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A Model of English Writing Instruction Using Digital Activities on Smartphones

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Abstract

This research aimed to develop a model of English writing instruction using digital activities on smartphones to improve the students' writing ability in this digital era and to study the effectiveness of the designed model using quasi-experimental design with explanatory mixed methods in the context of English as a foreign language at lower-intermediate level in a private university in Thailand. By amalgamating the research's findings on the students' preference for English writing learning with the use of digital activities on smartphones inside and outside classroom (Ngamsomjit, 2021; Ngamsomjit & Modehiran, 2022) with the documentary research, four components of the designed model were proposed including learners' learning, teacher's teaching, digital tools and technology for English writing learning, and English writing instruction. The lessons in the instruction comprised nine steps for in-class collaborative writing activities and an outside-class group project as an instructional instrument. The findings from the pretest/posttest revealed the students' writing scores in the experimental group increased in the posttest at a significance level of .05. The semi-structured interview and the online questionnaire after students' attending the instruction as the designed model reported their satisfaction towards the teaching as the model. The research concluded that the developed model satisfactorily influenced students' confidence, motivation, enjoyment, engagement, and interaction in their writing learning, and improved the students' writing ability in this digital era.

Keywords: Instructional model development, Digital writing activities, smart phones, English writing instruction, English as a foreign language

Introduction

Technology has been incorporated into English instructions for many decades; however, the world's digital transformation and the disruptive technological innovations have changed all aspects of lives including how people write (Electronic Transactions Development Agency, 2019, 2020). In a private university in Thailand, a lower-intermediate English writing instruction in an English as a foreign language context is conventionally conducted with the use of common teaching tools and technology such as textbook, computer and a projector, students seem increasingly inactive in their learning leading to ineffective learning and

unsuccessful academic results. One of the possible factors might be that the students' ways of learning English writing have changed on account of their digital attributes (Ngamsomjit, 2021; Ngamsomjit & Modehiran, 2022); as a result, the traditional English writing instruction currently in use might probably be less suitable. Therefore, a cautious research study is necessary to raise some concerns of the EFL communities to mitigate the impact of the digital transforming on English writing teaching and learning. This current research firstly aimed to develop a model of English writing instruction using digital activities on smartphones to improve the students' writing ability in this digital era and investigated its effectiveness on significant improvement of the students' writing ability and their satisfaction toward the writing instruction as the model.

Related Literature Review

The related studies regarding the designing of the writing instruction model included SLA principles, English writing instruction, digital technology for English writing learning, and instructional models as follows.

Related SLA Principles for Learners' English Learning

An insight into the related principles of second language acquisition could reflect on how learners learned English rendering right direction towards appropriate EFL teaching and learning. Three groups of second language acquisition (SLA) principles including cognitive-interactionist perspective, sociocultural perspective, and innatist perspective can be applied in the proper writing teaching and learning. Beginning with the **cognitive-interactionist perspective**, to set up the steps of learning writing, students' new knowledge should be primarily and gradually formed by increasing experiences and practices, scaffolded by the teacher's directive lecture and presentation, and developed by the modified interaction with the teacher (Lightbown & Spada, 2013; Long, 1996; Ortega, 2007). For the **sociocultural perspective**, English writing can be taught for the communicative purpose. Social interaction could be focused to enhance the learners' cognitive development (Lightbown & Spada, 2013; Margolis, 2020; McLeod, 2020; Shooshtari & Mir, 2014). Vygotsky's Zone of Proximal Development (ZPD) and the More Knowledgeable Others (KMO), defined as "a skillful tutor" (McLeod, 2020, p.4), conceptualized how a child could learn language when supported by adults and peers with higher language proficiency (Margolis, 2020). McLeod (2020) pointed out that technology and tools could also help the learners with the new knowledge development in the ZPD. Social interactions and learning collaboration played a significant role in knowledge development as explained by Margolis (2020) that "interactions of the two actors" (p.20) could promote the true joint-learning construction (co-constructive learning), from inter-psychological processing to intra-psychological processing, resulting in the cognitive development (Shooshtari & Mir, 2014). For the **innatist perspective**, learning how to write reflects from the internal and external factors affecting language acquisition as proposed by Krashen (1982)'s Monitor Model: Acquisition/Learning Hypothesis, Input Hypothesis, and Affective Filter Hypothesis. Acquisition/Learning Hypothesis focused on the learning environment affecting the learners' learning. It was believed that learners consciously learn

