TEACHERS' BELIEFS AND PRACTICES OF SCAFFOLDING STUDENTS' PARAGRAPH WRITING THROUGH MIND-MAPPING AT PRE-WRITING STAGE

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Abstract:
Scaffolding is considered as a kind of support assisting students in completing language learning tasks. Research into mind-mapping, a type of graphic organizer, has indicated its role as a scaffolding strategy in teaching English. This paper reports a descriptive study examining teachers' beliefs and practices of using mind-mapping to scaffold students' paragraph writing at pre-writing stage. The data discussed in this paper include questionnaires and observations with eighty-four teachers of English as a foreign language. The findings of the research reveal teachers' positive beliefs about mind-mapping and their practices of mind-mapping to scaffold students' paragraph writing. Pedagogical implications for teachers and students are presented.

Keywords: teachers' beliefs, scaffolding, paragraph writing, mind-mapping

1. Introduction

Scaffolding is viewed as the support provided by a more knowledgeable person to students in their learning process (Vygotsky, 1978). The key purpose of scaffolding in teaching is the transition of the task responsibility to students in their learning and the focus of teacher-student interaction in constructing new knowledge and skills (Maybin, Mercer, & Stierer, 1992). The inclusion of scaffolding in writing classes, therefore, enables students to develop their autonomy in writing and boost their new knowledge of a particular topic (Hasan & Karim, 2019).

In Vietnam, the National Foreign Languages Projects launched by the Ministry of Education and Training have highlighted the need to improve the quality of English teaching and learning to meet students' demands at all levels of schooling (Ministry of Education and Training, 2008). However, in the context of teaching English as a foreign language in Vietnam, the challenges as grammatical structures, lexical resources, written

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conventions and mechanical techniques could make writing become one of the most daunting skills to develop (T. P. T. Nguyen, 2019). Besides, most students lacked independence in text-writing techniques and were passive recipients due to the lecture classes (T. P. T. Nguyen, 2019). As a result, it is vital to enhance students' writing process and lead students to become independent writers. One way to strengthen student writing is the implementation of mind-mapping as a novel thinking tool since it supports students to process information, generate ideas, and increase the power of creative thinking (Buzan, 2006). However, the use of mind-mapping to scaffold students' paragraph writing remains scarce in Vietnamese educational setting. Also, little is known about how teachers' beliefs and practices of mind-mapping may support students in paragraph writing. This research; therefore, aims to fill the gap in this field.

2. Literature review

2.1 Teachers' beliefs
Teachers' beliefs have been widely supported as an influential factor in teachers' instructional practices (H. B. Nguyen, Haworth, & Hansen, 2019; Pajares, 1992). Teachers' beliefs have an impact on teachers' decision-making in classroom practices (Bandura, 1986; Nespor, 1987; Pajares, 1992), which contribute to the understanding of how teachers may improve their teaching practices. Therefore, there is a recognition of the role of teachers' beliefs to make changes in their actual practices in their classroom (H. B. Nguyen, 2013). However, teachers' beliefs about using mind-mapping to scaffold students' paragraph writing is scarce within the Vietnamese context. Thus, this study focuses on this aspect and adds to the literature of scaffolding students' paragraph writing through mind-mapping.

2.2 Scaffolding
Scaffolding is defined as "*a process that enables a child or novice to solve a problem, carry out a task, or achieve a goal which would be beyond his unassisted efforts*" (Wood, Bruner, & Ross, 1976, p. 90). Scaffolding is rooted in Vygotsky's (1978) sociocultural theory of learning and the term 'zone of proximal development' (ZPD) as described as "*the distance between the actual developmental level as determined by independent problem-solving and the level of potential development as determined through problem-solving under guidance or in collaboration with more capable peers.*" (p.86). Based on Vygotsky's (1978) theory, scaffolding is viewed as a temporary support from a more knowledgeable peer or more capable person who helps students complete their work beyond their endeavors.

Scaffolding is also considered as a type of support given to students to help them carry out a task, head to gain new skills or levels of understanding (e.g., Reynolds & Daniel, 2018) and enhance their autonomy in the learning process (Walqui, 2006). Scaffolding is therefore reduced to help students become independent (e.g., Gibbons, 2002; Wood et al., 1976).

For the purpose of this study, the term 'scaffolding' refers to teachers' temporary support to help students complete their learning activities and acquire new knowledge. Therefore, scaffolding is gradually removed from the control of the teacher and allows students to learn independently.

2.2.1 Types of scaffolding

Several researchers have classified scaffolding into different types. Beed, Hawkins, and Roller (1991) categorize scaffolding as *incidental scaffolding* and *strategic scaffolding*. While *incidental scaffolding* is the support parents provide to their children in order to help them express themselves and promote their communication, *strategic scaffolding* is a way parents instruct their children to do something.

Jackson, Krajcik, and Soloway (1998) classify scaffolding as three types: *supportive scaffolding* (which is provided beside the task to offer advice and support to learners), *reflective scaffolding* (which helps learners to think about the tasks through explicating) and *intrinsic scaffolding* (which reduces the complexity of the task and focuses on learners' attention). While *supportive scaffolding* and *reflection scaffolding* do not change the task, *intrinsic scaffolding* simplifies the task so that learners can progress from a simple task to a more complicated task.

Hannafin, Land, and Oliver (1999) divide scaffolding into four types based on its functions: *conceptual scaffolding* to guide learners to relevant knowledge, *metacognitive scaffolding* to help learners monitor and have reflection on their learning practice, *strategic scaffolding* to offer learners possible options to work on their tasks, and *procedural scaffolding* to support learners to make use of provided resources and tools for their learning.

