ESL Pre-service Teachers' Perceptions on the Use of Paragraph Punch in Teaching Writing

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Abstract

The development of Information and Communication Technologies (ICTs) provides broad opportunities in teaching English in ESL countries. Given the rapid development in computer applications, it is important to look at how these applications can be used in language teaching specifically for writing skills. The purpose of this paper is to investigate the pre-service teachers' perceptions of a writing software called 'Paragraph Punch' as a tool for assisting beginner writers. This software is designed to help learners of English as a second language to develop and organise paragraphs in essay writing. This paper provides an overview of the development of computer-assisted language learning (CALL) over the years, and the background and features of Paragraph Punch. Data for this study have been gathered from third-year TESL students in a state university in Malaysia using a questionnaire survey to elicit their views on the use of Paragraph Punch as a potential writing tool. The descriptive analysis of the data showed that the (i) respondents have a positive view towards Paragraph Punch as a potential writing tool, (ii) Paragraph Punch is more suited for beginner writers, and (iii) the software can still be improved in terms of interactivity and layout to enhance writing. The findings have been discussed with regard to ESL writing.

Keywords: paragraph punch, ESL writing, pre-service teacher, perceptions, CALL

1. Introduction

English as a Second/Foreign Language (ESL/EFL) teachers of the new millennium are constantly on the move to discover new ways and methods to teach language more effectively. Technology has the power to transform teaching and learning (Meier, 2005). Therefore, it has become increasingly important for teachers and teachers-to-be to delve deeper into technology as a potential pedagogical tool to teach language using a more student-centred approach (Melor Md Yunus, 2007; Melor Md Yunus, Maimun Aqsha Lubis, Chua Pei Lin, 2009; Melor Md Yunus et al., 2010). Over the years, many studies have been conducted on how language learning can be improved or facilitated using technology such as blogs, word processors, and web pages (Nadzrah and Kemboja, 2009; Melor Md Yunus et al., 2009; Maimun Aqsha Lubis et al., 2010; Conroy, 2010). The use of such technology has allowed educators worldwide to gain more insight on the evolution of the teaching of writing in modern classrooms.

Of all the four language skills, ESL learners often find writing a daunting task owing to its complexity. This is because it does not simply require learners to memorise written symbols and put them on paper. According to Scarcella (1984), writing involves the writer to employ high-order thinking skills as well as communication skills which include conceptualisation, inference, creativity, organisation, and the summarisation of sophisticated ideas. Hence, there is a growing need for teachers to come up with effective writing instruction for L2 learners. It remains crucial for three primary reasons: first, the ability to write well is a fundamental skill for academic or professional success but is a particularly difficult skill for ESL learners to master (National Commission on Writing, 2004). Second, writing can be especially effective in developing learners' academic language proficiency because they will be more eager to explore lexical or syntactic terms in their written work (Weissberg, 1999). The third reason being writing allows students to master various subject matters because it heightens learners' awareness towards knowledge gaps and apply problem-specific knowledge into other areas (Reeves, 2002).

2. Literature Review

Ever since the mass production of the first microcomputer in 1977, development in technology has influenced not only the way people write but also how writing is taught. More and more educators are turning to computer-supported classrooms as teaching environments. The following literature review gives readers an overview of the importance of the pre-writing process in writing, CALL and writing software, a brief history and description on the writing software Paragraph Punch as well as previous studies on Paragraph Punch.

2.1 The Pre-writing Process

Many ESL learners find it extremely difficult to put their thoughts on paper because they often have not fully mastered its linguistic features such as vocabulary, grammar and discourse. Indeed, writing in a second language is a complex process which calls for educators all around the world to continuously develop and improve instructions in the teaching of writing in order to motivate and develop the writing skills of ESL learners. A typical writing lesson consists of three stages: pre-writing, while-writing, and post-writing. While all three are essential to the writing process, the pre-writing stage is seen as the most crucial, as it helps to jumpstart and support writing as it allows students to generate and organise their ideas before starting on their writing task. Previous studies have found that pre-writing activities help in activating students' prior schemata or create new schematas for vocabulary, syntax, and cultural content associated with the writing task (Kroll, 1990; Swaffar, 1988). Through pre-writing also, writers can be guided to produce work of higher quality through the review of necessary vocabulary and the discovery of possible ways of interpreting the writing prompt (Byrd, 2011).

