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## Systematic Review: The Effectiveness of Digital Tools to Improve Writing Skill of ESL Students

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### Abstract

Despite the evolution in technology, some teachers rely on conventional methods to teach millennials writing skill. Consequently, students lose interest and fail in mastering the challenging skill. It is high time teachers change their pedagogical approaches and develop awareness on technology-oriented approach in improving writing skill. Thus, this paper aims to provide a systematic review on the studies done in the past pertaining to the effectiveness of digital tools in improving English as Second Language (ESL) students' writing skill. A total of 16 Malaysian articles, published within 2017 to 2021 in various credible databases, were selected and reviewed. The review addressed the following research question: 1) How effective are digital tools in improving writing skill of ESL students? The findings were presented in table and discussed according to the writing approaches: product-based and process-based. It was found that digital tools improved the students' writing skill and developed their language knowledge, particularly grammar, vocabulary, spelling and punctuation. Moreover, students became autonomous learners as they had access to explore knowledge virtually beyond the physical classroom. From the findings, it is recommended that future studies should explore digital tools like Google Classroom as it is less researched in writing context.

**Keywords:** English as Second Language (ESL), Digital Tools, Writing Skill, Product-based Approach, Process-based Approach

### Introduction

Globally recognised as an international language, English is acquired and learned by people all around the world. Including Malaysia, English is learned as a second language in several countries. It is a compulsory subject in both the Malaysian primary and secondary schools, even in some Universities (Arif et al., 2020). Nevertheless, most ESL students have poor English proficiency despite learning the language since their primary education (Suhaimi et al., 2019). Studies found that the writing skill has contributed to the poor language proficiency (Tan & Wan, 2019; Arif et al., 2020). This is because most ESL students find the skill to be very challenging to learn (Liong & Yunus, 2019; Tan & Wan, 2019). Students' poor writing skill can be evident through the result of their examination. For instance, Yunus et al (2020) cited in their article that the 2018 UPSR English writing paper had 25.45% failures from 329,024 national school students. On the other hand, Zakaria and Aziz (2019) reported in their study

that out of 388, 899 students who took the 2018 SPM examination, 80,113 failed their English paper. These findings indicate that the students' writing skill is at an alarming rate, and the problem need a serious attention.

The cause of this problem is often associated to the pedagogical approaches that are used by teacher. According to Tan and Wan (2019), the approach used by teachers to teach writing is inefficient. Some teachers are very exam-oriented and use the traditional methods such as drilling and rote learning (Yuk et al., 2019). Students are given sample essays to imitate which hinders their potential to produce self-composed writing. There are various digital tools that can create engaging and fun writing lessons, yet teachers overuse mind maps (Arif et al., 2020). As a result, students get bored. Besides, most teachers are found to be skipping the pre-writing stage, which is the most important stage to assist students in their writing. Students also lack writing practices (Chua et al., 2019). These lead to the production of poorly written text as the students have insufficient experience and language knowledge for a good composition (Ien et al., 2017).

A change must be made in the strategy used to teach writing. A strategy that suits the 21<sup>st</sup> century students and enables them to produce quality compositions through meaningful and interesting writing experience (Ien et al., 2017; Yunus et al., 2020). As the American philosopher and educator, Dewey (1915), once said, '*If we teach today's students as we taught yesterday's, we rob them of tomorrow!*'. Therefore, it is vital to explore the effectiveness of using digital tools to improve writing skill.

## Literature Review

### Writing as a Product

There are few approaches in the teaching of writing skill. One of it is the product-based approach, which is regarded as a traditional method. Experts such as Raimes (1983) and Silva (1990) have regarded the approach as 'controlled-to-free', 'text-based' and 'guided composition' approach. The focus of this approach is laid on the 'end product' or the final piece of a particular writing task. Students who write via this approach are drilled to pay attention on their 'end product' instead of the stages in producing in a quality writing (Nunan, 1989). Writing through the product approach also emphasizes on drilling students on their grammar and syntax (Tangpermpoon, 2008).

