

PROJECT-BASED ACTIVITIES IN A CALL CLASSROOM: EFL STUDENTS' EXPERIENCES

Yustinus Calvin Gai Mali¹
Anne Indrayanti Timotius²

Universitas Kristen Satya Wacana, Salatiga, Indonesia

¹yustinus.calvin@staff.uksw.edu; ²anne@staff.uksw.edu

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Abstract

This study investigated students' perspectives of and measured their attitude, confidence, and anxiety when interacting with Computer-Assisted Language Learning (CALL) through project-based instructions. Thirty students from a CALL course participated in this study by responding to a questionnaire and writing a reflective note about their experiences in the course. The qualitative research findings would seem to indicate that the majority of the students possess a positive attitude, confidence and low anxiety levels towards the use of technology in their course. Further, the statistical analysis indicated that there were no significant differences of the students' attitudes, confidence, and anxiety levels before and after taking the CALL course. Considering the findings, the researchers suggest that the technology-based projects discussed in the present study may become viable learning activities to prepare pre-service EFL teachers to deal with the effort and initiative by the Ministry of Education in some countries to encourage local teachers integrating the best and wisest use of technology into lessons. Pedagogical implications for teaching and learning CALL as well as direction for further research were discussed in the study.

Keywords: Project-based learning; CALL; attitude; anxiety; confidence

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INTRODUCTION

The Ministry of Education or related entities in some countries have made an effort and led some initiatives to encourage local teachers to maximize the use of technology. For instance, the Ministry of Education in the Czech Republic introduces technological skills through its national educational programs for elementary schools, namely *Narodni škola* (national school), *Obecna škola* (general school) and *Zakladni škola* (basic school) (Mannova, 2004). U.S. schools (Baraya, 2002) and universities across Australia (Hashemzadeh & Wilson, 2007 as cited in Sawang, O'Connor, & Ali, 2017) are encouraged to integrate technology into their teaching and learning practices. Other countries like Chile, Finland, Singapore, through their set national policies, have considered the essential role that information and communication technologies (ICT) have in the development of their educational systems and the improvement of their curricula (Kozma & Anderson, 2002). Also in Morocco, the government introduced 'web-based learning' to some public universities by implementing projects like the 'Moroccan Virtual Campus' to encourage e-learning in the institutions (Ajhoun & Bouzidi, 2010, in Yeou, 2016).

Furthermore, as a result of some technology policies, in Turkey, a series of activities were designed to promote the provision and development of technology in different areas, including the education system (Tekin & Polat, 2014).

Similar policies are also carried out in other countries, such as Germany, Senegal, Uganda, Philippines, and Vietnam. In Germany, Telekom AG, in 1995, launched a nationwide initiative that aims to prepare students for the information society and make the schools get connected to the Internet (Zander, 2004). In some African countries, such as Senegal and Uganda, the Ministries of Education have initiated technology-training programs, e.g., Uganda School Net, and Internet connectivity to improve education and skills for securing jobs in the 21st century (Aduwa-Ogiegbaen & Iyamu, 2005). In the Republic of Palau, an island republic in Micronesia located in the southeast of the Philippines, Sales and Emesiochl (2004) reported that the country has made an active effort to adopt and integrate educational technology into its public schools since the late 1980s. In Vietnam, the National Foreign Language 2020 project is directing technology standards for language teachers, establishing

VietCALL, a new organization that plays a primary role in implementing the standards (Levy, 2015).

Indonesia also follows a similar pattern to those of the countries, precisely when the Minister of Education and Culture of Indonesia emphasizes the essence of integrating technology in teaching and learning practices through educational policies of the country. The policies to highlight are the specific working descriptions stipulated in levels 6 to 8 in the Indonesian Qualification Framework¹ (IQF) (Kementrian Pendidikan Nasional Republik Indonesia, 2012). Briefly, IQF is a national framework aimed to equalize and integrate the educational field, work training, and work experience of every Indonesian citizen. The descriptions of those levels highlighting the necessity of the technology should be performed by Indonesian teachers possessing a Bachelor's or Master's degree and be translated into teaching and learning activities in higher education contexts. The specific working descriptions in level 6:

Being able to utilize ICT in their expertise, and being able to adapt to situations they are facing in solving a particular problem” (translated by the researchers).

The specific working descriptions in level 7:

Being able to plan and manage resources under their responsibility, and conduct a comprehensive evaluation of their work benefiting ICT to create organization strategic development steps (translated by the researchers).

The specific working descriptions in level 8:

Being able to develop knowledge, technology, and/or arts in their expertise or professional practices through research until they can produce an innovative and qualified work (translated by the researchers).

