

EFL Secondary School Students' Perception of ICT Use in EFL Classroom

Parlindungan Pardede

Universitas Kristen Indonesia, Jakarta
parlpard2010@gmail.com

Abstract

Its huge potential to facilitate learning has made information and communication technology (ICT) use grow as one of the main advancements in the education sector in the 21st Century. This study aims at exploring secondary school students' perceptions of ICT use in the EFL classroom. To achieve the objective, 197 students in 15 secondary schools located in Jakarta, Depok, and Bekasi were surveyed using a questionnaire. The data obtained were analyzed employing the descriptive analysis technique. The results showed that the participants' perception was positive and high in some dimensions of ICT use in learning but low in one dimension. Positive and high perceptions were found in (1) the potentials of ICT use to increase learning interest and motivation; (2) the impacts of ICT use in learning; (3) ICT educational values; and (4) ICT use self-efficacy. It was also found that the participants used ICT more frequently for entertainment and socio-economic purposes than for learning activities. Finally, a majority of the participants thought taking formal ICT training to enable them to effectively use ICT in learning is not necessary.

Keywords: *EFL, ICT, students' perception, secondary school,*

INTRODUCTION

During the past few decades, information and communications technology (ICT) has grown exponentially and is bringing new and essential implications to various sectors, including education. ICT has become gradually more important to most educational systems of education for it expands the range of options to advance teaching and learning inputs, processes, and outcomes. As a result, more and more schools and universities started to use computer networks as the major components of their teaching and learning environment.

The use of ICT, which is defined as “a diverse set of technological tools and resources used to communicate, and to create, disseminate, store and manage information” (Tinio, 2003), in language learning and teaching is not new. It can be traced back to 1921 when Pennsylvania State College began to use radio for

broadcasting courses. After that, some experiments to use television for broadcasting courses were conducted in the 1930s. With the invention of two-way communication and the use of computer-based technologies for interaction in the 1970s to 1980s, virtual English education began. Then, when the Internet and mobile technologies were introduced into language learning and teaching in the 1990s, a greater revolution started.

The new technologies have revolutionized language education because they make learning materials available online and accessible anytime and anywhere. They also facilitate individual learning because their use makes it possible to customize training “by allowing material to be adapted to individual levels and tasks to be paced according to personal progress” (Semenov, 2005). Modern ICT offers big opportunities for teachers to create a more attractive and informative learning environment. Teachers today can use a huge number of learning materials, images, videos, and even free software to make their teaching more effective. Pardede (2012) argued that ICT tools influx into language education has provided “a growing range of possible solutions for refining teaching and learning inputs, processes, and outcomes.” ICT also provides various social media to enable teachers to get in touch with their students. ICT, therefore, has changed not only teachers' and students' way of interaction but also the material resources. Padurean and Margan (2009) listed four obvious advantages of ICT use in language learning. First, ICT increases the capacity to control presentation because, unlike books which offer a fixed presentation, ICT could be used to combine audio and visual contents with texts. Second, ICT offers novelty and creativity for it facilitates teachers to use different materials in every lesson. Third, ICT facilitates immediate feedback because computers can spot mistakes and offer appropriate corrections. Fourth, ICT promotes adaptability which facilitates more learner-friendly resources. Unlike printed books produced in a single uniform format, computer programs enable teachers to adjust learning materials to suit their students' needs and level of language mastery.

Numerous studies have shown that if ICT is appropriately integrated into learning, it offers many advantages. Roden (1991) reported that multimedia use facilitates learners to understand difficult concepts and increases their concentration, understanding, and retrieval. Based on her literature review, Houcine (2011) listed four positive impacts of effective use of ICT in language learning: (1) increasing learners' motivation which enhances personal commitment and engagement; (2) improving independent learning; (3) promoting learners' collaboration and communication; and (4) improving learners' attainment and outcomes. These are in line with the results of some studies reporting that ICT use in language teaching increases students' motivation that develops their engagement (Chen et al, 2014; Gleason, 2013). Also, ICT use helps learners to be skillful in using technology, and ICT proficiency is highly needed by every student in the ever changing society and work market (Salomon & Schrum, 2007). Khalid et al (2014) found that ICT integration into learning hone the skills students need in the digital era, including how to use word processor, email, internet, and the other ICT skills.