In the product approach writing classroom, students are provided with dozens of model essays which are later imitated by the students with the goal of composing their own piece (Selvaraj & Aziz, 2019). Steele (2004) has outlined four steps that are involved in the product approach. The steps are as specified below:

- Read and highlight the characteristics of the modelled composition.
- Practise the characteristics or format of the modelled composition in a controlled manner.
- Organise the ideas according to the model imitated. The emphasis is on the organization rather than the content of the ideas itself.
- Students compose their written product based on the skills practiced on the format and ideas organization.

According to Selvaraj and Aziz (2019), the product approach is not favourable by most teachers and students as this approach does not consider the students' creativity of thoughts in composing an essay. Nevertheless, this approach is employed by some ESL teachers for several benefits such as vocabulary and syntax mastery. It also enhances the students'

grammar knowledge as well as the formats and language style used in tackling certain types of writing such as narratives, persuasives etc. (Tangpermpoon, 2008).

### **Writing as a Process**

An opposite to the product-based approach, a process-based approach emphasizes on the stages that are involved in producing the final piece of a written task (Tangpermpoon, 2008). According to O'Brien (2004), the process approach produces writers who are free to explore and express their ideas and thoughts without attached to the excessive burden of conventional grammar drills. A writing lesson that is oriented by this approach will introduce and familiarise students with the steps involved in the approach until they are able to create a good piece of composition (Al-Naibi, Al-Jabri & Al-Kalbani, 2018). Seow (2002) outlined 4 stages in the process writing approach, which are recursive. The students can go back to a particular stage and modify their writing until they are satisfied with the outcome (Lawai & Aziz, 2019). The stages are as below:

- Planning: Ideas are brainstormed and organised based on the topic.
- Drafting: The ideas are drafted into a paragraph.
- Revising: Drafts are read and examined for correction.
- Editing: Amendments are made based on the feedback received.

Several past studies done on process-based writing have reported significant improvement on the students' writing performance (Ho, 2017; Sumarno & Tatik, 2019). It encourages creative thinkers and produces autonomous students who are optimistic in improving their work based on the feedbacks given by the teacher and classmates (Selvaraj & Aziz, 2019). Despite its positive impacts, the process approach has its setbacks. Selvaraj and Aziz (2019) stated that this approach consumes time and put less emphasis on the grammar and syntax as the focus is on the processes of writing.

### **Digital Tools in Writing Classroom**

Numerous innovations have been done in the field of educational technologies. One of it is the inventions of digital tools (Palaiageorgiou & Grammatikopoulou, 2016). Digital tools enable teachers to provide an immersive learning environment for students. There are a variety of digital tools that aid teaching and learning. Padlet, Edmodo, Kahoot, Digital storytelling, social medias and Google Classroom are some of the digital tools available for educational purpose. To keep up with the rapid advancement in technologies, the ministry of education has urged teachers to utilise digital tools in maximising the teaching and learning (Arif et al., 2020). The urge can be seen in the Malaysian Education Blueprint which has emphasised the integration of technology in one of its eleven shifts which aim to transform the education system (Malaysian Education Blueprint, 2013).

In the past, several studies have explored the effectiveness of using digital tools in the development of students' writing skill. According to Chua, Yunus and Suliman (2019), ESL students enjoy writing sessions that are conducted using digital tools. Rather than the conventional way, students prefer writing through a digital tool as it gives them a sense of satisfaction and makes writing a fun process (Ok & Rao, 2019). Digital tools were found to develop students' confidence and motivation toward writing (Zafrin, 2018; Chua, Yunus & Suliman, 2019). Faizi (2018) found that the 21<sup>st</sup> century students are in favour of learning via digital tools because it suits their preferences and motivates them to expand their knowledge. On the other hand, Zou and Xie (2018) discovered that the integration of digital tools has created blended learning environment which encourages active participation of students.