Taken together, by implementing appropriate types of scaffolding, teachers can provide timely support, guidance to enable learners to become more proficient in using English for different personal and communicative purposes in their learning process.

2.2.2 Features of scaffolding

Different views about features of scaffolding have been indicated. Scaffolding consists of four key features (Wood et al., 1976). The first feature is that scaffolding is considered as a type of task and support. The second feature is that adults get involved in a considerate analysis of students' existing level of understanding and the measurement of support to provide students. The third feature is that adults can supply a range of types of support. The last feature is that scaffolding is temporary and may be faded over time.

Six features of scaffolding are classified as c*ontinuity, contextual support, intersubjectivity, contingency, handover/ takeover,* and *flow* (van Lier, 1996, 2004). *Continuity* refers to the repeated occurrences in a period of time. *Contextual support* is related to supportive learning environment with a few challenges. *Intersubjectivity* emphasizes the mutual engagement. *Contingency* involves teacher support and adjustments of the activity based on students' ability. *Handover or takeover* indicates the opportunity seeking to perform and relates to the shift from teachers to students. *Flow* refers to the natural

way of task performances so that it can be in tune with other participants. Once these features are properly incorporated into teaching English as a foreign language, they are likely to contribute to students' English language proficiency and greater responsibility in successful language use.

2.3 Paragraph writing

Writing is described as a means to express feelings, thoughts and experiences in a concrete way (Arnaudet & Bareett, 2016; Elbow, 1998). It is a reflective activity that requires an adequate amount of time to think about a specific topic, analyze and break down information. It stimulates reflections, promotes student concentrations and thought organizations, and cultivates their ability to summarize and evaluate information (Bruning & Horn, 2000).

Paragraph, the basic unit of any writing, includes three types of sentences: simple, complex and compound sentences (Jayakaran, 2005), and shows ideas organized smoothly (Baker, 1962).

Another definition is provided by Rajatanun (1988) who describes a paragraph as a writing unit conveying one main idea and including two types of sentences: a topic sentence and a series of supporting statements. O'Donnell and Paiva (1993) highlight the essential parts of paragraph writing: a topic sentence, supporting details, logical order and connectors, a concluding sentence, unity and coherence.

The process of paragraph writing requires students to undertake several steps including brainstorming, drafting and revising to develop a final, well-written text (Brown, 2007). Therefore, teachers' guidance is needed in order to facilitate students' writing tasks.

2.4 Mind-mapping (MM)

Mind-mapping, a dominant tool in different aspects including education, training and business, is first introduced as an instructional strategy where students link the key concepts with the subordinate ones appropriately (Buzan, 2006). It is an example of Radiant Thinking, which involves associative thought processes that proceed from or link to a central point, making it a natural function of the human mind (Buzan, 2006). Murley (2007) characterizes mind-mapping as a non-linear visual outline that presents complex information and facilitates *"creativity, organization, productivity and memory"* (p.175).

Mind-mapping is proved to be beneficial in writing. In fact, since it is a method for note-taking before writing (Hedge, 1988), it assists students to arrange their ideas while writing in order (Hayes, 1992) and drives students to explore their initial ideas about a particular subject (Morley-Warner, 2010). Therefore, mind-mapping can be used to encourage students to generate ideas, develop critical thinking and make sense of the ideas in a logical way.

2.4.1 Features of mind-mapping

Four key features of mind-mapping are identified (Buzan, 2006). Firstly, a central image representing the main subject reflects the theme of the entire mind map. Secondly, the main subject is represented by branches radiating from the central image, like the branches of a tree. Thirdly, various phrases containing information directly related to the central image are presented on these branches or associated lines. Mind-mapping can be made more lively and attractive by incorporating pictures, symbols, or colors to facilitate information recall. Finally, the branches associated with a specific mind map form a connected nodal structure.

2.4.2 The relationship between mind-mapping and paragraph writing (PW)

Mind-mapping can help explore a variety of topics in different types of writing such as narrative, descriptive, recount, persuasive, and argumentative (Riswanto & Putra, 2012).

The nature of mind-mapping is a non-linear visual outline that presents complex information (Murley, 2007); therefore, it implies that students can use mind-mapping to imagine and explore connections between topics, examine the links between ideas, and grasp connections between the concepts. It helps students realize the link between ideas and help them put ideas in certain groups (Riswanto & Putra, 2012).

Mind-mapping is a simpler and more enjoyable way for students to memorize information while they process information in a more creative, analytical, and multidimensional manner than conventional note-taking (Buzan, 2006, 2018). Thus, it supports students to brainstorm ideas, visualize concepts, or organize ideas, which enhances critical thinking and improves language skills including writing skills (Isa, Putri, & Yusnimar, 2019).

Since one of the mind-mapping's feature is using visual aids like pictures, symbols or colors to convey meanings in a specific context (Buzan, 2018), it can inspire students to write, help students become self-regulated of what they are going to write, and motivate students to complete their writing tasks (Al-Zyoud, Jamal, & Baniabdelrahman, 2017; Isa et al., 2019).

A study carried out by Vu, Hoang and Lai (2019) aimed to explore the effects of using the mind-map method on fostering high school graders' writing skills. The study involved the participation of 11th graders at Thai Nguyen high school and used two instruments including questionnaire and writing analysis. The findings from this study show that using mind maps could boost students' writing skill at Thai Nguyen high school, Vietnam.

Another study undertaken by Vu (2021) investigated the effectiveness of one typically practical mind-mapping in English language teaching at the tertiary level during the first term of the academic year 2020-2021. This quasi-experimental study employed questionnaire, pre-test, and post-test. The findings from this study show that most of the teachers and students expressed high satisfaction and preferences for the use of mind-mapping in learning and teaching English as a foreign language. Also, the

findings suggest more supportive policies be proposed to increase the use of mind-mapping in the educational setting, particularly in English language acquisition.