It seems to be true, therefore, that teachers, in Indonesia, are encouraged to improve competencies in line with the development of technology and national policies.

However, there have been situations in which technology does not efficiently contribute to students' learning caused by problems of implementing technology that puts little focus on the learning process and students' real needs (Bork, 1995), by teachers' doubts (Javad & Leila, 2015), lack of skills (Torat, 2000), creativity and innovations in using the technology (Cobo, 2011), as well as technical problems with the technology itself (Wichadee, 2014). Furthermore, Jati (2015) noted an argumentation about E-learning. He mentioned that many teachers tend to focus on the aspects of E-learning. They keep looking for the most sophisticated technology. However, they ignore the

learning aspect when they do not evaluate whether or not the technology facilitates the language learning process.

These situations call for an exploration about how faculty members should utilize technology to obtain maximum pedagogical benefits (Amirault, 2012; Deubel, 2007) and what technologies should be used for teaching and learning (U.S. Department of Education Office of Educational Technology, 2010 as cited in Ditzler, Hong, & Strudler, 2016) to promote language learning in courses so that students meet their learning expectations (Wilsey & Keengwe, 2012). In essence, some factors ensure the success of technological implementation in teaching and learning. One can be ascribed to individuals' attitudes because those who possess the positive attitude to technology can determine perceptions regarding technological tools (Papanastasiou & Angeli, 2008). As Kubiak, Usak, Yilmaz, and Tasar (2010) point out, when teachers possess positive attitudes to technological practices, they promote useful insights to their students dealing with accepting and using technology in a classroom. Importantly, “student attitudes and beliefs towards e-learning, as well as their satisfaction with technology and are regarded as success determinants of future e-learning initiatives” (Rhema & Miliszewska, 2014, p.169). In the subsequent sections, the authors discuss some foundational theories for the study and the research gap, which the present study addresses.

Types of Technology

According to Stanley (2013), technology is classified as Internet, software, and hardware. Table 1 shows the examples of technology under every classification.

¹ Other related documents of Indonesian Qualification Framework are available online at: <http://kkn-kemenristekdikti.org/>

Table 1: Types of Technology

Internet	Software	Hardware
automatic translators	apps	CD-ROMs
blogs	authoring software	computer room
comic-creator websites	concordances	data projectors
image-creation softwares	ebooks	digital cameras
instant messaging	electronic dictionaries	DVDs
news website	email	interactive whiteboards
online games	interactive fiction	laptops
podcasts	mind-mapping software	mobile phones
poster websites	music software	mp3 players
social networks	presentation software	netbooks
survey websites	quiz-making software	pen or flash drives
text and voice chat	screen-capture tools	tablets
text and voice forums	social bookmarking	video cameras
video-sharing websites	sound-editing software	voice recorders
wikis	word processors	webcams

In the CALL classroom, the use of the Internet is related to social networks, online games, blogs, and web-based applications. Software mostly applies to *Microsoft PowerPoint* to present slides. Meanwhile, types of hardware used in the classroom are computers, laptops, and an LCD projector to display the slides of teaching materials and students' presentations.

Who We Are in the World of Technology

People of different generations may also be different in the world of technology. There are some terms to explain different generations in the world of technology (Chaves, Maia Filho, & Melo, 2016). First, digital immigrants are the subjects who were born before the advent of digital technologies (Chaves et al., 2016). They are said to be the ones who have lived in the analog age and immigrated to the digital world (Ehiobuche & Justus, 2016). People of this generation are typically those who were born before the mid-1970s. They seem to be able to learn to use technology at a slower pace, compared to the next generations. As a result their capability of using technology is usually quite limited. They are not as 'fluent' as the future generations regarding technology utilization.

The millennial were "fomented since the early 1980s" (Chaves et al., 2016, p. 349). The millennial generation "is characterized by the hopeful determination and taste for technological innovations, especially the highly graphic, at the same time that doesn't appeal for slow stuff and negativity" (Chaves et al., p. 349). Furthermore, millennial learners are considered fast-paced electronic learners (Neumann, 2016). The millennial generations were not exposed to digital technology since they were born. However, they still quickly learn digital technology as 'fluently' as the next generation, the digital natives.

Digital natives are "the subjects whom were born in the current generation and that would have special qualities, especially regarding the learning process" (Chaves et al., p. 347). They are the people who were "born into an innate "new culture" (Ehiobuche

& Justus, 2016) and "have grown up with and used technology since the day they were born (Jackson, 2015, in Neumann, 2016). People of this generation, do not seem to have any problem in using technology. Usually, they are confident and 'fluent' users of digital technology as a result of being exposed to it from birth.