While students enjoy writing virtually through digital tools, Yunus et al. (2019) found that some needed the support of face-to-face learning. To cater the needs of such students, some digital tools are designed to fit the blended learning approach such as Google Classroom (Subandi et al., 2018; Suganthan & Ramesh, 2020). In addition, past studies found digital tools useful in helping students to brainstorm ideas, choose suitable vocabulary and construct sentences with minimal grammar error (Fallon, 2016; Al – Maroof & Al – Emran, 2018; Sujannah et al., 2020). Furthermore, writing lessons that used digital tools produce autonomous students. Sujannah et al (2020) asserted that the user-friendly approach of some digital tools has encouraged students to seek new knowledge while learning (Apriyanti et al., 2019). Regardless of the number of studies done around the world, studies that utilised the digital tool to improve writing skill in Malaysia is not abundant, especially in primary schools setting. Thus, teachers lack awareness toward the effectiveness of the tools in improving writing skills.

### Methodology

This systematic literature review was conducted according to the 5 steps proposed by Khan et al. (2003). The 5 steps are elaborated in detail below.

#### Step 1: Define the Question to be Reviewed

According to Khan et al. (2003), the question framed for the systematic review must be unambiguous and straightforward. The question should reflect the issue identified and structured before the review begins. In this systematic review, the author is interested in exploring the effectiveness of digital tools in improving the writing skill of ESL students. Thus, the question is framed accordingly so that the gathering of information can be done efficiently.

#### Step 2: Gathering Pertinent Resources

In this stage, Khan et al. (2003) mentioned that the criteria for the inclusion and exclusion of work need to be defined. For this review, the author has only included journal articles that are published online in various credible databases. This is because of the limited access to printed sources like books and journals from library due to the pandemic. Some of the databases are Google Scholar, Scopus, Scientific Research, ERIC, HRMARS, IJIAR, AWEJ etc. The resources from these databases were downloaded for extensive reading. The resources were short-listed to research-based journal articles published within the year 2017 to 2021. 16 Malaysian articles were selected after thorough screening done according to the selection criteria. Below is the table for the inclusion and exclusion criteria.

**Table 1: Inclusion and Exclusion Criteria**

INCLUSION CRITERIA	EXCLUSION CRITERIA
<ul style="list-style-type: none"> <li>• MALAYSIAN ESL CONTEXT</li> <li>• RESEARCH-BASED JOURNAL ARTICLES</li> <li>• PRIMARY, SECONDARY AND TERTIARY LEVEL</li> </ul>	<ul style="list-style-type: none"> <li>• LITERATURE REVIEW PAPERS</li> <li>• CONFERENCE PAPERS</li> <li>• PHD/DOCTORATE LEVEL</li> <li>• FOREIGN ARTICLES (EFL CONTEXT)</li> </ul>

**Step 3: Examine the Quality of the Selected Resources**

Based on the selection criteria outlined in Step 2, the articles selected for review were assessed with reference to the focus of the review question.

**Step 4: Summarize the Findings**

Once the selected journal articles were reviewed, the findings of each article were summarised and presented in a table.

**Step 5: Interpret the Findings**

The findings from the selected articles were interpreted in accordance with the review question. This is followed by conclusion derived from the interpretation.

**Findings**

16 Malaysian research articles were finalised and reviewed in this paper. The selected articles, which were published within 2017 to 2021, utilised digital tools to improve the participants' writing skills. The findings of each article are summarised and presented in the table below.

