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ANALYZING EFL TEACHERS' TECHNOLOGY PREPAREDNESS
TO PROMOTE CALL IN INDONESIA

by

Eugenie Mainake

B.Ed., Universitas Pattimura, 2014

A Thesis

Submitted in Partial Fulfillment of the Requirements for the
Master of Arts Degree

Department of Linguistics

in the Graduate School

Southern Illinois University Carbondale

May 2020

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THESIS APPROVAL

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A Thesis Submitted in Partial

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Master of Arts

in the field of Teaching English to Speakers of Other Languages

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April 2, 2020

AN ABSTRACT OF THE THESIS OF

Eugenie Mainake, for the Master of Arts degree in Teaching English to Speakers of Other Languages, presented on April 2, 2020, at Southern Illinois University Carbondale.

TITLE: ANALYZING EFL TEACHERS' TECHNOLOGY PREPAREDNESS TO PROMOTE CALL IN INDONESIA

MAJOR PROFESSOR: Dr. Shannon M. McCrocklin

In recent decades, technology has played a significant role in English language teaching. Current Indonesian policies in education encourage teachers to integrate technology into teaching and learning activities to bolster the effectiveness and efficiency of their teaching practice (Ministry of National Education Indonesia, 2013). Previous studies found that various technology-based pedagogies yielded rewarding results for learners' language skills in Indonesia, yet teachers report a lack of skills and knowledge necessary for CALL (Computer Assisted Language Learning) integration (Cahyani & Cahyono, 2012; Ridwan, 2017). There are, however, limited studies examining teachers' readiness and skills to implement technology use in their classroom instructions. Therefore, the present study investigates teachers' technological skills to implement CALL-based English as Foreign Language (EFL) instructions, particularly in Maluku, Indonesia using the TPACK (Technology, Pedagogy, and Content Knowledge) Framework (Koehler & Mishra, 2006).

EFL high school teachers ($N=43$) from Maluku, Indonesia participated in the study. The data were collected using an online TPACK survey (Schmidt et al, 2009; Sahin, 2011) and follow-up interviews (Nila, 2013). The teachers showed interest and awareness of the use of technology to facilitate efficient and effective EFL instruction. The majority of participants demonstrated their perceived understanding of utilizing and combining technology with their pedagogical practices. Further, the interviews uncovered the fact that a handful of technology

tools were already employed to improve students' practice of English inside and beyond classrooms. These findings shed light on the reality that Indonesian EFL teachers are prepared to enact CALL. Nevertheless, participants encountered challenges for effective enactment of CALL-based EFL instruction such as a lack of CALL training and accessible technology to facilitate learning. The findings then suggest a need for training modules for technology incorporation in ELT, quality school facilities, and assistance in developing technology based EFL teaching.

ACKNOWLEDGMENTS

I would like to express my utmost thanks to God and all the people who assisted, guided, and supported me during this study. Without their help and endless support, it would have been impossible to accomplish what I have so far.

Firstly, I would like to express my deepest gratitude and appreciation to my major adviser, Dr. Shannon M. McCrocklin, who has been an ideal professor, academic advisor, thesis chair, and mentor throughout my graduate education. Her endless support, sage advice, insightful criticism, and patient encouragement aided the writing of this thesis in innumerable ways. I would also like to express my profound thanks to the members of my thesis committee, Dr. Katherine I. Martin, and Dr. Itxaso Rodríguez-Ordóñez , for their guidance, help, and invaluable feedback in constructing this thesis. My thanks also go to the teachers who enthusiastically participated in this study, answered all questions, and provided insightful responses to the interview.

My deep appreciation goes to the Fulbright Program for granting me a scholarship and making my dream of pursuing my graduate study in the US come true. My special thanks go to AMINEF (American Indonesian Exchange Foundation/Fulbright Commission in Indonesia) for all their unceasing guidance and support for my master's study. Deep appreciation for Fulbright grantees (Batch 2018) for the togetherness, motivation, and support. I could not be where I am at, today, without you all.

I am also truly indebted and thankful to all my family members who were always there for me: my father, mother, sisters, brothers, and grandmothers. Their words and prayers supported and encouraged me to put more effort into my study and particularly this thesis in every stage.

I am grateful for Mrs. Inggrit Tanasale/Jambormias, Ms. Novelin Litamahuputty, and Mr. Paskah Soumokil for their kind assistance in transcribing the interview scripts and the thorough discussions. I wish all the best for everything they do and appreciate their good deeds for a lifetime.

My two years of study in the Linguistics Department at SIU have been priceless. Many thanks go to all of my colleagues, faculty members, departmental staff; Diane for the immediate help, and guidance along the way, and friends for making these two years so wonderfully unforgettable.

Lastly, I am deeply thankful for my Indonesian family and fellows (Tugi and family, Mba Petra and Mas Eko, Arief, Is, Fitri and husband, Pak Lumban and family) in Carbondale, IL for the kindness, togetherness, and laughter that made this special town “a home away from home”. I would also like to express my appreciation for all people who directly and indirectly supported my thesis at various levels, such as people in the graduate schools and my lecturers in Universitas Pattimura for their support and understanding although I may not have met them personally and bothered them oftentimes for my interviews. Again, I truly appreciate all the people who are involved in my thesis directly and indirectly.

DEDICATION

I dedicate this thesis to my family for their endless support throughout my study here at SIU, Illinois, USA, and also for teachers for their insightful and invaluable inputs that help me understand the actual needs in ELT in Indonesia. A very special feeling of gratitude is extended to my ultimate support system; grandmothers and (the late) grandfathers for their encouragement and prayers that convinced and motivated me to study in the US.

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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

The implementation of Computer-Assisted Language Learning (CALL) in English Language Teaching (ELT) is growing at present. CALL is the integration of computer use in the language learning process. Chapelle (2001) defines CALL as the use of computers and other media for language teaching and learning. CALL has expanded to a wide range of ELT contexts such as English as Second Language (ESL) and English as Foreign Language (EFL) (Chapelle, 1996; Healey et al., 2008). CALL provides authentic language materials and exposes learners of ESL and EFL to real-life language use. Hidayati (2016) argues that CALL offers authentic learning resources and interactive learning environment in an EFL context. A number of studies show that, in ESL and EFL contexts, CALL has the potential to provide language practice for learners such as writing tasks, grammar checkers, blogs, wikis, emails, e-books and multimedia text formats and embedded video and audio (AbuSeileek, 2012; Almekhlafi, 2006; Chapelle, 2001; Derbel, 2002; Mthethwa, 2011; Nila, 2013; Park and Son, 2009). CALL, accordingly, can be an ideal practice for improving ELT.

In Indonesia, CALL is gaining its popularity in ELT. As of 2013, CALL is implicitly integrated in the English language teaching curriculum by DEPDIKNAS (the National Education Department of Indonesia). DEPDIKNAS (2016) states that the newly-revised curriculum by the national education department requires technology-based learning for all courses, including English as one of compulsory courses in Indonesian High Schools.

The integration of CALL in ELT, particularly in EFL teaching contexts, has received great attention from teachers and researchers in the field. Research on the implementation of

CALL in EFL has been conducted, particularly in Indonesia, and has contributed to the field of ELT. Al-Munawwarah (2014) and Hidayati (2016) have investigated Indonesian teachers' perceptions and argue that immediate action is needed considering the benefits CALL offered such as engaging activities, autonomous learning and high motivation. Ridwan (2017) studies how Indonesian EFL teachers' pedagogy, in East Java Province, replicate CALL-based instruction in a way that promotes mediation and interaction in English for students. Also, Machmud and Basalama (2017) explore teachers' perspectives focusing on potential weakness encountered in applying CALL in Indonesian EFL context. These authors draw the conclusion that EFL teachers have shown interest in CALL implementation in their EFL classes but experience major barriers, such as a lack of technology skill, a lack of administrative support, insufficient facilities, and a lack of relevant training in CALL. Hidayati (2016) claims that teachers' lack of technology skill and training, inadequate amount of technology support, and administration have been considered less vital in the face of economic constraints to institutions as they consider budget allocation. These studies have, therefore, established a number of issues that need to be investigated in this study because CALL implementation requires teachers' technology skills and sufficient support from authorities such as school administration.

Despite the potential of CALL in Indonesian EFL context and positive attitude of teachers, the studies establish a critical need for improvement specifically with regard to teachers' lack of technology skills as a primary inhibition to CALL implementation. There is, however, a dearth of studies investigating EFL teachers' technology skill which is an important aspect and underpinning element towards the success of the implementation of CALL based instruction in Indonesia. Achacoso (2003) argues that the effectiveness and benefits of technology-based instruction can only be obtained if teachers possess skill to use in their

teaching practice. Because technology or CALL instruction does not navigate itself in class, teachers have the responsibility and obligation to guide it. Achacoso (2003) also argues that teachers' lack of technology skill may potentially lead to failure of CALL implementation. Ridwan (2017) adds that EFL teacher' familiarization to technology is still an issue in Indonesian EFL. He further mentions that CALL implementation training can further teachers' professional development in pedagogy.

Hence, the present study focuses primarily on the investigation and analysis of EFL teachers' technology skill to promote CALL and the constraints that they might face, particularly in Ambon, Maluku, Indonesia. The research study analyzes EFL teachers' perceptions, technology skills and needs for CALL-based EFL instruction. Results from this present study inform the current condition of potential CALL implementation in EFL teaching practice in Indonesia, provide a snapshot of the critical needs to improve Indonesian EFL teachers' professionalism, and contribute to the research literature of the field.

CHAPTER 2

REVIEW OF LITERATURE

2.1 The Nature of CALL

CALL has become popular in ELT since the 1960s and ELT practice has evolved due to the presence of CALL (Beatty, 2010; Chapelle, 2001; Healey & Warschauer, 1998; Levy, 1997). This chapter reviews and summarizes theories and studies on CALL implementation that reveal gaps on which the present study will primarily focus.

2.1.1 Definition of CALL

Principally, CALL involves the use of computer programs, apps and internet service in language pedagogy. In other words, CALL is the integration of computers in the language learning process. Levy (1997) defines CALL as a field of study that incorporates technology into language teaching and learning. Similarly, Beatty (2010) defines CALL as a process of integrating computers in teachers' pedagogy that aims at improving language learners' skills. He further mentions that CALL embodies the current language teaching and learning practice through the use of computer. In essence, CALL is a form of computer-based language learning.

CALL offers a plethora of digital resources that teachers can use for language teaching and learning. Ridwan (2017) points out that CALL is computer-based learning with internet connection, enriches learners and teachers with digital resources such as interactive videos, e-books, and language learning apps. CALL provides rich resources that teachers can utilize in their pedagogical practice. For example, teachers can use web-based language learning quizzes, online discussion forum and online chat to interact with students.

2.1.2 CALL Developmental Stages

CALL has long been incorporated in language teaching but has had substantial changes

throughout the years in its implementation. Warschauer (1996) mentions that CALL has existed since the 1960s and has been through several phases that corresponds to certain pedagogical approaches: Behavioristic CALL, Communicative CALL, and Integrative CALL. Following are the brief descriptions of the approaches:

Behavioristic CALL was influenced by the behaviorist approach which features language drills and language learning practices. Warschauer and Healey (1998) explain that behavioristic CALL was applied in the 1960s and emphasized repetitive language drills. At this stage, the computer was merely a tool used by students to work on an assigned task individually. The tasks focused on grammatical explanations and translation tests. In behavioristic CALL, “imitative practice could be recorded, judged, erased, re-recorded, to the point of learning” (Salaberry, 2001, p.43).

A decade later, Communicative CALL replaced the behavioristic approach in the late 1970s through the 1980s. Salaberry (2001) asserted that the previous stage hindered students’ optimal interaction that enhanced their performance in language learning because of the sole use of pre-recorded tapes. Thus, the primary emphasis of the communicative approach was the development of communicative skills, in particular by teaching learners to create chunks or use simple phrases in the target language. Warschauer and Healey (1998) advance the idea that communicative CALL was tailored to cognitive theories which state that learning includes stages such as discovery, expression, and development. They further elaborate that, in the communicative approach, CALL software assists learners’ interaction in groups or with peers to rearrange words and texts and establishes simulations for communication in the target language.