and unconsciously acquire language which was similar to Margolis's "spontaneous (everyday – outside classroom) concepts" and "scientific (inside classroom) concepts" (2020, p. 22). The unconscious acquiring (or the spontaneous – everyday outside class learning) was developed primarily at the bottom, promoting the conscious learning (scientific - inside class learning) at the top. They both interacted with each other in the two-sided process (top-bottom and bottom-top). For the other two hypotheses, Input Hypothesis focused on the proper input for leaners' effective language comprehension which could be promoted by the interactional modifications (Long, 1983) through learning collaboration with peers and teacher, while Filter Hypothesis focused on the factors affecting learners' learning which can include anxiety, boredom, and emotions obstructing learning. Each individual learner who possessed different characteristics, learning styles, and preferences should be taken care of by their teacher to create the proper learning environment (Lightbown & Spada, 2013). Therefore, the integration of writing learning collaboration with peer feedback and support from teacher and digital technology should create the proper learning environment with less affects that could better assist the learners to develop their English writing learning with effective cognitive development as aimed.

English Writing Instruction

Writing is regarded as a complicated process consisting of many dimensions such as context, culture and background, purpose, and genres. Hyland (2002) suggested that writing instructions should be based on the tripartite framework emphasizing on writer, text, and reader. This principle consisted of nine traits: collaborative, responsive, recursive, developmental, generative, problem-solving, authentic, interactive, and meaningful. These qualities therefore should be included in the writing activities. From concepts to the writing teaching approach, the tripartite approach consisting of product, process, and project as the base with the key mechanism using Funds of Knowledge would guide the construction of the writing activities both inside and outside classrooms (Chen et al., 2017; Hyland, 2002; Kokotsaki et al., 2016; Sarhady, 2015). First, the product-based approach would guide the students to practice towards the end product whereas the process-based approach would encourage the students in realizing the process of writing. Second, the project-based approach would provide the students with opportunities for social interactions, collaboration, and authenticity of English writing. Last, the Funds of Knowledge (FoK) (Hogg, 2011, 2016; Maitra, 2017) would allow the students possessing different experience and background to share their existing related knowledge together and build new knowledge for writing learning. The FoK-based approach using class discussions and collaboration among the students, and between the students and their teacher would be the way to increase the exchange of the funds of knowledge related to the writing tasks. This would help students lacking prior knowledge on or being less interested in the writing topic content to succeed their writing learning.

Digital Technology for English Writing Learning

Due to the speedy technological developments improving all aspects of life, many studies revealed significant benefits of technology-assisted language learning, from computer-

assisted language learning (CALL) to mobile-assisted language learning (MALL) and this means that technology has changed how learners acquire their language input (Otto, 2017; Rahim & Adzharuddin, 2018; Santos Costa & Xavier, 2016) and produce language output (Hyland, 2002). Particularly, for the past decades, Kim et al. (2013) revealed that the use of social networking features could enhance the learning collaboration increasing learners' motivation and effecting learning. And such integration of technology in English instruction was expected by the learners in their learning environment (García Botero et al., 2018; Kim et al., 2013; Ngamsomjit & Modehiran, 2022; Sun & Gao, 2020). And in the era of digitalization when smartphones have become indispensable part of lives, the digital devices with touchscreens are available for teaching and learning disruption with the more effective qualities and better accessibility (Godwin-Jones, 2017). It is also correlated with the study findings by Ngamsomjit (2021) and Ngamsomjit and Modehiran (2022) on the EFL university students' preference for the use of digital technology for writing learning.