According to UNESCO (2006), almost every country in Europe has made ICT integration into learning a priority in their educational development programs. Since the end of the 20th century, various training has also been held. Many countries on other continents have also tried the same, including Indonesia that initiated the use of ICT in education with the launch of Educational Radio in 1977 and Educational TV in 2004.

Then the 2004 Curriculum makes ICT courses compulsory for secondary school students in every grade. The program was intensified by the policy stipulating the integration of ICT into every subject taught in secondary school, in which ICT serves as learning sources and media. However, the results are varied from one country to other countries, from a region to other regions, and even from a school to other schools in the same city. Some ICT tools may work well in some schools but fail in other schools. Tinio (2003, p. 17) accentuated, "... like any other educational tool or mode of educational delivery, ICTs do not work for everyone, everywhere in the same way."

The varied results are due to numerous obstacles encountered in the implementation that are usually classified into external and internal factors (Kopcha, 2012; Wachira & Keegwe, 2011). The external factors refer to hardware (computers, laptops, smartphones, and internet networks), software (ICT programs or applications), and policy and leadership support. Internal factor refers to teachers and students' attitudes, beliefs, knowledge, and ICT skills. Both factors can affect the implementation. Inappropriate access to ICT facilities and infrastructure, poor design of ICT applications, and inadequate policy, administrative, funding, and technical support often hinder the integration of ICT into learning. The internal factors can even play a more crucial role than the external factors because teachers and students are the ones who directly involve in the program. Angers and Machtmes (2005) reported that teachers' attitudes and beliefs are key factors to succeed technology-based learning. Many programs of ICT integration into learning failed because teachers' beliefs, attitudes, and ICT knowledge and skills are ignored (Jimoyiannis & Komis, 2007). Students' perceptions are also a crucial success factor in ICT integration into the learning process (Selwyn, 1999) because the integration essentially forms a learning environment requiring the student-centered approach. To succeed it, students' engagement and commitment are a must (BECTA, 2007). Sanders and Morrison-Shetlar's (2002) study confirmed that students' attitudes toward technology are influential in determining the educational benefits of online learning resources and experiences.

With the extensive growth of technology use in EFL classrooms, a wide body of research has advanced investigating students' perception of ICT integration in EFL learning. Many of these studies revealed that the majority of students have a positive perception of ICT use in learning English. Many students reported that ICT makes them more motivated to learn English because ICT provides them a learning environment that promotes independent learning, greater opportunities to share, interact, and collaborate with other students using authentic English in various contexts. Many students also perceive that ICT warrants learner-centeredness and learning autonomy as ICT enables them to learn in a more flexible and self-scheduled study plan. They also view that ICT tools like smartphones, tablet apps computer software, social networking websites, and online videos have positive impacts and can effectively help them in improving their language skills.

However, most of these studies were conducted at the tertiary education level (Pardede, 2011; Manowong, 2016; Purnawarman, Sundayana & Susilawati., 2016; Milon & Iqbal, 2017; Zinan & Sai, 2017). Studies conducted to investigate students' perception of ICT use in English classroom at secondary school in Indonesia are still rare and focused on the use of specific ICT tools, such as Edmodo and Quipper (Cakrawati, 2015), Youtube (Sakir, Dollah & Ahmad, 2020), and WhatsApp (Susanti & Tarmuji, 2016). There's a need to investigate secondary school students' perceptions of

the use of ICT tools as a whole. Therefore, this study attempts to investigate students' perceptions of ICT use in the EFL classroom. The focus is to answer the following research questions: (1) What are secondary school students' perceptions of the potentials of ICT to develop their learning interest and motivation? (2) What is the students' perception of the impacts ICT use in learning English? (3) What is the students' perception of the educational values ICT use in learning? (4) What is the students' perception of their self-efficacy in using ICT for learning? (5) How do the students perceive the importance of ICT training? (6) What is students' perception of their intensity use of ICT for different purposes?

METHOD

Research Design

This study is a descriptive qualitative research employing the cross-sectional survey design. It was conducted in September-December 2019 in 8 junior high schools and 7 senior high schools in Jakarta, Depok, and Bekasi.

Population and Sample

This study was a part of a study conducted by Pardede and Sunarto (2020) surveying the perceptions of teachers and students of secondary schools in Jakarta, Depok dan Bekasi. The sample was selected employing the convenient sampling technique by asking the teachers and students of 15 schools included as the location of the teaching practice program for the students of the Faculty of Education and Teacher Training of UKI in the 2019/2020 Academic year. From the 458 respondents of Pardede and Sunarto's (2020) study, 197 students who ever used ICT in their English classes were taken as the participants of this study.