**Table 2: Summary of past research that evaluates the effectiveness of digital tools in improving writing skills of ESL students**

Article/ Study	Number of participants	Research design	Digital tool	Approach	Effectiveness	Recommendation
Yunus et al (2019)	40 3rd year TESL undergraduates in a public university	Quantitative Survey	Kahoot	Product	<ul style="list-style-type: none"> <li>▪ 97.5% students felt Kahoot has enhanced their learning and sustain their attention.</li> <li>▪ 62.5% agreed that the tool widen their vocabulary.</li> <li>▪ 60.5% improved their sentence construction and grammar knowledge.</li> <li>▪ Students were found to be highly engaged and motivated while writing via Kahoot.</li> <li>▪ Opportunities for communication.</li> </ul>	-
Lim & Noor (2019)	15 Form 1 students (Secondary)	Quantitative Pre-Experimental	Digital Storytelling	Product	<ul style="list-style-type: none"> <li>▪ Students' writing skill had significant improvement.</li> <li>▪ Able to write a story with a clear storyline.</li> <li>▪ Minimal grammar errors</li> <li>▪ varied and good choice of vocabulary.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Try different tool in digital storytelling</li> </ul>
Arif et al (2020)	30 Form 1 students (Secondary school in Selangor)	Quantitative study	Padlet	Process	<ul style="list-style-type: none"> <li>▪ Students felt encouraged &amp; motivated to write.</li> <li>▪ Majority agreed that its very useful for generating ideas in the pre-writing stage.</li> <li>▪ Students were able to develop and organise ideas coherently.</li> <li>▪ Encouraged independent learning.</li> <li>▪ 'Web-search' feature creates opportunity to learn new vocabulary.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Explore other digital tools, such as Google Classroom, to study students' perceptions, the advantages and challenges.</li> </ul>

Yuk et al (2019)	42 chinese primary school students studying in urban (Johor) and sub-urban (Pahang) schools.	Quantitative  Quasi-experimental	PaW-Modo  (Edmodo)	Process	<ul style="list-style-type: none"> <li>▪ The mean score of the pre-test and post-test signified a great improvement in the students' writing skills.</li> <li>▪ 80% of the students had a positive response toward the use of the digital tool in learning paragraph writing.</li> <li>▪ Found to be a unique virtual classroom that motivated the students to participate actively in paragraph writing.</li> <li>▪ Provided a variety of interesting writing topics.</li> <li>▪ Encouraged teacher-student communication as well as student-student communication.</li> <li>▪ Created confident and independent learners.</li> <li>▪ Encouraged peer-scaffolding, which promotes better writing skills.</li> <li>▪ Students were able to write a good paragraph that consists of topic sentence, body details and a concluding sentence.</li> </ul>	-
Mohammad et al (2018)	12 Malaysian secondary school students	Qualitative Case study	Google+	Process	<ul style="list-style-type: none"> <li>▪ Students build new language knowledge through fun writing sessions with students from various countries.</li> <li>▪ Stress-free writing tasks that encouraged students to examine their writing for grammar and spelling errors.</li> <li>▪ Created synchronous as well as asynchronous learning.</li> </ul>	-



					<ul style="list-style-type: none"> <li>▪ Attractive features that keep students engaged in the writing tasks.</li> <li>▪ Students were more interactive with their friends compared in the traditional writing lesson.</li> </ul>	
Mahmud (2019)	60 Malaysian private college students in Penang.	Quantitative Survey	Padlet	Product	<ul style="list-style-type: none"> <li>▪ Students found the digital visual aids such as mind map to be useful in generating ideas to write.</li> <li>▪ Students gained knowledge by reading their friends' writings.</li> <li>▪ A good tool to practice writing. However, the participants shared that Padlet needs to include higher level English as the students prefer advanced writing activities.</li> </ul>	Include writing tasks that are created by the lecturers in Padlet.
Suhaimi et al (2019)	8 Year 6 students from a national primary school (Negeri Sembilan)	Qualitative Case study	WhatsApp	Process	<ul style="list-style-type: none"> <li>▪ The tool was found to be significant in improving the participants' narrative writing in the aspect of grammar and vocabulary.</li> <li>▪ 75% of the participants had a significant increase in their post-test score.</li> <li>▪ The participants felt the tool was effective in developing their vocabulary and sentence building.</li> <li>▪ The tool created opportunity for feedback session, which enhanced the</li> </ul>	In a different primary or secondary school context as the current study only involved one school.