Perspectives on the Use of Technology

A plethora of international studies is carried out to explore students' perspectives on the use of technology in their learning. Kubiato et al. (2010) investigated attitudes of Turkish and Czech university students towards ICT use. The findings indicated an interest in using ICT in the sciences. The study also concluded that when used effectively, ICT provides additional benefits for such as enhancement of attitudes and computer skill that in turn could improve the effective implementation of ICT. Unal and Unal (2017) also did a study related to the flipped teaching model. It is one of the most well-known and recent technology-infused teaching models in which students learn a new concept at their home, but practice the concept in the classroom. Among others, they investigated students' perception in participating in a flipped classroom. The study revealed that compared to the traditional approach, students learned more, and there was higher teacher satisfaction.

Furthermore, Humble-Thaden (2011) investigated the utilization of cell phones in classrooms in research done in the U.S. From the survey of 166 first-year college students, the study revealed that the participants perceive the use cell phones to be positive. "...there is interest in and potential for educational implementation and use of cell phones as learning tools in schools." (Humble-Thaden, p. 10).

In Nigeria, Yusuf and Balogun (2011) examined competences and attitudes towards ICT use. The participants were undergraduate student teachers who enrolled in the teacher education programs for secondary school subjects. The study revealed that the students possess the positive attitude towards the use

of and skills related to word processing, general computer operation, downloading, and utilizing basic Internet resources.

Rhema and Miliszewska (2014) surveyed undergraduate engineering students at two Libyan universities. Empirical data showed positive attitudes and the willingness of students to engage in e-learning courses. Interestingly, the study would seem to prove that better access to technology and the Internet resulted in stronger positive attitudes.

In the following year, Balta and Duran (2015) looked at the use of an interactive whiteboard, and "an instructional tool that is connected to a computer and a projector and that enables the transfer of images from computer to the board" (p.15) to facilitate teaching activities. Quantitative findings indicated students' and teachers' positive preferences in utilizing the technology, specifically in math courses.

More recently, Baz (2016) sought to investigate attitudes of using technology in language learning and teaching. The study involved ninety-eight Turkish English as a Foreign Language (EFL) student teachers in a state university in Turkey. Using a mixed-method design, the study showed that the participants possessed highly positive attitudes towards the use of technology in their language learning because of its convenience, time-efficiency, and capability to enhance students' engagement.

These studies inform the current investigation in response to the need for finding out students' perspectives from the eyes of Indonesian university students to learn EFL with the use of technology framed in a particular pedagogical approach. Also, the previous studies indicate the need for delving closely into more specific perspectives (e.g., attitudes, confidence and anxiety), both from quantitative and qualitative angles. Furthermore, responding creatively to the pessimistic views on technological practices and considering the essence of positive attitude and beliefs about technology, and the educational policy in Indonesia, this current study explored the implementation of technology-based projects framed in Project Based Learning (PBL) paradigms in a Computer Assisted Language Learning (CALL) classroom in a university setting.

In short, PBL is an approach to instruction in which a project is employed to teach curriculum concepts (Bell, 2010). PBL is also social practice into which students are socialized through a series of group activities involving the simultaneous learning of language, content, and skills (Slater, Beckett, & Aufderhaar, 2006). Hedge (2000) pointed out that PBL includes principles of learner-centered teaching, collaborative learning, and learning through tasks. In learner-centered instruction, students are encouraged to be responsible for their learning (Lingua Network Online, 2014) and engaged in a classroom discussion and problem-solving activity (Felder, 2015). In collaborative learning, students help and handle their own and group members' learning so that they can perform successfully in their learning (Gokhale, 1995). Then, in learning through tasks, students do an activity

in which they use their available language resources to achieve a particular goal and to result in a real outcome (Richards & Renandya, 2002; Richards & Schmidt, 2010). More specifically, this study aimed to find out whether or not there was a significant difference of students' perspectives (e.g., attitude, anxiety, and confidence) towards technological practices particularly to learn EFL after they completed all the projects in the CALL classroom during a semester period. The hypothesis of this study was:

H0: There is no significant difference between students' perspectives toward technology before and after taking CALL class

H1: There is a significant difference between students' perspectives toward technology before and after taking CALL class.

The answer to the hypothesis was obtained through qualitative responses of the students who reflected the implementation of the projects in the classroom through the use of a reflective note.

The discussions in this paper will be an interest of pre- and in-service EFL teachers who are now looking for ideas about educational technologies that can be used for teaching and learning in EFL contexts, particularly in the context of higher education in Indonesia. The contribution of the study is to provide some details about how educational technology is learned and maximized in an Indonesian EFL setting. The merit of the research can also provide an answer to the immediate need for more bottom-up initiatives and actions from schools' local actors to understand potentials, and detriments of using technology in schools, and to provide technological perspectives of what will work, and what will not (Mannova, 2004). Also, the study can suggest constructive evaluations towards the use of PBL in the CALL classroom. It also describes types of educational technology that can be potential tools to facilitate students in learning EFL. Lastly, the present study is to be a positive response to a recent view of Mosier, Bradley, and Perkins (2016) that the exploration of students' perception of PBL is still little known.