Instrument

To answer the research questions, data were collected using a questionnaire comprises of 44 close-ended questions and 4 open-ended questions. It was adapted from the questionnaire developed by Mahdum, Hadriana, and Safriyanti (2019). To meet this study requirement, some questions were modified and translated into Indonesian for collecting the data and re-translated into English for analysis.

Table 1. Agreement, Belief, or Intensity Level Index

No	Interval	Category
1	3,36—4,00	Very High
2	2,72—3,35	High
3	1,42—2,71	Low
4	0,00—1,41	Very Low

Data Analysis Technique.

The collected data were analyzed using the descriptive analysis technique. The participants' responses to the closed-ended questions were analyzed by administering the descriptive statistical operation in terms of percentages and means (\bar{X}). The participants' responses to the open-ended questions were used to triangulate and elaborate the quantitative data. The participants' agreement, belief, or intensity level was determined using the index presented in Table 1.

FINDINGS AND DISCUSSION

Perceived Potentials of ICT Use to Increase Learning Interest and Motivation

Interest and motivation are two essential internal factors that affect the learning process and outcomes. According to Renninger and Hidi (2016), interest is “a powerful motivational process that energizes learning and guides academic and career trajectories. Motivation is a key success factor in academic achievement and develops long-life learning (Sanacore, 2008). Triarisanti and Purnawarman (2019) accentuated, that the higher a student’s interest and motivation, the higher his learning outcomes will be.

Tabel 2. Perceived Potentials of ICT Use to Increase Learning Interest and Motivation (n= 197)

No	Statement	Responses (%)				\bar{X}	SD
		SD	D	A	SA		
1	Learning using ICT is more interesting	6.09	24.37	35.53	34.01	2.86	0.08
2	I prefer to learn by using ICT	10.7	23.98	34.69	30.61		
3	It's more comfortable to learn using ICT	13.7	25.89	30.46	29.95		
4	I like reading digital texts than printed texts	13.2	24.87	30.46	31.47		
5	I love learning ICT skills	10.7	21.32	28.93	39.09		
6	I'm more enthusiastic to learn with ICT	11.7	27.41	30.96	29.95		
7	ICT use increase my motivation to learn	11.2	27.41	30.46	30.96		
8	I never get bored learning through ICT	9.64	26.4	28.93	35.03		

The findings indicate that the majority of the participants had a positive perception of the potentials of ICT use to increase their interest and motivation. More than 60% of them agreed and strongly agreed with the whole statements designating the potentials of ICT use to increase students' learning interest and motivation in the questionnaire (Table 2). The obtained mean score ($\bar{X} = 2.86$) indicates that the participants' perception of the potentials of ICT use to increase their interest and motivation is high. This finding is supported by the respondents' reply to the open-ended question showing that 77% said they were interested in using ICT in learning, and only 10.66% said they were not interested (Table 8).

This finding confirms Prensky's (2001) view that one of the most strategic ways to boost students' interest in learning is by presenting interesting activities and media to them. This strategy can be effectively actualized through ICT use since today's students are digital natives who love ICT based activities. It also confirms some research findings revealing that ICT use and teacher positively affect students' motivation (Atkinson, 2000); that ICT facilitates teachers to make challenging and enjoyable lessons which can prevent learning activities monotony and increase students' interest (Frydrychov & Poulouva, 2014) and that ICT use increases learners' motivation that develops their engagement (Chen et al, 2014; Gleason, 2013).

Perception of the Impacts of ICT Use in Learning

In addition to interest and motivation development, ICT can also facilitate other aspects of learning, such as resources, contents, and media enrichment, learning process monitoring enhancement, students' achievement, and satisfaction development, and teacher-students and students-students communication advancement.

Tabel 3. Perceived impacts of ICT use in Learning (n= 197)

No	Statement	Responses (%)				\bar{X}	SD
		SD	D	A	SA		
1	ICT use supports learning	4.57	19.29	42.13	34.01	3.05	0.03
2	ICT helps in getting new knowledge	7.11	15.74	39.09	38.07		
3	ICT helps in learning new skills	8.12	16.24	38.58	37.06		
4	ICT use makes learning more varied.	5.58	18.78	41.12	34.52		
5	ICT use makes learning easier	11.2	14.21	38.58	36.04		
6	ICT use has a positive effect on learning	10.2	15.74	36.55	37.56		
7	ICT use makes me more involved	6.6	17.26	37.06	39.09		

Table 3 displays that the majority of the participants had a positive perception of the impacts of ICT use in learning. More than 75% of them agreed and strongly agreed with the whole statement defining ICT use impacts in learning. The obtained mean score ($X = 3.05$) indicates that the participants' perception of ICT use impacts to learning is high.

