds of up to _ _ _ km/h.

C) Thailand has an aboveground R _ _ _ system, as well as both a S _ _ _ _ _ system and an E _ _ _ _ _ _ _ railway in Bangkok.

B) Aircraft are often powered by P _ _ _ _ _ _ _ _ , rotorcraft, J _ _ , R _ _ _ _ _ , or even hot air.

C) As of 2019, the largest passenger plane is the A _ _ _ _ _ A380. It can carry up to _ _ _ passengers, and has a range of 1 _ , _ _ _ km.

LESSON 1 (CONTINUED)

TECHNOLOGY
ENTERTAINMENT
DESIGN

Transport

ENL / ILE 126
Lesson 1 / 15

5. Transport (Group Discussion - The Causes of Traffic)

Like most big cities, Bangkok suffers from the problem of traffic. But what causes traffic, and how can it be improved?

a) Watch the video and answer the questions below:

The Simple Solution to Traffic
CGP Grey 31/10/2016 - Youtube (4:29)
** Click twice to play video*

1. What causes traffic?
2. What is a 'traffic snake'?
3. How can traffic be improved?

LESSON 2

TECHNOLOGY
ENTERTAINMENT
DESIGN

Communication

ENL / ILE 126
Lesson 2 / 15

1. Activity (I)

"Cell phones are so convenient that they're an inconvenience"
Haruki Murakami

a) Introduction - What is the meaning of communication? Complete the definition below:

1. Communication: *Noun* (U) - A PROCESS by which I _____ is exchanged between I _____.

b) Communication and related technology has changed significantly over the last 100 years. Connect 4 images below to each medium on the left:

1. Telephone
2. Radio
3. Cell Phone
4. Sat Phone

TECHNOLOGY
ENTERTAINMENT
DESIGN

Communication

ENL / ILE 126
Lesson 2 / 15

3. Activity (II)

a) Mediums - Complete the sentences:

1. A) Alexander Graham BELL made the first long distance TELEPHONE call on February 12th, 1 ___ in the US.

2. A) Radio began in the early 1900s when VOICE was first transmitted W _____.

3. A) The first mobile phone call was made in 1973 by MARTIN COOPER, who worked for M _____ (US).

4. A) INMARSAT (UK), founded in 1979, is the oldest S _____ Phone network operator.

B) The world is connected by telephone through the PSTN, which stands for P ___ S _____ T _____ Network.
C) S _____ telephone cables run under the oceans, and most telephone traffic is between A ___, the US, & E _____.

B) A radio signal, or wave, is defined by its Wavelength, A _____, F _____, and S ____.
C) Most radio is Amplitude M _____ (AM), Frequency M _____ (FM), or a D _____ Audio Broadcast (DAB).

B) Mobile phones are also called C ___ phones, because they operate using a N _____ of connected radio 'C ___ s'.
C) S _____ use a mobile operating S _____ (OS). Android (OS) is the leader with a market S ____ of approx. 85% (2019).

B) The three other main operators are Iridium, T _____, and G _____. All together they have 138 S _____.
C) However, this type of communication is very E _____, and only one operator (I _____) offers full 'G _____ coverage'.

LESSON 2 (CONTINUED)

TECHNOLOGY
ENTERTAINMENT
DESIGN

Communication

ENL / ILE 126
Lesson 2 / 15

5. Communication (Group Discussion - Cell Phone Health Concerns)

Smartphones have become an extension of our lives and are very powerful devices. However, there is evidence to suggest that cell phone use can be harmful - in terms of blue light, or exposure to microwave radiation, for example.

a) Watch a video about the health concerns of using cell phones and answer the questions below in groups:

Can Cellphones Cause Cancer? Experts Surprised By Latest Tests
CBS Pittsburgh 29/03/2018 - Youtube (2:07)
** Click twice to play video*

1. Should we be concerned about our health when using mobile / cell phones?

2. Who is responsible for ensuring that phones are safe; manufacturers, users, or government?

TECHNOLOGY
ENTERTAINMENT
DESIGN

Communication

ENL / ILE 126
Lesson 2 / 15

7. Communication (Group Task Work - Lesson 2)

a) Form groups for the following presentation task *(each group member must present at least one slide)*

What is the most significant communication invention / development to date?

Your answer must include:
1) A description / background of the invention
2) What makes it the most significant / have the most potential *(+ 3 support points)*
3) Conclusion / Recommendation / Suggestion

Follow the structure below for your presentation (PowerPoint or Keynote) slides:

Title Slide	Description / Background	Support Point 1	Support Point 2	Support Point 3	Conclusion

LESSON 3

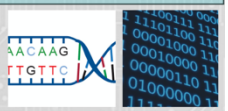
TECHNOLOGY
ENTERTAINMENT
DESIGN

Computers

ENL / ILE 126
Lesson 3 / 15

1. Activity (I)

"DNA is like a computer program but far, far more advanced than any software ever created"
Bill Gates



a) Introduction - What is a computer? Complete the definition below:

1. Computer: *Noun* (C) - A programmable, usually electronic, device that can STORE, retrieve, and process D _ _ _ .

b) Calculation (which is essentially what computers do) is nothing new, however the form computers have taken has changed enormously over the last 50 years. Connect 4 images below to each era on the left:

TECHNOLOGY
ENTERTAINMENT
DESIGN

Computers

ENL / ILE 126
Lesson 3 / 15

3. Activity (II)

a) Computer types - Complete the sentences:

1. A) Early business computers used PUNCH cards where a hole = *yes*, and no hole = *no*; a BINARY system.

B) There are four major tasks performed by a device which define it as a *computer*; I _ _ _, S _ _ _ _ _ _, P _ _ _ _ _ _ _ _ _, O _ _ _ _.

C) Currently, some computers are so powerful that they are called S _ _ _ _ _ _ _ _ _ _ _ _ _, the fastest is I _ _ 's 'Summit' in the US.

2. A) Personal Computers (PCs) began in The 1970s with computers like the IBM 5100 and the Datapoint 2 _ _ _.

B) However, it wasn't until the 19 _ _ s that personal computers really took off, with A _ _ _ _ 's *Macintosh* and I _ _ 's *PC*.