Some of the more commonly used techniques for facilitating the pre-writing process are brainstorming, clustering, and free writing. The brainstorming process can be done in small groups or an activity involving the entire class (Williams, 2005). Clustering is almost similar to graphic organisers, where students begin by writing a key word associated to their topic on a piece of paper, enclosing the topic with a geometrical shape, and adding ideas to the key word. Free writing, on the other hand, is more suited for more proficient learners and should be carried out for at least five minutes at any one time (Vacca, Vacca and Mraz, 2010). In this activity, students are required non-stop to generate ideas and put aside grammatical or spelling mistakes. When the activity is done, students can re-examine what they wrote to identify possible main ideas and supporting details.

Although pre-writing techniques are commonly associated with the beginning of a writing lesson, they can also be useful for students experiencing 'writer's block' at any stage of the writing process. With the introduction of technology nowadays, teachers have more choices in terms of selecting teaching aids for the pre-writing process. But this does not necessarily make it easier, as teachers have to consider how those teaching aids should be used effectively in the classroom.

2.2 CALL and Writing Software

CALL has long been introduced since the early 1960s. CALL is defined as 'the search for and study of applications of the computer in language teaching and learning' (Levy, 1997). In other words, CALL can be referred to as a range of technologies such as electronic mail, websites, online dictionaries, blogs, and computer softwares which are employed for language teaching and learning.

For the past four decades of advancement, CALL's development can be seen in three distinctive stages, namely, behaviouristic CALL, communicative CALL, and interrogative CALL (Warschauer and Healy, 1998). According to Lee (2000), there are five reasons for using CALL, which are learning to gain experience, motivation, achievement enhancer, authentic material for study, better interactions, understanding, broader spectrum of information, and global understanding.

Since then, various types of CALL have emerged and some had been successfully implemented in the classroom learning process, while a few have undergone major reconstruction to fit the current expanding situation. Text reconstruction software that allows individual or a group of students to re-arrange words and text and self-learn grammar rules and meaning are some examples of CALL which has successfully been implemented as a classroom activity (Warschauer and Healy, 1998).

In the recent years, different writing softwares have been used extensively in and outside of the classroom to develop and enhance the students' knowledge on the language, specifically their writing skills (Warschauer and Grimes, 2008; Miller, 2010). The writing software which is focused on in this paper is 'Paragraph Punch', which was first developed by Merit Evaluation Software in 2002 primarily for schools in the United States from 5th to 10th grade. It has since come up with updated versions to cater to a wider audience. Paragraph Punch utilises the writing mechanism, emulating the Principle of Gradually Diminishing Control whereby students are guided to brainstorm for starting ideas at first and gradually prompting them to write sentences that will eventually develop

into workable and organised paragraphs.

2.3 Paragraph Punch

Paragraph Punch is a step-by-step writing improvement software which assists students in building up their paragraph-writing skills. Currently, there are two versions of this software; one is a demo version which is available for free online whereas the other is the 'home version' which can be purchased and contains an additional function which allows learners to send their completed paragraphs via email. The version used for the purpose of this paper is the demo version (Paragraph Punch version 4.2).
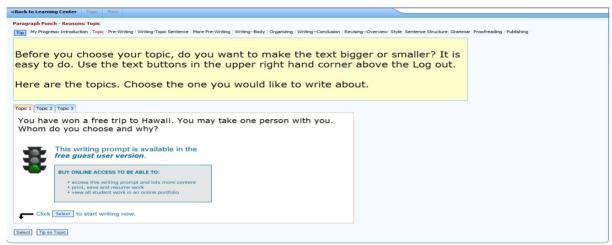

Figure 1. A screen shot of Paragraph Punch showing how the program guides the user