					participants' writing skill.	
Zakaria et al (2019)	52 Form 4 secondary school students	Mixed methodology  Quasi-experimental	Digital story telling	Process	<ul style="list-style-type: none"> <li>▪ The tool had a positive effect on the students' narrative writing.</li> <li>▪ Students were highly motivated to participate in the writing task.</li> <li>▪ Students had better ideas to write when they read their friends' published story.</li> <li>▪ The feedback given by friends helped the students to work on their grammar.</li> </ul>	Longer period for the intervention.
Azlan et al (2020).	118 undergraduates from 2 Malaysian universities.	Mixed methodology	Social networks (SNS)  Facebook Twitter Instagram etc.	Product	<ul style="list-style-type: none"> <li>▪ Majority of the respondents agreed that using SNS increase their confident due to peer-review/ feedback.</li> <li>▪ They are free to express their thoughts confidently using SNS regardless of the errors made.</li> <li>▪ The features of SNS enable the respondents to check their spelling and punctuation, resulting in minimal errors in writing.</li> </ul>	Use the tool in other areas of language development.

Jong et al (2021)	70 level 2 primary school teachers (Sarawak)	Mixed methodology	Padlet	Product	<ul style="list-style-type: none"> <li>▪ The respondents agreed that their students showed interest and were actively engaged during writing assessment using Padlet.</li> <li>▪ The features available in the tool attracted their students' interest and kept them encouraged to complete every assessment assigned regardless of the difficulty.</li> </ul>	Respondents from different academic level.
Rashid et al (2019)	87 public university students	Qualitative Survey	Padlet	Process	<ul style="list-style-type: none"> <li>▪ Students were motivated due to the design of the tool (user-friendly, fun and colourful).</li> <li>▪ 97.5% found it to be engaging whereby students could communicate and collaborate to complete the writing task.</li> <li>▪ Reduce students' anxiety.</li> <li>▪ Students' give feedback through various ways such as pictures, videos etc.</li> <li>▪ Low proficient students improved their writing by reading and imitating their friends' writing (published writings).</li> </ul>	Different level/ research context
Akhiar et al (2017)	101 university undergraduates	Mixed methodology	Instagram (SNS)	Process	<ul style="list-style-type: none"> <li>▪ Only 33% of the participants preferred writing using Instagram. They still needed face-to-face sessions. (Blended learning).</li> <li>▪ However, 82% enjoyed the experience of</li> </ul>	Longer duration for the writing activities using Instagram.

					<p>writing through Instagram.</p> <ul style="list-style-type: none"> <li>The writing of captions helped students to develop their language knowledge.</li> </ul>	
Azam et al (2019)	29 Form 1 students from Johor and 27 Form 3 students from Selangor.	Quantitative  Action research of quasi experimental design	Kahoot & PinUp forum  (ProvWrit)	Product	<ul style="list-style-type: none"> <li>Significant improvement in the post-test scores.</li> <li>Students were able to understand and use proverbs correctly in writing paragraphs.</li> <li>Develop students' critical thinking skills via the quizzes in Kahoot.</li> <li>Students were able to generate better ideas to write during the PinUp collaborative discussion.</li> </ul>	-
Lie et al (2018)	30 primary Year 6 students (Selangor)	Mixed methodology	PenPal schools  (Educational website)	Product	<ul style="list-style-type: none"> <li>Post-test score revealed significant improvement in the students' writing skill.</li> <li>73.33% of the students were interested to learn writing via the tool.</li> <li>Students had opportunity to communicate with learners around the world, thus, developing their language ability.</li> <li>Encourage students to explore new knowledge outside the classroom.</li> </ul>	-
Karthigesu et al (2019)	60 Year 3 Chinese primary school students  (Malaysia)	Quantitative  Action research	TikTokActiV	Product	<ul style="list-style-type: none"> <li>55 over 60 students scored higher results in the post-test.</li> <li>Tik Tok has helped the students to construct grammatically correct sentences using the appropriate action verbs.</li> </ul>	More research utilising Tik Tok.

