

## TÍCH HỢP SƠ ĐỒ TƯ DUY VÀO DẠY MÔN VIẾT THƯƠNG MẠI 1 TẠI TRƯỜNG ĐẠI HỌC LẠC HỒNG

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### TỪ KHÓA

Sơ đồ tư duy;  
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Phát triển ngôn ngữ.

### TÓM TẮT

Nghiên cứu này khảo sát hiệu quả của sơ đồ tư duy đối với kỹ năng viết thương mại của sinh viên ngành Ngôn ngữ Anh tại Trường Đại học Lạc Hồng, Việt Nam. Trong khuôn khổ một nghiên cứu hành động dài 15 tuần thuộc học phần Viết Thương mại 1, một can thiệp được triển khai sau bài kiểm tra giữa kỳ cho 26 sinh viên năm ba nhằm hỗ trợ phát triển ý tưởng, tổ chức nội dung, cải thiện ngữ pháp và sử dụng ngôn ngữ thương mại. Dữ liệu thu thập từ bảng hỏi, bài viết trước-sau can thiệp và phỏng vấn bán cấu trúc. Phân tích thống kê mô tả và kiểm định t độc lập cho thấy sự cải thiện đáng kể ở cả bốn tiêu chí (Ý tưởng, Tổ chức, Ngữ pháp, Ngôn ngữ), với  $p < 0.001$ . Chỉ số Cohen's  $d$  (0.92–1.47) cho thấy mức độ ảnh hưởng lớn. Phân tích định tính củng cố kết quả này, cho thấy sơ đồ tư duy giúp sinh viên phát triển ý tưởng, tổ chức bài viết hợp lý và sử dụng ngôn ngữ phù hợp hơn. Ngoài ra, đa số sinh viên thể hiện thái độ tích cực, xem đây là công cụ học tập hữu ích giúp họ giảm lo lắng và viết tự tin hơn. Kết quả cho thấy sơ đồ tư duy là công cụ trực quan hiệu quả, với tiềm năng sư phạm rõ rệt trong giảng dạy viết thương mại Tiếng Anh.

## INTEGRATING MIND MAPPING INTO TEACHING THE BUSINESS WRITING 1 COURSE AT LAC HONG UNIVERSITY

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### ABSTRACT

This study investigated the effectiveness of mind mapping on the business writing skills of English Language students at Lac Hong University, Vietnam. Within the framework of a 15-week action research conducted in the Business Writing 1 course, an intervention was implemented after the midterm test for 26 third-year students. This intervention aimed to support idea development, content organization, grammatical accuracy, and the appropriate use of business language. Data were collected through questionnaires, pre- and post-intervention writing samples, and semi-structured interviews. Descriptive statistical analysis and independent t-tests revealed significant improvements across all four criteria (Ideas, Organization, Grammar, Language), with  $p < 0.001$ . Cohen's  $d$  values (0.92–1.47) indicated a large effect size. Qualitative analysis corroborated these findings, demonstrating that mind mapping aided students in developing ideas, structuring their writing logically, and employing more appropriate language. Furthermore, the majority of students exhibited positive attitudes, perceiving mind mapping as a beneficial learning tool that helped reduce anxiety and foster greater writing confidence. The results suggest that mind mapping is an effective visual tool with clear pedagogical potential in teaching English business writing.

## 1. INTRODUCTION

In today's globalized world, effective business correspondence is a vital skill for English majors entering the professional workforce. At Lac Hong University (LHU), *Business Writing 1* is designed to build workplace writing competence among third-year students. However, many students continue to struggle with this transition due to unfamiliarity with business tone, limited exposure to real-world communication, and difficulty generating and organizing ideas. Diagnostic writing tasks and follow-up interviews revealed students' persistent weaknesses in task fulfillment, organization, grammar, and vocabulary, often rooted in passive, form-focused learning practices influenced by traditional writing instruction.

In response to these limitations, mind mapping has been proposed as an effective pedagogical tool for supporting English learners in business writing. Originally defined by [1] as a visual, non-linear brainstorming technique, it enables learners to generate, connect, and structure ideas in ways that reflect natural cognitive processes. Studies show that mind mapping enhances coherence and organization in English writing by helping students visualize conceptual relationships and plan more structured texts [2–3]. However, most existing research has focused on general writing tasks, mainly in pre-university contexts. In Vietnam, although some studies have explored mind mapping, they focus on general language development. Few researchers have systematically applied it to business writing within tertiary English education, where issues like limited exposure to authentic communication, passive learning, and formulaic writing persist. This gap is critical, as business writing demands clarity, purpose-driven structure, and real-world communicative functions such as informing, persuading, or negotiating. To fulfill this gap, this study examines how mind mapping can be integrated into the Business Writing 1 course at LHU to support idea generation, content organization, and language development in students' business correspondence. It aims to answer the following research questions:

1. How does mind mapping support students in generating and organizing ideas for business correspondence?
2. To what extent does mind mapping improve students' grammatical accuracy and language proficiency?
3. What are students' attitudes toward using mind mapping as a writing aid?