Integrative CALL, in early 1990s, is the third phase of CALL development as a response to the criticism to the communicative approach. This approach sought to integrate task-based,

content-based, and project-based learning into language teaching via the use of computers. Warschauer and Healey (1998) add that integrative CALL focuses on a whole-language approach to instruction and teaching of the four language skills (listening, speaking, reading, and writing). During integrative CALL stage, students were allowed to learn and interact via Computer-mediated Communication (CMC) with individual or groups of learners through synchronous, e.g., online chat or asynchronous, e.g., email (Warschauer, 1996). This implies that integrative CALL has involved four language skills and computer usage in learning through interactive activities in delayed or either real-time.

2.2 Importance of CALL

Studies have been carried out addressing the effects of CALL on learners' progress and teachers' pedagogy. Warschauer and Healey (1998) point out that CALL benefits teaching and learning process by facilitating collaborative work, making accessible of a variety of authentic materials, fostering interaction among learners and teachers, incorporating a variety of learning sources, and motivating learners. The following sections describe the significances of CALL in ELT.

2.2.1 For Learners

CALL implementation aims to improve learners' language skills, meet their learning needs, and expose them to real-world language use. CALL practice benefits the learners' progress in language learning by enhancing motivation, providing learning resources, and fostering autonomous learning.

a) Motivation

Hidayati's (2016) study reveals that CALL helps enhance learners' motivation, improving learners' interest to learn. CALL provides enticing ways for learners to learn English.

The process of learning is done through computer games, animated graphics, and problem-solving activities which make learning more interesting. AbuSeileek (2012) argues that communicative and interactive activities in CALL enhance learners' participation. In brief, CALL enables learners to enjoy the learning process which enhances motivation.

b) Learning Resources

CALL offers a variety of resources for learners. Chapelle (2001), Park and Son (2009), and Hidayati (2016) argue that CALL provides authentic materials that learners access and utilize to learn at their own pace. AbuSeileek (2012) adds that CALL equips language learners with computer software or programs and websites tailored to specific skills practice such as grammar, vocabulary, and so forth. Learners are allowed to select resources that match their interests and that will expose them to authentic language use through real-life tasks and interaction in computer programs and on the internet.

c) Autonomous Learning

CALL allows learners to decide on their own what to learn, which skills to develop and course to use, also decide the speed and level they need. A number of studies highlight that CALL potentially creates and encourage learners' autonomy (Almekhlafi, 2006; Dashtestani, 2012; Hidayati, 2016; Lam & Lawrence, 2002; Nila, 2013). Learners have the option to study anytime and anywhere at their own pace. Miftachudin (2012) points out that CALL allows students to manage their learning schedule to access their preferred online materials at any time. They are given more opportunities to revisit the same materials and repeat the lessons as often as necessary.

2.2.2 For Teachers

Teachers play an important role in planning, designing, and implementing CALL.

Teachers should also note that CALL can be beneficial to their pedagogical approaches by providing resources and helping in monitoring learning.

a) Teaching Resources

Park and Son (2009) examine the teachers' perceptions of implementing CALL in ELT and the result showed that majority of the participants benefited from the implementation in terms of access to a wide range of useful teaching materials. CALL provides countless sources such as videos, handbooks, and digital pictures for English language teaching which teachers can access and use in their classes. In addition, Miftachudin (2012) argues that CALL allows teachers access to the most recent, appropriate, and relevant materials.

b) Monitoring

CALL is a platform to bridge communication and interaction between teachers and learners. AbuSeileek (2012) states that CALL serves as communication platform for learners and teachers. This mode of learning allows communication via computers through teleconferencing technologies and social networks. Therefore, internet connectivity, software for language learning, and social networks are tools to support such communication and observation. Hidayati (2016) adds that CALL provides opportunities to also give direct individual feedback to learners such as via grammar checkers and spelling checkers for learners' writing, pronunciation correctors in automatic speech recognition, and error tracking in analyzing learners' work using computers. CALL allows language learning beyond the classroom, so teachers can observe and evaluate learners' progress over time within a school's online platform and computer programs or applications.

2.3 CALL as a Current Trend for Language Pedagogy

Over the years, language teaching has transformed. Computer use is believed to

significantly impact language learning. Computer facilities, language labs, and sufficient technical, and administrative support are required to implement CALL. However, Dashtestani (2012) adds that textbooks for teachers, curriculum supporting the use of CALL, and teachers training on CALL are required as well. Principally, ESL/EFL teachers should know theories and strategies pertaining to CALL implementation that will contribute to better impacts on students' language acquisition and learning. Dashtestani (2012) further highlights the importance of teachers learning computer software and language learning websites prior to introducing CALL. In line with this idea, Alshumeri (2008) says that CALL implementation should ideally involve education authorities, curriculum developers, parents, and the schools in decision making. Those stakeholders have the responsibility to reinforce the use of technology in education.

It is necessary to provide intensive training for ESL/EFL teachers to be able to improve, enrich, and employ CALL in the classrooms. Alshumeri (2008) states that regular staff development training is needed as support for teachers in order to be capable of introducing CALL. Technological advances in language classes must be considered to create meaningful and effective lessons. So, teachers and schools should invest more time, effort, and commitment to establish technology-based environments to supplement the students' language learning.

2.4 Barriers to CALL Implementation

Implementing CALL is challenging and there are a number of underlying factors that hinder its implementation. Park and Son (2009) classify factors in implementing CALL into external and internal issues. External factors include time constraints, limited facilities, lack of financial support, teacher training and curriculum. Park and Son describe internal factors affecting CALL implementation as teachers' personal attitudes, experiences, and technology skills. Lam (2000) and Kim (2002) assert that teachers' technology skills and experiences of

computer use in class are critical factors determining the success or failure in CALL implementation. They suggest that teachers with basic and strong skills in technology use tend to be more confident and knowledgeable in incorporating computer use into their teaching practice. An abundance of research reveals that those external and internal factors can potentially lead to the failure of CALL use (Park & Son, 2009; Shin & Son, 2007; Smerdon et al, 2000).

A number of studies on CALL implementation in ESL and EFL contexts have been conducted and have identified concerns regarding technology skills. Nila (2013) investigated teachers' perspectives and attitudes when CALL is introduced to EFL classroom in Bangladesh. Nila found that EFL teachers need more training to polish their skills to teach using CALL in their classes and that the authorities (school, government, staff) are seen as primary support for effective CALL implementation in many aspects such as facilities, language labs, and supervision of the progress.

In addition, Mthethwa's (2011) case study described the potential implementation of CALL for English language teaching in Swaziland. Mthethwa examined how prepared the English teachers (in-service and pre-service) were to introduce such innovation in ELT. He discovered that English teachers found the use of computers in ELT essential and improved students' language acquisitions in terms of grammar and vocabulary, but teachers possessed limited skills and knowledge on the use of technological tools and programs in class. Mthethwa, thus recommended intensive teacher training on CALL.

In another study investigating technological skill, and pedagogical and content knowledge of primary and secondary English language teachers in Turkey using the TPACK (Technological, Pedagogical, and Content Knowledge) Survey, Yuksel and Yasin (2014) found that those EFL teachers had moderate technology skill. TPACK is a framework for teachers

developed by Koehler and Mishra (2006) to identify the knowledge required for technology integration in teaching practice such as pedagogy, content, and technology. Yuksel and Yasin (2014) compared novice and experienced teachers, then revealed that novice teachers possessed better technology skill and more frequently employed technology in their teaching practice than their experienced counterparts. However, their study reveals that technology use in the EFL classroom in Turkey is teacher-centered and that the learners are not actively engaged with the technology used in the classroom. Yuksel and Yasin's (2014) study in Turkey has inspired the present study to measure Indonesian EFL teachers' technology skill to promote CALL in EFL as they recommended conducting a similar study outside Turkey to examine more foreign language teachers' technology skills.

Similarly, Rouf and Mohamed (2018) investigated secondary school teachers' technological skills. Their focus was on English teachers in the Bangladesh context. Their case study revealed that secondary school English teachers had adequate technology skills, but the use of computer technology in teachers' pedagogy was not effective for students' learning. This study suggests that teachers should utilize technology in classroom practice and develop their understanding of technology skill and usage in teaching English. Accordingly, understanding of technology integration in English teaching and learning activities should be developed.

2.5 CALL in Indonesian EFL Teaching

According to the Indonesian Law no. 20 year 2003 article 45, "every formal and non-formal education unit shall provide educational facilities and equipment required in accordance with pedagogical criteria for learners' development and growth for physical, intellectual, social, emotional, and spiritual abilities" (Ministry of National Education Indonesia, 2003). The government has focused on developing education by regulating the support required in each

school, including the use of technology for language teaching and learning. As DEPDIKNAS (2016) explicates, the newly-revised Indonesian education curriculum (known as Curriculum 2013) requires the incorporation of computer and digital technology with various themes of learning in teachers' pedagogical practice. Technology integration into English language teaching, then, is mandatory as well. EFL teachers in Indonesia have to be well-prepared and well-trained for such inclusion in their pedagogies. Rachmati (2016) said that technology integration into the teaching and learning of English is rising in Indonesia. Likewise, Hidayati's (2016) asserted that technology is promising to improve ELT in Indonesia because it leads to better learning outcomes.

However, Machmud and Basalama (2017) argued that the implementation of CALL in Indonesian EFL teaching has faced challenges such as a lack of supporting hardware (computers, printers, etc.) and a lack of software (computer programs, internet connection) which are not in accordance with the expectations of the Indonesian curriculum. Machmud and Balasama (2017) also found that qualified EFL teachers for CALL implementation are limited. There are reasons underlying this issue, one of which is technology skill. Nila (2013) asserted that EFL teachers introducing CALL should have skill to enact and integrate the use of technology into their pedagogy. The abovementioned studies highlight the important gap to address and investigate in the present study, that is teachers' lacking technology skills which could hinder successful implementation of CALL in ELT, particularly in the Indonesian EFL context.

2.5.1 CALL – Integrated Curriculum in Indonesia

Technology integration in language teaching and learning particularly in Indonesia has been an integral aspect governed in newly reformed education curriculum. In 2013, Indonesian Ministry of Education and Culture introduced ICT (Information Communication and

Technology)-based education curriculum, which is commonly known as the 2013 curriculum. This curriculum requires ICT to be integrated into all courses at schools and exploited by both teachers and students as a learning medium and resource. The Ministry of Education and Culture regulation number 65/2013 of the Republic of Indonesia on the Standard Process of Primary and Secondary Education highlights the policy of technology incorporation into teachers' pedagogies with the purpose of improving learning efficacy and efficiency. Prior to the enactment of 2013 curriculum, Mahdum, Hadriana, and Safriyanti (2019) mentioned that ICT was a discrete subject emphasizing the introduction of digital technology software and information access taught only at high schools, yet currently it is embedded into the instruction of all disciplines at primary and secondary schools.

Mahdum, Hadriana, and Safriyanti (2019) reported that the government supplied ICT facilities to schools in Indonesia. They add that schools today have sufficient infrastructures and facilities to perform technology-mediated learning activities, such as building computer laboratories, providing computers for teachers' use, projectors, internet connections, etc. Such a situation indicates that the Indonesian government highly regards the importance of technology use in current teaching and learning contexts. However, a number of studies indicated that teachers possessed lower technology skill in implementing technology-mediated language learning, which inspired the primary focus of the present study.

2.6 TPACK

Koehler and Mishra (2009) introduced TPACK (Technology, Pedagogy and Content Knowledge) framework for teachers as a set of guidelines to assess their ability to use computer technology in ESL/EFL teaching. TPACK was developed to describe teachers' understanding of technology use in education and to employ efficient and effective language learning with

technology. TPACK describes seven sub-sections of knowledge such as content knowledge (CK), pedagogical knowledge (PK), technological knowledge (TK), pedagogical content knowledge (PCK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), Technological Pedagogical and Content Knowledge (TPACK).