					<ul style="list-style-type: none"> <li>▪ The entertaining writing lesson encouraged the students to produce error-free sentences.</li> </ul>	
Rahman et al (2018).	30 Year 5 national primary school students. (Putrajaya, Pahang, N.Sembilan.)	Mixed methodology  Action research	Wattpad	Product	<ul style="list-style-type: none"> <li>▪ High post-test scores indicate great improvement in the students' writing skill.</li> <li>▪ Students were able to produce writings at paragraph level with good content.</li> <li>▪ Able to punctuate, spell and write sentences that are grammatically correct.</li> <li>▪ Students became independent learners, who utilised Google search to explore information.</li> <li>▪ Students were able to make connections between their writing to the real-life scenario.</li> <li>▪ Able to give corrective feedback.</li> <li>▪ Students get insight into producing quality writing when they read writings' done by students around the world.</li> </ul>	-

## Discussion

From the findings above, several digital tools have been used by researchers in their research to improve ESL students' writing skill. Padlet was found to be the most common tool, with a total of 4 studies. Second was Social Networks (SNS), with 3 studies. In each study, different SNS application was used, namely WhatsApp, Instagram and mixed-SNS (Facebook, Twitter, Instagram etc.). This is followed by Digital storytelling and Kahoot with 2 studies, respectively. The other digital tools used were Edmodo, Google+, PenPal schools, Tik Tok and Wattpad. These 16 studies comprised of tertiary (5 studies), secondary (5 studies) and primary (6 studies) education level. From the 16 studies done, 9 studies used the product approach while 7 studies used the process approach. It can be deduced that, there are more studies on product-based approach compared to process-based writing approach.

## Product-based Approach

In 2018, 2 studies were done using product-based writing approach. The studies, by Lie and Yunus (2018); Abdul Rahman et al (2018), utilised educational websites, 'PenPal Schools' and 'Wattpad' respectively. Lie and Yunus (2018) saw significant improvement in the students' writing skill using 'PenPal Schools'. The students enjoyed writing on 'PenPal Schools' which developed their passion toward writing. They had opportunity to communicate with learners around the world and explore new knowledge beyond the classroom. Consequently, their language knowledge was developed. Similarly, Abdul Rahman et al (2018) found that students who wrote on 'Wattpad' showed great improvement in their writing skill. They were able to write good paragraphs with suitable content, grammatical sentences that are punctuated and spelled correctly. Corresponding to Lie and Yunus (2018); Abdul Rahman et al (2018) also found that writing through educational sites produced independent learners who are active in exploring knowledge using the search tab in Google. Besides, writing on Wattpad enabled the students to get insight into producing quality writing when they read writings done by students around the world. The exposure to various style of writings will widened the students' existing knowledge.

The following year, 5 studies were done using various digital tools. Yunus et al (2019) conducted a survey which evaluated the effectiveness of Kahoot in English writing. In the product-based writing class, 60.5% of students shared that Kahoot improved their ability in sentence construction and develop grammar knowledge. In terms of vocabulary development, 62.5% stated that doing writing task in Kahoot enhanced their vocabulary. The survey reported that majority of the students were highly motivated and showed active engagement whenever writing tasks were assigned in Kahoot. On the other hand, the survey conducted by Mahmud (2019), investigated students' perceptions on the use of Padlet as a writing tool. Students stated that Padlet is an efficient tool for them to practice writing. However, they felt that the tool lacks higher level English for students who prefer advanced writing activities. Nevertheless, the digital visual aids such as mind map were found to be useful because they could generate better ideas to write. Besides, the access to read friends' writings on Padlet has helped students to gain useful knowledge. Meanwhile, Lim and Noor (2019) conducted pre-experimental research, in which writing was taught based on the product-approach using Digital storytelling. The quantitative research reported significant improvement in the participants' writing skill after the intervention. Digital storytelling enabled the students to produce stories with clear storyline, consisting of good vocabulary selection. They also found that the students' writing had minimal grammar errors compared to before the experiment. Azam et al (2019) carried out action research that aimed to improve