METHOD

This study investigated if there was a significant improvement of students' perceptions toward technological practices particularly with English as a Foreign Language (EFL) after they completed all the projects in the CALL classroom during a semester. To achieve the research objective, the study employed a mixed-method design that included a survey with a questionnaire administered at the beginning and end of the semester and a reflective note to support the questionnaire data.

Research Setting and Participants

The site of this study was in single CALL classroom at English Language Education Program of a private university in Central Java, Indonesia. For additional information, the teaching and learning process of the course was done in a computer laboratory, in which every student was provided with a computer connected

to the Internet. The study program has an explicit mission statement that encourages lecturers to integrate technology and maximize its potential into their teaching practices.

“To have teaching and learning process by optimizing the use Information and Communication Technology (ICT) through a service committed to life-long learning.”
(translated by the researcher)

Therefore, it was evident that the selection of the CALL classroom at the university represented an ideal setting for the study that helped to achieve the research validity and to ensure the availability of relevant and productive data for the study. The study involved thirty students, aged from twenty to twenty-two years old, in the classroom. This study spanned four months from January to April 2017.

Descriptions of the Technology-Based Projects

During the semester period, students in the CALL classroom completed two main technological-based

projects that were done in a group of three to four students. With regards to Mali's (2017) elaborations, the first project was [a] technological workshops. In this project, the teacher gave students a general technological topic (e.g., google facilities, social networking sites, and educational games) or a more specific technological application (e.g. *Wordhippo*, *Screencast-O-Matic*, and *Kahoot*) to be presented in the classroom. The first presentation is in the form of *PowerPoint* slides that discuss principles of CALL evaluation by Chapelle (2001). For instance, the students had to explain related definitions of the technology and discuss who will be the best users of the particular technology, how interactive the technology is, and how the technology can provide language learning activities for its users. Figure 1 illustrates the presentation.



Figure 1: The Classroom Presentation

This *PowerPoint*-based presentation was then followed up by a mini-workshop. In this workshop, the students had to prepare activities in which their classmates could utilize the technology presented. The teacher gave the students 90 minutes to run the workshop and encouraged every student in the group to perform and be actively involved. During the workshop, the teacher

allowed other students in the classroom to clarify things and ask for assistance while using the presented technology. After the group presentation, other students were asked to give constructive oral comments concerning their friends' performances during the workshop. Figure 2 helps to illustrate the workshop activity.



Figure 2: The Workshop Activity

The second project was [b] lesson plans. In this project, the students had to work in the same group to create one lesson plan for the workshop they had presented. In other words, all activities in the workshop had to be based on the lesson plan. With this activity, students could have opportunities to the role play as a teacher who ran language learning activities with the technology. The lesson plan should cover five essential parts, namely [1] course information, [2] technology requirements, [3] activities designed, [4] students' assessment, and [5] caveats. First, in the course information part, the students detailed learning objectives, skills to learn (e.g., speaking, listening, writing, or reading), and an intended level of their students. Second, in the technology requirement part, the students listed any hardware, software, supporting facilities to run the activities. Third, in the activities planned part, the students described learning activities to do. Then, they provided some details about names and duration for each activity. After that, they explained references, particular websites, or software they used to

support the activities. Fourth, in the assessment portion of the lesson plan, the students explained a criterion how learners are going to be assessed. If the students adapted any evaluation forms on the Internet, they had to state the references. Last, in the caveats, the students reported possible considerations for teachers who wish to apply the lesson plan, including requirements, problems, and other essential details.

Research Instrument

The data for the survey was collected from a questionnaire adapted from Papanastasiou and Angeli (2008). More specifically, the questionnaire designed consisted of items asking the students to agree or disagree with four-scale (1-4) options ranging from 1 (strongly disagree); 2 (disagree); 3 (agree); 4 (strongly agree). For the interpretation, the means from the analysis used the following range: 1-1.75 (strongly disagree); 1.75-2.5 (disagree); 2.5-3.25 (agree); 3.25-4 (strongly agree). Table 2 displays constructs of the questionnaire.