This finding confirms the findings of Apple Computer Inc. (2002) revealing that ICT integration into the class not only increases learners' proficiency of basic skills in reading, writing, and math but also develops their learning achievement and motivation. It also approves Liu, Hsieh, Cho, dan Schallert's (2006) finding showing the use of ICT develops learners' achievement and motivation and Miller's (2009) finding that ICT tools such as videos, audios, and website pages increase learners' retrieval of the learning contents.

Perception of ICT Educational Values

Tabel 4. Perceived ICT Educational Values (n= 197)

No	Statement	Responses (%)				\bar{X}	SD
		SD	D	A	SA		
1	ICT helps me get the importance of technology in life	5.58	16.75	39.09	38.58	3.13	0.03
2	ICT makes me learn more actively	4.06	19.29	38.58	38.07		
3	ICT helps and inspires me to express my self	6.09	15.74	36.55	41.62		
4	ICT helps in developing communication & collaboration skills	4.57	15.74	37.56	42.13		
5	ICT helps me become an independent learner	3.55	17.26	41.12	38.07		

In this study ICT educational values refer to the benefits offered by ICT to the entire educational process as an attempt to develop knowledge, skills, and values that students need for their future. ICT educational values go beyond the benefits provided by ICT through learning because learning is only a part of education.

Table 4 shows that the majority of the participants had a positive perception of ICT educational values. More than 76% of them agreed and strongly agreed with the 5 statements defining the educational values of ICT. The obtained mean score ($X = 3.13$) indicates that the participants' perception of ICT educational values is high.

This finding approves Kreutz and Rhodin's (2016) research findings showing that ICT use is effective in aligning educational practice with the conditions and needs of 21st Century students. It also supports Salomon & Schrum's (2007) notion that ICT use helps develop learners' proficiency in using technology, and this proficiency is highly needed to adapt to an ever-changing society and work market. The finding also confirms the findings of Apple Computer Inc. (2002) revealing that ICT integration into the class not only increases learners' proficiency of basic skills in reading, writing, and math but also develops their learning achievement and motivation and ICT skills that support them to succeed in university and work environment as well. Additionally, the finding confirms the study results of Frydrychova and Poulouva (2014) revealing that ICT use does not only increase students' autonomy but also develops their interactive and collaborative learning skills.

Perception of Self-Efficacy in Using ICT for learning

Self-efficacy refers to "people's judgments of their capabilities to organize and execute courses of action required attaining designated types of performances" (Bandura, 1986, p. 391). In learning it plays an essential role because students' self-efficacy affects their choices of activities, effort invested, persistence, interests, and achievements (Schunk & Pajares, 2009), and self-regulatory processes use as well (Zimmerman, 2000). The studies of Wan et al. (2008) and Yang and Cheng (2009) revealed that students' capabilities to accomplish ICT related tasks positively correlated with their ICT self-efficacy.

Tabel 5. Perceived Self-Efficacy in Using ICT for Learning (n= 197)

No	Statement	Responses (%)				\bar{X}	SD
		SD	D	A	SA		
1	I don't need much guidance to use ICT in learning	5.08	17.77	37.06	40.1	3.09	0.09
2	I can use ICT easily	6.09	16.24	36.04	41.62		
3	I'm never worried or distressed to use ICT	5.08	16.75	36.04	42.13		
4	I believe in my ability and knowledge to use ICT in learning activities.	7.11	22.84	36.55	33.5		

Table 5 shows that the participants' perception of their knowledge and ability to use ICT in learning activities is positive. More than 77% of them agreed and strongly agreed with the 4 statements describing self-efficacy in ICT use in learning. The mean score ($X = 3.13$) indicates that the participants' perception of their self-efficacy in using ICT in learning is high.

This finding is clarified by the participants' replies to the open-ended question "What obstacles have you ever faced in learning using ICT?" None of the obtained answers is related to the knowledge and ability to use ICT. These answers concern mainly with ICT infrastructure and accessibility (See Appendix).