Ngo and Tran (2021) conducted a study to investigate the use of mind maps in relation to the frequency, writing phases, and first-year students' perceptions of using mind maps to improve their writing. The study was carried with three instruments including classroom observation, interviews, and questionnaires to freshmen. The findings reveal that using mind mapping technique had a significant impact on the improvement of writing skill amongst the first-year students. The research pointed out that the freshmen were in favor of the effectiveness of mind maps in writing skills at different rates and that they frequently made use of mind maps during the pre-writing stage.

3. Methodology

A mixed-methods approach was employed to investigate teachers' beliefs and practices of using mind mapping to scaffold students in paragraph writing. The mixed-methods approach was deemed appropriate as it integrates both quantitative and qualitative techniques for gathering and analyzing data (Fraenkel, Wallen, & Hyun, 2012). While quantitative data was used to make generalizations based on the findings, qualitative data were used to offer a thorough explanation of the initial quantitative data (Creswell, 2014).

For this paper, the data discussed are mainly drawn from questionnaires and classroom observations. Quantitative approach employed questionnaires to investigate teachers' beliefs about using mind-mapping to scaffold students' paragraph writing at pre-writing stage. The 32-item questionnaire includes four sections. The first section focuses on participants' personal information: gender, years of teaching experience, and workplace. The second section of 15 items examines teachers' understanding of scaffolding concepts and its importance at pre-writing stage. The third section of ten items is based on the view of mind-mapping of Murley (2007), indicating teachers' beliefs about using mind-mapping as a scaffolding strategy. The fourth section of seven items based on the view of Murley (2007) regarding teachers' practices of using mind-mapping to scaffold students' paragraph writing at pre-writing stage.

The classroom observations were conducted to gain further understanding of actual happenings in writing classes when the teachers implemented mind-mapping at pre-writing stage.

Participants were eighty-four EFL teachers (14 males, 70 females) coming from high schools, foreign language centers, colleges and universities in different provinces in the Mekong Delta, Vietnam. All of the participants had from one to five years of experience in teaching English writing to students.

4. Findings

4.1 Teachers' beliefs of scaffolding students' PW through MM
A. Teachers' understanding of scaffolding at pre-writing stage (PWS)

Section Two of the questionnaire contains 15 items divided into two clusters: teachers' understanding of scaffolding concept and its importance at PWS.

A *Descriptive Statistics Test* was run to examine the overall teachers' understanding of scaffolding concept and its importance at PWS. Table 4.1 presents the result.

Table 4.1: The mean score of teachers' understanding

	N	Min	Max	Mean	SD
Teachers' understanding	84	2.33	5.0	4.16	.49

Table 4.1 shows that the mean score of teachers' understanding about scaffolding and its importance in PWS was acceptable (*M*=4.16, *SD*=.49). A *One Sample t-Test* was conducted to evaluate whether the mean score of teachers' understanding about scaffolding and its importance at PWS was different from the test value (4.5), the highly acceptable level, as noted by Oxford (1990), the five-point Likert scale (highly acceptable level: means of 4.5 to 5.0).

Table 4.2: *One Sample t-Test* for teachers' understanding

	Test Value = 4.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Total	-6.306	83	.000	-.33968	-.4468	-.2325

The result of *One Sample t-Test* indicates that there was a difference (*t*=-6.30; *df*=83; *p*=0.00). It can be concluded that teachers' understanding of scaffolding is acceptable.

A *Descriptive Statistics Test* was conducted to determine the mean scores of the two clusters including scaffolding concept and the importance of scaffolding at PWS. Table 4.3 shows the results of the test.

Table 4.3: Scaffolding concept and its importance at PWS

Cluster	N	Min	Max	Mean	SD
Scaffolding concept	84	2.2	5.0	4.18	.50
The importance of scaffolding at PWS	84	2.2	5.0	4.10	.61

Table 4.3 indicates that the mean score of scaffolding concept (*M*=4.18, *SD*=.50) and that of the importance of scaffolding at PWS (*M*=4.10, *SD*=.61) are acceptable.

Ten items were presented to obtain responses on teachers understanding of scaffolding concept. Table 4.4 illustrates the results of teachers' responses.

Table 4.4: Teachers' understanding of scaffolding

Items	N	Min	Max	Mean	SD
1. Scaffolding is to help students achieve what they can do with the teachers' guidance.	84	1.00	5.00	4.36	.81
2. Scaffolding is to help students achieve a task which is beyond students' ability.	84	2.00	5.00	4.05	.85
3. Scaffolding is to provide students with elements of the given task.	84	2.00	5.00	4.33	.76
4. Scaffolding is a way to have students concentrate in completing a given task.	84	1.00	5.00	3.92	.87
5. Scaffolding is to offer temporary support to aid students to accomplish a task.	84	1.00	5.00	3.66	1.09
6. Scaffolding is to facilitate the tasks through teacher-student interaction.	84	1.00	6.00	4.15	.91
7. Scaffolding is necessary in leading students to acquire a new skill and knowledge.	84	1.00	5.00	4.32	.85
8. Scaffolding should be given sufficiently.	84	1.00	5.00	4.53	.75
9. Scaffolding should be given in time.	84	3.00	5.00	4.51	.63
10. Scaffolding should be gradually reduced to help students enhance their autonomy.	84	2.00	5.00	3.97	.93

Table 4.4 indicates that the teachers believed scaffolding should be given to students sufficiently (*M*=4.53, *SD*=.75) and in time (*M*=4.51, *SD*=.63). The teachers agreed that scaffolding was to help students achieve what they could do with teachers' guidance (*M*=4.36, *SD*=.81), to provide students with elements of the given task (*M*=4.33, *SD*=.76), and was necessary in leading students to acquire a new skill and knowledge (*M*=4.32, *SD*=.85). Moreover, the teachers agreed that scaffolding was to facilitate the tasks through teacher-student interaction (*M*=4.15, *SD*=.91) and to help students achieve a task which was beyond students' ability (*M*=4.05, *SD*=.85). In addition, teachers agreed that scaffolding should be gradually reduced to help students enhance their autonomy (*M*=3.97, *SD*=.93) and scaffolding was a way to have students concentrate in completing a given task (*M*=3.92, *SD*=.87). The teacher agreed that scaffolding was to offer temporary support to aid students to accomplish a task (*M*=3.66, *SD*=1.09).