Table 2: Perspectives of the Use of Technology in the CALL Classroom
(Shown for a brevity sake)

Components	No	Statements
Attitude	1	I feel comfortable with the idea of the technology as a tool in teaching and learning the target language.
	2	The use of the technology as a language learning tool excites me.
	3	The technology is a valuable tool for teachers.
	4	The technology will change the way I teach the target language.
	5	The technology will change the way students learn the target language in my classes.
	6	The technology helps students understand concepts of the target language in more effective ways.
	7	The technology helps students learn the target language because it allows them to express their thinking.
	8	The technology helps teachers (me) to teach the target language in more effective ways.
Anxiety	9	The use of technology in teaching and learning the target language stresses me out.
	10	The use of technology in teaching and learning the target language scares me.
	11	The technology is not conducive to student learning the target language because it is not easy to use.
	12	The technology is not conducive to good teaching the target language because it creates technical problems.
Confidence	13	I feel confident that I can design technology-enhanced language learning activities for my students (classmates).
	14	I feel confident that I can design technology-enhanced language learning activities to meet certain learning goals.
	15	I feel confident that I can use certain technology-enhanced language learning to help my students (classmates) to understand particular concepts of the target language more easily.

Data Collection Procedure

Initially, the researchers distributed the questionnaire in the second meeting (17th January 2017) and in the fourteenth meeting (14th March 2017) of the classroom. Both questionnaires were analyzed to see whether there were significant differences in scores of each statement. Then, the researchers asked the students to write a note that reflected their feelings towards the use

of technology for language learning before and after the CALL classroom. The students submitted the notes in the classroom meeting (21st March 2017). Then, the researchers read the responses

and circled some ideas that the students needed to explain further. In the following classroom meeting (27th March 2017), the researchers re-distributed the note to the students and asked them to clarify the circled responses, so that more in-depth information about the issues could be delved. This activity was done twenty minutes before the class ended.

Data Analysis Procedure

The questionnaire data were analyzed statistically. Specifically, paired-samples t-test was used with the help of SPSS software. Meanwhile, the written responses on the note were analyzed using content analysis guidelines that define a process of summarizing, reporting written data, and examining emergent nature of themes from the data (Cohen, Manion, & Morrison, 2007). Initially, the researchers read all the written responses. Then, they defined the units of analysis by underlining sentences that indicated the students' attitude, anxiety, and confidence before and after taking the CALL class. That step was followed by deciding the codes to be used in the analysis. Later, the researchers wrote some words to label the underlined sentences indicating the issues. After they had written the codes, they started to develop them into three main themes, namely attitude, anxiety, and confidence of utilizing technology for language learning before and after taking the CALL class. Some excerpts of the students' reflective notes were recorded to support the discussions of every theme.

FINDINGS AND DISCUSSION

This part consists of two main sub-sections to provide some details about the results of the questionnaire and the reflective note. The findings in each sub-section were supported by excerpts from the students' written responses (NTE) as they were so that the researchers, according to Sawir (2005), can maintain a truth-value of the responses.

Findings from the Questionnaire

The indicators' scores (questionnaire questions) were first tested for reliability, validity, and normality. Then, indicators that were not valid were removed from the analysis. The researchers discussed the results of each variable in the subsequent sections.

The Students' Attitude of Using the Technology

The first variable was related to participants' attitude towards the use of technology in language teaching. Regarding reliability, the Cronbach's Alpha was 0.711 for the pre-questionnaire and 0.716 for the post-questionnaire. These indicated that the questions for this variable were reliable (>0.6). At the validity test, at the pre-questionnaire, question number six was removed because it was not considered a valid question (0.141 or above 0.05). At the post-questionnaire, question number one was removed because it was not considered a valid question (0.169 or above 0.05). The other items were valid because they range between 0.000-0.010 (below 0.05). After removing the invalid questions, the normality test was conducted using the

Kolmogorov-Smirnov statistic. The result of the test (0.027) violated the assumption of normality (above 0.05) of the questions in the questionnaire. With this condition, the non-parametric test (Wilcoxon Signed Ranks Test) was used. The result is summarized in Table 3.

From Table 3, it is evident that there was no significant difference between students' attitude at the beginning and toward the end of CALL class (sig. 0.759 or above 0.05). However, the descriptive statistics depicted that the mean at the beginning of the CALL class was 3.219 (agree) and 3.252 (strongly agree) towards the end of the course. This means that the students already had the positive attitude about the use of technology in language classrooms from the beginning of the class and this attitude increased slightly by the end of the class.