Through Paragraph Punch, learners learn how to write a paragraph effectively in an organised manner. After learners choose a topic for the paragraph, the pre-writing process begins. Learners, first, are asked to enter words or phrases related to the topic on a notepad. This process is stimulated by a number of prompt questions. This is similar to the brainstorming process which normally takes place in the classroom, except that with Paragraph Punch, the interaction takes place between the user and the writing software. After that, the program demonstrates how a topic sentence is written by showing learners a sample topic sentence. Learners are later asked to write their own topic sentence as an introduction to the paragraph.
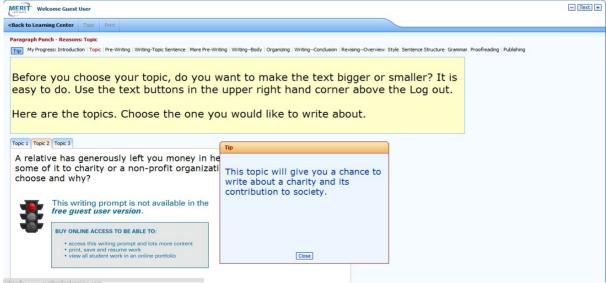

Figure 2. A screen shot of Paragraph Punch showing how tips act as a prompt in the pre-writing stage

After coming up with a topic sentence, learners are asked to make sentences out of the words or phrases they have in a notepad. The process continues until learners generate a few sentences. This will be followed by the

organisation process. Learners are asked to arrange the sentences they have constructed to make a complete paragraph. Learners are given a choice to delete the sentences that they think are not necessary. In addition, Paragraph Punch suggests a list of transition words which learners can choose and make their paragraph more cohesive.

For the concluding sentence, again, the software provides a sample and learners are instructed to write their own. When this is done, the draft of the complete paragraph is presented on the screen for students to review. Buttons such as 'Add', 'Edit', 'Remove', and 'Move' can be utilised by students to check their work. The software offers guidance in the form of brief advice on editing, style, grammar, and sentence structure. The Proofreading section of the program assists students in editing their paragraph through tools such as the 'spell-checker'. Finally, learners are able to 'publish' their paragraph either by saving it, printing it, or transferring it to a word processor. Moreover, learners are given the option of repeating the review process again.

In using the Paragraph Punch software, where emphasis is more on the writing process, users will be able to practise pre-writing, drafting, revising, editing, and publishing through the composition of a single paragraph.

2.4 Previous Studies on Paragraph Punch

The earliest study on Paragraph Punch (Version 8.1) was a media review done in the year 2002, the year it was developed by Merit Evaluation Software. The paper entitled 'Paragraph Punch' provided a detailed description of the software, the author's personal evaluation of pros and cons of the software and suggestions for usage in the classroom (Fouser, 2002). Mei-Lin (2009) explored the impact of Paragraph Punch as well as other technology tools on English-language learners' self-perception of writing difficulty. She suggested several advantages of Paragraph Punch such as spelling check and reinforcement of the writing process. In addition, she elaborated on some limitations of the software and implications of technology in the teaching of writing (Mei-Lin, 2009). However, the present researchers suggest a need for this study as teachers' perceptions are equally if not more important than language learners' perceptions on the effectiveness of this writing software as a writing tool since teachers are pivotal in the teaching and learning process.

Since teacher education organisations in the world today equip all teachers with the necessary knowledge of technology in education through Information and Communication Technologies (ICT) courses, the tendency to use or refrain from using technology in classrooms to teach writing strongly depends on the perceptions of teachers or teachers-to-be towards technology. Thus, in this paper, the researchers aim to investigate the perceptions of pre-service ESL teachers on the effectiveness of the writing software Paragraph Punch as a writing tool for students in terms of its features, user-friendliness and its affective aspects. The findings will be related to implications of teaching writing in the classroom. In order to facilitate the investigation regarding the effectiveness of Paragraph Punch as a writing tool, the researchers formulated the following research questions:

1) Does the software Paragraph Punch support the pre-writing process?