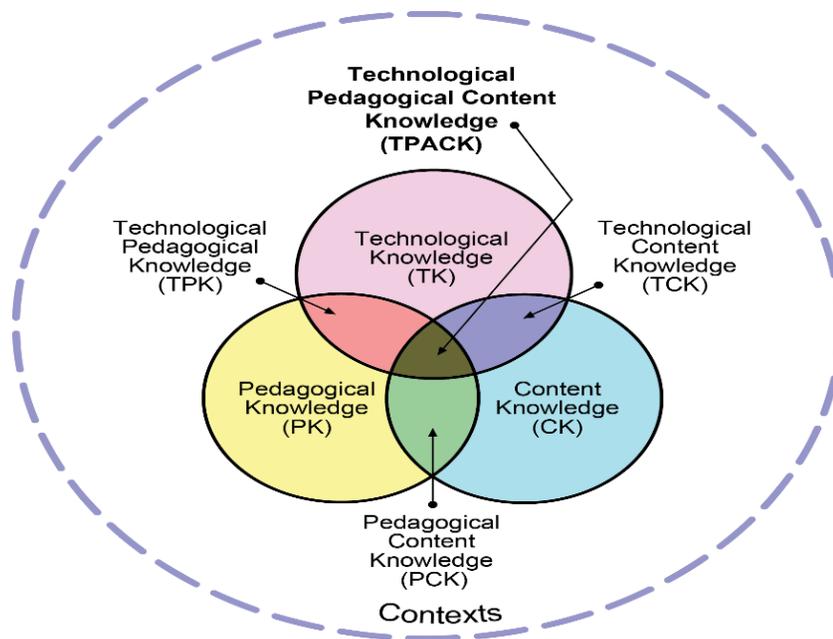


Figure 1. The TPACK framework and its components of knowledge (source: <http://tpack.org>)

2.6.1 Content Knowledge

Content knowledge is a critical and basic aspect for EFL teachers. Content knowledge is teachers' understanding (prior knowledge) about the materials and topics to teach in their classes (Koehler & Mishra, 2009). Content knowledge includes the knowledge of concepts, theories, ideas, and framework of a particular course to be taught.

2.6.2 Pedagogical Knowledge

Koehler and Mishra (2009) defined pedagogical knowledge as teachers' ability to teach and manage learning activities with various methods and approaches. Such knowledge is

mandatory when one wants to teach classes, especially in EFL classrooms with varied students' needs and characteristics. Pedagogical knowledge includes understanding students' learning style, classroom organization techniques, lesson designs, and student classroom evaluation.

2.6.3 Technological Knowledge

Koehler and Mishra (2009) defined technological knowledge as teachers' understanding of the use of technology for students' access of information and classroom use. Technological knowledge is how a teacher is able to identify particular technology and master its uses. This knowledge requires teachers to employ the technology tools and sources available to support learners' practice of the language.

2.6.4 Pedagogical Content Knowledge

This particular knowledge recognizes that particular content of learning should match with various teaching approaches. Pedagogical content knowledge represents teachers' understanding of the interplay of the pedagogical practices and content area (Koehler & Mishra, 2009). Effective teaching and learning processes required the appropriate combination of the content and the right teaching methods.

2.6.5 Technological Content Knowledge

Technological Content Knowledge is the teachers' ability to identify the links between certain technology and content. Teachers use technology to enable students discover new things related to the contents taught. Therefore, Koehler and Mishra (2009) suggest that this particular knowledge requires teachers' decision-making ability in designing the learning materials to match with certain technology tools in their pedagogical practices.

2.6.6 Technological Pedagogical Knowledge

This specific knowledge enables teachers to understand what technology is appropriate

for the learning objectives and allows teachers to choose technology tools suitable for a particular teaching method based on their feasibility. Koehler and Mishra (2009) argue that the use of technology in class involves a wide variety of teaching approaches that teachers need to carefully consider.

2.6.7 Technological Pedagogical Content Knowledge

TPACK synthesizes all the knowledges described previously. It relies heavily on how technology is suited to a pedagogical need to teach the right content in a certain context. This particular competence involves all abilities required to implement technology-mediated language learning (Koehler & Mishra, 2009). TPACK has wide use as an approach in measuring teachers' capability and readiness to teach with technology.

2.7 Research Questions

Grounded on the discussions of relevant theories and studies above concerning the major issues in CALL implementation, the present study specifically focused on exploring Indonesian EFL teachers' technological skill. A number of studies on Indonesian EFL learning addressed an issue regarding the teachers' lack of technology skill, considering such skill as a critical factor towards the successful implementation of CALL in ELT. However, little work has been done to investigate EFL teachers' technology skills to promote CALL in their class, particularly in Indonesian EFL contexts. Therefore, this study seeks to answer the following questions:

1. Are Indonesian EFL teachers' technology skills sufficiently prepared to use CALL in EFL classes?
2. Is there any significant difference of technology skills among teachers' teaching experience, school accreditations, and teachers' levels of education?
3. How do Indonesian EFL teachers perceive the usefulness of CALL?

4. What are EFL teachers' current needs in order to enact CALL-based EFL instruction?

CHAPTER 3
METHODOLOGY

3.1 Research Design

The present study employed a mixed methods design which focuses on collecting, mixing, and analyzing both quantitative and qualitative data in a single study. Creswell and Plano Clark (2011) state that mixed methods design can provide a better understanding of both quantitative and qualitative data of the research. A mixed methods design allows distinct yet complementary results to be gathered and analyzed.



Figure 2. Prototypical version of the explanatory sequential design (Creswell & Plano Clark, 2011, p. 69)

The quantitative data of this study were collected via an online survey distributed to the participants. The qualitative results emerged from the interviews with the participants. The findings were compared and conclusions were drawn during the interpretation.

3.2 Research Setting

The research study was conducted in Indonesia where English is learned as a foreign language and the specific focus was on EFL teachers in Maluku Province. The primary rationales of conducting the research in Maluku were because Maluku is the home region for the research, less populated, unique geographical area and there is a dearth of study on CALL in Maluku. The present study informed current measure of teachers' competence and provided recommendations

to foster EFL teachers' professional development training in Maluku.

3.3 Research Participants

Table 1. Demographic Summary of Participants

	%	<i>n</i> (43)
Gender		
Male	6.98	3
Female	90.70	39
Prefer not to say	2.33	1
Age: 25 - 61		
Highest Level of Education		
Bachelor's Degree	65.12	28
Master's Degree	34.88	15
Major:		
English Education	100	43
English Literature	-	-
Duration of Teaching English:		
Less than 12 years	48.84	21
12 or more years	51.16	22
Level of School:		
Senior High School	83.72	36
Vocational School	16.28	7
School Accreditations:		
A	25.58	11
B	74.42	32
School a Language Laboratory*		
Yes	16.67	4
No	83.33	20
School has an ICT Laboratory*		
Yes	62.50	15
No	37.50	9

Note: *Only 24 different schools were represented in the study

A total of 43 EFL teachers of high schools in Maluku Province (see Table 1) participated in the online survey. These teachers have had decent teaching experience divided into novice and experienced teachers as indicated by the average score, 12. Following the survey questionnaire, nine participants agreed to a follow-up semi-structured interview aimed at gaining more in-depth data regarding the focus of this study. Therefore, the research study employed purposive sampling to select the interview participants. Cresswell and Plano Clark (2011) state that purposive sampling relies on the researcher's judgment to select samples for the study that are knowledgeable and experienced with regard to the phenomenon of research interest. Hence, EFL teachers were selected for this study with criteria as follows; the highest level of education, length of teaching experience, school accreditation, training/conference participation, and willingness to proceed to the interview phase as indicated in demographic information and survey.

3.4 Research Instruments

The instruments implemented in the research study included a questionnaire and an interview.

3.4.1 Questionnaire

In this research study, TPACK framework questionnaire (see Appendix 1) developed by Schmidt et al. (2009) and Sahin (2011) was adapted. The survey questionnaire contained demographic information questions for teachers to answer and 45 Likert-scale (*Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree*) items investigating EFL teachers' technological skills and CALL practices in their classes.

3.4.2 Interview

A semi-structured interview was used to gain more in-depth data to follow up the

quantitative findings. There were nine guided interview questions (see Appendix 2) asked about the classroom implementation of CALL and EFL teachers' perspectives pertaining to the practices, thoughts, and expectations about CALL-based EFL teaching. The interviews were conducted in two modalities; 1). Face-to-face interviews and, 2). Interview by Skype, WhatsApp video calls, and Messenger video call. Then, the interviews were audio recorded using Audacity for voice recording on the computer.

3.5 Data Collection Method

In collecting the data, the participants completed the online survey through a Google form survey shared in a Facebook group of English Teacher Association in Maluku. Teachers and schools were also contacted directly and offered a paper copy of the survey that took 45 minutes to complete. At the end of the survey, participants were asked if they would be willing to participate in an interview. Some follow-up interviews took place in Ambon, Maluku, Indonesia while some others were conducted via online video calls due to a time constraint for researcher's visit. The interview took 60 minutes for each participant. The audio and video recordings were transcribed for data analysis.

3.6 Data Analysis

To analyze the data collected from the survey and interview, the study employed descriptive and inferential statistics and the general inductive approach.

3.6.1 Descriptive and Inferential Statistics

To analyze the quantitative data, the present study employed descriptive statistics by using t-test to determine the mean and standard deviations in order to measure and compare the datasets in this research study such as comparison between an A accredited school and a B accredited school in terms of EFL teachers' technology skills, and the use of technology tools in

their pedagogies. In addition, inferential statistics through the Mann-Whitney Test was used to make inferences about the population using data drawn from the sample.

3.6.2 General Inductive Approach Analysis

In order to analyze the result of semi-structured interview, a general inductive approach was used. Thomas (2006) defined general inductive approach as an analysis approach that establishes link emerging from the raw data to the research questions. So, the interview transcripts were analyzed to identify emerging themes or categories that connected to the aims of the research study. Each segment of the interview was coded on a particular theme addressed by participants to see differences and similarities generated among subgroups of participants.

3.7 Limitation of the Study

The present study focused on viewing EFL technological skills preparedness to promote CALL implementation in EFL learning context. Because Indonesia is a vast archipelago country, the study was focused primarily on and specific to CALL in EFL teaching and learning at high schools in Maluku Province of eastern Indonesia and availability of supporting elements such as administrative and supply to promote CALL at high schools. A number of studies explored the potential of CALL implementation in other areas of Indonesia but a dearth of similar work on CALL has been done in Maluku. Thus, the study sought to provide further evidence of CALL implementation in EFL teaching contexts.

3.8 Research Ethics

Considering the regulations of conducting research on human subjects at SIU, participants in the study were involved voluntarily and the confidentiality of their data were thoughtfully respected throughout the research process. Participants were clearly informed about the details of the study, data collection procedures and their rights of participation by which they

could decide to withdraw from the study at any time. They all agreed to take part in the study by signing the consent form or clicking the consent button on online survey given prior to starting to fill in the survey and voluntarily giving their contact (email address or WhatsApp contact number) for the follow-up interview upon each individual's approval. To analyze and present the results of the study, the participants' identities (names and institutions) were protected by assigning pseudonyms for each participant.

3.9 Research Timeline

Data were collected from June – late September for both quantitative and qualitative data collection. The online survey for EFL Teachers in Maluku was distributed in late May – July 2019 on Facebook. Then, the follow-up interviews were conducted from July 30 – September 24, 2019.

CHAPTER 4

RESULTS

The chapter presents the findings of the present study examining Indonesian EFL teachers' technology preparedness, perceptions on the use of CALL, and their current needs for CALL adoption in EFL pedagogies. For the objectives of the present study, a sample of 43 Indonesian EFL high school teachers participated in an online survey containing Likert scale items and nine teachers took part in the interview. The data of the findings are presented from quantitative data and followed by qualitative data as in the order of the research questions stated in Chapter 2.

4.1 Indonesian EFL Teachers' Perceived TPACK

The present study explored Indonesian EFL teachers' technology skills to introduce CALL based EFL instruction by using TPACK questionnaire adapted from Schmidt et al (2009) and Sahin (2011). TPACK questionnaire consist of seven sub-divisions as follows: Technological Knowledge (TK), Content Knowledge (CK), Pedagogical Knowledge (PK), Pedagogical Content Knowledge (PCK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and Technological Pedagogical and Content Knowledge (TPACK). For the objective of this study, four of the seven sub-sections of the questions such as Technological Knowledge (TK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and Technological Pedagogical Content Knowledge (TPACK) were investigated for distinct foci of comparison as follows: school accreditations, teaching experience, and teachers' level of education.