Table 3: The Students' Attitude of Using Technology

Test Statistics ^a	
	TOT_POS_AT D_WITHOUT1 -
	TOT_PRE_AT D_WITHOUT6
Z	-.307 ^b
Asymp. Sig. (2-tailed)	.759

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

The Students' Anxiety of Using the Technology

The second variable was related to participants' anxiety towards the use of technology in language teaching. The reliability test resulted that the Cronbach's Alpha was 0.743 for the pre-questionnaire and 0.752 for the post-questionnaire. Therefore, the questions for this variable were reliable (>0.6). At the validity test, all the pre-questionnaire and post-questionnaire questions were considered valid because they ranged between 0.000-0.010 (below 0.05). In the normality test, using the Kolmogorov-Smirnov statistic, the result of the test (0.025) violated the assumption of normality (above 0.05) of the questions in the questionnaire. As a result, the non-parametric test (Wilcoxon Signed Ranks Test) was used. The result of the test is summarized in Table 4.

Table 4 shows that there was no significant difference between students' anxiety at the beginning and toward the end of CALL class (sig. 0.595 or above 0.05). Nevertheless, the descriptive statistic result indicated that the mean at the beginning of the CALL class was 2.008 (disagree) and 2.05 (disagree) towards the end of the class. This means that the students had low anxiety about the use of technology in language classrooms from the beginning through the end of the class.

Table 4: The Students' Anxiety of Using Technology

Test Statistics^a

	TOT_POS_AX T - TOT_PRE_AX T
Z	-.569 ^b
Asymp. Sig. (2-tailed)	.569

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

The Students' Confidence of Using the Technology

The third variable was related to participants' confidence in using technology in language teaching. From the reliability test, it was depicted that the Cronbach's Alpha was 0.840 for the pre-questionnaire and 0.852 for the post-questionnaire. Therefore, the questions for this variable were highly reliable (>0.8). For the test of validity, all the pre-questionnaire and post-questionnaire questions were valid because they ranged between 0.000-0.010 (below 0.05). In the normality test, using the Kolmogorov-Smirnov statistic, the result of the test was 0.000 (below 0.05). Therefore, the questions violated the assumption of normality (above 0.05). As the other variables, the non-parametric test (Wilcoxon Signed Ranks Test) was used. The result of the test is summarized below.

Table 5: The Students' Confidence of Using Technology

Test Statistics^a

	TOT_POS_C ON - TOT_PRE_C ON
Z	-.859 ^b
Asymp. Sig. (2-tailed)	.390

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

It is evident in Table 5 that there was no significant difference between students' confidence at the beginning and by the end of CALL class (sig. 0.390 or above 0.05). Nevertheless, from the descriptive statistic, it can be seen that the mean at the beginning of the CALL class was 3.16 (agree) and towards the end of the class, the mean increased to 3.25 (strongly agree). Therefore, it can be concluded that students were already confident in using technology in language learning and their confidence increased slightly towards the end of the class.

Findings from the Reflective Note

The students' reflective note was used to provide further clarification towards the perspectives (e.g., attitude, anxiety, and confidence) of the use of technology for language learning before and after the students took the CALL classroom. Therefore, this section displayed the research findings based on three main categories, namely attitude, anxiety, and confidence of using the technology. Importantly, the results from the reflective note would seem to indicate that all students had a positive attitude to the use of technology for language learning in their classroom

after they collaboratively completed all the technological projects in the classroom.

The Students' Attitude of Using the Technology

Regarding attitude, the CALL classroom could help the students to learn and try new technology that they had not used before. Before taking the class, most of the students acknowledged that they often use some technology that they were already familiar with, such as Facebook, Email, Schoology. "Previously, I just know few technologies to support my language learning, like Schoology. It is used for submitting assignments, downloading materials, and seeing my score" (student 30/NTE). Student 21 also shared similar feelings.

Before taking the CALL class, I did not feel that it was special in using the technology for language learning. It is common for me to pay attention to my lecturer's explanation from his *Power Point* slides. I did not use many online media/ platforms for language learning. I only used Facebook, Email, and Schoology. I also used a laptop and a mobile phone in the learning process. After taking the class, I can learn about more various technology, such as *Clarisketch*², *Storybird*³, *Abcya*⁴ and I am happy about that. (Student 21/NTE)

More specifically, student 22 could learn the new technology from her classmates who delivered their technological presentations and workshops. "I get more information from my friends' presentation. They explain the descriptions, advantages, disadvantages, and instructions how to use and apply the applications or websites for teaching and learning activities. After doing the presentation, they also lead a workshop how to use them" (student 22/NTE).

The Students' Anxiety of Using the Technology

In her reflective notes, student 6 stated that the CALL classroom successfully changed his mindset that learning the target language using technology was something complicated and confusing. "After taking the class, I know that many software and sites support language learning. All of them are easy to access and to use by teachers and students. For example, I just know *Screencast-o-matic*⁵, and it can be used to

² Accessible at <https://www.clarisketch.com/>, Clarisketch is an android based application that enables its users to take pictures, draw, record their voice, and share their edited pictures (Bharti, 2014).