Five items were presented to obtain responses on teachers understanding of scaffolding concept at PWS. Table 4.5 illustrates the results of teachers' responses.

Table 4.5: Teachers' understanding of scaffolding at PWS

Items	N	Min	Max	Mean	SD
11. Scaffolding at PWS helps students focus on combining new ideas and knowledge in writing a paragraph.	84	2.00	5.00	4.30	.74
12. Scaffolding at PWS helps students pay attention to the details they have ignored when they write a paragraph.	84	2.00	5.00	4.04	.87
13. Scaffolding at PWS helps build up students' knowledge base in writing a paragraph.	84	2.00	5.00	4.17	.74
14. Scaffolding at PWS helps students become independent in writing a paragraph.	84	1.00	5.00	3.83	.97

15. Scaffolding at PWS helps students to gradually acquire the knowledge for writing a paragraph.	84	2.00	5.00	4.17	.79

Table 4.5 indicates that the teachers agreed that scaffolding at PWS helped students focus on combining new ideas and knowledge in writing a paragraph (*M*=4.30, *SD*=.74). Moreover, the teachers agreed that scaffolding at PWS helped students build up students' knowledge base in writing a paragraph (*M*=4.17, *SD*=.74), gradually acquire the knowledge for writing a paragraph (*M*=4.17, *SD*=.79), and pay attention to the details they had ignored when they wrote a paragraph (*M*=4.04, *SD*=.87). In addition, the teachers believed that scaffolding at PWS helped students become independent in writing a paragraph (*M*=3.83, *SD*=.97).

B. Teachers' beliefs of scaffolding students' paragraph writing through MM at PWS
Section Three of the questionnaire includes ten items about teachers' beliefs of using mind-mapping at pre-writing stage.

A *Descriptive Statistics Test* was run to examine the overall teachers' beliefs of using MM to scaffold students' paragraph writing at PWS. Table 4.6 presents the result.

Table 4.6 The mean score of teachers' beliefs

	N	Min	Max	Mean	SD
Teachers' beliefs	84	2.30	5.00	4.23	.52

Table 4.6 shows that the mean score of teachers' beliefs of using MM to scaffold students' paragraph writing at PWS was acceptable (*M*=4.23, *SD*=.52). A *One Sample t-Test* was conducted to evaluate whether the mean score of teachers' beliefs of using MM to scaffold students' paragraph writing at PWS was different from the test value (4.5).

Table 4.7: One Sample t-Test for teachers' beliefs

	Test Value = 4.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Total	-4.572	83	.000	-.26190	-.3758	-.1480

The result of *One Sample t-Test* indicates that there was a difference (*t*=-4.57; *df*=83; *p*=0.00). It can be concluded that teachers' beliefs of using MM at PWS is at an acceptable level.

Ten items were presented to obtain responses on teachers' beliefs of using MM to scaffold students' PW at PWS. Table 4.8 illustrates the results of teachers' responses.

Table 4.8 Teachers' beliefs of using MM at PWS

Items	N	Min	Max	Mean	SD
16. I believe that using mind-mapping at PWS provides students with the main topic and other relevant information to write a paragraph	84	2.00	5.00	4.38	.70
17. I believe that using mind-mapping at PWS can show students the elements they need for writing a paragraph.	84	2.00	5.00	4.33	.76
18. I believe that using mind-mapping at PWS helps students stick to the topic of the paragraph while they write.	84	1.00	5.00	4.35	.80
19. I believe that using mind-mapping at PWS helps students brainstorm the ideas for a paragraph.	84	1.00	5.00	4.14	.86
20. I believe that using mind-mapping at PWS helps students organize ideas for writing a paragraph.	84	1.00	5.00	4.33	.86
21. I believe that using mind-mapping at PWS helps students make an outline for a paragraph.	84	1.00	5.00	4.21	.87
22. I believe that using mind-mapping at PWS helps students to think of more ideas.	84	2.00	5.00	4.11	.82
23. I believe that using mind-mapping at PWS boosts students' creativity in writing a paragraph.	84	2.00	5.00	3.85	.09
24. I believe that using mind-mapping at PWS is a graphic technique to boost student thinking.	84	3.00	5.00	4.19	.73
25. I believe that using mind-mapping at PWS helps students retain information and ideas.	84	3.00	5.00	4.45	.64

Table 4.8 shows that mind-mapping at PWS was believed to help students retain information and ideas, which gained the highest level of agreement (*M*=4.45, *SD*=.64). The teachers believed that mind-mapping at PWS could provide students with the main topic and other relevant information to write a paragraph (*M*=4.38, *SD*=.70) and helped students stick to the topic of the paragraph during their writing (*M*=4.35, *SD*=.80). Moreover, using mind-mapping was believed to show students the elements they needed for writing a paragraph (*M*=4.33, *SD*=.76), and to help students organize ideas for writing a paragraph (*M*=4.33, *SD*=.86).