The summary of Indonesian EFL teachers' technology skill is shown in Table 2. The data demonstrated participants' TK with a mean score of 3.51 and a standard deviation of 0.92. In

addition, the teachers' PCK had the highest mean score ($M=3.75$, $SD=1.20$), followed by PK score ($M=3.71$, $SD=1.12$) and CK score ($M=3.63$, $SD=1.05$). This indicated that the participants perceived their average competence of the pedagogical approaches and the content knowledge.

Table 2. Descriptive Statistics of Indonesian EFL Teachers' TPACK scores

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Technology Knowledge	43	1.40	4.93	150.80	3.51	0.92
Pedagogical Knowledge	43	1.00	5.00	159.33	3.71	1.12
Content Knowledge	43	1.00	5.00	156.00	3.63	1.05
Technological Pedagogical Knowledge	43	1.00	5.00	150.25	3.49	1.12
Pedagogical Content Knowledge	43	1.00	5.00	161.14	3.75	1.20
Technological Content Knowledge	43	1.00	5.00	146.75	3.41	1.03
TPACK	43	1.00	4.80	143.40	3.33	0.94
Valid N (listwise)	43					

The data depicted that the participants' TPK ($M=3.49$, $SD=1.12$) and TCK ($M=3.41$, $SD=1.03$) scores were slightly low. The participants' total TPACK scores were the lowest of all sub-sections, with an average score of 3.33 and a standard deviation of 0.94. The results imply that the EFL teachers self-perceived their low competence to identify and use specific pedagogical approach and suitable content with particular technology. Figure 3 below provides graphs to visualize the difference of descriptive statistics findings. It can be seen that PCK is the

highest knowledge while TPACK is the lowest one which demonstrate that teachers perceived their lack of knowledge to combine technology in the EFL teaching practices.

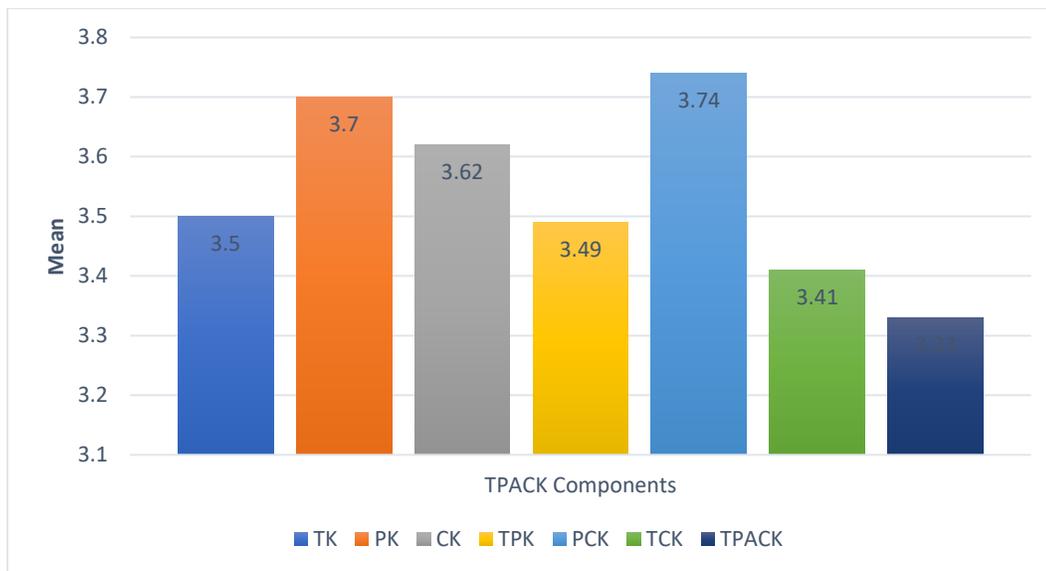


Figure 3. Indonesian EFL Teachers’ TPACK Score

4.1.1 Indonesian EFL Teacher’s TPACK Comparison by School Accreditation

Other than looking at overall scores of teachers’ TPACK, it is valuable to evaluate competences based on school accreditation, assuming that being placed in a nationally best accredited school allows teachers to explore technology use in EFL class. The result in Table 3 presented varied scores. In terms of TK, teachers from the A accredited schools reported greater mean score of 3.87 and a standard deviation of 0.90 than those who teach at the B accredited schools (M=3.38, SD=0.90). TPACK scores between these two accreditation levels were varied. The data described that the “A” schools’ TPACK score (M=3.51, SD=1.10) was markedly higher than the “B” schools (M=3.28, SD=0.89).

**Table 3. Comparison of Indonesian EFL Teachers' TPACK
by School Accreditation**

	Accreditation	N	Mean	Std. Deviation
TK	A	11	3.87	0.90
	B	32	3.38	0.90
PK	A	11	3.73	0.99
	B	32	3.70	1.17
CK	A	11	3.80	1.10
	B	32	3.57	1.05
TPK	A	11	3.84	1.24
	B	32	3.38	1.08
PCK	A	11	3.84	1.15
	B	32	3.71	1.23
TCK	A	11	3.59	1.09
	B	32	3.35	1.03
TPACK	A	11	3.51	1.10
	B	32	3.28	0.89

The following Figure 4 below gives visual representation of Table 3 above. The figure contains comparison of all TPACK components between A accredited schools and B accredited ones. It can be seen that the A schools overweighed B schools in all components, markedly higher differences were shown in TK and TPK.

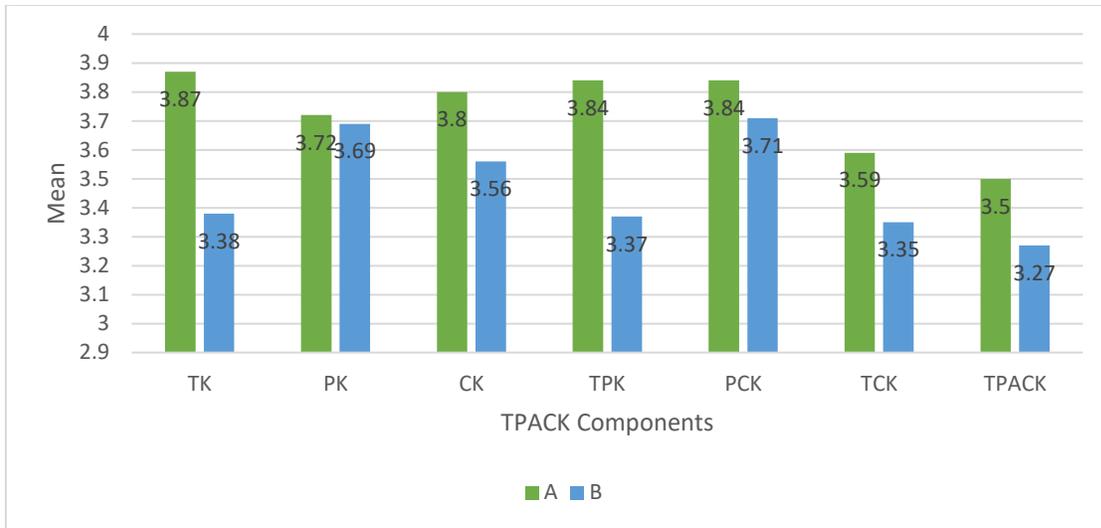


Figure 4. Indonesian EFL Teachers' TPACK by School Accreditation

In order to see if there is a significant difference between these two variables, Mann-Whitney Test was, therefore, performed. Table 4 presented the Mann-Whitney test results for EFL teachers' competence and actual use of technology in ELT based on school accreditation. The data in Table 4 indicated that the school accreditation divide showed a significant difference ($p > .019$) in terms of Technology Knowledge (TK) out of all other subscales of TPACK. The data clearly denoted that teachers from the A accredited schools were proficient in technology compared to their B counterparts.

Table 4. Mann-Whitney U Test by School Accreditation

	TK	PK	CK	TPK	PCK	TCK	TPACK
Mann-Whitney U	92.000	174.000	135.500	130.000	168.000	153.500	149.500
Z	-2.342	-.056	-1.133	-1.304	-.224	-.634	-.743
Asymp. Sig. (2-tailed)	.019	.955	.257	.192	.823	.526	.457

4.1.2 Indonesian EFL Teacher's TPACK Comparison by Teaching Experience

Previous studies reported that the longer teaching experience allows more technology exploitation in EFL classes. The present study challenged to view teachers' competence based on their teaching experience. The median score of participants' demographic data is 12 years, therefore, for the purpose of this study, teachers who had taught more than 12 years were considered experienced while those less than 12 were novice. Table 5 described the findings of teachers' TPACK competence and practice based on their teaching experience. PCK demonstrated the greatest mean score of 3.81 and standard deviation of 1.30 for teachers whose teaching experience were more than 12 years (>12) whereas a mean score of 3.70 and a standard deviation of 1.14. This suggested that the experienced teachers perceived of having proficient ability to make decisions about teaching approaches that suit particular lessons in EFL class.

Table 5. Comparison of Indonesian EFL Teachers' TPACK by Teaching Experience

	Teaching Experience	N	Mean	Std. Deviation
TK	>12	19	3.48	0.97
	<12	24	3.53	0.90
PK	>12	19	3.71	1.23
	<12	24	3.70	1.04
CK	>12	19	3.74	1.13
	<12	24	3.54	1.01
TPK	>12	19	3.41	1.20
	<12	24	3.56	1.08
PCK	>12	19	3.81	1.30
	<12	24	3.70	1.14
TCK	>12	19	3.38	1.05
	<12	24	3.44	1.05
TPACK	>12	19	3.31	1.02
	<12	24	3.36	0.89

The findings report experienced teachers' PK (M=3.71, SD=1.23) and CK (M=3.74, SD=1.13) were higher than their fairly novice counterparts' PK (M=3.70, SD=1.04) and CK (M=3.54, SD=1.01). However, the experienced teachers' TK (M=3.48, SD=0.97) scores are slightly lower than novice teachers' (M=3.53, SD=0.90). The data in Table 5 also depicted that the experienced teachers' TPK (M=3.41, SD=1.20), TCK (M=3.38, SD=1.05) and TPACK (M=3.31, SD=1.02) were somewhat lower than the novice teachers' TPK (M=3.56, SD=1.08), TCK (M=3.44, SD=1.05) and TPACK (M=3.36, SD=0.89). These data indicate that novice teachers self-perceived to have better technology competence, ability to adopt technology with the right content and method than the experienced ones. The comparison of the visual data is provided in the following figure.

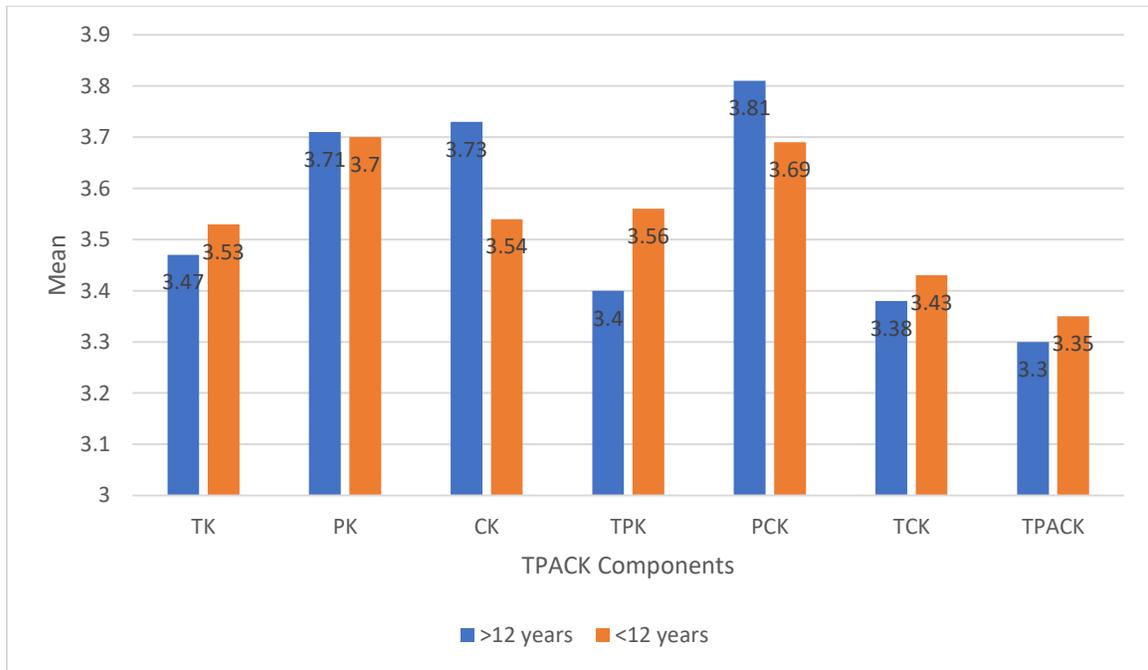


Figure 5. Indonesian EFL Teachers' TPACK by Teaching Experience

Table 6 below presented the data run by Mann-Whitney U test. Data were classified into two categories; experienced and novice teachers, then calculated all subscales of TPACK. The result turned out to be not significantly different between experienced and novice EFL teachers.