C) Most of the world's PCs run W _ _ _ _ _ _, and the largest M _ _ _ _ _ _ _ _ _ _ _ _ are HP, L _ _ _ _ _, Dell, Apple, and Acer.

3. A) While there were many attempts in the 1990 s like the PalmPILOT, the iPad was the first successful T _ _ _ _ _.

B) As of 2018, T _ _ _ _ _ _ made up 37% of computers sold, with L _ _ _ _ _ _ and D _ _ _ _ _ _ _ making up the remaining 63%.

C) Additionally, as of 2018, A _ _ _ _ _ _ (OS) holds a unit sales market share of 58%, while i _ _ has 23%, and W _ _ _ _ _ _ 19%.

4. A) In 2016, SOPHIA from Hanson ROBOTICS was the first robot in the world to be granted C _ _ _ _ _ _ _ _ _ _.

B) A _ _ _ _ _ _ _ _ I _ _ _ _ _ _ _ _ _ _ (AI) is intelligence demonstrated by M _ _ _ _ _ _ _.

C) AI produces *Deep Learning* which is applied in areas such as Speech R _ _ _ _ _ _ _ _ _ & N _ _ _ _ _ _ Language Processing.

LESSON 3 (CONTINUED)

TECHNOLOGY
ENTERTAINMENT
DESIGN

Computers

ENL / ILE 126
Lesson 3 / 15

5. Computers (Group Discussion - AI)

Artificial Intelligence is developing at an enormous rate, and becoming an ever-growing part of our daily lives. AI is great for processing massive amounts of data quickly and making predictions, but is there a downside - *What are the dangers / concerns of AI? Will we be put 'out of work' by super intelligent robots?*

a) Watch an interview with AI robot *Sophia* then answer the questions below in groups:

We Talked To Sophia — The AI Robot That Once Said It Would 'Destroy Humans'
Tech Insider 28/12/2017 - Youtube (3:20)
** Click twice to play video*

1. Should we be concerned about our the quality of information from AI - can it be trusted to be truthful?

2. Do you think AI will ever replace people? If so, what areas do you think will be replaced first?

TECHNOLOGY
ENTERTAINMENT
DESIGN

Computers

ENL / ILE 126
Lesson 3 / 15

7. Computers (Group Task Work - Lesson 3)

a) Form groups for the following presentation task *(each group member must present at least one slide)*

What is the most effective computer for a university student in 2020, a laptop *or* a tablet?

Your answer must include:
1) A description / background of a university student's 'computer needs' in 2020
2) Explain the key benefits of your chosen device *(+ 3 support points for your choice)*
3) Conclusion / Recommendation / Suggestion

Follow the structure below for your presentation (PowerPoint or Keynote) slides:

Title Slide	Description / Background	Support Point 1	Support Point 2	Support Point 3	Conclusion

LESSON 4

TECHNOLOGY
ENTERTAINMENT
DESIGN

Performing Arts

ENL / ILE 126
Lesson 5 / 15

1. Activity (I)

"Raise your words, not your voice.
It is rain that grows flowers, not thunder"
Rumi

a) **Introduction - What is performing arts? Complete the basic definition below:**

1. Performing Arts: *Noun* (Plural) - Types of ART, such as music & DANCE, that are performed for an A _ _ _ _ _ _ _.

b) **Performing Arts incorporate a wide range of artistic expressions, from spoken word to theatre, and dance. Connect 5 images below to each type of performing arts:**

1. Spoken Word
2. Theatre
3. Music
4. Dance

TECHNOLOGY
ENTERTAINMENT
DESIGN

Performing Arts

ENL / ILE 126
Lesson 5 / 15

3. Activity (II)

a) **Different Types - Complete the sentences:**

1. A) SPOKEN WORD includes art forms such as stand-up comedy, prose monologue, and P _ _ _ _ _.

2. A) The theatre of ANCIENT Greece consisted of three types of drama: tragedy, COMEDY, & the S _ _ _ _ play.

3. A) Ancient forms of MUSIC existed in EGYPT, Asia, and Greece, as well as in references found in the B _ _ _ _.

4. A) BALLET is a type of dance which originated in the RENAISSANCE period in the _ _ th century.

B) It is an O _ _ _ art that focuses on the aesthetics of word play such as I _ _ _ _ _ _ _ _ and voice I _ _ _ _ _ _ _ _ _.

C) The earliest known P _ _ _ whose name was recorded was the S _ _ _ _ _ _ _ artist named Enheduanna circa _ _ _ _ BC.

B) The G _ _ _ _ theatre was a theatre in London and was associated with William S _ _ _ _ _ _ _ _ _ _. It was built in 1 _ _ _.

C) Types of theatre include: plays, M _ _ _ _ _ _ _, dance theatre, S _ _ _ _ _ theatre, and P _ _ _ _ _ _ _.

B) Current modern genres include: rock, S _ _ _ / _ & _, funk, country, R _ _ _ _ _, hip hop, J _ _ _, and electronic.

C) Audiences attend a variety of venues, from S _ _ _ _ _ _ _ and amphitheatres, to concert H _ _ _ _ and small B _ _ _ and pubs.

B) Modern dance styles also include hip hop, tap, J _ _ _, and C _ _ _ _ _ _ _ _ _ _, and shows often include M _ _ _ _ & lighting.

C) The M _ _ _ _ _ _ _ is a famous dance popularised by M _ _ _ _ _ _ Jackson, but also recorded as far back as 1 _ _ _ by Cab Calloway.

LESSON 4 (CONTINUED)

TECHNOLOGY
ENTERTAINMENT
DESIGN

Performing Arts

ENL / ILE 126
Lesson 5 / 15

7. Performing Arts (Group Task Work - Lesson 5)

a) Form groups for the following presentation task *(each group member must present at least one slide)*

Will technology have a Positive or Negative effect on Performing Arts in the future, why?

Your answer must include:
1) A description / background of how you view performing arts in the future
2) The pros / cons of new technology in performing arts (3 x support points)
3) Conclusion / Recommendation / Suggestion

Follow the structure below for your presentation (PowerPoint or Keynote) slides:

Title Slide	Description / Background	Support Point 1	Support Point 2	Support Point 3	Conclusion

TECHNOLOGY
ENTERTAINMENT
DESIGN

Performing Arts

ENL / ILE 126
Lesson 5 / 15

7. Performing Arts (Group Task Work - Lesson 5)

a) Form groups for the following presentation task *(each group member must present at least one slide)*

Will technology have a Positive or Negative effect on Performing Arts in the future, why?