ESL students' writing skill using Kahoot and PinUp forum. The comparison done on the pre-test and post-test scores indicated that the students' writing has significantly improved. Unlike the previous studies, this research focused on using proverbs in writing. The combination of both Kahoot and PinUp forum helped the students to understand the proverbs' meaning and build sentences. Azam et al (2019) also added that learning through Kahoot developed critical thinking skills. In another action research that focused on writing as a product, TikTokActiV was used as intervention. From the findings, Karthigesu et al (2019) found Tik Tok has helped their students to construct grammatically correct sentences using the appropriate action verbs. The fun and entertaining approach of the tool motivated the students to strive hard in producing error-free sentences.

Two different study were done in the year 2020 and 2021 respectively. Azlan and Yunus (2020) did a mixed methodology research using Social Networks (SNS). A few types of social media applications were incorporated in the research such as Facebook, Twitter, Instagram etc. The research was conducted to identify ESL students' perceptions on SNS as a digital writing tool. Majority of the respondents agreed that using SNS has increased their confident in writing. The review given by their friends on SNS was a contributing factor in boosting the students' confidence. They also added that writing on SNS gave them freedom to express their thoughts confidently, regardless of the errors made. The in-built features of SNS enabled them to check their spelling and punctuation, resulting in minimal errors in writing. Meanwhile, Jong and Tan (2021) utilised Padlet in their mixed methodology study. The respondents of the study were primary school teachers who used Padlet for writing assessment. It was mentioned that students often showed high interest and active engagement during writing assessment when Padlet is used. The in-built applications available in the tool attracted their students' interest and kept them encouraged to complete every assessment assigned regardless of the difficulty.

### **Process-based Approach**

Similar to Azlan and Yunus (2020), Akhiar, Mydin and Kasuma (2017) also did study using SNS. However, in Akhiar, Mydin and Kasuma's (2017) study, only Instagram was used. The writing approach used also differed, whereby process-based approach was emphasised. It was stated that 82% of the students enjoyed the experience of writing through Instagram and the writing of captions helped them to develop their language knowledge. On a contrary to Azlan and Yunus (2020), only 33% of the students preferred writing using Instagram. They felt the need of face-to-face sessions while writing, preferably a blended approach. In the following year, a qualitative case study using Google+ was done by Mohammad, Ghazali and Hashim (2018). Google+ was reportedly efficient in creating both synchronous and asynchronous writing lesson. The combination of both face-to-face and virtual sessions created a stress-free writing experience for the students. Consequently, the students were found to be more interactive with their friends compared to the traditional writing lesson. It was found that using Google+ has encouraged the students to pay attention on examining their writing for grammar and spelling errors. Most importantly, students built new language knowledge through fun writing sessions with students from various countries. The attractive features of the tool also kept the students engaged in the writing tasks.

The remaining studies were conducted in the following years, whereby 4 studies were done in 2019 and 1 in 2020. Using WhatsApp, Suhaimi, Mohamad and Yamat (2019) did a qualitative case study in which writing was taught as a process. WhatsApp was found to be significant in improving the participants' narrative writing, especially in the aspect of grammar

and vocabulary. 75% of the participants performed better in their post-test. According to the students, WhatsApp was an efficient tool in developing their vocabulary and sentence building skill. Not only that, the tool also created opportunity for feedback sessions, which enhanced the participants' writing skill. Meanwhile, Azmi Zakaria and Aziz (2019) utilised Digital storytelling for their mixed methodology, quasi-experimental research. The research found that the tool had a positive effect on the students' narrative writing due to their high motivation. They had better ideas to write when they read their friends' published story and improved their grammar based on the peer-feedback given. As a result, quality narratives were written. In a different quasi-experimental research, Yuk et al. (2019) used PaW-Modo (Edmodo) to improve students' writing skill. It was found that 80% of the students had positive attitude toward the use of Edmodo in learning paragraph writing. They were able to write a good paragraph that consists of topic sentence, body details and a concluding sentence. Through Edmodo, the students get to do a variety of interesting writing topics. Consequently, they became confident and active learners as they had sufficient writing practices. It was also stated that Edmodo encouraged peer-scaffolding, which promoted better writing skills.