Table 6. Mann-Whitney U Test by Teaching Experience

	TK	PK	CK	TPK	PCK	TCK	TPACK
Mann-Whitney U	224.000	201.000	186.000	210.500	197.500	216.000	204.500
Z	-.098	-.667	-1.033	-.436	-.751	-.297	-.579
Asymp. Sig. (2-tailed)	.922	.505	.302	.663	.453	.766	.563

4.1.3 Indonesian EFL Teachers' TPACK Comparison by University Degrees

The results were also examined in relation to the highest degree that the teachers had earned. This was done to determine whether higher education plays a considerable role for EFL teachers' competence pertaining to the inclusion of technology tools in their classroom instruction. The demographic data reported a good number of Bachelor's degree holders and Master's degree holders, then this study referred to such data to make comparison. Table 7 below revealed that the mean scores for TK, master's ($M=3.76$, $SD=0.94$) were higher than bachelor's ($M=3.37$, $SD=0.89$). Additionally, master's TPK ($M=3.55$, $SD=1.20$) and TCK ($M=3.57$, $SD=1.05$) were also higher than bachelor's TPK ($M=3.46$, $SD=1.10$) and TCK ($M=3.33$, $SD=1.03$). Furthermore, TPACK score for bachelor's ($M=3.31$, $SD=0.91$) was somewhat lower than master's ($M=3.39$, $SD=1.02$). These results inform varied scores between the two variables of degrees.

Table 7. Comparison of Indonesian EFL Teachers' TPACK by University Degree

	Degree	N	Mean	Std. Deviation
TK	Master's	15	3.76	0.94
	Bachelor's	28	3.37	0.89
PK	Master's	15	3.61	1.15
	Bachelor's	28	3.76	1.12
CK	Master's	15	3.86	1.15
	Bachelor's	28	3.51	1.00
TPK	Master's	15	3.55	1.20
	Bachelor's	28	3.46	1.10
PCK	Master's	15	3.90	1.25
	Bachelor's	28	3.66	1.19
TCK	Master's	15	3.57	1.05
	Bachelor's	28	3.33	1.03
TPACK	Master's	15	3.39	1.02
	Bachelor's	28	3.31	0.91

The graph below (see Figure 6) highlights comparison between master's degree holders and bachelor's degree holders in TPACK elements. It can be said that those with master's degree perceived higher competence than teachers with only bachelor's degree in all components, except PK as the graph shows higher mean to bachelor's degree holder.

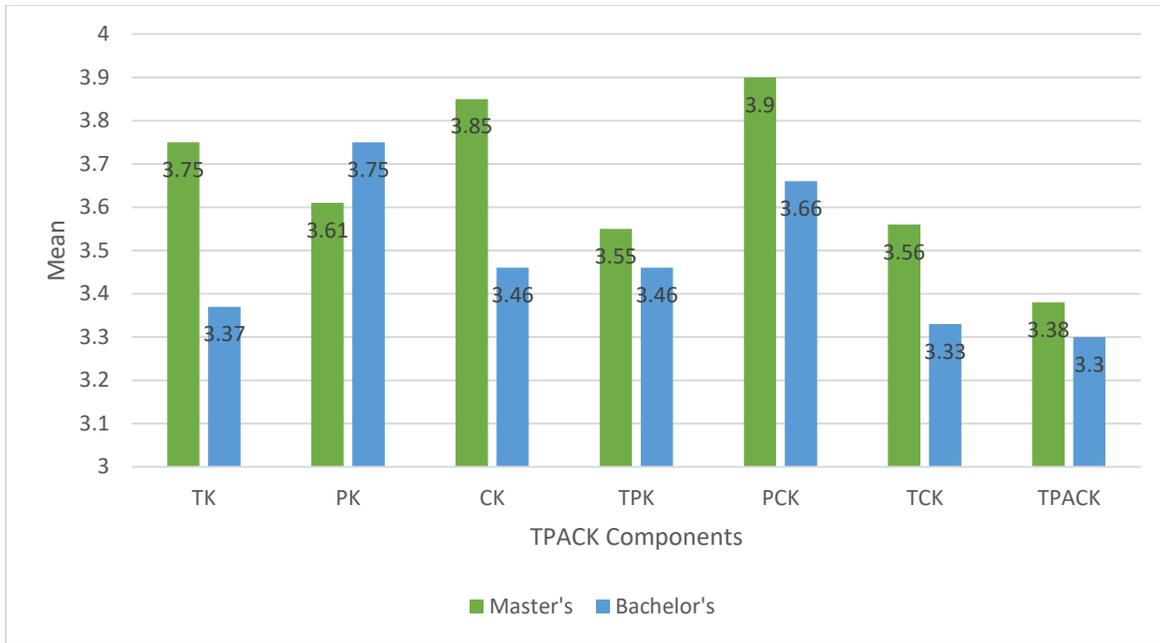


Figure 6. Indonesian EFL Teachers' TPACK by University Degree

Adding up to the findings above, table 8 shows Mann-Whitney test results. Subscales PK, CK, TPK, PCK, TCK and TPACK performed no significant difference. However, it is surprising that comparing the educational degree, significantly statistical difference ($p < .05$) was measured in TK between participants who are master's and bachelor's degree holders. The quantitative data suggest that teachers who earned master's degree have better technology knowledge than others who are bachelor's graduates.

Table 8. Mann-Whitney U Test by University Degree

	TK	PK	CK	TPK	PCK	TCK	TPACK
Mann-Whitney U	129.500	176.000	138.500	191.500	178.500	172.000	200.500
Z	-2.055	-.875	-1.832	-.480	-.808	-.980	-.244
Asymp. Sig. (2-tailed)	.040	.381	.067	.631	.419	.327	.807

The statistical findings entailed evidence of the participants' perceived technology literacy. In order to better understand EFL teachers' proficiency in deploying technology in their teaching practices and to have comparable data that support quantitative results, interviews were

conducted. The qualitative data obtained in this study expands the interpretation of the numerical results. The following sections disclose participants' views and exemplified adoptions of CALL in their classroom instructions.

4.2 Indonesian EFL Teachers' Perceptions on the Usefulness of CALL

In addition to EFL teachers' statistical measurement of TPACK that signifies their technology literacy in ELT practice, it is essential to look further the teachers' perceptions of technology utilization in English teaching and learning. To gauge the perceptions, a semi-structured interview was conducted with nine EFL teachers (see Table 9). Afterwards, their responses were analyzed by using General Inductive Approach Analysis.

Table 9. Description of Interview Participants

Pseudonym	Teaching Experience	School Accreditations	Level of Education
Chelsea	10 years	A	Master's Degree
Cheryl	13 years	B	Bachelor's Degree
Joy	27 years	A	Master's Degree
Lincoln	18 years	B	Master's Degree
Candice	29 years	B	Master's Degree
Maria	11 years	B	Bachelor's Degree
Jessie	5 years	B	Bachelor's Degree
Rossie	14 years	A	Master's Degree

From the analysis, several themes emerged. Six major themes were attributed to the perceptions of CALL efficacy to EFL learning. The study reported the following themes

pertaining as to how EFL teachers recognize the benefits of CALL integration in their EFL classroom. Table 9 provides a summary snapshot of teachers' perceptions on adopting CALL into teaching practice.

Table 10. An Overview of Interview Results

Emergед Themes	<i>N</i>
CALL allows exchanging knowledge	5
CALL embodies the interplay of technology and English language	7
CALL replaces traditional classroom	6
CALL assists design efficient EFL materials	5
CALL promotes digital learning	4
Teachers' awareness of digital era	4

4.2.1 Knowledge Exchange

CALL is perceived to be a means of sharing knowledge between teachers and students in the EFL classrooms. Participants find CALL useful to learn and transfer knowledge with the students about particular technology currently available, meaning that teachers are not the only source of learning in the classroom when it comes to the use of technology. Students are also allowed to share what they know regarding technology use with teachers. For example, Cheryl discussed teachers' reversed role in the classroom when implementing CALL-based EFL teaching in their contexts. Unlike previous decades in which teacher-centered learning played role, today students are given opportunity to elicit their knowledge of recent technology advances with teachers and classmates.

"...when I talk about technology, my students, they have qualifications, or they are qualified in

technology. Yeah, they are more skillful than I as their teacher. Even, I asked them to help me with something related with the technology, they will help me, the newest thing in term of technology, they will give the information for me. In class decades ago, I, as teacher, give them information, material but right now students can give contribution also to teachers. So, teachers should realize it." (Cheryl)

Similarly, Joy echoed the fact that students are capable in technology literacy and that teachers are encouraged to creatively innovate and create engaging classroom activities that involve technology tools.

"our students in this era, they sometimes have better knowledge of technology rather than the teachers. So, we must compare our method, and our skills to face students of this era. Like my students, they are smart in technology." (Joy)

The remarks indicate that teachers were aware of the needs of ideas and information shared from students, and embraced the fact that students were likely to be more technology literate.

4.2.2 Interplay of Technology and English

The interviews reported the idea with regards to why CALL is useful for the EFL teachers' classroom practice. They revealed that the use of technology and English learning is related. The EFL teachers looked attentively at the importance of mastering technology and English language for students and teachers themselves in this globalized era. For instance, Cheryl's statement signaled the extent to which learning English is beneficial to technology mastery. Such statement is strongly underpinned by Joy and Rossie's remarks on the implications of English language' role in technology domain.

"I think when we learn English and learn technology effectively, if we know technology, we

know English, we can get anything for our lives more easily. So, I think the English and technology are related. English and technology are equally important. They should walk together. That's my opinion." (Cheryl)

"Well, English and technology are closely related. These two are important nowadays, such as information you find on internet is in English...or for example, information about teaching methods in English or scholarship and many more. So, both learning English and mastering technology are equally important..." (Joy)

"I think, you know, learning English helps you know almost everything. I mean, the instructions in technology tools are in English so learning this language (English) helps you to master how to use technology properly..." (Rossie)

These extracts highlight that implementing CALL allows students to not solely learn English but also how to use technology for any purposes.

4.2.3 Replacing Traditional Classroom

CALL based EFL learning embodies the potential shifting from old-fashioned learning which heavily relied on the use of blackboard and chinks to a more technology-mediated learning. Participants recognized the efficiency of involving practical and affordable technology into their EFL teaching practice. Chelsea expressed the impact of CALL which is efficiency in her teaching material delivery.

"I have to admit that technology is also useful because it makes my learning easier. Much easier! ... Can you imagine I have to write down every day on the whiteboard?" (laughed) - (Chelsea)

"now, students can find the new words, they can find through their handphones. They can google, they browse the internet. So, I think, um, there's a lot of changes (in learning)" - (Maria)

Further, Maria pinpointed a shift of her teaching approaches with the use of practical technology. These two statements provide evidence on how technology is employed as a media for language teaching and finding resources by teachers and students.

4.2.4 Assisting Efficient EFL Material Design

In relation to changing conventional classroom to online-based classroom, participants also highlighted the efficacy of designing EFL materials for teaching and learning with technology. In other words, participants made use of technology for effective and enjoyable EFL materials delivery to students. Joy, Chelsea, and Candice provided below the samples of their technology use to design their lessons.