2) Do features such as tips, prompting, and spellchecker in Paragraph Punch facilitate students in the writing process?

3) From the pre-service teachers' point of view, what other aspects of Paragraph Punch can be improved to enhance writing skills?

3. Methodology

This study employed a survey research to measure the perceptions of pre-service teachers on the effectiveness of Paragraph Punch as a writing tool for beginner writers. The participants consisted of 30 third-year TESL undergraduate students in a state university in Malaysia who were taking the course 'Teaching Writing in an ESL Context' at the time the survey was administered. All the participants have acquired at least Band 4 and above in MUET (Malaysian University English Test). They can be categorised as competent or modest users of English. In addition, the participants were familiar with the use of ICT since most of them utilise the Internet for the purposes of gathering information, email, social networking, etc. The participants ranged from 21 to 28 years of age.

To obtain data for the study, the respondents were first given a 30-minute tutorial on Paragraph Punch. After trying out the software, the respondents were required to answer a questionnaire. The questionnaire used in the study was developed by the present researchers. In the development process of the questionnaire, in order to ensure validity and reliability, first of all, the present researchers reviewed the relevant literature and examined the questionnaires designed for similar purposes. Then, the first draft of the questionnaire was given to two experts to be reviewed in order to ensure the content validity and face validity of the questionnaire. Following the suggestions from the experts, the first draft of the questionnaire was revised and the necessary changes were

made in the second draft. The second draft of the questionnaire was piloted on 10 ESL learners and Cronbach's alpha coefficient was calculated to see the internal reliability of the questionnaire. The Cronbach's alpha coefficient was 0.76.

The questionnaire was made up of two sections: (1) ten close-ended items and (2) two open-ended items. The ten close-ended items were designed to elicit students' perceptions on the effectiveness of Paragraph Punch as a writing tool from three different aspects. Questions 1 to 3 focus on the user-friendliness of the software whereas questions 4 to 7 were designed to elicit responses on the features of Paragraph Punch. Finally, questions 8 to 10 pay more attention to the affective aspects of the respondents when utilising the software. The close-ended items were measured by an 'agree-disagree' scale to ensure consistent response. Two open-ended questions were included to allow students the freedom to give their views on the Paragraph Punch software. In the analysis phase of the study, the percentages for each close-ended item were calculated and the results were presented in the tables. Moreover, the responses to the open-ended items were categorized, coded and analyzed based upon the extracted themes.

4. Findings and Discussion

Items 1 to 3 examined the respondents' responses towards the features in the software Paragraph Punch (see Table 1). All the respondents (100%) agreed that it is easy to understand the instruction in the software because it is indeed clear and straightforward. A very high percentage of the respondents (93.3%) also agreed that the layout used in Paragraph Punch is simple and systematic. Most of the respondents (76.6%) considered the software 'easy to access and navigate' whereas 23.4% disagreed with the statement.

Table 1. Respondents' response on the user-friendliness of Paragraph Punch

	Items	Agree (%)	Disagree (%)
1	The instructions in Paragraph Punch are clear and easy to follow	100.0	-
2	The layout of Paragraph Punch is simple and well organised	93.3	6.7
3	The software is easy to access and navigate	76.6	23.4

Items 4 to 7 focused on the respondents' responses towards the user-friendliness of Paragraph Punch. As Table 2 shows, the respondents generally agreed that the software is user-friendly. A very high percentage (90.0%) agreed that the spellchecker feature does assist them in rectifying spelling errors in their writing as they go along navigating the software. Only 10% of the respondents disagreed with item 4. Almost all the respondents (93.3%) seem to agree that the prompting feature, one of the prominent aspects of Paragraph Punch, does help them in producing more ideas for them to keep writing. Almost 90% of the respondents believed that the tips provided in the software provide helpful additional information, which further consolidates their understanding of the construction of their paragraph. Moreover, the majority of the respondents (96.6%) concur that the software allows them to draft and write in a more organised manner.