This finding may be related to the fact that all of the participants are Generation Z (born 1996-2010) who are used to using smartphones since their childhood. Their familiarity with ICT makes it a seamless part of their lives (Prensky, 2001), and this enables them to use the technology without any significant obstacle.

Perception of ICT Use Intensity in Daily Life.

Table 6 displays that the participants perceived their ICT use intensity level is different for the three purposes addressed in the questionnaire. The obtained mean score of the activities related to the use of ICT for learning ($X = 2.64$) indicates that the participants thought their intensity level of using ICT in learning is low. However, their intensity level of using ICT for entertainment is high ($X = 3.1$) and for socio-economic purposes, high ($X = 2.78$). This indicates that the participants believed their ICT use frequency was much higher for entertainment than for socio-economic purposes, not to mention for learning.

Tabel 6. Perceived Intensity of Using ICT for Different Purposes (n= 197)

No	Statement	Responses (%)				\bar{X}	SD
		SD	D	A	SA		
A.. Using ICT for Learning							
1	Doing assignments from my teachers	8.12	13.71	45.18	32.99	2.64	0.27
2	Creating PowerPoint slides	17.3	19.8	41.62	21.32		
3	Accessing learning materials	9.64	20.3	42.13	27.92		
4	Watching learning videos/movies	17.3	19.29	43.65	19.8		
5	Submitting assignment online	26.4	29.44	33.5	10.66		
6	Discussing learning topics with classmates online	14.2	22.34	39.09	24.37		
7	Discussing learning topics with teachers online	28.4	32.99	24.37	14.21		
8	Doing online quizzes/tests	19.3	21.32	37.56	21.83		
B. Using ICT for Entertainment							
9	Listening to music	6.09	15.74	37.06	41.12	3.1	0.13
10	Watching videos/movies	7.61	17.77	37.56	37.06		
11	Watching TV on the Internet	9.64	21.32	35.53	33.5		
12	Searching information for entertainment	7.11	14.21	37.56	41.12		
13	Playing online games	3.05	9.645	43.65	43.65		
C. Using ICT for Socio-Economic Purposes							
14	Accessing information/latest news	7.61	16.24	38.07	38.07	2.78	0.28
15	Communicating with family members/relatives	26.8	23.71	32.99	16.49		
16	Chatting with friends	7.61	16.24	38.07	38.07		
17	Online shopping	26.8	23.71	32.99	16.49		
Total		14.3	19.87	37.68	28.16		

This finding confirms Mahmood's (2009) finding that most of the students in the University of the Punjab, Lahore, Pakistan used ICT more frequently for communication, word processing, entertainment, etc. rather than for educational purposes. It also approves Gokcearslan and Seferoglu's (cited in Alkan and Meinc, 2016) research finding which shows that at the time the study was conducted, Turkish students mainly used ICT for playing games instead of doing learning activities.

Perception of the Importance of Taking ICT Training

Table 7 demonstrates that the majority of the participants perceived they do not need to attend extensive formal ICT courses to enable them to use that technology in learning. More than one-third of them disagreed and strongly disagreed with the three statements concerning the need to take formal ICT courses. The obtained mean score ($X = 2.09$) indicates that the participants' perception of the importance of taking formal ICT training is low.

Tabel 7. Perception of the importance of Taking ICT Training (n= 197)

No	Statement	Responses (%)				\bar{X}	SD
		SD	D	A	SA		
1	I need extensive training to use ICT in learning	31.5	35.53	21.83	11.17	2.09	0.04
2	I'm interested to take formal ICT courses	35	35.03	19.29	10.66		
3	Every student should attend courses to learn to use ICT	34.5	34.52	19.8	11.17		

The participants' low level of agreement with the importance of taking ICT training to enable them to use ICT in learning is supported by their reply to the open-ended question "Do you think you need formal ICT training so that you can use ICT effectively in learning?" A total of 43.15% of the respondents said "No" and only 34.1% said "Yes", and the other 22.84% did not respond (Appendix). This indicates more students thought taking formal ICT training is not necessary to enable them to effectively use ICT in learning than those who thought it is necessary.

To a higher extent, this finding is closely related to the fact that the participants belonged to the Generation Z cohort. They were born and brought up in the era of smartphone development which makes them so accustomed to using ICT that they think of ICT as a natural part of themselves. Bliss (in Global news, 2018), accentuated that Generation Z predisposition to do "online" activities extensively is not because they are 'addicted', but because technology is an extension of themselves. For them, ICT is not a kind of tool, but a way of life. As a result, Generation Z tends to be very familiar with ICTs and this familiarity enables them to use ICT skillfully without having to devote special time to learn it.