Instructional Models

Designing and developing a model as aimed involved three related instructional models: instructional design model, model for instructional technology and media integration and teaching models. First, the **ADDIE Model**, which is an instructional design model (Levesque, 2019), was chosen as the primary procedure to design and develop the aimed English writing instruction. **ADDIE Model** consists of five main steps: Analyze, Design, Develop, Implement, and Evaluate. This instructional design could help teachers to plan lessons with all teaching and learning steps in different learning environments (Linh & Suppasetseree, 2016; Richards & Lockhart, 1994). Second, the **ASSURE Model** is a model chosen for utilizing technology and media in learning. **ASSURE Model**, defined as "a procedural guide for planning and conducting instruction that incorporates media and technology" (Heinich et al., 2001, p. 54), consists of Analyzing learners, Stating objectives, Selecting methods, media and materials (including technology), Utilizing media and materials, Requiring learner participation, and Evaluating and revising. With the strategic guidelines, digital technology integration could both facilitate teacher's teaching and engage students in their active learning. The third model includes one of the **models of teaching**. Joyce and Weil (2003) explained that a model of teaching was "a description of a learning environment. The descriptions have many uses, ranging from planning curriculums, courses, units, and lessons to designing instructional materials – books and workbooks, multimedia programs, and computer-assisted learning programs" (p.11). Also, most teaching models were basically designed to be the "tools" (p.2) to manage education for learners' academic accomplishments. Therefore, a variety of different models have been designed to serve different curriculums, course contents, teaching and learning objectives, and learners' learning styles. The two instructional models applied to develop the writing instruction model for the current research included cognitive processing model and collaborative learning model (Joyce & Weil, 2003) as discussed when presenting the model below.

Therefore, the writing lessons and activities that responded to the learners' preference should be designed as a teaching model that was developed to improve the students' writing ability as conducted in this research.

Research Methodology

The current research applied mixed-method quasi-experimental design. The research first brought the findings of learner analysis of preference for digital writing activities (Ngamsomjit, 2021; Ngamsomjit & Modehiran, 2022) to design conceptual components to develop a teaching writing model by selecting conceptual components, digital tools, and technology to design a model of English writing instruction using digital activities on smartphones. The teaching as the designed model was then conducted with the experimental group, while a conventional teaching method was used with the control group. The writing instruction as the designed model was investigated into its effectiveness in improving the students' writing ability by pretest and posttest and the opinions toward the teaching as the model was investigated by questionnaire and semi-structure interview.

Research Context

The present research was carried out in a private international university in Thailand in the communicative, EFL context. The subject course of the study was a lower-intermediate academic English course to foster all four skills. However, in terms of English writing learning, through a commercial textbook currently in use, content and exercises mainly focused on texts as a model. Additionally, students' mother tongues were different, for instance Thai, Chinese, Cambodian, Burmese, and more; consequently, English was the medium of the instructions.

Participants

The present study applied the intact groups of 32 university students from different faculties, and different levels of English proficiency. The participants were in the 18-25 age range, studying the course in 2021. Unfortunately, on account of the COVID-19 pandemic since 2019, the short number of students caused the decline of student enrollment. This resulted in unequal sample size, causing eight participants in the control group and 24 in the experimental group. After the teaching treatment, 13 participants from the experimental group volunteered to fill in the online satisfaction report questionnaire and six interviewees were selected from the group to participate in the semi-structured interview yielding a supportive qualitative data.

Research Instruments

The explanatory mixed-method research design utilized six research instruments to collect data from different sources for insightful understanding of the study. The research instruments included pretest and posttest, teacher's observation form, students' satisfaction questionnaire, semi-structured individual interview, and an instructional treatment developed as the designed model of teaching, all of which were explained as in the following.

Pretest and Posttest Writing and the Writing Rubric. The present research used the existing writing test and rubric offered by the university's language institute to examine the students' writing ability. They were rated the Item-Objective Congruent (IOC) by three experts and received a positive result (0.87). Moreover, an inter-rater who was teaching the same course was invited to regrade the students' test writing. Correlation analyses yielded a correlation coefficient of 0.93 for pretest and 0.95 for posttest.

Teacher's Class Observation Form. During the activity was conducted, the researcher as the teacher observed all groups and filled the form accordingly. The table form consisted of five aspects potentially observed in the digital group-based English writing activities (engagement, motivation, collaboration, interaction, and achievement), using five-point Likert scale. Space for short written comments and suggestions was also provided. It received positive average IOC score (1.0).