Table 2. Respondents' response on the features of Paragraph Punch

	Items	Agree (%)	Disagree (%)
4	The spellchecker feature in Paragraph Punch helps me to identify and correct spelling errors in my writing	90.0	10.0
5	The prompting feature in Paragraph Punch helps me generate more ideas for my paragraph	93.3	6.7
6	The tips feature provides useful information which supports my writing	83.3	16.7
7	Paragraph Punch allows me to outline my ideas and write in a more systematic manner	96.6	3.4

Items 8 to 10 aimed to probe what respondents feel when they use Paragraph Punch. A relatively high percentage of the respondents (70.0%) agreed that the software allows them to work on their own. Most of the respondents considered Paragraph Punch to be lacking in the 'fun factor' and interactivity which is reflected in a high percentage of 63.4% in comparison to 36.6% who feel that Paragraph Punch is an enjoyable writing software to use. On the other hand, the majority of the respondents (93.3%) expressed that the prompting feature and

specific instruction found in Paragraph Punch increase their confidence in their writing whereas 6.7% disagreed with the statement.

Table 3. Respondents' response on the affective aspects of Paragraph Punch

	Items	Agree (%)	Disagree (%)
8	Paragraph Punch allows me to work independently	70.0	30.0
9	Paragraph Punch is fun and interactive	36.6	63.4
10	The prompting and specific instruction in Paragraph Punch make me feel more confident in my writing.	93.3	6.7

Item 11 is an open-ended question whereby it asked for the respondents' opinion with regard to the type of writers (beginner, intermediate, or advanced) who would find the software Paragraph Punch most beneficial. A high number of respondents (22 persons) expressed that the software is most suitable for beginner writers as it provides step-by-step instructions that will assist the beginner writers to start writing. Such scaffolding is necessary for the beginner writers, as they are pretty much uncertain of the structure of a paragraph and still find it hard to construct a topic sentence and to link a sentence with another. This in turn assists the writers in organising their writing. Some examples selected from the respondent views may be seen below:

'… the paragraph punch approach is a step-by-step method to encourage the early writers to write more and more'.

'… they are not familiar with the sentence and paragraph structure. So, with the help of Paragraph Punch, they will find it easier in constructing their essays and sentence structures'.

Apart from the beginner writers, the rest of the respondents (8 persons) suggested that the software might also be beneficial to intermediate writers as some of the features in Paragraph Punch such as prompting and spellchecker would still come in handy for intermediate writers who are still in the process of building up their vocabulary and organisation of ideas. Some also stated that Paragraph Punch could be more appropriate for intermediate writers, as users of Paragraph Punch will require a certain level of language proficiency to understand the instructions given. Some excerpts of their views are seen below:

'The instructions in Paragraph Punch require a certain level of proficiency in order to navigate'.

'… they do not need that much of scaffolding as compared to beginner writers, and they're able to do independent study out of class'.

However, none of the respondents think that the software is suitable for advanced writers. They think Paragraph Punch is far too structured for advance learners who might not prefer to write in a linear manner. Moreover, they perceive advance writers as those who already know the outline of an essay and thus do not need instructions to write step by step. One of the respondents even suggests that there could be a downside to Paragraph Punch for advanced writers because it tends to constrain the user's flow of thoughts through its heavily guided feature and hence limits creativity in writing. This is expressed in a statement made by one of the respondents.

'… for advanced writers, the prompts somehow limit my ideas. It makes me think in "their" way and try to generate ideas that fulfil the prompts instead of my own'.

Item 12 is another open-ended question which aimed to elicit the respondents' opinion on what aspects of the software could be improved to make it more effective for teaching writing. Two-thirds of the respondents (20 persons) suggested that the layout of the software should be improved in order to make it even more user-friendly and accessible. One of the respondents also added that the font can be adjusted to fit the user's preference, stating that

'[t]he font used in the software is too small and makes it uncomfortable for the user to read. Plus, I think the font can be varied so that it will be more attractive and personalized'.