Your answer must include:
1) A description / background of how you view performing arts in the future
2) The pros / cons of new technology in performing arts (3 x support points)
3) Conclusion / Recommendation / Suggestion

Follow the structure below for your presentation (PowerPoint or Keynote) slides:

Title Slide	Description / Background	Support Point 1	Support Point 2	Support Point 3	Conclusion

LESSON 5

TECHNOLOGY
ENTERTAINMENT
DESIGN

Film

ENL / ILE 126
Lesson 6 / 15

1. Activity (I)

"When people ask me if I went to film school I tell them, 'No, I went to films'."
Quentin Tarantino

a) **Introduction - What is a film? Complete the basic definition below:**

1. Film: *Noun* (C) - A MOVIE or motion PICTURE - often viewed at a C _ _ _ _ _.

b) **Categories - Motion pictures are produced in a range of different 'types', from cartoon-like animations and big budget Hollywood movies to small independent productions. Connect 5 images below to each category on the left:**

1. Animation
2. Major Release
3. Documentary
4. Film Festival

TECHNOLOGY
ENTERTAINMENT
DESIGN

Film

ENL / ILE 126
Lesson 6 / 15

3. Activity (II)

a) **Different Types - Complete the sentences:**

1. A) The phénakisticope was introduced in 1833 and was the basis for the F _ _ _ book & CINEMATOGRAPHY.

B) The period from 1920 - 1960s is referred to as the G _ _ _ _ _ age of American A _ _ _ _ _ _ _, starting with S _ _ _ _ _ _ _ _ Willie.

C) The largest animation S _ _ _ _ _ _ in the world include P _ _ _ _, Walt Disney, DreamWorks, and S _ _ _ _ _ G _ _ _ _ _.

2. A) FEATURE films can be defined as being 40 minutes or longer, and made by industries such as H _ _ _ _ _ _ _ _.

B) The countries which produce the highest number of films are: I _ _ _ _, Nigeria, C _ _ _ _, the United States, and J _ _ _ _.

C) The G _ _ _ _ _ box office was worth $ _ _._ _ billion in 2018, with the oldest national F _ _ _ industry being Hollywood in the US.

3. A) A DOCUMENTARY film is a non-fiction motion PICTURE intended to document R _ _ _ _ _ _.

B) These films were originally called A _ _ _ _ _ _ _ _ films and were _ minute(s) or less, but over time they have become L _ _ _ _ _.

C) S _ _ _ _ _ media platforms such as Y _ _ _ _ _ _ have provided an avenue for growth of the documentary film G _ _ _ _.

4. A) A film FESTIVAL is an organised PRESENTATION of films in venues usually in the same C _ _ _ or region.

B) The oldest one in the world is the V _ _ _ _ _ film F _ _ _ _ _ _ _ which began in 1 _ _ _, and is still running today.

C) The most prestigious ones are called the "Big T _ _ _ _". These Include Venice, B _ _ _ _ _, and C _ _ _ _ _.

LESSON 5 (CONTINUED)

TECHNOLOGY
ENTERTAINMENT
DESIGN

Film

ENL / ILE 126
Lesson 6 / 15

5. Film (Group Discussion - *Fame & Fortune: the life of a celebrity*)

It is common knowledge that top film stars lead a life we believe is full of fame and fortune. From private jets to limousines - it appears that no expense is spared. However, is this type of life really one to aspire to? Do you think it would be a fulfilling life, and what would you 'have' at the end?

a) Watch the short video about a 'celebrity life' and answer the questions below:

The truth about being famous
Will Smith 26/11/2018 - Youtube (3:30)
** Click twice to play video*

1. Would you trade your 'normal' life for that of a 'celebrity' life, why / why not?

2. Would you allow / encourage your son or daughter become a potentially famous celebrity, why / why not?

TECHNOLOGY
ENTERTAINMENT
DESIGN

Film

ENL / ILE 126
Lesson 6 / 15

7. Film (Group Task Work - Lesson 6)

a) Form groups for the following presentation task *(each group member must present at least one slide)*

Do movies have a Positive or Negative effect on society in 2020, why?

Your answer must include:
1) A description / background of 'movies' in 2020
2) Thee clear points to support your opinion (include the effect on children as well as adults)
3) Conclusion / Recommendation / Suggestion

Follow the structure below for your presentation (PowerPoint or Keynote) slides:

Title Slide	Description / Background	Support Point 1	Support Point 2	Support Point 3	Conclusion

LESSON 6

TECHNOLOGY
ENTERTAINMENT
DESIGN

Television

ENL / ILE 126
Lesson 7 / 15

1. Activity (I)

"When I got my first television set,
I stopped caring so much about having close relationships."
Andy Warhol

a) **Introduction - What is television? Complete the basic definition below:**

1. Television: *Noun* (U) - A SYSTEM for transmitting IMAGES that are reproduced on S _ _ _ _ _ _.

b) **Forms - Television stations air a range of different programs; from regular news bulletins and major sporting events, to comedy shows and dramas. Connect 5 images below to each form of TV content on the left:**

1. News
2. Comedy
3. Drama
4. Ads

TECHNOLOGY
ENTERTAINMENT
DESIGN

Television

ENL / ILE 126
Lesson 7 / 15

3. Activity (II)

a) **Different Programs - Complete the sentences:**

1. A) Many people think the word 'news' is an acronym of: NORTH, EAST, W_ _ _, & S_ _ _ _, however this is false.

B) The word 'news' originates from the following three words: NOVA *(Latin)*, N _ _ _ _ _ _ *(French)*, & N _ _ *(English)*.

C) TV news programs often feature three different 'levels' of news: L _ _ _ _, N _ _ _ _ _ _ _, and I _ _ _ _ _ _ _ _ _ _ _ _.

2. A) Many popular TV SHOWS are called 'sitcoms'. This word is an abbreviation of SITUATION, & C _ _ _ _ _.

B) According to some, the 3 most popular sitcoms of all time are: MODERN FAMILY, F _ _ _ _ _ _, & B _ _ B _ _ _ T _ _ _ _ _.