Online Questionnaire on Students' Learning Experiences and Satisfactions towards the Effectiveness of English Writing Instruction Using Digital Activities on Smartphones. It consisted of 23 questions. Part I explored the students' profile. Part II examined the students' learning experiences and satisfactions towards the effectiveness using five-point Likert scale. Part III allowed students to give feedback. It received positive scores for both the average IOC (0.90) and the Cronbach's Alpha (0.96).

The Semi-Structured Interview for Students' Learning Experiences and Satisfactions towards the Effectiveness of English Writing Instruction Using Digital Activities on Smartphones. Five questions were adapted from the online questionnaire on students' experience and satisfactions to give more insight into the students' learning experiences and satisfactions. The interview questions received the positive average IOC score (1.0).

Instructional Instrument. The two in-class writing lessons with digital activities on Line and Facebook in accordance with the developed teaching model (See Figures 1 and 2) and the outside class project assignment on any digital platforms of the students' own choice, all lasted 348 hours: 12 hours in-class and 336 hours out-of-class. The lesson plan received the positive average IOC score (0.96).

Findings

The explanatory mixed method resulted in both quantitative and qualitative findings. The research results revealed the designed instructional model and the effectiveness of the teaching as the designed model as follows.

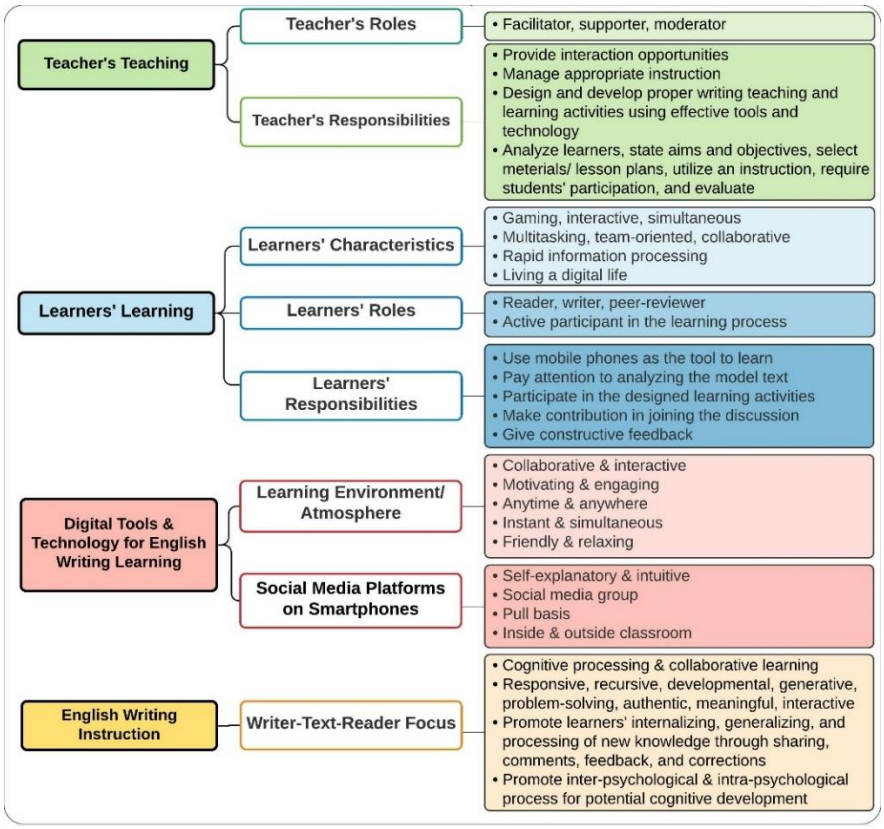
Model of Writing Instruction Using Digital Activities on Smartphones

The elements applied in consideration as the base to design the writing instruction model for the current research included four components: **learners' learning, teachers'**

teaching, digital tools and technology for English writing learning, and English writing instruction (Ngamsomjit, 2021; Ngamsomjit & Modehiran, 2022). The four components were intervened into one another aiming to enhance students' writing ability and satisfaction towards the effectiveness of English writing instruction using digital activities on smartphones. Each component possessed the qualities and details that constituted an English writing instruction using digital activities on smartphones as the designed model (See Figure 1).