Among other suggestions regarding the software's layout are to improve the colour scheme and include more animated graphics. Five respondents also suggested that Paragraph Punch should include additional features such as a thesaurus, synonym checker, and a dictionary in order to enrich the software's vocabulary archive.

'… could have some interesting pictures to guide users in generating more creative ideas and attract users…'

'… insert some vocabulary section in it so that when a writer starts to write his essay, he could choose other similar meaning words to show variety words usage in the essays'.

One-third of the respondents (10 persons) also recommended that the software can be made more user-friendly in terms of the choice of navigation buttons, the allowance to minimise the window while in use, adding oral instruction as well as the option to link the software to Facebook so that their work could be showcased and reviewed by others. Some statements about them are presented below:

'... could be more useful if there were navigation buttons which allow users to skip certain procedures'.

'Once the program is activated, unable to navigate other browsers. If I need to check for information on the internet, I have to shut down and save my progress in the program before I can do so. If can be minimized, would be easier'.

'It would be good if Paragraph Punch can be shared on Facebook so that people can see the writer's progress'.

'Voice instructions. Sometimes the "Help" button is just not enough'.

In addition to that, a few of the respondents added that it would be helpful if the software could provide more sample essays or online essay links as reference and guidance for the users.

'... improve the graphics and give example on good essays so that the users will be able to compare their essays with the good ones'.

While most of the respondents mentioned how the features can be improved to enhance the user-friendliness of the program, one of the respondents actually justified the reasons for the need to do so: to make Paragraph Punch more attractive so as to encourage independent study (learning beyond the classroom) among developing writers.

'Perhaps paragraph punch could have some interesting pictures to guide users in generating more creative ideas and attract users to use them especially as their independent study/activity'.

This research has managed to explore the pre-service teachers' perceptions with regard to the use of the software Paragraph Punch for the teaching of writing. Based on the findings, it is found that the software does indeed support the pre-writing process (Research question 1: Does the software Paragraph Punch support the pre-writing process?), as it helps most of the respondents in the brainstorming process. Explicitly, the software's prominent features such as prompting and tips together with the step-by-step instructions guide the user to generate ideas prior to writing. By using prompts as a guide to encourage users to write down key words or phrases related to the topic, Paragraph Punch facilitates the free flow of ideas in writing.

Regarding the second research question, 'Do features such as tips, prompting, and spellchecker in Paragraph Punch facilitate students in the writing process?', the answer is a resounding yes. Based on the respondents' feedback, features of paragraph punch such as tips and prompting assist users in generating and organising more ideas. The spellchecker feature helps in the editing process whereby learners are able to minimise spelling errors. Paragraph Punch also helps users to understand the flow and structure of an essay via implicitly teaching them the fundamental structure of an essay, which is the paragraph. In addition, not only does the software help users to write, it also drives and motivates the users to work independently owing to the extensive instructions. This enables them to write on their own with little assistance from the teacher. The majority of the respondents also find that Paragraph Punch is most suited for beginner writers owing to the amount of scaffolding it provides them in the writing process. It would be best if the software is used in the classroom so that the teacher can supervise the students and check on their progress as they go through the software.

In terms of the third research question, which is 'From the pre-service teachers' point of view, what other aspects of Paragraph Punch can be improved to enhance writing?', the researchers found that many of the pre-service teachers recommended that Paragraph Punch could be further improved in terms of its layout, content, and interactivity. A large number of respondents suggested that the layout needs to be refined so that it will attract more users to use it. The current layout is said to be dull and uninspiring for the user to sustain interest. Pastel colours, interesting graphic display as well as attractive navigation buttons are some of the suggestions mentioned by the respondents. There should also be an option to change the type and size of fonts in the software so that it will cater to the needs and preferences of the user. On top of that, the inclusion of sound and animation might also garner the interest of younger users. From the variety of responses in terms of layout, the researchers conclude that aesthetic aspects of writing software can also affect its user-friendliness as it is usually the first thing which catches the attention of its users. If the layout fails to attract, it will also be a de-motivating factor when it comes to getting users to continue using the software for the purpose of writing practice.