"I use them (technology) for creating the materials so they can be enjoyed by the students. As teachers, we have to provide several technology(s) to support our materials. It can help us in teaching because English is (a) hard subject for the students in Maluku..." (Lincoln)

"...So, I used storyboard to design my teaching materials, adding animated pictures so that my students could understand the context very well like about using language expressions, like apologizing or greeting, yeah, they liked it and seemed to enjoy..." (Chelsea)

"to design my materials for teaching, I used powerpoint most of the time. Because, you know, it's very handy. You just need to be creative like add pictures, animation, video...yeah, to keep students pay attention to you." (Candice)

It is evident that teachers used a number of tools or apps to design their materials. By using these, they believed that students can be engaged with the learning. More evidence on technology tools in EFL teaching is discussed in teachers' uses of technology in EFL class.

4.2.5 Promoting Digital Learning

With regard to the relationship of technology and English, CALL was perceived as the

promotion of digital learning in this particular EFL context. The participants acknowledged that CALL enables the students to learn English at anytime and anywhere beyond their classroom.

The participants reported that digital learning offers plenty of options of language learning apps to the students. For example, Rosie introduced several apps to use in her class.

"not to waste of the facilities and I always tell them to download or to install some educative applications just like, edpuzzle and also Google classroom" (Rosie)

"Again, the point is that they can learn everything about English everywhere and everytime they want to." (Jessie)

In addition, Jessie highlighted the significance of digital learning students may experience. These indicated that English learning, in today's globalized and digital era, is hardly ever textbook-oriented and in classroom, instead students can manage to create self-learning at any convenient times and places.

4.2.6 Recognizing Digital Era

The interviews revealed that the participants are aware of the growth of digital learning, today. Participants perceived the need to master technology for effective language learning and teaching embodies their enthusiasm of technology importance in their pedagogy.

"I myself and the other English teachers, also students, uhm, must study more about the technology because that is very important in this era." (Candice)

"...there is an urgency, today, to master technology and use it on our daily basis, especially in teaching..." (Jessie)

Candice and Jessie, as teachers of 21st century, truly embraced the necessity of technology use in their daily teaching practices. Their responses indicated an important task for teachers; the need to follow up with the advancement of technology, nowadays.

4.3 Indonesian EFL Teachers' Enactment of CALL

In addition to teachers' perceptions on the advantages of CALL towards EFL pedagogy, it is crucial to observe EFL teachers' actual utilization of CALL in their classrooms. The participants reported that they exploited a wide variety of tools and apps, for a number of reasons, and also challenges that impeded the implementation of CALL based EFL learning. The findings are elaborated as follows.

4.3.1 Teachers' Uses of Technology in EFL Class

The participants' interviews disclosed a number of tools or apps such as Story Board, Kahoot, and even mobile phones used in their teaching. These apps were used for various reasons pertaining to improving learners' English proficiency. Additionally, the participants desired to create the nuanced yet engaging atmosphere of EFL learning.

"I develop the materials uses story board and developing the genre such as narrative or descriptive or recount, I used to develop my own materials by using this story board, I put pictures and materials, and make it as interesting as well" (Chelsea)

"I use some technology such as Kahoot and I also use powerpoint, I applied everything that I got from MOOC (Massive Open Online Course)" - (Lincoln)

"..I used my laptop showing the powerpoint, and I, uh, show them (students) about the material in the powerpoint..." (Candice)

"the site that I have is Edpuzzle.com, it's like google classroom, and e-learning. They're similar actually. I apply it by getting them (students) to, first of all, join the site" (Rosie)

The responses above illustrated a handful of tools and apps deployed in EFL teaching. The utilization of those particular tools was plainly tailored to different topics of learning as

indicated by the statements below, for instance. They signify that teachers selected a tool or app that suits to a particular theme of learning.

"I think because I found that storyboard encourages my student to speak even if they just speak in very short sentence" (Chelsea)

"I use media, media to teach the students like a laptop also could be a good media,... also mobile phone to read because this is a new modern era." (Cheryl)

"the tools I used video, and also some audio recorders, ... , students were teenagers so they like recording like videos or something like that... when I taught them about the process of something, like, how to make fried rice, how to make a cup of tea, something like that. So, they have to demonstrate in front of the class, and I tried to record them make a video. With that video, I played it so that they could see how their performances were like so that they could build more confidence later, feel brave and more fluent when presenting in English in front of other people." (Jessie)

"we use Messenger, so it will be easy to communicate with them. So, sometimes when I had a task, I sent it through the Messenger for some students. Because some students, they cannot afford to buy the mobile data, but messenger is free." (Maria)

"I think, those technology(ies) help improve all of the language skills, like reading skill, speaking skill, and listening also um, writing skill." (Jessie)

Chelsea and Jessie pinpointed the facts that they figured out the implications of their technology use on students' performances in their EFL classes. This aligns with the abovementioned quotes that indicate teachers' selective considerations of using technology that matched topics and expected output of students.

4.3.2 Teachers' Reasons for Adopting Technology in EFL Class

During the interviews, the participants also highlighted several considerable arguments to make use of some technologies in their EFL classrooms. They regarded students' needs, current trends, and the practicality offered by the involvement of technology. Following are the selected quotes of the participants' responses.

"I see the needs, the students' needs, I think that mobile phones have become their favorite thing." (Cheryl)

"so, I encourage myself to find any information about any news and technologies that could meet (students) needs, any new method unless I will know nothing" (Chelsea)

Cheryl and Chelsea, for instance, positioned students' needs as the utmost importance of integrating technology into their EFL teaching. They valued students through adopting common things such as gadgets to use in class activities for learning.

"It (curriculum 2013) says that all subjects or all courses should be integrated with the use of IT or, uhm, technology..." (Candice)

Furthermore, Maria commented on the advantage that technology offers to teachers.

"...if we use technology, there is a lot of information that we can get, right? you know, lots of information regarding some kind of teaching methods that we can take from technology available." (Maria)

In addition, Candice added that CALL enactment in EFL is the actualization of the newly amended curriculum. Since its establishment in 2013, curriculum 2013 requires all classes to incorporate technology in teaching and learning process. These extracts imply myriad considerations were made to come up with using appropriate CALL specific tools in learning activities.

4.3.3 Teachers' Sources for CALL Enactment

The interviews brought up the facts that the participants gained their inspiration to use technology in EFL classrooms from multiple sources. The participants acknowledged that their experiences contributed to CALL implementation. The experiences included the previous education and training, including their participation in some events such as seminar and online course. Chelsea's statement suggests that her university study has inspired her use of technology in language teaching.

"I heard the... technique I can say like that or these things, I mean, Kahoot and Storyboard from my lectures and I found that they are very useful apps. Also, when I attended or participated in a program two years or three years ago. And I found that, wow! These are very interesting! So, I decided to implement it..." (Chelsea)

Meanwhile, Candice, Meenie, Cheryl and Lincoln mentioned their participation in events such as seminar and workshop endowed more practical ideas for technology use in language class. However, Cheryl admitted a somewhat related response to Chelsea's that their study played an important role in building up more new knowledge of CALL.

"...I have learned from the training, like, in [name of place], I followed a national instruction training. When my instructor gave us materials, ... but they focused on the technology" (Candice)

"I joined, we call it RELO, from some lecturers from (the) US... and they teach us about how to teach students by using IT but it's not more complete but I like the way they try to teach us about technology, it's better if you use internet or if you use IT for the students and I like that."

(Meenie)

"I got that since I attended several courses and from MOOC. Also, when I attended an event or workshop in [name of place], I got several applications for teaching English from our tutors."

(Lincoln)

"I did participate in a training related to mobile-assisted learning. So I think, I'm so lucky because the training helped me to design an engaging learning activity related with daily lives also. I also discussed with the other English teachers, and I was inspired by my lecturers at the university." (Cheryl)

Interestingly, Jessie who was self-motivated, stated that, despite limited participation in conferences and seminars, sharing with fellow teachers is useful to gain more practical ideas. Jessie alone provided a different perspective that teachers create self-learning, meaning that they found out and searched for more inputs from a wide variety of resources such as networking with colleagues from different disciplines and self-surfing on the internet for more updates.

"And I was just looking what is going on in the internet, finding information, and then the ideas just crossed my mind then I decided to implement them in my class. Oh yeah, I also shared ideas with some of my friends in other schools. That's where also I got the ideas from. But not limited to English teachers but also IT teachers. They helped me so much to develop my ideas and turn into real applications in class..." (Jessie)

4.3.4 School Support for CALL

In order to effectively implement CALL in the EFL classroom, the interview revealed the decent support provided by the related authority, in this case, the schools as the primary stakeholder for education. The participants' responses were varied. Some participants expressed that their schools contributed the supplies required by the teachers such as internet connection whereas some others reported no support.

"we have internet provided by the school, we have internet and if we want to search for more materials to support my teaching I can really go to lab and then searching the material that use

internet from the school." (Meenie)

"In our school we have some Wi-Fi connection. It's for free. And we have computer laboratory and we can access wi-fi every time in there. And students access the internet in there or in the yard or in many areas of the school." (Joy)

"our school provides all the facilities because we are applying another curriculum which requires technology for teaching and learning process" (Rosie)

"I myself did everything using all my money, using my own class" (Jessie)

The quotes indicate a certain degree of support from schools to teachers such as internet connectivity, infrastructures like computer laboratory. Rosie asserted that the provision of those supplies was due to the implementation of curriculum 2013. Conversely, Jessie reported that she managed to provide what she needed at her own expense.

4.3.5 Challenges for CALL Enactment

Regardless of the given facts about the enactment of CALL for various purposes and with a variety of technology tools, the interviews revealed issues encountered by the participants. The participants found that limited facilities and infrastructures, low proficiency and technology literacy, and teachers' ignorance about technology use in EFL classrooms seem to be the major challenges in CALL implementation.

4.3.5.1 Lack of Facilities for CALL

Participants said that the limited number of tools, unavailability of internet connection, and shared infrastructures such as computer laboratories were needed by the schools.

"If English class needs to use (the) computer(s), we need to ask for permission from a person in charge of computer rooms to allow us to use the facility because (the) internet is only accessible in that room." (Lincoln)

"umm, actually there's no available internet connection." (Chelsea)

"...not only for English class but all classes, and all teachers if they think that materials should use (a) computer then they can just go there (computer laboratory)." (Meenie)

"Now, we don't have (a) language laboratory but (a) computer laboratory will be used by English teachers. But sometimes we cannot use it because we have limited classrooms. Because today we have 24 classes, but we just have 22 rooms available. Computer room sometimes, is used by another class not just our English class."(Joy)

"Well, you know what, in my school, there are two in-focus (projectors). So, there are 54 teachers and they all try to fight who's gonna take the in-focus first. (both laughed)." - (Maria)

The participants highlighted complex problems in enacting CALL. It is seen that Lincoln dealt with asking permission for a room use while Meenie and Joy figured out scheduling computer laboratory hours for English class. Moreover, Chelsea addressed her complain for no connectivity and Maria pointed out the struggle to share a particular tool. These concerns portray the major hindrance for CALL implementation at schools.

4.3.5.2 Students' Low Technology Literacy

Adding to the low English proficiency, participants were mildly concerned about students' lack of technology knowledge. The participants' students also reflected such diverse background and origins in which technology has not been introduced yet or simply used for language learning and teaching.

"they come from different background, several areas in [name of place], as some of them were very shocked when I provided, presented the power point presentation because they haven't seen that kind of technologies before" (Chelsea)

"...they (students) are from not from city, I mean, they may be from [name of place], or from

yeah [name of place] or from yeah [name of place], or any other cities that are outside [name of place]. Sometimes they get problems, they don't know how to turn on the computer, how to turn off the computer, turn off the computer, how to use the mouse..." (Meenie)

Chelsea and Meenie concerned that their students had no prior knowledge or either experience of using technology. This indicates that not all areas in Maluku has promoted IT learning in previous level of education.

"most of our students are very, very low in understanding and using technology such as computer..." (Maria)

Maria's response is in line with Chelsea and Meenie's. Their concerns depicted the lack of technology literacy is another major issue for teacher to operationalize CALL in EFL teaching.

4.3.5.3 Fellow Teachers' Ignorance with the Use of Technology in EFL instruction

Participants also described the agonizing facts that their colleagues at schools hardly put their efforts to enact CALL based EFL instructions. Some participants recognized those colleagues for their conventional teaching practices that neglect the incorporation of simple digital tools such as gadgets, etc.