³ Accessible at <https://storybird.com/>, Storybird enables its users to create visual stories with pictures.

⁴ Accessible at <http://www.abcya.com/>, Abcya is a teacher-created website in which its users can access educational games and apps specifically for kids (ABCya.com, L.L.C, 2017).

⁵ Accessible at <http://screencast-o-matic.com/home>, Screencast-O-Matic is a free web-based program and similar to video lecturers (Powell & Wimmer, 2014) that enables its users to create basic screencasts (Donahoe, 2015) that can be delivered using the Internet (Budden, 2016).

support my teaching” (Student 6/ NTE). Student 2 also shared similar ideas.

Before taking the CALL classroom, I was little worried because I did not like technology. I also think that we will learn about how to use the computer like students in the Faculty of Information and Technology. This course will be hard for me. After taking the classroom, I enjoy the learning activities that give advantages of using technology. For example, I more understand that technology is not always about Microsoft word and excel. I can find many games to learn English.
(Student 2/NTE)

In addition, student 11 reflected similar views.

Before taking the classroom, I thought that using technology for language learning is difficult to access and take a lot of time in preparing the material. I also thought it needs money to access an application or website. When I tried to find the material on the Internet, there are many sources that are not trusted. After taking the classroom, I know some websites that I can use to learn speaking, writing, grammar, vocabulary, and reading for free, such as *Ed-ted*, *Storybird*, *Wordhippo*⁶.
(Student 11/NTE)

Furthermore, student 14 wrote that “after taking the CALL class, I feel that technology has now have been more attractive with its web interface that attracts the users. It is designed well to provide fun, practical, and efficient language learning activities” (student 14/NTE).

The Students' Confidence of Using the Technology

The data clarified that the CALL classroom enhanced students' confidence of using the technology for language learning in a way that they could obtain more technological knowledge and mastery that they could use in their working places. “If I become a teacher in the future, I will use what I have learned from the CALL class” (student 28/NTE). In addition, “I feel grateful because the technology I learn in this class can be used as a tool to help me when I am a worker. *Google Docs* can help me to share files with my workmates. *Storybird* can help me to make a storybook for my children in the future.” (student 9/NTE). Student 4 had a similar thought to what student 9 wrote in her note.

“I feel lucky to take this class since I can get many experiences to use technology to learn English. Moreover, we have to practice how to use the applications, such as *Kahoot*⁷

and *ScribbleNauts*⁸, in the classroom.

Therefore, I can use high technology in my language classroom now.”
(student 4/ NTE)

Student 26 also wrote, “I feel more confident because of all the things that I have learned in the classroom. I think if someday I become a teacher, all those things will help me in my teaching process” (student 26/ NTE). In a similar view, student 17 expressed her feelings. “I can apply what I have learned in this class to teach my private course students and my students in my learning service community (English club in my church and village). For example, I can use *Storybird* in teaching past tense” (student 17/ NTE). In addition, from this class, I get some weapons if I become a teacher. I know some applications, such as *Storybird*, *Clarisketch*, *WordHippo*, and *Screencast-o-Matic*” (student 25/ NTE). Similarly, student 14 wrote that one day, if I become a teacher, I will involve those applications to my classroom to make my students like English” (student 14/ NTE).

The research findings indicated that the students possessed the positive attitude, confidence, and low anxiety before and after they learned CALL in the course. This finding appears to corroborate the results of the previous studies (e.g., Unal & Unal, 2017; Balta & Duran, 2015; Baz, 2016) on the positive trends in using technology in classrooms. In the present study, the positive findings were significantly affected by the fact that they learned various, yet easy-to-use technology in the classroom. In Nigeria, the student teachers also had the similar positive attitudes when learning the simple and convenient use of technology (Yusuf & Balogun, 2011; Baz, 2016). This finding raises a reflective question if the choice of technology to introduce in a classroom can greatly impact students' attitudes towards the technology. With these in minds, we believe that EFL teachers should introduce potential educational technologies to their students. However, the teachers have to ensure that they select ones that the students can access and operate easily so that they can prevent their students from experiencing: unnecessary doubts (Javad & Leila, 2015) and fear (Torat, 2000) in using technology as well as technical problems with the technology itself (Wichadee, 2014), which could reduce opportunities of technology to contribute effectively to students' learning.

The positive attitude, confidence, and anxiety of the students were also influenced by the collaborative activities done in the course. This finding demonstrates the essence of collaborative learning where students can help one another to perform successfully in their learning (Gokhale, 1995). Nevertheless, the finding addresses another reflective question whether the students can maintain their positive attitudes and feel confident when they work individually without any

⁶ Accessible at <http://www.wordhippo.com/>, Wordhippo is an online dictionary/thesaurus by which its users can find opposites, rhyming words, translation, and lots more besides of a word (Hill, 2013).