From the respondents' feedback, Paragraph Punch is also seen to be too rigid in terms of its content. The software does not allow the users to write using their preferred title or write a selected topic according to their preferred genre (narrative, argumentative, etc). Users can only choose from the limited list of topics provided by

the software. This is an indication of the software's inflexibility. However, the researchers think that this problem might be attributed to the fact that only the demo version of the software is used for the purpose of this study. The full version of the software, which can be purchased online, may provide users with more variety in terms of topic choice.

In actual writing, a topic sentence is not necessarily the first sentence of a paragraph. However, Paragraph Punch seems imply that idea by making the topic sentence the first sentence which users must construct before they proceed with the rest of the paragraph. The disadvantage of this is that students might generalise this concept to all their writing styles. In addition, a few of the respondents also suggested that the software should offer users the option to switch from one stage of writing to another at their own pace by providing the appropriate navigation buttons. This will allow the software to cater to a wider audience as some writers, especially advanced writers, might not prefer to write in a linear process. This is supported by studies which suggest that writing is more recursive in nature (Flower and Hayes, 1981; Omaggio-Hadley, 2001).

The interactivity of Paragraph Punch is greatly reduced because it does not allow users to minimise the window when the program is running. This disables multitasking, and prevents the user from utilising other programs such as an online dictionary, search engines, or perhaps software from other sources such as CD-ROMs. Furthermore, owing to the popularity of the social-networking site Facebook, some of the respondents also proposed that the software can be linked to their Facebook account. They expressed that it would be more motivating if the paragraphs which they wrote using the software can be posted on Facebook so that it can be reviewed by their peers. Such views are concurrent with recent research which asserts that learning can be supported through a social perspective and that the writing process can be facilitated via the effective use of technology to create a collaborative, interactive environment (Hewett, 2000; Jonassen, 2005).

5. Conclusion

As this software is originally designed to support the pre-writing process, it helps most of the respondents in the brainstorming process. The data were collected from third-year university students because they were taking the course 'Teaching Writing in an ESL Context' at the time the survey was administered. The respondents were first given a 30-minute tutorial on Paragraph Punch. Although the allocated time for tutorial on the software was not sufficient, the respondents almost became familiar with how this software works. After trying out the software, the respondents were required to answer a questionnaire.

The findings of this study have provided evidence that pre-service teachers consider Paragraph Punch as an effective software which can be utilised by teachers to teach writing, specifically for beginner writers. The features in the software are practical because they allow beginner writers to have a basic understanding of the construction of a paragraph through a step-by-step writing process which includes selecting a topic, constructing a topic sentence, generating supporting ideas, and writing a conclusion.

The researchers propose for the software to be used as an introductory tool in teaching writing. This is because as students progress in their writing skills, they would gradually develop recursive writing styles and the rigid step-by-step layout of the software might not cater to these developing writing needs. Teaching writing through technology is most effective when students can access an individual computer every day (Russell, Bebell and Higgins, 2004; Warschauer, 2006). This cannot possibly be done in the schools where computer labs are limited. Hence, besides utilising Paragraph Punch to teach writing in the classroom, the researchers also suggest that teachers encourage students who have personal computers at home to practise their writing daily using the software beyond school hours, as it provides the drill-and-practice so often needed to perfect a skill.

This research was limited to the study of ESL pre-service teachers' perceptions on the use of Paragraph Punch in teaching writing. Due to a constraint of time and cost, no longitudinal studies have been conducted since the development of the Paragraph Punch software. As this software is developed to support the pre-writing process, language teaching researchers are highly recommended to conduct extensive longitudinal studies on the impact of this software on pre-service teachers in order to evaluate in what way and to what extent this software can influence their English writing skill over a period of time. The longitudinal studies, in general, might help to explain how Paragraph Punch influences its users' English writing skill. In summary, despite the obvious limitations which come with Paragraph Punch, the bottom line is for teachers to integrate it into their writing instruction creatively so as to maximise its benefits for ESL writers.

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