"sometimes they (teachers) ignore the use of technologies in teaching, and sometimes like they don't want to do any more effort to provide the students with this, what is it, technologies in, they don't want to include because they think that is, the responsibility, school get to be responsible to provide these technologies, but I cannot do that, I think that's my own progress and my students as well " (Chelsea)

"in fact, that there are other colleagues who are still applying old-fashioned teaching." (Rosie)

Chelsea and Rosie's responses unraveled an issue that potentially hinders CALL

implementation in schools as teachers should work together to actualize such mode of learning with technology. Teachers play pivotal role for effective learning and teaching process with CALL.

4.3.6 EFL Teachers’ Needs for Effective CALL Implementation

Referring to the challenges described above, the participants addressed their needs for better improvement and effective yet efficient enactment of CALL based EFL instructions. They voiced out for adding up better infrastructures, facilities, and provide constant training for teachers’ professionalism. Table 10 displays the most reported teachers’ needs in adopting CALL.

Table 11. Teachers’ Needs for CALL Enactment

Teachers Need	<i>N</i>
Internet Connectivity (Wi-Fi)	5
Language Laboratory	5
Technology Tools (Projectors, Laptops, etc.)	6
Teacher Professional Development Training	6

"I really need internet connection, it’s not for me, actually, at least for my students because I think I always give them assignments and they have to find from the internet so I think I cannot guarantee that they will do the assignment at home or out of school, after school hours but I need that to learn using the internet in the classroom activities. Well, Yes, and I have to make sure that all the students have the same opportunities to use the internet connection, I think I need, actually I’m still wondering if my school has or own (an) online library, that would be cool!" (Chelsea)

"we need a language laboratory with more advanced programs/software because some are not

free, so I suggest the school to afford to buy at least one to help us teachers" (Lincoln)

"...in facing this (digital) era, I wish all teachers can have capability in using technology in teaching English for students in the class." (Joy)

"I also still hope that the school, you know, will support us especially for English class with English or language laboratory or something like that. But I want to say that the school should prepare the teachers first, before they prepare the infrastructures" (Jessie)

The responses highlight teachers' demands for better infrastructure such as language laboratories because the schools in which some participants teach English do not have a language laboratory. In addition, Lincoln posited a request to have some language learning software. Also, Joy and Jessie focused on prioritizing teachers' skills in exploiting technology for teaching and learning.

4.3.7 EFL Teachers' Evaluation of Computer-Based Examination

Computer-based examination is an online-based testing used only for final exams at high schools throughout Indonesia. Since its administration to schools in the academic year 2014/2015, many schools attempted to implement such online exams including the schools of the participants of the study. The interviews revealed that some participants are well-aware of such advancement in education, while some others found it problematic.

4.3.7.1 Teacher's Awareness of Digital Era

Online exams are seen positively by the participants that accounted for actual implementation of learning in the digital era.

"at some point, this exam is great and effective. You know, we should deal with the advancement that technology offers to us. And it has been three years, we organize this computer-based exam. So, we get used to it. I guess, the students are okay because they are living in this modern era and

it has become part of their lives..." (Cheryl)

This response indicates that the participants recognized the benefits of technology for language learning assessment and students were accustomed to such significant change.

4.3.7.2 Efficiency for Assessing Students

Examination is a way of evaluating students' progress of learning, in particular EFL learning. Computer-based exam is an alternative measure for students' knowledge.

"...because the students, their knowledge can be measured by final exam by using computer"(Joy)

Joy echoed that computer-based exam is efficient to evaluate students' academic performance.

4.3.7.3 Limited Facilities

Regardless of the advantage mentioned previously, this particular exam posits a few drawbacks in its administration.

"that's a shame! ... because, well, I have to say that it's not good because some schools in Maluku haven't prepared themselves very well like my school, we have to use the tools, I mean, the computers to share with the other schools." (Chelsea)

"It was bad, because the population, I mean, the students, the number of the students in my school like 500." (Lincoln)

Chelsea concerned particularly on the preparation stages that indicate there are schools which shared computers and labs for the online exams. Lincoln added that the amount of students outnumbered the computers in the schools. This situation denotes the factors that schools need to prioritize in order to be able to successfully conduct that kind of online test format. That said, constant training and intensive monitoring of facilities are needed for

successful online exams.

Overall, participants have demonstrated their ample competence pertaining to CALL use in EFL settings. It is surprising that they are moderately tech savvy EFL teachers proven by a number of apps/software used in their teaching practice. Nevertheless, they encountered barriers that should be solved by involving related stakeholders such as schools and the authorities to donate their demands of facilities and infrastructures considering the increasing number of students who took the online exams, for instance. With regard to computer-based examination, the participants positively valued the newly administered exam format despite a slight obstacle emerged afterward. Given all those responses and prevailing facts, it can be said that the teachers perceived their moderate skills to use technology but have attempted to implement CALL in EFL contexts, particularly in Maluku, Indonesia.

These findings have contributed insightful information to reflect upon the EFL teachers' factual practice of incorporating technology, their addressed concerns and needs that tap into their TPACK results. Their responses describing their effort that echo wishful needs to enact CALL in EFL contexts effectively. The findings also implied that students should be introduced with the use of technology since early age of schools regardless of origins and background.

CHAPTER 5

DISCUSSION AND CONCLUSION

This chapter provides a discussion of the results of the present study associated with relevant theory and research. In addition, potential implications for CALL implementation in EFL teaching are drawn based on the results. The limitations of the present study and recommendations for future research are presented. Finally, the chapter also highlights the contributions of the current study to the EFL teaching, with particular focus on CALL enactment.

5.1 Discussion

Mishra and Koehler (2006) argue that teachers should possess technology competence combined with sound pedagogy approach and appropriate content in their teaching context to achieve the requirements of the 21st century learning skills. Further, studies show that EFL teachers have a lack of technology skill to operationalize CALL-based English teaching (Nila, 2013; Al-Munnawarah, 2014; Ridwan, 2017; Machmud & Basalama, 2017). Egbert et al. (2018) add that teachers' actual usage of technology tools in CALL teaching is still much unexplored. Thus, the primary purpose of this study was to examine EFL teachers' technology preparedness to promote CALL in Indonesian EFL instructions. In order to explore the EFL teachers' technology literacy and actual use in their teaching practice, mixed methods research was employed. Forty-three Indonesian EFL teachers at high schools in Maluku took part in the survey and of these, nine EFL teachers engaged in a semi-structured interview following the online survey. The discussion of the results of the present study follows the order of research questions outlined in Chapter Two.

5.1.1 Indonesian EFL Teachers' Technology Preparedness

The first research question asked if EFL teachers were sufficiently skillful to utilize technology in their teaching practices. TPACK questionnaire revealed varied results regarding teachers' technology knowledge and use in EFL instructions. The findings are divided specifically by school accreditations, teaching experience, and levels of study. Yet, the overall TPACK result for all participants, which had the lowest mean score, shows that participants recognize their low technology literacy and ability to incorporate technology utilization in their EFL teaching practice. Although their perceived Technology Knowledge score was higher than TPACK. This indicates that Indonesian EFL teachers report moderate knowledge of technology and have ample capability to implement technology tools/software with appropriate materials in their classes. The results are in line with the findings of Yuksel and Yasin (2014), who found that EFL teachers show moderate technology knowledge despite their high score on pedagogical and content knowledge. Son et al. (2011) also confirmed that Indonesian EFL teachers generally perceived average technology knowledge.

The present study considered the significance of school accreditations by examining if there is a significant difference between the A and B accredited schools. Accreditation indicates that a school is highly qualified based on ranks (A - D) in terms of the quality of human resources (teachers and education administrators), management, infrastructures, and leadership (Haryati, 2014). An "A" accredited school shows excellence and meets all eight national standards stipulated in Ministerial Regulations for Education in 2006/2007, whereas a "B" accredited school indicates good and moderately achieves the national standards. The findings of Mann-Whitney U test show that there is a significant difference between A and B accredited schools in terms of technology knowledge ($p < .019$). Such a statistical difference reveals that

teachers from A accredited schools possess better proficiency in technology knowledge than those from B accredited schools. Teachers from B accredited schools are required upgrade their accreditation, however schools need to pay more serious attention to empower their teaching staff.

Secondly, the current study compared participants' TPACK competence based on their teaching experience. Comparison is made between participants with over 12 years of teaching experience and those with less than 12 years. The result demonstrates that teachers with less than 12 years of teaching experience have higher score in Technology Knowledge (TK) than those with more than 12 years of teaching experience. Nevertheless, the Mann-Whitney U test shows no significance difference in this particular variable. The finding contradicts with the study of Yuksel and Yaksin (2014), and Nazari et al (2019) who compared novice and experienced EFL teachers. These studies revealed that novice teachers possess better technology skills and indicated more uses of technology tools in EFL classes. Regardless, the finding is in line with Hervey's (2015) study that experienced teachers are more competent in pedagogy and content, yet less competent in technology. This situation presumably has to do with the idea of digital immigrants introduced by Prensky (2001) that people born before 1985 are digital immigrants. Thus, it can be said that the novice teachers adapted to technology and present teaching content with the suitable tools.

Additionally, the study explored participants' TPACK competence based on their education degrees considering the demographic data showing a great number of participants holding master's and bachelor's degrees. The results demonstrated that the higher one's education level, the more varieties of technology incorporated in classrooms. The TPACK findings demonstrate slightly contrast competence between the two groups of participants. As

seen, the Mann-Whitney U test also revealed that there is a significant difference between the two variables in terms of technology knowledge ($p < .040$). The findings align with the results of Tai (2015) and Cote and Milliner's (2018) studies that EFL teachers with master's degree demonstrate higher competence with technology.

5.1.2 Indonesian EFL Teachers' Perceptions of CALL Usefulness

The TPACK score demonstrated moderate technology skills that EFL teachers had, the study further sought evidence on their use of technology in teaching practices to support the quantitative findings by exploring the participants' perceptions of the advantages that CALL offers and their technology exploitation in EFL teaching. The interviews revealed that the participants demonstrate positive responses on the perceived benefits of CALL. They acknowledged that CALL-mediated EFL learning can be a means to exchange knowledge regarding the most up-to-date digital technology with students and help teachers design their teaching contents and find resources.

Interestingly, the participants added that CALL-mediated EFL learning is a way of promoting digital learning for students, which then leads to having a desire to shift from a conventional classroom into a flipped classroom or even a fully digital/online classroom, considering EFL teachers' recognition of today's digital era and that there is connection of English learning with technology utilization. The responses indicate teachers' awareness and eagerness to operationalize technology tools in their future EFL classes.

Further, the participants told about their experiences attempting to include a few digital apps or tools in their teaching. Some of tools used in participants' EFL classes are Story Board, Kahoot, EdPuzzle, Google Classroom and the common ones such as mobile phone, PowerPoint Presentation software. As Drajadi et al (2018) found in their study that Indonesian EFL teachers

employed a variety of technology tools in their teaching practice. This informs that EFL teachers attempt to be innovative and recognize the potential of digital language learning. In regard to the mobile phone and internet usage, teachers have utilized mobile-assisted language learning. In addition, Lekawael's (2017) research suggests that EFL students in Ambon, Maluku have made use of their smartphones and internet access for educational purposes. The participants from the current study also admitted some reasons for enacting CALL-based EFL teaching such as current trends in teaching, curriculum requirements, and the utmost importance is the students' needs in learning. Some resources to operationalize CALL are mentioned such as participants' previous education and training, and teachers' self-initiatives.

5.1.3 Indonesian EFL Teachers' Needs to Enact CALL

A plethora of challenges are also addressed by the participants. The issues encountered lead to answering the third research question of the study regarding the needs of teachers for effective CALL implementation.

Participants report that they are lacking the supporting facilities such as the infrastructures and internet connection which are the ultimate aspects for online learning. Moreover, teachers report that students' technology literacy is low which aligns with Son et al.'s (2011) finding that students' skills in technology are concerning for the optimal use of CALL. The participants even complain that their fellow teachers would not want to try implement CALL with the lack of facilities as an excuse. These findings corroborate with Son and Park (2009) that both external factors (e.g., facilities) and internal factors (e.g., technology skills) play a significant role for CALL implementation.