C) The S _ _ _ _ _ _ _, released in 1 _ _ _, is often referred to as the highest ranking animated S _ _ _ _ _ of all time.

3. A) TV drama is a GENRE of narrative fiction intended to be more SERIOUS than H _ _ _ _ _ _ _ in tone.

B) Different forms of drama include CRIME or legal drama, H _ _ _ _ _ _ _ _ drama, romantic drama, and T _ _ _ drama.

C) Two of the most popular TV dramas in recent times are G _ _ _ O _ T _ _ _ _ _ and B _ _ _ _ _ _ _ B _ _.

4. A) FREE - TO - AIR TV stations generate REVENUE (or income) from A _ _ _ _ _ _ _ _ _ _.

B) The first TV commercial or advertisement aired in 1941, before a B _ _ _ _ _ _ _ game in N _ _ Y _ _ _ (US).

C) TV advertisements or Ads can be extremely expensive. A 30-sec Ad during the 2019 USA Super Bowl cost $ _._ _ M _ _ _ _ _ dollars.

LESSON 6 (CONTINUED)

TECHNOLOGY
ENTERTAINMENT
DESIGN

Television

ENL / ILE 126
Lesson 7 / 15

5. Television (Group Discussion - *Beauty and the screen*)

Films and TV shows have long been a source of cultural inspiration for many people. TV in particular has had a very strong influence over viewers in terms of social issues, politics, popular trends, and especially fashion and beauty. The people who appear regularly in front of us on screens often set the tone for different fashions, styles, and appearances, but is this good or bad? *Is there too much pressure being placed on 'ordinary' people to look like TV stars?*

a) Watch the short video about an 'obsession with beauty' and answer the questions below:

Obsession with beauty and how it can become a sickness
GMA 22/04/2017 - Youtube (2:32)
** Click twice to play video*

1. Do you think the actors on TV shows influence the appearance of viewers?
2. Do you think these actors also set unrealistic 'beauty' expectations for viewers, especially younger ones?

TECHNOLOGY
ENTERTAINMENT
DESIGN

Television

ENL / ILE 126
Lesson 7 / 15

7. Television (Group Task Work - Lesson 7)

a) Form groups for the following presentation task *(each group member must present at least one slide)*

What is the purpose of television - why does it exist?

Your answer must include:
1) A description / background of television in 2020
2) Why television exists in your opinion *(3 points to support your opinion)*
3) Conclusion / Recommendation / Suggestion

Follow the structure below for your presentation (PowerPoint or Keynote) slides:

Title Slide	Description / Background	Support Point 1	Support Point 2	Support Point 3	Conclusion

APPENDIX F

IOC OF PRETESTS & POSTTESTS

Item Objective Congruence (IOC) for the Pretest 1 by the Experts

Sl. No.	Attributes	Ratings by Experts			IOC Average	Remarks
		#1	#2	#3		
1	Question 1	+1	+1	+1	+1	Accepted
2	Question 2	+1	+1	+1	+1	Accepted
3	Question 3	+1	+1	+1	+1	Accepted
4	Question 4	+1	+1	+1	+1	Accepted
5	Question 5	+1	+1	+1	+1	Accepted
6	Question 6	+1	+1	+1	+1	Accepted
7	Question 7	+1	+1	+1	+1	Accepted
8	Question 8	+1	+1	+1	+1	Accepted
9	Question 9	+1	+1	+1	+1	Accepted
10	Question 10	+1	+1	+1	+1	Accepted
11	Question 11	+1	+1	+1	+1	Accepted
12	Question 12	+1	+1	+1	+1	Accepted
13	Question 13	+1	+1	+1	+1	Accepted
14	Question 14	+1	+1	+1	+1	Accepted
15	Question 15	+1	+1	+1	+1	Accepted
16	Question 16	+1	+1	+1	+1	Accepted
17	Question 17	+1	+1	+1	+1	Accepted
18	Question 18	+1	+1	+1	+1	Accepted
19	Question 19	+1	+1	+1	+1	Accepted
20	Question 20	+1	+1	+1	+1	Accepted
21	Question 21	+1	+1	+1	+1	Accepted
22	Question 22	+1	+1	+1	+1	Accepted
23	Question 23	+1	+1	+1	+1	Accepted
24	Question 24	+1	+1	+1	+1	Accepted
25	Question 25	+1	+1	+1	+1	Accepted
26	Question 26	+1	+1	+1	+1	Accepted

27	Question 27	+1	+1	+1	+1	Accepted
28	Question 28	+1	+1	+1	+1	Accepted
29	Question 29	+1	+1	+1	+1	Accepted
30	Question 30	+1	+1	+1	+1	Accepted
Average					+1	Accepted

Item Objective Congruence (IOC) for the Posttest 1 by the Experts

Sl. No.	**Attributes**	**Ratings by Experts**			**IOC Average**	**Remarks**
		#1	**#2**	**#3**		
1	Question 1	+1	+1	+1	+1	Accepted
2	Question 2	+1	+1	+1	+1	Accepted
3	Question 3	+1	+1	+1	+1	Accepted
4	Question 4	+1	+1	+1	+1	Accepted
5	Question 5	+1	+1	+1	+1	Accepted
6	Question 6	+1	+1	+1	+1	Accepted
7	Question 7	+1	+1	+1	+1	Accepted
8	Question 8	+1	+1	+1	+1	Accepted
9	Question 9	+1	+1	+1	+1	Accepted
10	Question 10	+1	+1	+1	+1	Accepted
11	Question 11	+1	+1	+1	+1	Accepted
12	Question 12	+1	+1	+1	+1	Accepted
13	Question 13	+1	+1	+1	+1	Accepted
14	Question 14	+1	+1	+1	+1	Accepted
15	Question 15	+1	+1	+1	+1	Accepted
16	Question 16	+1	+1	+1	+1	Accepted
17	Question 17	+1	+1	+1	+1	Accepted
18	Question 18	+1	+1	+1	+1	Accepted
19	Question 19	+1	+1	+1	+1	Accepted