Figure 1

Model of English Writing Instruction Using Digital Activities on Smartphones (Ngamsomjit, 2021)

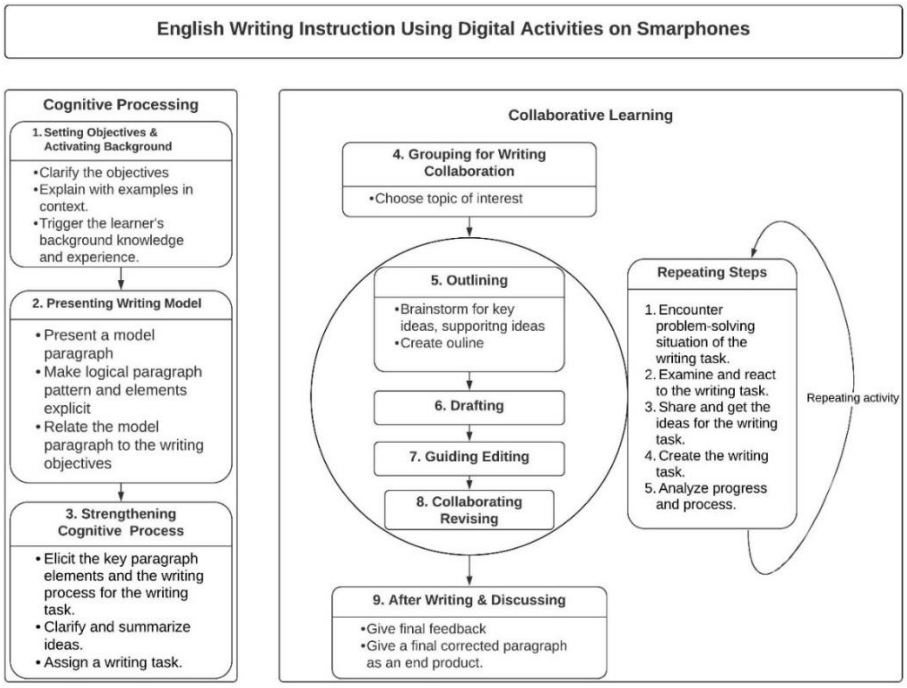


As shown in Figure 1, the designed teaching writing model for the current research comprised the congruent dimensions under the four components: 1) roles and responsibilities of teachers, 2) characteristics, roles, and responsibilities of learners, 3) learning environment and atmospheres with the use of social media platforms on smartphones, and 4) the writer-text-reader-based writing instruction. In planning and developing a lesson for writing teaching in accordance with the developed model, the two models of teaching adapted from teaching models by Joyce and Weil (2003) were combined as they suited the concepts of related SLA principles for an English writing instruction using digital activities on smartphones as aimed. First, the current English writing instruction as described involved the **cognitive processing model** consisting of step one: presentation of writing lesson objectives, step two: presentation of writing task/ model pagragraph, and step three: strengthening cognitive process. Additionally, to create a proper learning environment to suit the learners' learning styles and preference for collaboration with peer feedback and knowledge sharing, the **collaborative**

learning model was also involved. It promoted collaborative learning and interactions among learners, consisting of six teaching steps - step one: encounter problem-solving situation of the writing task, step two: examine and react to the writing task, step three: get and share the ideas for the writing task, step four: create the writing task, step five: analyze progress and process, and step six: repeat activity. Consequently, the writing instruction of the developed model of English writing instruction using digital activities on smartphones comprised nine-step in-class activities, and one project of outside-class assignment (Ngamsomjit, 2021; Ngamsomjit & Modehiran, 2022) (See Figure 2).