Therefore, EFL teachers strongly echoed their needs for CALL implementation such as language laboratories, an adequate supply of computers, and speedy internet connectivity. It is

surprising that a few participants expressed their want, that is to establish their school online library to help students access more resources for reading and many more. But most importantly, some participants voice the urgency of preparing teachers' knowledge and skills prior to executing technology mediated EFL learning. These responses reflect the urgent needs of a wider pool of EFL teachers in Indonesia for more effective and efficient CALL enactment in the future.

5.2 Conclusion

The present study provides a baseline for understanding the technology skills of Indonesian EFL Teachers in Maluku. It has measured teachers' self-perceived technology proficiency and provided evidence on actual uses of technology in EFL settings. Furthermore, the study identified issues and factors hindering CALL implementation and provided suggestions for future endeavors in CALL.

The findings of the present study principally revealed that Indonesian EFL teachers possess moderate knowledge of technology which is evident in their self-perception of TPACK components. In terms of accreditation ranks, the data indicate that there is significant difference between teachers' technology literacy and inclusion in language pedagogy. The "A" accredited schools were higher than the "B" accredited schools. Teachers' TPACK competence based on school accreditation was unexplored prior to this study. Thus, the present study has shed light on this particular component for further research. Moreover, it is noticeable that teaching experience contributes to self-assessments of proficiency in technology use. Teachers with less than 12 years teaching experience (novice) were more tech savvy than their experienced counterparts. Regardless, experienced teachers showed richer knowledge of other subscales of TPACK, particularly content and pedagogical knowledge.

The present study also touched on a compelling aspect which was teachers' level of education. The data discloses a significant difference in technology competence between EFL teachers with bachelor's and those with master's degree. It can be said that EFL teachers who hold master's degree are more proficient in technology knowledge. This also suggests that higher education invests more new insights and up-to-date information in EFL teaching.

Furthermore, EFL teachers expressed positive responses toward CALL implementation. They conveyed that CALL is beneficial for both parties (students and teachers) in EFL classrooms. The participants even recognized their myriad uses of technology tools in their EFL teaching practices and students' positive progress in EFL classes.

Thus, the overall impression of this study is that there is a relatively high proclivity for technology inclusion in EFL classes by teachers in Maluku, Indonesia, regardless of school accreditation, teaching experience, and even levels of education. This, in sum, implies that Indonesian EFL teachers are ready to shift from conventional classroom to a more digital instruction or a flipped classroom.

5.3 Recommendation

The results of the present study contributed to the body of literature of EFL Teachers' TPACK proficiency and provided sound evidence of EFL teachers' CALL pedagogical practices in Indonesia. However, stemming from the discussion of findings and conclusion above, a number of recommendations are suggested for CALL pedagogy in Indonesian EFL settings as follows:

5.3.1 Teacher Professional Development

The utmost effectiveness of technology integration in EFL classes lies heavily on teachers' skills and knowledge to operate technology-mediated language learning. Therefore, the

school and the local authorities should hold constant teacher training to empower EFL teachers' technology literacy as the digital era rapidly advances and evolves. For example, Indonesian curriculum 2013 requirements to enact technology integrated language learning in Indonesia that needs adequate mastery of technology integration into language pedagogies. Therefore, pursuing higher education can be another alternative solution for EFL teachers who desire to be updated and enriched with the latest knowledge regarding the teaching and learning process in the 21st century and sharpen their teaching skills for effective and efficient CALL-based EFL instructions.

5.3.2 Support of related Stakeholders

The present study emphasized the importance of infrastructures and facilities to underpin fruitful implementation of CALL in an EFL context. Teachers are in need of computers, connectivity, and software to enact CALL successfully. Local authorities work hand in hand with schools to allocate the supplies to teachers' needs. Accordingly, this will eventually impact the quality of schools to maintain or even upgrade their accreditations. IT administrators at schools should support and assist EFL teachers in designing and implementing their lessons with the use of different technology tools in and out of class. IT staff and school principals supervise and consult with teachers regarding the integration of technology with pedagogy and content in their appropriate context. Undoubtedly, parents should be the third party in supporting the government policy to engage their children in learning English beyond the classroom setting. This idea is in compliance with the testament of Alshumeri (2008) that an ideal CALL enactment involves education policy makers, teaching staff, and parents to reinforce the application, in making decisions, and in monitoring the whole process.

5.3.3 Open Access

Schools should provide access for teachers to more resources such as journals relevant to CALL practices and online programs or applications for actual classroom implementation of CALL. This is a primary resource to give ideas for teachers to design and develop lessons including technology tools in EFL classrooms. By doing so, EFL teachers may be well-informed to reach the goal of 21st century learning and accommodate students' needs who are predominantly digital natives. However, the participants of this study encountered different characteristics of students, such as different backgrounds and low technology literacy.

5.3.4 Future Research

In order to gain the cutting-edge knowledge of technology use in EFL classes, the present study suggests reaching wider participant pools from primary level up to tertiary levels. The present study has potential limitations which affect the interpretations of the findings. For the quantitative phase, further studies should engage a larger number of participants covering all areas of the province and consider getting primary teachers as well as lower secondary teachers involved to contribute a better measure of perceived TPACK competence. Moreover, the present study suggests examining how the confounding variables such as school accreditations, teaching experiences, and teachers' level of education are related to their perceived knowledge in TPACK. Meanwhile, the qualitative phase dove in deeply about the on-going enactment of technology use of EFL teachers in their teaching practices and the benefits to EFL students ranging from primary schools to secondary schools and if possible, university students. In addition, the interpretation generated from the qualitative data are not represented the whole population of EFL contexts. The further studies are expected to contribute to a better understanding of EFL teachers' technology literacy and professional development

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APPENDIX A

TECHNOLOGICAL SKILLS IN EFL TEACHING QUESTIONNAIRE

(TPACK SURVEY)

Dear Participant,

Thank you for taking time to complete this questionnaire. Please answer each question to the best of your knowledge. Your thoughtfulness and candid responses will be greatly appreciated. Your individual information will not at any time be associated with your responses. Your responses will be kept confidential and will be used in the United States by the researcher with no particular reference to you.

Demographic Information (Check \surd one that best describes you!)

- 1. Gender
 - Male
 - Female
- 2. Age
 - 21-25
 - 26-30
 - 31-35
 - 36-40
 - 41-45
 - 46-50
 - 50-55
- 3. Major :
 - English Education
 - English Literature
 - Other: _____
- 4. What is your highest level of education? _____
- 5. How long have you been teaching English? _____ years.
- 6. At which level of the following?
 - a. Senior High School / MA
 - b. Vocational School

Name your current school : _____

School Accreditation : _____

Does your school have language laboratory? Yes / No

Does your school have ICT laboratory? Yes / No

Please describe the language lab. or any technology that are available in your school!

- 7. Mention English Language Teaching or Technology in Language Teaching related training and/or conference you attended

No	Training and/or Conference*	Year
1		

2		
3		
4		
5		

*you may add more

8. Technology tools available at school

TOOLS	YES	NO	AMOUNT (PCS)
COMPUTERS DESKTOP			
LAPTOPS			
LCD PROJECTORS			
SMARTPHONES			
TABLETS			
TELEVISIONS			
TAPE RECORDERS			
INTERNET CONNECTION			
Others:			

TPACK SURVEY

Technology is a broad concept that can mean a lot of different things. For the purpose of this questionnaire, technology is referring to digital technology/technologies. That is, the digital tools we use such as computers, laptops, iPods, handhelds, interactive whiteboards, software programs; and web-based resources such as Kahoot, Duolingo, Coursera, Social Networks, etc.

Please answer all of the questions and if you are uncertain of or neutral about your response you may always select “Neutral/Neither Agree or Disagree”.

No	Items	Scale				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	Technology Knowledge (TK)					
1	I have knowledge to solve a technical problem with the computer					
2	I have knowledge about basic computer hardware (e.g., CD-Rom, motherboard, RAM) and their functions					
3	I have knowledge to use a word-processor program (e.g., MS Word)					
4	I have knowledge to use an electronic spreadsheet program (e.g., MS Excel)					
5	I have knowledge to use communication through Internet tools (e.g., e-mail, messenger)					
6	I have knowledge to use a picture editing program					
7	I have knowledge to use a presentation program (e.g., MS Powerpoint)					
8	I have knowledge to save data into a digital medium (e.g., Flash Card, CD, DVD)					
9	I have knowledge to use area-specific software					
10	I have knowledge to use printer					
11	I have knowledge to use projector					
12	I have knowledge to use scanner					
13	I have knowledge to use digital camera					

	Pedagogy Knowledge (PK)					
14	I have knowledge to assess student performance					
15	I have knowledge to eliminate individual difference					
16	I have knowledge to use different evaluation methods and techniques					
17	I have knowledge to apply different learning theories and approaches (e.g., Constructivist Learning, Multiple Intelligence Theory, Project-Based Teaching)					
18	I have knowledge to being aware of possible student learning difficulties and misconceptions					
19	I have knowledge to manage class					
	Content Knowledge (CK)					
20	I have knowledge about key subjects in my area					
21	I have knowledge to develop class activities and projects					
22	I have knowledge to follow recent developments and applications in my content area					
23	I have knowledge to recognize leaders in my content area					
24	I have knowledge to follow up-to-date resources (e.g., books, journals) in my content area					

25	I have knowledge to follow conferences and activities in my content area					
	Technological Pedagogical Knowledge (TPK)					
26	I have knowledge to choose technologies appropriate for my teaching/learning approaches and strategies					
27	I have knowledge to use computer applications supporting student learning					
28	I have knowledge to select technologies useful for my teaching career					
29	I have knowledge to evaluate appropriateness of a new technology for teaching and learning					
	Pedagogical Content Knowledge (PCK)					
30	I have knowledge to select appropriate and effective teaching strategies for my content area					
31	I have knowledge to develop evaluation, tests and surveys in my content area					
32	I have knowledge to prepare a lesson plan including class/school-wide activities					
33	I have knowledge to be able to meet objectives described in my lesson plan					
34	I have knowledge to make connections among					

	related subjects in my content area					
35	I have knowledge to make connections between my content area and other related courses					
36	I have knowledge to support subjects in my content area with outside (out-of-school) activities					
	Technological Content Knowledge (TCK)					
37	I have knowledge to use area-specific computer applications					
38	I have knowledge to use technologies helping to reach course objectives easily in my lesson plan					
39	I have knowledge to prepare a lesson plan requiring use of instructional technologies					
40	I have knowledge to develop class activities and projects involving use of instructional technologies					
	Technological Pedagogical and Content Knowledge (TPACK)					
41	I have knowledge to integrate appropriate instructional methods and technologies into my content area					
42	I have knowledge to select contemporary strategies and technologies helping to teach my content effectively					
43	I have knowledge to teach successfully by					

	combining my content, pedagogy, and technology knowledge					
44	I have knowledge to take leadership role among my colleagues in the integration of content, pedagogy, and technology knowledge					
45	I have knowledge to teach a subject with different instructional strategies and computer applications					

(Adapted from Schmidt et al, 2009/2010 & Sahin, 2011)

1. Would you be willing to participate in a follow-up interview? Yes ___ No ___

If Yes, please provide me with your contact info (email address or WA contact number) :

Thank you for your participation in the survey!

APPENDIX B

INTERVIEW QUESTIONS

1. What types of technology do you use in the classroom? Why?
2. In what ways do you use computers in classroom?
3. What are the purposes of using computers or any technology tool in the classroom?
4. In what ways do you think technology can help your (EFL) students in learning language?
5. In what ways do you think technology can help you teaching language?
6. Which language skills do you think can be improved through technology?
7. What resources have the authorities and/or school contributed/supplied, so far, to support CALL implementation in your EFL class?
8. Suppose you have implemented CALL in EFL instruction, what are the possible barriers you might find in the context of Indonesia?
9. What support do you feel that you have or need for implementing CALL in your school?

(adapted from Nila, 2013)

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Thesis Paper Title:

Analyzing EFL Teachers' Technology Preparedness to Promote CALL in Indonesia

Major Professor: Dr. Shannon M. McCrocklin