The last 2 studies were done using Padlet. Rashid, Yunus and Wahi (2019) did a qualitative survey, while Arif et al (2020) conducted a quantitative study on evaluating the effectiveness of Padlet. In Rashid, Yunus and Wahi's (2019) study, the students had lower anxiety compared to the conventional writing style. This resulted in the production of good text. The low proficient students showed good improvement as well. They had the opportunity to read and learn from their friends' writing. Then, the knowledge gained was used in their own writing. Majority of the students found Padlet engaging because they could communicate and collaborate to complete the writing task. Meanwhile, Arif et al (2020) mentioned that Padlet was useful for their students while generating ideas in the pre-writing stage. Through Padlet, the students developed and organised ideas coherently. They also became autonomous learners as they developed their vocabulary knowledge using the web-search feature. In addition, using Padlet has changed the students' perception toward writing. They felt encouraged and motivated to write.

### **Recommendations**

From the findings and discussion, there are several recommendations to be made. First, more studies should be done on process-based approach. The purpose is to gather strong evidence that support the effectiveness of process approach in teaching writing skill. Next, digital tools that are less popular in writing context, such as Google Classroom, should be explored through future research. This is because, Google Classroom was introduced as one of the government's initiatives to upgrade the Malaysian education system. As a support to the initiative, this tool should be prioritized first compared to the other common digital tools. Hence, researchers should explore Google Classroom in-depth. Besides, studies that evaluate the effectiveness of digital tool in improving national primary students' writing skill should be expanded. This is because, there are lesser studies involving national primary students. The findings would contribute to the effectiveness of digital tools in improving writing regardless of the participants' age and education level.

### **Conclusion**

This systematic review was done based on 16 Malaysian studies that comprised of primary, secondary and tertiary education level. The purpose was to identify the effectiveness of digital



tools in improving writing skills of ESL students. From the 16 studies reviewed, 9 studies used the product approach, while 7 studies used the process approach. Several digital tools were utilized in these studies and the most common tool was Padlet. This is followed by Social Networks (SNS), Digital storytelling, Kahoot, Edmodo, Google+, PenPal schools, Tik Tok and Wattpad. It was found that digital tools have significantly improved the students' writing skill. The students were able to write grammatically correct sentences with correct punctuation and spelling. Besides, students developed their language knowledge in terms of vocabulary and grammar, using digital tool. The interactive features in the tools enabled the students to become autonomous learners who are active seekers of knowledge. In addition, writing through digital tool has boosted students' motivation and confidence in writing. Consequently, they developed passion toward writing.

Digital tools are evolving. As technology expands, more advanced and interesting digital tools are invented and used in the education system. The evolution in technology is seen when teachers change the tools that they use across time. From web-based tools such as PenPal Schools and Wattpad, teachers move to interactive digital tool like Kahoot and Padlet. As time goes on, teachers shift their attention to newly emerged digital tool that are in trend. Some digital tools can be volatile. For instance, Google+ is obsolete and less popular among teachers. Consequently, the usage is discontinued and forgotten. Hence, teachers need to be aware of the current digital tools so that the right tool is selected for their writing lesson. In addition, teachers need to explore and understand the digital tool that they intend to use. This is because, the characteristic or features of some tools limit its potential as an efficient writing tool. It could be limited to certain type of writing or a particular language focus only. For instance, TikTok is limited to action word. It is less suitable for paragraph level writing or even teaching writing using the process approach. Regardless of the countless effectiveness of digital tools, teachers need to be careful in selecting a digital tool for their writing lesson. It must be appropriate with the learning objective, suitable with the students' needs and user-friendly.

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