Figure 2

English Writing Instruction Using Digital Activities on Smartphones (Ngamsomjit, 2021)



The in-class teaching process was divided into two stages of teaching and learning. **Stage one** was **Cognitive Processing** - 1) Setting Objectives and Activating Background, 2) Presenting Writing Model, 3) Strengthening Cognitive Process, and **Stage Two** was **Collaborative Learning** - 4) Grouping for Writing Collaboration, 5) Outlining, 6) Drafting, 7) Guiding Editing, 8) Collaborating Revising, and 9) After Writing and Discussing. The first three steps supported **cognitive processing,** and the later six steps supported **collaborative learning**. The outside-class project assignment promoted authenticity in English writing using situational instructions to collaborate in groups with their own choice of topics and teammates for outside-class work and inside-class presentations.

Significant Increase of Posttest Scores in Experimental Group

For the pretest, both experimental and control group manifested very close mean score with the control group slightly higher than the experimental group, where the pretest scores showed no significant difference between the two groups (See Table 1). The results indicated that the control group's mean value was 14.44 and SD was 1.60 while the

experimental group's mean value was 14.27 and SD was 5.13. Based on the two-sample t-Test (t = .26, p = .80), it assured the comparability for the experiment since there was no statistically significant difference between the two groups.

Table 1

Pretest Mean Scores and t-Values

	N	M	SD	*t*	df	*p*
Control Group	8	14.44	1.60	0.26	22	0.80
Experimental Group	24	14.27	5.13			

For the posttest, after the exposure to the use of digital activities on smartphones of the students in the experimental group and the conventional teaching in the control group, the posttest scores of the two groups indicated significant difference at the level of .05, revealing the significant effect of the different methods of teaching (See Table 2).

Table 2

Posttest Mean Scores and t-Values

	N	M	SD	*t*	df	*p*
Control Group	8	14.43	2.60	2.41*	30	0.01
Experimental Group	24	15.81	1.80			

Note. *$p < .05$

As can be seen in Table 2, the results of the two-sample t-Test (t = 2.41*, p = .01) indicated that there was a statistically significant difference between the two groups since the control group's mean value was 14.43 and SD was 2.60 whereas the experimental group' mean value was 15.81 and SD was 1.80. Next, t-Test: Paired Two Sample for Means by MS Excel was used to investigate the writing ability improvement of the two groups.

Table 3

Pretest and Posttest Mean Scores and t-Values

	Control Group (CG: N=8)		Experimental Group (EG: N=24)		*t*		*p*	
	M	SD	M	SD	CG	EG	CG	EG
Pretest	14.44	1.60	14.27	5.13	-0.02	3.42*	0.49	0.00
Posttest	14.43	2.60	15.81	1.80				

Note. *$p < .05$

The results shown in Table 3 revealed that there was statistically significant difference between the pretest and posttest scores of the experimental group (t = 3.42*, p = .00). On the other hand, there was no statistically significant difference between the pretest and posttest scores of the control group (t = -.02, p =.49).

Since the sample size of the control group was quite small, Wilcoxon Signed-Ranks Test for Paired Samples by MS Excel, the non-parametric statistics used for a comparison of unequal sample size groups (Rattanasiri, 2014; Sullivan, 2017), was used to analyze the scores of both groups as a verification. The results re-confirmed the former two-sample t-Test in that there was no statistically significant improvement between pretest and posttest scores ($p = .87 > \alpha .05$) in the control group, but there was a statistically significant improvement between the pretest and posttest scores ($p = .00 < \alpha .05$) in the experimental group.

Furthermore, qualitatively, the writing ability of the students from the experimental group could be clearly noticed. Based on the AI-powered and human-based analyses, it indicated that the use of digital writing activities on smartphones could support the students with low English proficiency to improve their writing ability in the areas of basic grammar, spelling, and paragraph composition. Especially, on the readability aspect, it indicated that the development made paragraph more comprehensible.

Students' Development by Teacher's Class Observation

Teacher's class observation investigated students' writing collaboration quantitatively and qualitatively, yielding positive results in that quantitatively it supported their achievement ($\bar{X}$= 4.63, SD=0.52), motivation ($\bar{X}$= 4.50, SD= 0.53), engagement ($\bar{X}$= 4.50, SD= 0.76), collaboration ($\bar{X}$= 4.50, SD= 0.76), and interaction ($\bar{X}$= 4.25, SD= 0.89) in writing learning. Qualitatively, it was observed that they actively used comments for writing collaboration with the highest number of 32 group comments. Additionally, tasks were shared among teammates, and a variety of writing versions was posted for whole group selection, part by part, until they arrived a final group paragraph.