The other four items (Items 19, 22, 23, 24) had the mean score at a high level. The teachers believed that using mind-mapping at PWS was a graphic technique to boost student thinking (*M*=4.19, *SD*=.73). Moreover, using mind-mapping at PWS was believed to help students brainstorm the ideas for a paragraph (*M*=4.14, *SD*=.86) and think of more ideas (*M*=4.11, *SD*=.82). The teacher agreed that using mind-mapping at PWS helped to boost students' creativity in writing a paragraph (*M*=3.85, *SD*=.90).

4.2 Teachers' practices of scaffolding students' PW through MM at PWS
4.2.1 Findings from the questionnaire
Section Four of the questionnaire includes seven items which examine teachers' practices of using mind-mapping to scaffold students' paragraph writing at pre-writing stage.

A *Descriptive Statistics Test* was run to explore teachers' practices of scaffolding students' PW through MM at PWS. The results are shown in Table 4.9.

Table 4.9 The mean score of teachers' practices

	N	Min	Max	Mean	SD
Teachers' practices	84	2.57	5.00	4.12	.60

Table 4.9 shows that the mean score of teachers' practices of using MM to scaffold students' paragraph writing at PWS was acceptable (*M*=4.12, *SD*=.60). A *One Sample t-Test* was conducted to evaluate whether the mean score of teachers' practices of using MM to scaffold students' paragraph writing at PWS was different from the test value (4.5).

Table 4.10: One Sample t-Test for teachers' practices

	Test Value = 4.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Teachers' practices	-5.703	83	.000	-.37925	-.5115	-.2470

The result of *One Sample t-Test* indicates that there was a difference (*t*=-5.70; *df*=83; *p*=0.00). It can be concluded that teachers' practices of using MM at PWS is at an acceptable level.

Seven items were presented to obtain responses on teachers' practices of using MM to scaffold students' PW at PWS. Table 4.11 illustrates the results of teachers' responses.

Table 4.11 Teachers' practices of using MM at PWS

Items	N	Min	Max	Mean	SD
26. I have students tell ideas related to the topic before writing a paragraph.	84	2.00	5.00	4.42	.73
27. I have students tell from the general ideas to specific ones around a given topic before writing a paragraph.	84	2.00	5.00	4.27	.79
28. I have students connect the information by drawing lines.	84	1.00	5.00	3.59	1.19
29. I have students generate ideas in the order: main topic, related topics, and subtopics.	84	2.00	5.00	4.10	.86
30. I have students arrange ideas hieratically in a flow chart.	84	1.00	5.00	3.97	.96
31. I have students classify the information for writing a paragraph.	84	2.00	5.00	4.03	.81
32. I have students put the information for writing a paragraph in order.	84	3.00	5.00	4.42	.64

Table 4.11 shows that teachers had students tell ideas related to the topic before having them write a paragraph (*M*=4.42, *SD*=.73) and got students to arrange the information in their writing assignment in order (*M*=4.42, *SD*=.64). Teachers had students go from the general ideas to specific ones around the given topic before writing a paragraph (*M*=4.27, *SD*=.79), got students to generate ideas in the order: main topic, related topics, and subtopics (*M*=4.10, *SD*=.86) and had students classify the information for writing a paragraph (*M*=4.03, *SD*=.81). In addition, teachers required students to hieratically

arrange the ideas in a flow chart (*M*=3.97, *SD*=.96) and made students connect the ideas by drawing lines (*M*=3.59, *SD*=1.19).

4.2.2 Findings from the observations

The observation data reveal that the teachers shared the same practices since they got students to provide ideas, start with the main topics, and put ideas hierarchically. The following scenarios illustrate teachers' practices in implementing mind-mapping in writing classes.

Scenario 1

This lesson requires students to practice writing two body paragraphs about positive sides of living in a nuclear family or an extended family. After recalling the topic and related vocabulary for students, the teacher had students form a mind map of the benefits of living in a nuclear family and an extended family (OB. T1. 6.05-6.25pm).

> T: *"What do you write in the two body paragraphs?"*
> S: *"Benefits of a nuclear family and benefits of an extended family."* (Introduce the main topic)

The teacher wrote the topics on the board and draw three lines below each main topics.

> T: *"For each paragraph, you need to write three benefits. What is the first benefit of an extended family?"* (Introduce the related topics)
> S: *"Have better care."*

The teacher wrote "Have better care" in the first branch of "Benefits of extended family".

> T: *"What is the second one?"* (Introduce the related topics)
> S: *"Receive useful advice."*

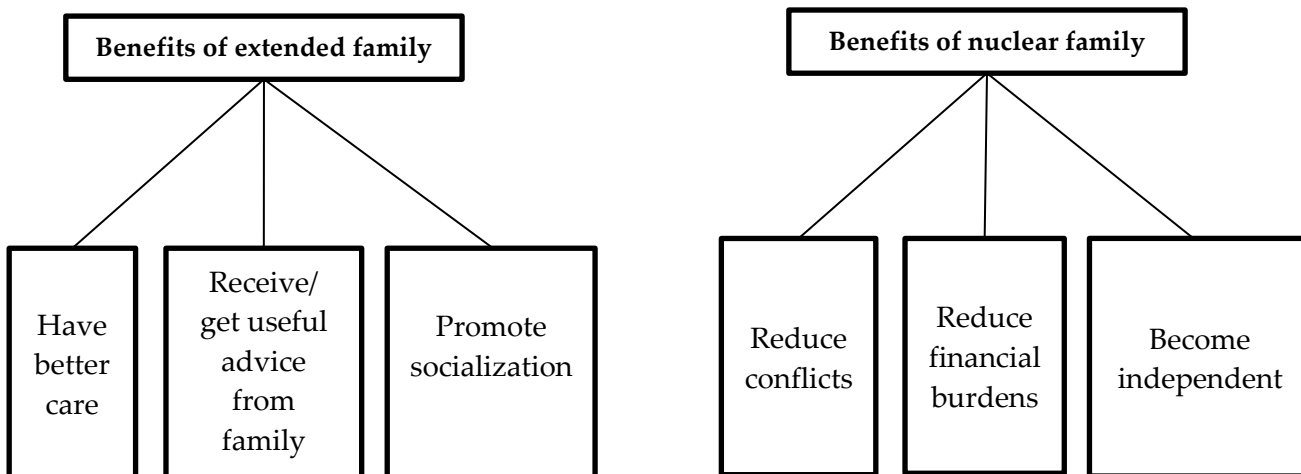The teacher wrote "Received useful advice" in the second branch of "Benefits of extended family.