20	Question 20	+1	+1	+1	+1	Accepted
21	Question 21	+1	+1	+1	+1	Accepted
22	Question 22	+1	+1	+1	+1	Accepted
23	Question 23	+1	+1	+1	+1	Accepted
24	Question 24	+1	+1	+1	+1	Accepted
25	Question 25	+1	+1	+1	+1	Accepted
26	Question 26	+1	+1	+1	+1	Accepted
27	Question 27	+1	+1	+1	+1	Accepted
28	Question 28	+1	+1	+1	+1	Accepted
29	Question 29	+1	+1	+1	+1	Accepted
30	Question 30	+1	+1	+1	+1	Accepted
Average					+1	Accepted

Item Objective Congruence (IOC) for the Pretest 2 by the Experts

Sl. No.	**Attributes**	**Ratings by Experts**			**IOC Average**	**Remarks**
		#1	**#2**	**#3**		
1	Question 1	+1	+1	+1	+1	Accepted
2	Question 2	+1	+1	+1	+1	Accepted
3	Question 3	+1	+1	+1	+1	Accepted
4	Question 4	+1	+1	+1	+1	Accepted
5	Question 5	+1	+1	+1	+1	Accepted
6	Question 6	+1	+1	+1	+1	Accepted
7	Question 7	+1	+1	+1	+1	Accepted
8	Question 8	+1	+1	+1	+1	Accepted
9	Question 9	+1	+1	+1	+1	Accepted
10	Question 10	+1	+1	+1	+1	Accepted
11	Question 11	+1	+1	+1	+1	Accepted
12	Question 12	+1	+1	+1	+1	Accepted

13	Question 13	+1	+1	+1	+1	Accepted
14	Question 14	+1	+1	+1	+1	Accepted
15	Question 15	+1	+1	+1	+1	Accepted
16	Question 16	+1	+1	+1	+1	Accepted
17	Question 17	+1	+1	+1	+1	Accepted
18	Question 18	+1	+1	+1	+1	Accepted
19	Question 19	+1	+1	+1	+1	Accepted
20	Question 20	+1	+1	+1	+1	Accepted
21	Question 21	+1	+1	+1	+1	Accepted
22	Question 22	+1	+1	+1	+1	Accepted
23	Question 23	+1	+1	+1	+1	Accepted
24	Question 24	+1	+1	+1	+1	Accepted
25	Question 25	+1	+1	+1	+1	Accepted
26	Question 26	+1	+1	+1	+1	Accepted
27	Question 27	+1	+1	+1	+1	Accepted
28	Question 28	+1	+1	+1	+1	Accepted
29	Question 29	+1	+1	+1	+1	Accepted
30	Question 30	+1	+1	+1	+1	Accepted
Average					+1	Accepted

Item Objective Congruence (IOC) for the Posttest 2 by the Experts

Sl. No.	Attributes	Ratings by Experts			IOC Average	Remarks
		#1	#2	#3		
1	Question 1	+1	+1	+1	+1	Accepted
2	Question 2	+1	+1	+1	+1	Accepted
3	Question 3	+1	+1	+1	+1	Accepted
4	Question 4	+1	+1	+1	+1	Accepted
5	Question 5	+1	+1	+1	+1	Accepted

6	Question 6	+1	+1	+1	+1	Accepted
7	Question 7	+1	+1	+1	+1	Accepted
8	Question 8	+1	+1	+1	+1	Accepted
9	Question 9	+1	+1	+1	+1	Accepted
10	Question 10	+1	+1	+1	+1	Accepted
11	Question 11	+1	+1	+1	+1	Accepted
12	Question 12	+1	+1	+1	+1	Accepted
13	Question 13	+1	+1	+1	+1	Accepted
14	Question 14	+1	+1	+1	+1	Accepted
15	Question 15	+1	+1	+1	+1	Accepted
16	Question 16	+1	+1	+1	+1	Accepted
17	Question 17	+1	+1	+1	+1	Accepted
18	Question 18	+1	+1	+1	+1	Accepted
19	Question 19	+1	+1	+1	+1	Accepted
20	Question 20	+1	+1	+1	+1	Accepted
21	Question 21	+1	+1	+1	+1	Accepted
22	Question 22	+1	+1	+1	+1	Accepted
23	Question 23	+1	+1	+1	+1	Accepted
24	Question 24	+1	+1	+1	+1	Accepted
25	Question 25	+1	+1	+1	+1	Accepted
26	Question 26	+1	+1	+1	+1	Accepted
27	Question 27	+1	+1	+1	+1	Accepted
28	Question 28	+1	+1	+1	+1	Accepted
29	Question 29	+1	+1	+1	+1	Accepted
30	Question 30	+1	+1	+1	+1	Accepted
Average					+1	Accepted

APPENDIX G

LEARNING ACHIEVEMENT TESTS (PRETESTS & POSTTESTS)

Pretest & Posttest 1:

socrative

Name _____
Date _____

2020 - ILE 126 - Quiz 1: TECHNOLOGY Pretest/Posttest

Score _____

1. Section 1: Transport

Complete the definition below with the best answer choice

Transport is the movement of goods or _____ from one place to another.

(A) People
(B) Public
(C) Animals
(D) Personal

2. Section 1: Transport

Complete the sentence below with the best answer choice

The busiest port in the world is in _____ .

(A) New Zealand
(B) China
(C) Thailand
(D) Germany

3. Section 1: Transport

Complete the sentence below with the best answer choice

In the early 1900s cars were powered by steam, _____ , and petrol.

(A) E20
(B) Hydrogen
(C) Diesel
(D) Electricity

4. **Section 1: Transport**

Complete the sentence below with the best answer choice

As of 2018, the world's top selling automotive brands include: _____ , Volkswagen, and Ford.

(A) Toyota
(B) Alfa Romeo
(C) Land Rover
(D) Nissan

5. **Section 1: Transport**

Complete the sentence below with the best answer choice

LHT or Left-Hand-Traffic is used in _____ countries.

(A) 25
(B) 55
(C) 125
(D) 75

6. **Section 1: Transport**

Complete the sentence below with the best answer choice

Early trains were powered by steam, but modern trains are usually powered by electricity or _____ .

(A) Diesel
(B) Natural Gas
(C) Petrol
(D) Coal

7. **Section 1: Transport**

Complete the sentence below with the best answer choice

The railway speed record is held by the L0 Series Maglev train from _____ .