This finding confirms the results of Rae's (2006) study showing that 58% of students at the Open University of England mastered computer operating skills by learning on their own, 10% learned them during lectures, and other students through training courses relating to their employment. Additionally, 40.7% of the students learned their ICT skills by learning on their own, and only 18.8% learned them by attending related training.

CONCLUSIONS AND SUGGESTIONS

Based on the findings and discussion above, the following conclusions were drawn. First, the participants had a positive and high-level perception of ICT use to increase their interest and motivation. Second, the participants had a positive and high-level perception of the impacts of ICT use in learning. Third, the participants had a positive and high-level perception of ICT educational values. Their agreement level to this dimension ($X = 3.13$) is a bit higher than to the impacts of ICT use in learning ($X =$

3.05). Fourth, the participants had a positive and high-level perception of their ICT use self-efficacy. This indicates that the students were confident of their knowledge and ability to use ICT in learning activities. Fifth, the participants perceived their intensity level of using ICT in learning as low but high in using for socio-economic purposes, and even higher in using ICT for entertainment. Sixth, the participants' perception of the importance of taking formal ICT training is low. This indicates that a majority of them thought taking formal ICT training is not necessary to enable them to effectively use ICT in learning.

There are at least three limitations in this study. First, it employed a cross-sectional survey design so that the information collected is limited only to the participants' perceptions at the time the data was collected. Second, the research sample was selected using a convenient sampling technique. This makes the results cannot be generalized to the entire population. The findings are valid only to the selected samples. Third, the data were collected only through a questionnaire. In this regard, the two suggestions are recommended. First, further studies are recommended to use longitudinal research to obtain more stable information. Second, further studies are suggested to select the sample randomly so that the research results can be generalized to the entire population.

REFERENCES

- Akkoyunlu, B. & Soylu, Y. (2008). A study of student's perceptions in a blended learning environment based on different learning styles. *Educational Technology and Society*, 11(1), 183-193.
- Alkan, M. & Meinc, S. (2016). The relationship between students' use of ICT for social communication and their computer and information literacy. *Large-Scale Assessments in Education*, 4(15), 1–17. DOI:10.1186/s40536-016-0029-z.
- Angers, J., & Machtmes, K. (2005). An ethnographic-case study of beliefs, context factors, and practices of teachers integrating technology. *The Qualitative Report Volume*, 10(4), 771-794.
- Apple Computer Inc. (2002). The impact of technology on student achievement. Retrieved June 2015 from www.oten.info/conferences/jukes/ResearchSummary.pdf
- Atkinson, E.S. (2000). An investigation into the relationship between teacher motivation and pupil motivation. *Educational Psychology*, 20(1). 45-57.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, New Jersey: Prentice-Hall
- BECTA. (2007). *Harnessing technology review: Progress and impact of technology in education*. Retrieved May 2018 from <http://partners.becta.org.uk>.
- Chen, L., & Zhang, R, Liu, C. (2014). Listening strategy use of influential factors in Web-based computer-assisted language learning. *Journal of Computer Assisted Learning*, 30, 207-219.
- Frydrochova K, B., & Poullova, P. (2014). *ICT as a motivational tool in the learning of foreign languages*. Retrieved June 2019 from <http://www.europment.org/library/2014/interlaken/bypaper/EDU/EDU-06.pdf>
- Gleason, J. (2013). Dilemmas of Blended Language Learning: Learner and Teacher Experiences. *CALICO Journal*, 30 (3), 323-341.