⁷ Accessible at <https://getkahoot.com/>, Kahoot is a social, fun, and game like-learning online-based platform in which its users can create questions for unlimited number of players

⁸ Further information about this computer (educational) game can be accessed at <https://www.scribblenauts.com/scribblenauts/unmasked>

support from their group mates in the technological exploration and practices in the course.

The statistical analysis would seem to indicate that there was no significant difference in the students' attitudes, confidence, and anxiety levels before and after taking the CALL course. The reason for this result might be the fact that the participants (who were born after the 1980s) are digital natives (Chaves et al., 2016) who have been exposed to digital technology ever since they were born. Therefore, most people of this generation, as the participants in this study, may not be as anxious in using technology. They seem to be more confident and have a more positive attitude toward technology compared to, especially, digital immigrants.

More specifically, the analysis showed that most of them had already possessed positive attitude and confidence as well as low level of anxiety of using technology before taking the course. These positive feelings continued through the semester so that they did not hinder their technology-based practices in their course. The most obvious reason for this result was most of the students had already been familiar with types of technology, such as the Internet, software, and hardware (Stanley, 2013) before they entered the course as what student 21 clarified in the reflective note.

Considering the positive attitude, low anxiety, and confidence levels of the students to technology in the classroom, the researchers might state that the technological based projects can become an alternative learning activity to prepare pre-service EFL teachers to deal with the effort and initiative by the Ministry of Education in some countries as to encourage local teachers integrating the best and wisest use of technology into lessons (see, for instance, Baraya, 2002; Kozma & Anderson, 2002; Tekin & Polat, 2014; Zander, 2004; Aduwa-Ogiegbaen & Iyamu, 2005; Sales & Emesiochi, 2004; Levy, 2015). Also, the projects can be activities to deal with a concern (Kubiato et al., 2010) that prospective teachers need to have technology-based courses and training so that they can plan, practice, and try to integrate technology into their teaching practices confidently.

CONCLUSION AND RECOMMENDATIONS

Throughout the technology-based projects, (e.g., the technological workshops and the lesson plan) framed in PBL paradigms, the research reveals some success stories. The first success is that students can learn newer and more various technology so that they are now more confident in applying the technology, mainly, when they become an English teacher in the future. Secondly, the projects would seem to change the students' prior views that technology is something complicated and confusing. Nevertheless, the researchers are fully aware that the success stories are situated in a setting where the students can have easy access to the computer and Internet connection. The stories could possibly be different from those narrated in an environment where the same accesses are challenging to obtain. Therefore, as far as similar projects are to be conducted, the researchers believe

that school administrators or related entities should ensure the availability of the access.

Based on the present study, the researchers would also like to discuss some pedagogical considerations for teachers who are interested in teaching CALL specifically for EFL students in a higher education setting. First, the teachers need to have a brief overview of the technology that their students often use in their daily language learning activities before taking the CALL classroom. The outline can help to ensure that students will not learn the same technology that they are already familiar with in the classroom. Therefore, the researchers believe that teachers, some time before the class starts, should initiate an online survey to document types of technology that their students have or have not utilized. Second, in learning the technology, the students should have opportunities to practice utilizing it in an authentic situation where they can use the technology to teach the target language to real students. Third, asking the students to work in a group to explore potentials of the technology can be a way to learn the technology in a less-threatening situation. Similarly, a teacher needs to ensure that the class setting enables the students to help one another during the technological exploration process. Fourth, the teacher needs to ensure that the technological practices in the classroom provide the students with language learning opportunities. Therefore, conducting a self-reflection on the teaching and learning process using technology will help to reveal some insights on how to better utilize technology in language teaching and learning practices.

Finally, the current research calls for future studies. The previous analysis by Rhema and Miliszewska (2014) showed that better access to technology and the Internet resulted in stronger positive technological attitudes. To respond this finding, a comparative study should be conducted in a setting where students have limited experiences and access to technology to assess the extent the CALL-related projects in this study can enhance students' attitude and confidence and minimize their anxiety in using technology. Moreover, students' in-depth voices on the use of each technology-based project implemented in the classroom are not sufficiently documented. Therefore, the researchers believe that a phenomenology study can help future researchers to document students' lived-experiences towards the use of the projects in learning CALL. The researchers also find it interesting when EFL students or pre-service English teachers in different settings can have opportunities to apply the technology they have learned in the similar CALL classroom to teach the target language in a formal school setting or other authentic settings outside the classroom. In that case, future researchers can explore an in-depth investigation towards the students' feelings on their authentic technological practices beyond classroom walls.

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