(A) China
(B) Australia
(C) Japan
(D) the U.S.

8. **Section 1: Transport**

Complete the sentence below with the best answer choice

Longer-distance railway systems are oftern aboveground, however inner-city rail systems are commonly elevated or _____ .

(A) Underground
(B) Ground
(C) In the ground
(D) Grounded

9. **Section 1: Transport**

Complete the sentence below with the best answer choice

In 1903 the Wright brothers made the first ever 'plane' flight in _____ with the *Wright Flyer*.

(A) the U.K.
(B) the U.A.E.
(C) the U.S.
(D) the E.U.

10. **Section 1: Transport**

Complete the sentence below with the best answer choice

As of 2019, the Airbus A380 is the largest passenger plane in the world. It can carry over _____ passengers.

(A) 700
(B) 800
(C) 500
(D) 300

11. **Section 2: Communication**

Complete the sentence below with the best answer choice

In 1877, Alexander Graham _____ made the first long distance telephone call in the US.

(A) Bush
(B) Phone
(C) Bell
(D) Brown

12. **Section 2: Communication**

Complete the sentence below with the best answer choice

The world is connected by telephone through the **PSTN**, which stands for the _____ .

(A) Public Switched Telephone Network
(B) Public System Telephone News
(C) Public Service Talk Net
(D) Public Series Talk Now

13. **Section 2: Communication**

Complete the sentence below with the best answer choice

Radio began in the early _____ .

(A) 1600s
(B) 1700s
(C) 1800s
(D) 1900s

14. **Section 2: Communication**

Complete the sentence below with the best answer choice

A radio signal, or wave, is defined by its Wavelength, Amplitude, _____ , & Speed.

(A) Cycles per second
(B) Watts
(C) Frequency
(D) Hertz

15. **Section 2: Communication**

Complete the sentence below with the best answer choice

Some radio stations use FM, while others use AM or Amplitude _____ .

(A) Metadata
(B) Mode
(C) Moderation
(D) Modulation

16. **Section 2: Communication**

Complete the sentence below with the best answer choice

Martin Cooper, who worked for Motorola (US), made the first mobile phone call in _____ .

(A) 1963
(B) 1973
(C) 1983
(D) 1993

17. **Section 2: Communication**

Complete the sentence below with the best answer choice

Mobile phones operate by using a network of connected radio '_____' .

(A) bands
(B) packets
(C) boxes
(D) cells

18. **Section 2: Communication**

Complete the sentence below with the best answer choice

The oldest Satellite Phone network operator is _____ , founded in 1979.

(A) Iridium
(B) Inmarsat
(C) Thyraya
(D) Globstar

19. **Section 2: Communication**

Complete the sentence below with the best answer choice

All together, the 4 major Staellite Phone operators have a combined number of _____ satellites.

(A) 138
(B) 13
(C) 55
(D) 15

20. **Section 2: Communication**

Complete the sentence below with the best answer choice

The only Satellite Phone operator which offers full 'Global Coverage' is _____ .

(A) Globstar
(B) Inmarsat
(C) Iridium
(D) Thyraya

21. **Section 3: Computers**

Complete the sentence below with the best answer choice

Early Business computers used _____ cards.

(A) Video
(B) Silicone Chip
(C) Plastic
(D) Punch

22. **Section 3: Computers**

Complete the sentence below with the best answer choice

The 4 main tasks performed by a device which define it as a computer are; Input, Storage, _____ , and Output.

(A) Entering
(B) Processing
(C) Data
(D) Moitoring

23. **Section 3: Computers**

Complete the sentence below with the best answer choice

The fastest computers in the world are called _____ .

(A) Supercomputers
(B) Megacomputers
(C) Ultracomputers
(D) Maxicomputers

24. **Section 3: Computers**

Complete the sentence below with the best answer choice

Personal computers took of in the 1980s with IBM's PC and Apple's _____ .

(A) Mac Mini
(B) iMac
(C) Macintosh
(D) PowerBook

25. **Section 3: Computers**

Complete the sentence below with the best answer choice

The largest personal computer manufacturers in the world are HP, Acer, Dell, Apple, and _____ .

(A) Toshiba
(B) Sony
(C) Casio
(D) Lenovo

26. **Section 3: Computers**

Complete the sentence below with the best answer choice

The 1st truely successful tablet was the _____ .

(A) iPad
(B) Surface Book
(C) Palm Pilot
(D) Newton Message Pad

27. **Section 3: Computers**

Complete the sentence below with the best answer choice

As of 2018, Android holds a unit sales tablet market share of 58%, while iOS has 23% and _____ has 19%.

(A) Blackberry
(B) Symbian
(C) Windows
(D) MS-DOS

28. **Section 3: Computers**

Complete the sentence below with the best answer choice

in 2016, Sophia from Hanson Robiotics was the first robot to _____ .

(A) get married
(B) be granted citizenship
(C) ride a bicycle
(D) play chess

29. **Section 3: Computers**

Complete the sentence below with the best answer choice

AI or Aritificial Intelligence is intelligence demonstrated by _____ .

(A) machines
(B) numbers
(C) computers
(D) smartphones

30. **Section 3: Computers**

Complete the sentence below with the best answer choice

AI produces 'deep learning' in the form of Data Classification & Data _____ .

(A) Output
(B) Entry
(C) Calculation
(D) Prediction

Pretest & Posttest 2:

socrative

Name _____
Date _____

2020 - ILE126 - Quiz 2 : ENTERTAINMENT Pretest/Posttest

Score _____

1. **Section 1: Performing Arts**

   Complete the definition below with the best answer choice:

   Performing Arts relates to types of art such as _____ that are performed for an audience.

(A) drawing and painting
(B) music and dance
(C) pottery and ceramics
(D) the writing of short stories

2. **Section 1: Performing Arts**

   Complete the sentence below with the best answer choice:

   Spoken Word includes art forms such as _____ .

(A) stand-up comedy and poetry
(B) choir singing
(C) dancing
(D) face painting

3. **Section 1: Performing Arts**

Complete the sentence below with the best answer choice:

The earliest known poet whose name was recorded was the _____ artist named Enheduanna.