> T: *"What is the third benefit?"*
> S: *"Promote socialization."*

The teacher wrote "Promote socialization" in the third branch of "Benefits of extended family).

T: *"Now work in groups to give supporting ideas for the three benefits."* (Have students think of their own ideas)

The students thought of the ideas in five minutes, then came to the board and finished the map. The map is illustrated as below.

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┌──────────────────────────┐              ┌──────────────────────────┐
│ Benefits of extended family │              │ Benefits of nuclear family │
└──────────────────────────┘              └──────────────────────────┘
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| Have better care | Receive/ get useful advice from family | Promote socialization | | Reduce conflicts | Reduce financial burdens | Become independent |

Scenario 2

In this lesson, students in B1 level practiced writing two body paragraphs to state positive and negative sides of studying abroad. After reminding students of vocabulary in the warm-up activity, the teacher had students form a mind map of the benefits and drawbacks of studying abroad. (OB. T2. 6.30-6.45pm)

T: *"Tell me the topic."* (Help students identify the topic)
S: *"Study abroad."*

The teacher wrote the phrase 'studying abroad' on the board as the main topic.

T: *"What does it ask you to write about?"*
S: *"The advantages and disadvantages."* (Get students to know what they need to write about.)

Teacher wrote the phrases 'advantages' and 'disadvantages' on the board as the related topics.

T: *"What are the advantages of studying abroad."* (Have students provide their own ideas for the related topics)

S: *"Broaden horizons, improve life skills, have more job opportunities."*

Teacher wrote three related topics on the board and drew lines to connect the main topic with related topics.

T: *"What are some disadvantages of studying abroad?"* (Have students provide their own ideas for the related topics)
S: *"Be expensive, feel lonely or homesick, and communication problems."*

Teacher wrote three related topics on the board and drew lines to connect the main topic with related topics.

T: *"Now, talk about the first benefits 'expand horizons', what kind of knowledge could you expand?"* (Ask students to think of more detailed ideas)
S*: "Knowledge about language, culture."*

The teacher had students continue giving ideas for all of the benefits and drawbacks. Their mind map is illustrated as below.
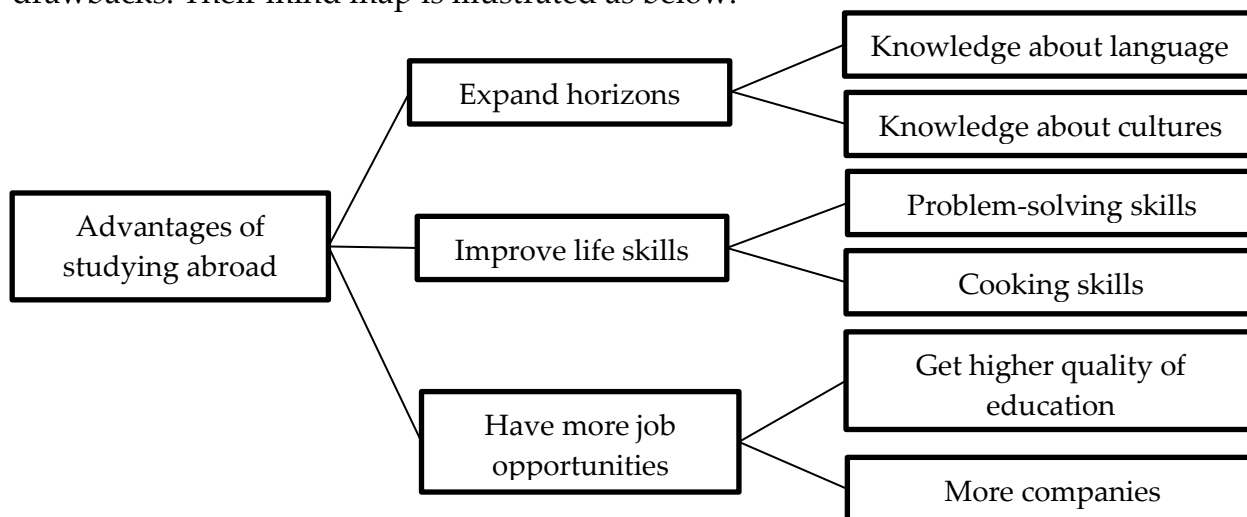
5. Discussion

This section discusses the key findings of the study to answer the two research questions.

Research Question One: What are teachers' beliefs about using mind-mapping to scaffold students' paragraph writing at pre-writing stage?

Scaffolding was found as a kind of support to help students complete a specific task, head to a new skills or advance new levels of their understanding. Specifically, scaffolding in teaching writing is a process that enables the teacher to organize writing activities systematically to meet the needs of the students. This finding supports the studies in the literature (e.g., Buzan, 2018; Hammond & Gibbons, 2005; Isa et al., 2019). These authors contend that writing scaffolding is useful for students with different learning needs, thereby allowing them to foster a more supportive learning environment

and to develop effective ways to learn writing, which includes prewriting techniques in their learning process.