- Houcine, S. (2011). The effects of ICT on learning/teaching in a foreign language Retrieved June 2018 from <http://www.pixel-online.net/ICT4LL2011>
- Jimoyiannis, A., & Komis, V. (2007). Examining teachers' beliefs about ICT in education: implications of a teacher preparation programme. *Teacher Development*, 11(2), 149-173
- Khalid, F., Joyes, G., Ellison, L., & Daud, M. D. (2014). Factors Influencing Teachers' Level of Participation in Online Communities. *International Education Studies*, 7, 23-32. <http://dx.doi.org/10.5539/ies.v7n13p23>
- Kopcha T. J. 2012. 'Teachers' perceptions of the barriers to technology integration and practices with technology under situated professional development.' *Computers and Education*, 59.
- Kreutz, J., and Rhodin, N. (2016). The influence of ICT on learners' motivation towards learning English (Master's thesis). Retrieved from <https://muep.mau.se/bitstream/handle/2043/20747/Degree%20Project%20Josefin%20%26%20Natalie.pdf?sequence=2&isAllowed=y>
- Liu, M., Hsieh, P., Cho, Y., and Schallert, D. (2006). Middle school students' self-efficacy, attitude, and achievement in a computer-enhanced problem-based learning environment. *Journal of Interactive Learning Research*, 17(3). 225-242.
- Mahdum, Hadriana, and Safriyanti, M. (2019). Exploring Teacher Perceptions and Motivations to ICT use in Learning Activities in Indonesia. *Journal of Information Technology Education: Research*, 18, 293-317.
- Mahmood, K. (2009). Gender, subject and degree differences in university students' access, use and attitudes toward information and communication technology (ICT). *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 5(3), 206–216.
- Manowong, S. (2016). Undergraduate students' perceptions of Edmodo as a supplementary learning tool in an EFL classroom. *Silpakorn University Journal of Social Sciences, Humanities, and Arts*, 16(2), 137–161.
- Miller, M. (2009). What the Science of Cognition Tells Us About Instructional Technology. *Change*, 41(2), 16-17. DOI:1667020291
- Milon, S.R.H. & Iqbal, M.A. (2017). Students' Perception towards Technology in Learning English as a Foreign Language: A Case Study of Higher Secondary Students of Pabna, Bangladesh. *IOSR Journal Of Humanities And Social Science (IOSR-JHSS)*, 22(6), 47-53
- Ong, C. S., & Lai, J. Y. (2006). Gender differences in perceptions and relationships among dominants of e-learning acceptance. *Computers in Human Behavior*, 22(5), 816-829
- Padurean, A. & Margan, M. (2009). "Foreign Language Teaching Via ICT". *Revista de Informatica Sociala*, 7(12), 2-7.
- Pardede, P. (2012). Blended learning for ELT. *Journal of English Teaching*, 2(3), pp. 165-178. DOI: <https://doi.org/10.33541/jet.v2i3.54>
- Pardede, P. (2011). Using BALL to develop writing skills: students' interest and perception. Paper presented at SWCU International Conference Satya Wacana Christian University, Salatiga
- Pardede, P. & Sunarto (2020) Persepsi Guru dan Siswa Terhadap Penggunaan TIK Dalam Pembelajaran di Sekolah Menengah di Jakarta dan Sekitarnya. In press.
- Prensky, M. (2001). Digital natives, Digital immigrants. *Horizon*, 9, 1–6.