(A) Australian
(B) Swiss
(C) Swedish
(D) Sumerian

4. **Section 1: Performing Arts**

Complete the sentence below with the best answer choice:

The theatre of ancient _____ consisted of 3 types of drama: tragedy, comedy, and the satyr play.

(A) New Zealand
(B) India
(C) Greece
(D) China

5. **Section 1: Performing Arts**

Complete the sentence below with the best answer choice:

The Globe theatre was a famous theatre in London and was associated with _____ .

(A) William Shakespeare
(B) Michael Jackson
(C) Elvis Presley
(D) The Beatles

6. **Section 1: Performing Arts**

Complete the sentence below with the best answer choice:

Ancient forms of music existed in _____ , Asia, and Greece, as well as in references found in the Bible.

(A) England
(B) Denmark
(C) Canada
(D) Egypt

7. **Section 1: Performing Arts**

Complete the sentence below with the best answer choice:

Rock, Soul / R&B, Funk, Country, Raggae, Hip hop, Jazz, and Electronic are all different _____ of music.

(A) groups
(B) songs
(C) genres
(D) eras (time periods)

8. **Section 1: Performing Arts**

Complete the sentence below with the best answer choice:

Stadiums, amphitheatres, concert halls, bars, clubs, and pubs are all _____ for different performances.

(A) varieties
(B) venues
(C) audiences
(D) styles

9. **Section 1: Performing Arts**

Complete the sentence below with the best answer choice:

_____ is a type of dance which originated in the Renaissance period in the 15th century.

(A) Ballet
(B) Tap
(C) Breakdancing
(D) Busking

10. **Section 1: Performing Arts**

Complete the sentence below with the best answer choice:

The _____ is a famous dance popularised by Michael Jackson, but also recorded as far back as 1932 by Cab Calloway.

(A) Moonshuffle
(B) Moondance
(C) Moonwalk
(D) Moonshine

11. **Section 2: Film**

Complete the definition below with the best answer choice:

A film is a movie or _____ - often viewed at a cinema.

(A) moving performance
(B) motion photo
(C) moving play
(D) motion picture

12. **Section 2: Film**

Complete the sentence below with the best answer choice:

This picture is of a _____ .

(A) flipper box
(B) flip book
(C) animation pad
(D) cartoon book

13. **Section 2: Film**

Complete the sentence below with the best answer choice:

Mickey Mouse is said to have debuted in the 1928 animated short film _____ .

(A) Steamboat Willie
(B) Skiboat Billy
(C) Speedboat Billy
(D) Sailboat Willie

14. **Section 2: Film**

Complete the sentence below with the best answer choice:

Pixar, Walt Disney, DreamWorks, and Studio Ghibli are all _____ .

(A) film festivals
(B) cartoon characters
(C) movie titles
(D) animation studios

15. **Section 2: Film**

Complete the sentence below with the best answer choice:

Feature films are usually _____ minutes or longer.

(A) 15
(B) 4
(C) 300
(D) 40

16. **Section 2: Film**

Complete the sentence below with the best answer choice:

The countries which produce the largest number of films include _____ .

(A) The US, The UAE, & The Philippines
(B) India, Nigeria, & China
(C) The US, Japan, Australia
(D) New Zealand, Bhutan, Thailand

17. **Section 2: Film**

Complete the sentence below with the best answer choice:

A documentary film is a _____ 'movie' intended to document reality.

(A) fictional
(B) fantasy
(C) non-fiction
(D) fairy tale

18. **Section 2: Film**

Complete the sentence below with the best answer choice:

Originally, documentary films were called 'Actuality Films' and were _____ minute(s) or less in length.

(A) 1
(B) 15
(C) 100
(D) 33

19. **Section 2: Film**

Complete the sentence below with the best answer choice:

The oldest film festival in the world is the _____ film festival which began in 1932 and is still running today.

(A) London
(B) Bangkok
(C) Venice
(D) Sydney

20. **Section 2: Film**

Complete the sentence below with the best answer choice:

The most presigious film festivals are referred to as the 'big three' and comprise of _____ .

(A) London, Tokyo, New York
(B) Bangkok, Los Angeles, Stockholm
(C) Sydney, Auckland, Taipei
(D) Venice, Berlin, Cannes

21. **Section 3: TV**

Complete the definition below with the best answer choice:

Television is a system for transmitting _____ that are reproduced on screens.

(A) images
(B) people
(C) stories
(D) songs

22. **Section 3: TV**

Select the best answer choice (True / False) for the following statement:

The word 'News' is an acronym of ***North, East, West, & South.***

(T) True
(F) False

23. **Section 3: TV**

Complete the sentence below with the best answer choice:

TV news programs often feature 3 different 'levels' of news; local, national, and _____ .

(A) interactive
(B) interstate
(C) interstellar
(D) international

24. **Section 3: TV**

Complete the sentence below with the best answer choice:

Many TV programs are called 'sitcoms'. This word is an abbreviation of *Stuation* & _____ .

(A) Communication
(B) Comic
(C) Comedy
(D) Competition

25. **Section 3: TV**

Complete the sentence below with the best answer choice:

The Simpsons, released in 1989, is often referred to as the highest ranking _____ series of all time.

(A) Action
(B) Animated
(C) Drama
(D) Horror

26. **Section 3: TV**

Complete the sentence below with the best answer choice:

TV drama is a genre of narrative fiction intended to be more _____ than humorous in tone.

(A) serious
(B) informative
(C) educational
(D) scary

27. **Section 3: TV**

Complete the sentence below with the best answer choice:

Different forms of drama include historical drama, teen drama, romantic drama, and _____ or legal drama.

(A) cartoon
(B) acting
(C) crime
(D) news

28. **Section 3: TV**

Complete the sentence below with the best answer choice:

Two of the most popular TV dramas in recent times are Breaking Bad and _____ .

(A) Frozen
(B) Game of Thrones
(C) Spiderman
(D) Netflix

29. **Section 3: TV**

Complete the sentence below with the best answer choice:

Free-to-air (FTA) TV stations generate revenue (or income) from _____ .

(A) movies
(B) acting
(C) advertising
(D) YouTube

30. **Section 3: TV**

Complete the sentence below with the best answer choice:

The first TV commercial or advertisment aired in 1941, before a _____ game in New York.