The participating teachers had positive beliefs about the use of mind-mapping to scaffold students' paragraph writing at pre-writing stage. First, the findings from the questionnaires show that teachers believed mind-mapping could help students retain the information while they are involved in the writing process. The finding is in line with studies by Al Naqbi (2011) and Do (2019) who claim that mind-mapping could aid students to retrieve and remember information necessary for their writing. One possible explanation for this is that the visualization of key words or ideas presented in a map could facilitate students' memory process.

Second, mind-mapping was perceived as fundamental tool for furnishing students with germane information and facilitating the development and generation of ideas for their paragraph writing. The rationale for this view is that students could identify what aspects or ideas they needed to write by referring to the mind map, thereby preventing confusion and streamlining the idea-making process. This finding is in line with previous studies by several researchers (Ngo & Tran, 2021; Saed & Al-Omari, 2014). These authors contend that mind-mapping could assist students in avoiding omissions of information in their writing, resulting in a more efficient development of ideas.

Third, mind-mapping was believed as an effective scaffolding strategy to help students stay focused and avoid going off-topic in their writing. This observation aligns with a study conducted by Isa and colleagues (2019) who found that mind-mapping could help writers stick to the topic by encouraging the generation of own ideas during the writing process. A plausible explanation for this claim is that the visual representation of ideas presented in a chart or a map allows students to comprehend the topic they write about, leading to coherence and relevance in their writing.

Fourth, the findings reveal that using mind-mapping could improve students' creativity. This is consistent with a study by Buzan (2006) who claims that mind-mapping in terms of creativity can increase amongst students' performance and a study by Vu (2021) who affirms that mind-mapping can promote students to become more creative in their writing. These findings could be explained by the fact that when students are presented with existing ideas in a visual format, they can connect existing ideas and come up with new ideas. Besides, incorporating visual aids in paragraph writing has been noted to increase students' creativity in writing classes, which contributes to their greater ability to produce more innovative and productive pieces.

Research Question Two: What are teachers' practices of using mind-mapping to scaffold students' paragraph writing at pre-writing stage?

The findings indicate that the teachers had students put ideas hierarchically in mind-mapping. This finding support a study by Al-Zyoud, Jamal, and Baniabdelrahman (2017) who claim that this helps students better link and connect ideas. One explanation for this is that there is the connection between the subtopics and that they can support

each other, thereby putting idea hierarchically in order to prompt students to realize the relationship in a flow chart easily.

Second, the teachers reported to have students start with the main topic when they applied mind-mapping in paragraph writing classes. This is consistent with a study by Al-Zyoud, Jamal, and Baniabdelrahman (2017) who claim that the main topic enabled students to generate their own ideas, write down their own words to establish the relationships amongst ideas. One possible explanation for this is that it helps students have time to visualize what they would write about and avoid wandering in their paragraph.

Third, the teachers had students provide their own ideas in forming a mind map. This is in line with a study by Vu, Hoang, and Lai (2019) who contend that students could work in pairs or groups to discuss ideas and add more information on the map; therefore, it promoted student learning. As noted by Al-Zyoud, Jamal, and Baniabdelrahman (2017), this improves students' writing performance since they stop writing down ideas individually.

6. Conclusions

The findings of the current study provide insights into teachers' beliefs about and practices of the use of mind-mapping to scaffold students' paragraph writing at pre-writing stage. In light of these findings, some pedagogical implications are made.

It is recommended that teachers should make use of mind-mapping as a scaffolding strategy in teaching to help students develop ideas easily in their writing. It improves students' writing ability and helps them get to know an effective way to generate ideas in their writing practices.

With mixed-level classes, it may be challenging for some low-achieving students to form a map due to the limited provision of ideas and vocabulary. Therefore, it is suggested to prepare questions to activate students' prior learning or knowledge and group students appropriately so that high-achieving students can support the low-achieving students.

It is advisable to encourage students to utilized mind-mapping to brainstorm ideas before writing. Collaborating with their peers to create a mind map can be persuasive, since this exercise not only motivates students to generate more ideas for their paragraphs but also promotes student-student interaction.

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References

Al-Zyoud, A. A., Jamal, D. A., & Baniabdelrahman, A. (2017). Mind mapping and students' writing performance. *Arab World English Journal, 8*(4), 280-291. doi:dx.doi.org/10.24093/aweij/vol8no4.19

Al Naqbi, S. (2011). The use of mind mapping to develop writing skills in UAE schools. *Education, Business and Society: Contemporary Middle Eastern Issues, 4*(2), 120-133. doi:doi.org/10.1108/17537981111143855

Arnaudet, M. A., & Bareett, M. E. (2016). *Paragraph development: A gude for students of English a second language*. Englewood Cliffs, N.J.: Prentice-Hall, Inc.

Baker, S. (1962). *The practical stylist*. New York: Crowell.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, New Jersey: Prentice-Hall.

Beed, P. L., Hawkins, E. M., & Roller, C. M. (1991). Moving learners toward independence: The power of scaffolded instruction. *The Reading Teacher, 44*(9), 648-655.

Brown, H. D. (2007). *Principles of language learning and teaching (3rd Ed.)*. White Plains, NY: Pearson Education, Inc.

Bruning, R., & Horn, C. (2000). Developing motivation to write. *Educational Psychologist, 35*(1), 25-37. doi:doi.org/10.1207/S15326985EP3501_4

Buzan, T. (2006). *The ultimate book of mind maps*. Berwick upon Tweek, UK: Martins the Printers Limited.