Online Questionnaire on Students' Learning Experiences and Satisfactions towards the Effectiveness of English Writing Instruction Using Digital Activities on Smartphones

After all activities and the project assignment were completed, 13 students consented to participate. The questionnaire using the five-point Likert scale yielded positive results (See Table 4).

Table 4

Mean and SD Values on Students' Experience and Satisfaction

No.	Statements	M	SD	Interpretation
1	The digital writing activities motivated me to learn and practice writing.	4.31	0.63	Strongly agree
2	The digital writing activities encouraged me to participate in the writing activities.	4.23	0.83	Strongly agree
3	The digital writing activities engaged me in writing activities and writing learning.	4.31	0.85	Strongly agree
4	The digital writing activities made English writing instruction more effective.	4.31	0.75	Strongly agree

No.	Statements	M	SD	Interpretation
5	The digital writing activities made my English writing learning more effective.	4.31	0.75	Strongly agree
6	The digital writing activities made English writing learning more interesting and more fun.	4.31	0.85	Strongly agree
7	The digital writing activities helped me improve my ability to work as a team member.	4.23	0.83	Strongly agree
8	The digital writing activities made me feel more confident about my written communication skills.	4.23	0.93	Strongly agree
9	The digital writing activities made me feel more confident about my ability to learn writing.	4.38	0.65	Strongly agree
10	The digital writing activities made me feel more positive about English writing learning.	4.23	0.73	Strongly agree
11	The digital writing activities motivated me to write in English in real life communication.	4.23	0.73	Strongly agree
12	The digital writing activities helped me improve my English writing ability.	4.15	0.90	Agree
13	The digital writing activities improved my writing process.	4.15	0.80	Agree
14	The digital writing activities helped me know more about what content to write.	4.46	0.78	Strongly agree
15	The digital writing activities improved my knowledge of grammar.	4.08	0.86	Agree
16	The digital writing activities improved my knowledge of vocabulary.	4.31	0.85	Strongly agree
17	The digital writing activities helped me make less mistakes and errors in my writing.	4.31	0.75	Strongly agree
18	Overall, I was satisfied with this English writing instruction using digital activities on smartphones.	4.38	0.65	Strongly agree

Overall, the results (See Table 4) revealed that the English writing instruction using digital activities on smartphones was satisfactory ($\bar{X}$= 4.38, SD= 0.65). Respectively, the participants strongly agreed that using digital writing activities on smartphones promoted their self-confidence in their writing ability ($\bar{X}$= 4.38, SD= 0.65) and their writing motivation for learning and practice ($\bar{X}$= 4.31, SD= 0.63). Next, it enhanced the effectiveness of writing teaching and learning and decreased their mistakes and errors ($\bar{X}$= 4.31, SD= 0.75). Additionally, it promoted more fun and interest in learning and engaged them in their writing

learning ($\bar{X}$= 4.31, SD= 0.85). It resulted in their positive feelings about writing learning and motivated them to write in English for real communication ($\bar{X}$= 4.23, SD= 0.73). It enhanced their learning participation and teamwork skills ($\bar{X}$= 4.23, SD= 0.83). Furthermore, in terms of the English writing areas, respectively, it could increase their knowledge of content ($\bar{X}$= 4.46, SD= 0.78), vocabulary ($\bar{X}$= 4.31, SD= 0.85), process of writing ($\bar{X}$= 4.15, SD= 0.80), the writing ability ($\bar{X}$= 4.15, SD= 0.90) and grammar ($\bar{X}$= 4.08, SD= 0.86).