- Purnawarman, P., Sundayana, W., & Susilawati. (2016). The use of Edmodo in teaching writing in a blended learning setting. *Indonesian Journal of Applied Linguistics, Vol. 5 No., 5(2)*, 242–252. <https://doi.org/dx.doi.org/10.17509/ijal.v5i2.1348>
- Rae, S. (2006). Where, When and How do University Students acquire their ICT Skills? *Innovation in Teaching and Learning in Information and Computer Sciences*, 4:1, 1-14, DOI: 10.11120/ital.2005.04010004
- Renninger, K A., Sansone, C., & Smith, JL. (2004) Love of learning. In: Peterson, C., Seligman, M.E.P. (Ed.). *Character strengths and virtues: A handbook and classification*. New York, NY: Oxford University Press, pp. 161-179
- Roden, S (1991). Multimedia: The future of training. *Multimedia Solutions*, 5(1), 17-19.
- Salomon, G., & Schrum, L. (2007). *Web 2.0: New Tools, New Schools*. USA: Iste
- Sanacore, J. (2008, September 1). Turning Reluctant Learners into Inspired Learners. *Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 82(1), 40-44.
- Sanders, D., & Morrison-Shetlar, A. (2002). Student's attitudes toward web-enhanced instruction in an introductory biology course. *Journal of Research on Computing in Education*, 33(3), 251-262
- Schunk, D.H., Meece, J.L., & Pintrich, P.R. (2014). *Motivation in education: Theory, research, and applications*, 4th ed. Harlow: Pearson
- Selwyn, N. (1999). Students' attitudes towards computers in sixteen to nineteen education. *Education and Information Technologies*, 4(2), 129– 141.
- Semenov, A. (2005). Information and Communication Technologies in Schools: A Handbook for Teachers or How ICT can Create New Open Learning Environments. Paris: UNESCO Press.
- Sakir, G., Dollah, S. & Ahmad, J. (2020). Students' Perceptions toward Using YouTube in EFL Classrooms. *Journal of Applied Science, Engineering, Technology, and Education Vol. 2 No. 1 (2020)*, 1-10
- Susanti, A & Tarmuji, A. (2016). Techniques of Optimizing WhatsApp as an Instructional Tool for Teaching EFL Writing in Indonesian Senior High Schools. *International Journal on Studies in English Language and Literature*, 4,(10), 26-31. <http://dx.doi.org/10.20431/2347-3134.0410005>.
- Tinio, V.L. (2003). ICT in Education. Manila: e-ASE Force. Retrieved June 2018 from https://en.wikibooks.org/wiki/ICT_in_Education/Notes#84)
- Triarisanti, R. & Purnawarman, P. (2019). The Influence of Interest and Motivation on College Students' Language and Art Appreciation Learning Outcomes. *International Journal of Education*, 11(2), 130-135. DOI: 10.17509/ije.v11i2.14745
- UNESCO. (2006). Using ICT to Develop Literacy. Retrieved June 2019 from <http://www.unescobkk.org/index.php?id=4348>.
- Wachira, P. & Keengwe, J. (2011) 'Technology Integration Barriers: Urban School Mathematics Teachers Perspectives' *Journal of Science Education and Technology* 20: p17–25
- Wan, Z., Wang, Y., & Haggerty, N. (2008). Why people benefit from e-learning differently: The effects of psychological processes on e-learning outcomes. *Information & Management*, 45(8): 513-521. DOI:10.1016/j.im.2008.08.003

- Yang, H.L. & Cheng, H.H. (2009). Creative self-efficacy and its factors: An empirical study of information system analysts and programmers. *Computers in Human Behavior*, 25(2): 429-438. DOI:10.1016/j.chb.2008.10.005
- Zimmerman, B.J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekerts, P.R. Pintrich, & M. Zeidner (Eds.), *The Handbook of Self-regulation* (pp. 13-39). London: Academic Press.
- Zinan, W. & Sai, G.T.B. (2017). Students' Perceptions of Their *ICT*-Based College English Course in China: A Case Study. *Teaching English with Technology*, 17(3), 53-76

Appendix

Recapitulation of Participants' Responses to the Open-Ended Questions

No	Questions	Responses
1.a.	Have you ever attended a class employing ICT	Yes= 128 (64.97%); No= 20 (10.15%) No Response= 50 (24.87%)
1.b.	If you have not, why?	1. The school computers are often out of order. (17) 2. No teacher ever integrated ICT in my classes (14) 3. I have never been instructed to learn online (9) 4. I have no laptop, PC, or smartphone (6)
2.a.	Are you interested to learn using ICT?	Yes= 153 (77.6%) No=21 (10.66%) No Response= 23 (11.68%)
2.b.	What advantages do you get from learning using ICT?	1. Easy to get any information I need. (52) 2. Learning things teachers do not teach in classes (38) 3. I can submit assignments more flexibly (26) 4. It helps me understand the topics unclearly taught in classes.(21) 5. It helps me learn the importance of ICT skills (20) 6. Learning becomes more comfortable (17) 7. I can finish my assignment more quickly (12) 8. I can do my assignments anywhere (7) ..
3.a.	What obstacles have you ever faced in learning using ICT?	1. Internet slow connection.(49) 2. I often lack internet quota (46) 3. When the computer is out of order.(41) 4. It's burdensome to bring a laptop to schools (22) 5. When the electricity goes out (14)
3.b.	What do you always do to handle the obstacles?	1. Searching for solutions on the internet (53) 2..Asking for help from my friends.(44) 3. Asking for help from my teacher (25) 4. I have the computer repaired in the computer shop.(18) 5. Just give it up, if the problem is computer malfunction (7)
4.a.	Do you think you need formal ICT courses/training to enable you to use ICT effectively in learning?	Yes= 67 (34.1%); No= 85 (43.15%) No Response= 45 (22.84%)
4.b.	What skills do you need to learn in ICT courses/training?	1. Designing pictures (58) 2. Using Excell (48) 3. How to use LMS effectively (41) 4. How to use Microsoft Office features (36) 5. Managing a blog (21) 6. How to create animations (7)