Buzan, T. (2018). *Mind map mastery: The complete guide to learning and using the most powerful thinking tool in the universe*: Watkins Publishing.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches (4nd Ed.)*. Thousand Oaks, California: SAGE Publications.

Do, M. D. T. (2019). *The effects of mind mapping technique on students' paragraph writing: An experiment at Viet Anh high school*. (MA), University of Social Sciences and Humanities.

Elbow, P. (1998). *Writing with power: Techniques for mastering the writing process*. New York: Oxford University Press.

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education (8th Ed.)*. New York: McGraw-Hill Humanities.

Gibbons, P. (2002). *Scaffolding language, scaffolding learning*. Portsmouth, NH: Heinemann.

Hammond, J., & Gibbons, P. (2005). What is scaffolding. *Teachers' Voices, 8*, 8-16.

Hannafin, M. J., Land, S. M., & Oliver, K. (1999). Open learning environments. In C. M. Reigeluth (Ed.), *Instructional design theories and models: A new paradigm of instructional theory 2* (pp. 115-140). Mahwah, NJ: Lawrence Erlbaum Associates.

Hasan, M., & Karim, M. R. (2019). Scaffolding effects on writing acquisition skills in EFL context. *Arab World English Journal, 10*(4), 288-298.

Hayes, D. A. (1992). *A sourcebook of interactive methods for teaching with text*: Allyn and Bacon.

Hedge, T. (1988). *Writing: Resource books for teachers*: Oxford University Press.

Isa, I., Putri, Y. T., & Yusnimar. (2019). Implementation of mind mappiing technique to improve the students' writing ability of English descriptive texts: A mixed method. *IOP Conference Series: Materials Science and Engineering, 536*, 1-10.

Jackson, S. L., Krajcik, J., & Soloway, E. (1998). *The design of guided learner-adaptable scaffolding in interactive learning environments.* Paper presented at the Proceedings of the SIGCHi conference on human factors in computing systems.

Jayakaran, C. I. (2005). *Everyone's guide to effective writing*: 2M Publishing International.

Maybin, J., Mercer, N., & Stierer, B. (1992). Scaffolding: Learning in the classroom. In K. Norman (Ed.), *Thinking voices: The work of the national oracy project* (pp. 186-195). London: Hodder and Stoughton.

Ministry of Education and Training. (2008). *Teaching and learning foreign languages in the national education system from 2008 to 2020*. Hanoi, Vietnam Retrieved from http://tailieu.vn/doc/de-an-day-va-hoc-ngoai-ngu-trong-he-thong-giao-duc-quoc-dan-1331102.html.

Morley-Warner, T. (2010). *Academic writing is: A guide to writing in a university context*. NSW, Australia: AALL (Association for Academic Language and Learning).

Murley, D. (2007). Technology for everyone: Mind mapping complex information. *Law Library Journal, 79*, 175-183.

Nespor, J. (1987). The role of beliefs in the practice of teaching. *Journal of Curriculum Studies, 19*(4), 317-328.

Ngo, T. T. H., & Tran, O. T. T. (2021). The English-majored students' practices of mind maps in writing skills. *International Journal of TESOL & Education, 1*(3), 301-312.

Nguyen, H. B. (2013). Beliefs about support for teacher change in English for Specific Purposes university classes. *New Zealand Studies in Applied Linguistics, 19*(2), 36-48.

Nguyen, H. B., Haworth, P., & Hansen, S. (2019). Challenging ESP teacher beliefs about active learning in a Vietnamese university. *Teacher Development, 23*(3), 345-365. doi:10.1080/13664530.2019.1598481

Nguyen, T. P. T. (2019). *Teachers' beliefs in the necessity and feasibility of fostering learner autonomy in learning writing.* (Master's thesis), Ho Chi Minh Open University.

O' Donnell, T. D., & Paiva, J. L. (1993). *Independent writing*: Heinle & Heinle Publishers.

Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. New York: Newbury House.

Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research, 62*(3), 307-332. doi:10.3102/00346543062003307

Rajatanun, K. (1988). *A refresher course in writing (2nd Ed.)*. Bangkok: Thammasat University Press.

Reynolds, D., & Daniel, S. (2018). Toward contingency in scaffolding reading comprehension: Next steps for research. *Reading Research Quarterly, 53*(3), 363-373.

Riswanto, & Putra, P. P. (2012). The use of mind mapping strategy in the teaching of writing at SMAN 3 Bengkulu, Indonesia. *International Journal of Humanities and Social Science, 2*(21), 60-68.

Saed, H., & Al-Omari, H. (2014). The effectiveness of a proposed program based on a mind mapping strategy in developing the writing achievement of 11th grade EFL students in Jordan and their attitudes towards writing. *Journal of Education and Practice, 5*(18), 88-100.

van Lier, L. (1996). *Interaction in the language curriculum: Awareness, autonomy and authenticity*. London: Longman.

van Lier, L. (2004). *The ecology and semiotics of language learning*. Dordrecht: Kluwer Academic.

Vu, B. D., Hoang, H. H. T., & Lai, U. T. (2019). Using mind map to improve writing skill for 11th graders at Thai Nguyen high school. *TNU Journal of Science and Technology, 199*(6), 61-64. doi:10.34238/tnu-jst.2019.06.670

Vu, T. V. (2021). A meta-analysis study of mind mapping effectiveness in English language teaching at a higher education institution. *TNU Journal of Science and Technology, 226*(13), 3-9.

Vygotsky, L. S. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Walqui, A. (2006). Scaffolding instruction for English language learners: A conceptual framework. *The International Journal of Bilingual Education and Bilingualism, 9*(2), 159-180.

Wood, D., Bruner, J., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Child Psychiatry, 17*, 89-100.