The Semi-Structured Interview with the Experimental Group after the Use of the Digital Activities

There were six participants participating the interview after the online questionnaire for better clarification. First, it increased their writing learning motivation. A participant reported "Yes the digital writing inspires and encourage me to write and type more because it is interactive and fun" (ES1). Second, it increased their ability to write. One participant reported "When we do in the group compare[d] to the paper based [individual practice] we can compare with our friends, know what they think" (ES4). Third, it improved their writing learning by convenient, smart functions and learning collaboration. A participant revealed "[I gained] benefits of tools -- autocorrect like Grammarly, interactive, easy to review writing and convenience for search for relevant information and impressive and can share idea" (ES1), while the other one mentioned he/she could gain new information. Last, most of them believed that the use of digital activities on smartphones should be used both in class and outside class. However, a few participants believed that the individual practices were still necessary to improve their writing skills with feedback and corrections from teachers.

Discussion and Implication of the Findings

The findings brought the present research objective accomplishments in developing a model of English writing instruction using digital activities on smartphones to improve the students' writing ability in this digital era and in studying the effectiveness of a model of English writing instruction as developed. There are certain aspects for discussion and pedagogical implication as the heart of the matter. Firstly, success in developing an effective model of English writing instruction using digital technology requires teacher's careful theoretical studies and methodological design by way of investigating the related instructional development, models of teaching, SLA principles, and guidelines for technology integration for learning. Likewise, many previous studies emphasized on this instructional prerequisite (Heinich et al., 2001; Joyce & Weil, 2003; Linh & Suppasetseree, 2016; Sun & Gao, 2020). By designing an instructional model based on selected SLA principles and incorporating appropriate digital technology to support learners' learning styles and English skill development, a new effective instruction can be developed, and students' English learning and their target language ability can be enhanced as aimed.

Secondly, with respect to the integrated FoK-based English writing instruction using social media platforms on smartphones that focuses on writer, reader and text and promotes learning collaboration with peers and digital technology, the findings of this present research

confirm the effectiveness of the developed model since it could significantly improve students' writing ability and their writing learning satisfactions. A study by Chen et al. (2017) similarly claimed that the concept of FoK utilizing background knowledge sharing among learners brought benefits to the learners and their English writing learning.

However, as in the interview findings, it seems challenging for a class with students with higher proficiency who might find knowledge sharing and peer support less useful or indifferent since the model was designed to support students with lower-intermediate English. This means that using sole, routine instructional model is not recommended. Teachers should conduct a variety of different learning activities that not only can creatively respond to different learning styles and levels (Alamri et al., 2021; Lightbown & Spada, 2013), but also can avoid learning monotony.

Next, on the aspect of the digital technology integration for language learning, the findings assure the positive influence of digital technology on students and their English learning as previously reported by many studies by Brick and Cervi-Wilson (2015), Chwo (2015), Godwin-Jones (2017) and Otto (2017). Social media platforms: **Line** and **Facebook** could encourage peer learning support as aimed, and it was found more satisfactory than individual writing practices. A study by Wichadee (2013) also claimed that peer feedback using Facebook benefited the students. This means that teachers should consider trying new technology for their instructions that may more encourage students' learning interests.

Lastly in the terms of the pedagogical implication for English writing instruction, the developed model can be applied to a similar EFL context to use as additional writing practices occasionally creating learning variety. While the traditional individual writing practices on paper will promote students' concentration to consciously work on difficult tasks, the digital collaborative writing activities inside and outside classroom will strengthen students' confidence, motivation, enjoyment, engagement, and interaction in their writing learning for better cognitive processing development and effective writing ability.

Conclusion

This research achieved its aim in developing a model of English writing instruction using digital activities on smartphones. The dimensions in the four components of the model specified teacher's roles and responsibilities, learners' characteristics, roles, and responsibilities, learning environment using social media platforms on smartphones, and the writer-text-reader-based writing instruction. Use of technology with writing collaboration as in this developed model had a positive influence on students' writing learning and it assisted in their learning development and ability, which similarly reported by Ekahitanond (2018), Godwin-Jones (2017), Kim et al. (2013), Lan and Huang (2012), and McLeod (2020). The limitation about having a small unequal sample size through the pandemic yielded the same findings after another statistic verification. The findings still indicated the potential application of the developed model with positive yields in similar or broader context of EFL. Further

studies on different aspects such as writing genres, comparison on different language proficiency levels, and different time frame can bring broader understanding into English writing instruction and instructional model development.

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