(A) baseball
(B) golf
(C) ten pin bowling
(D) chess

APPENDIX H

IOC OF CLASSROOM OBSERVATION FORM

Item Objective Congruence (IOC) for the Classroom Observation Form by the Experts

Sl. No.	Attributes	Ratings by Experts			IOC Average	Remarks
		#1	#2	#3		
1	Question 1	+1	+1	+1	+1	Accepted
2	Question 2	+1	+1	+1	+1	Accepted
3	Question 3	+1	+1	+1	+1	Accepted
4	Question 4	+1	+1	+1	+1	Accepted
5	Question 5	+1	+1	+1	+1	Accepted
6	Question 6	+1	+1	+1	+1	Accepted
7	Question 7	+1	+1	+1	+1	Accepted
8	Question 8	+1	+1	+1	+1	Accepted
Average					+1	Accepted

APPENDIX I

CLASSROOM OBSERVATION FORM

Classroom Observation Form

Classroom Observation

Sl. No.	Observation Statements	Yes	No
1	Learners actively make use of iPads when completing TED tasks		
2	Learners actively utilize iPads for internet searches and language definitions		
3	Learners actively use iPads for video activity viewing / second viewing		
4	Learners actively utilize iPads for presentation collaboration work		
5	Learners actively use iPads for presentation delivery		
6	iPads use encourages disctrations such as social media and games		
7	iPad use increses student focus and attention on the teacher		
8	iPad use encourages cheating during quizzes		
Other			

APPENDIX J

IOC OF SEMI-STRUCTURED INTERVIEW QUESTIONS

Item Objective Congruence (IOC) for the Semi-Structured Interview Questions by the Experts

Sl. No.	Attributes	Ratings by Experts			IOC Average	Remarks
		#1	#2	#3		
1	Question 1	+1	+1	+1	+1	Accepted
2	Question 2	+1	+1	+1	+1	Accepted
3	Question 3	+1	+1	+1	+1	Accepted
4	Question 4	+1	+1	+1	+1	Accepted
5	Question 5	+1	+1	+1	+1	Accepted
6	Question 6	+1	+1	+1	+1	Accepted
7	Question 7	+1	+1	+1	+1	Accepted
8	Question 8	+1	+1	+1	+1	Accepted
9	Question 9	+1	+1	+1	+1	Accepted
10	Question 10	+1	+1	+1	+1	Accepted
11	Question 11	+1	+1	+1	+1	Accepted
12	Question 12	+1	+1	+1	+1	Accepted
13	Question 13	+1	+1	+1	+1	Accepted
14	Question 14	+1	+1	+1	+1	Accepted
15	Question 15	+1	+1	+1	+1	Accepted
Average					+1	Accepted

APPENDIX K

SEMI-STRUCTURED INTERVIEW QUESTIONS

Semi-Structured Interview Questions

Semi-structured Interview Questions

Sl. No.	Semi-structured Interview Questions
1	Did you enjoy the TED classes? Explain why, or why not?
2	How well do you think TED made use of your iPad in class?
3	What activities did you most enjoy completing on your iPad in class?
4	What is your opinion now about Apple Classroom after this experience?
5	Do you feel that Apple Classroom made TED lessons more productive?
6	Do you feel that Apple Classroom reduced distractions in TED classes, why or why not?
7	Do you think that Apple Classroom reduced cheating in TED quizes, why or why not?
8	Would you prefer to take TED classes with Apple Classroom or *without* ? Explain your answer.

APPENDIX L

IOC OF STUDENT QUESTIONNAIRE

Item Objective Congruence (IOC) for the Student Questionnaire by the Experts

Sl. No.	Attributes	Ratings by Experts			IOC Average	Remarks
		#1	#2	#3		
1	Question 1	+1	+1	+1	+1	Accepted
2	Question 2	+1	+1	+1	+1	Accepted
3	Question 3	+1	+1	+1	+1	Accepted
4	Question 4	+1	+1	+1	+1	Accepted
5	Question 5	+1	+1	+1	+1	Accepted
6	Question 6	+1	+1	+1	+1	Accepted
7	Question 7	+1	+1	+1	+1	Accepted
8	Question 8	+1	+1	+1	+1	Accepted
9	Question 9	+1	+1	+1	+1	Accepted
10	Question 10	+1	+1	+1	+1	Accepted
11	Question 11	0	0	+1	0	Rejected
12	Question 12	+1	+1	+1	+1	Accepted
13	Question 13	+1	+1	+1	+1	Accepted
14	Question 14	+1	+1	+1	+1	Accepted
15	Question 15	+1	+1	+1	+1	Accepted
Average					+1	Accepted

APPENDIX M
STUDENT QUESTIONNAIRE

Student Questionnaire

Student Questionnaire

Sl. No.	Questions					
	How satisfied are you with the following (Mark with an 'X'):	**Completely Disagree**	**Somewhat Disagree**	**Neutral**	**Somewhat Agree**	**Completely Agree**
1	The TED content & activities are interesting and relevant					
2	iPads are useful for TED classes					
3	iPads help me learn more in TED classes					
4	Apple Classroom helps the teacher manage the class properly					
5	Apple Classroom reduces cheating					
	Circle the answer which best illustrates your feelings	**A**	**B**	**C**	**D**	**E**
6	TED classes help me improve my _____ the most	Speaking	Listening	Researching	Writing	Presenting
7	TED classes help me improve my _____ the least	Speaking	Listening	Researching	Writing	Presenting
8	iPads help me most in TED classes with my _____	Speaking	Listening	Researching	Writing	Presenting
9	I would prefer more TED class time to be spent on _____	Speaking	Listening	Researching	Writing	Presenting
10	I would prefer more _____ activities in class	Vocabulary	Video	Researching	Discussion	Presentation
	Write your responses to the questions in the space below					
11	N/A					
12	Q. What part of the TED lessons do you enjoy doing the most? Why?					
13	Q. Do you use your iPads more in TED classes than other classes? Why?					
14	Q. Do you think using Apple Classroom in TED helps you learn more? Give reasons					
15	Q. If you could change something about the TED lessons, what would you change and why?					

Biography

Name	Timothy Boundy
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