## 2. LITERATURE REVIEW

### 2.1 The Nature and Challenges of Business Writing in EFL Contexts

According to [4], business writing is a specialized mode of professional communication that is designed to convey information concisely and effectively within formal organizational contexts. It includes various formats, including emails, memos, letters, and reports, and is characterized by a structured and purposeful approach that enables readers to quickly grasp key messages and take appropriate actions. Effective business writing, as the

authors emphasize, is not only grammatically correct but also audience-centered and strategically organized to serve professional objectives. Echoing this perspective, [5] points out that in EFL contexts, business writing instruction should prioritize communicative clarity, relevance to workplace realities, and the ability to tailor messages to specific audiences. He underscores that students must learn not only the linguistic forms of business genres but also the pragmatic and cultural expectations of professional discourse. Together, these views underscore that business writing extends beyond information transfer; it is an intentional act of communication to achieve purposes and foster organizational collaboration.

However, EFL learners around the world, particularly those with minimal workplace exposure, often encounter considerable difficulties when transitioning from academic to business writing. Due to their limited interaction with authentic business discourse, many students struggle to achieve clarity, coherence, and an appropriate professional tone. As [6] pointed out, this often results in underdeveloped, fragmented messages that lack strategic focus. Expanding on this, [7] identifies additional barriers including students' inability to logically organize content, limited understanding of business writing conventions, and weak revision practices. These factors collectively hinder students' ability to produce effective business documents that meet the expectations of real-world professional communication.

In the Vietnamese context, a recent study shows that Vietnamese English learners also often experience anxiety and confusion when attempting to write formal texts, due to a lack of exposure to authentic communication settings and limited vocabulary. Inadequate time spent practicing English writing contributes to difficulties in organizing ideas and applying correct grammar, which further complicate their performance in writing business correspondence [8]. These findings are consistent with observations in my classroom, where students reported similar difficulties.

### 2.2 Limitations of Traditional writing approaches

Due to the nature of business writing, I have applied *Product-based* and *Genre-based* instruction in my teaching to guide students in developing their writing skills. Therefore, this section aims to review existing literature on these approaches to better understand their pedagogical impact and identify areas for improvement.

The product-based approach, which emphasizes the replication of model texts, grammatical accuracy, and structural correctness, has long been established in second language writing pedagogy [9]. According to the findings of [10], a product-based approach effectively improved EFL students' business English writing, specifically enhancing their organizational skills and use of context-appropriate language through the analysis and imitation of model texts. However, [11] noted that while this method provides clarity for beginners, it often leads to mechanical and disengaged writing. Learners relying solely on product-based instruction struggled with expressing personal voice and responding to communicative context.

The genre-based approach, drawing on Systemic Functional Linguistics, shifts the focus to the social purpose of writing. Foundational scholars such as [12] have emphasized the importance of understanding how texts function in context and how language choices align with communicative intent. This approach helps students become aware of discourse structures, rhetorical moves, and audience expectations in business communication. Contemporary research reinforces its effectiveness. [13] found that genre-based instruction significantly improved students' ability to organize content persuasively and use language appropriately across different business genres. The researcher [14] also reported that it fosters contextual awareness and communicative competence. However, studies such as [15] cautioned that overly rigid implementation may lead to formulaic writing and limit flexibility in responding to hybrid communication demands.

While both methods offer benefits, they share a tendency toward teacher-centered delivery and may not adequately support the recursive, creative nature of writing. Scholars such as [16] and more recently [17] have argued for integrating process-oriented strategies that enhance learner autonomy, critical thinking, and creativity. In this regard, approaches like mind mapping have been suggested to complement traditional methods by fostering idea generation, coherence, and engagement in business writing tasks.

### 2.3 Advantages of mind mapping over traditional approaches

Mind mapping, as an alternative instructional tool, offers several advantages over traditional methods in teaching writing business correspondence.

First, it significantly enhances students' ability to generate ideas by providing a visual platform for brainstorming that stimulates creative thinking and active engagement [18]. This process of visual brainstorming encourages learners to explore diverse aspects of a topic, which is particularly beneficial in business writing, where original yet focused content is valued.

Second, mind mapping supports the effective organization of ideas by allowing students to structure their thoughts hierarchically and recognize interconnections between different concepts [19].

Third, mind mapping enables learners to break down complex communication tasks into manageable visual nodes, facilitating a better understanding of the audience, business-specific contexts, and communicative goals, thereby helping students use language more appropriately and effectively in business settings [20].

Additionally, recent studies show that mind mapping also supports grammar acquisition among EFL learners. By visually mapping sentence structures and grammatical rules, students develop a clearer understanding of how language components function in context, which improves their grammatical accuracy in writing tasks [21-22].

Furthermore, learner perceptions and attitudes play an essential role in the effectiveness of instructional strategies. As [23] note, students' engagement with tools like mind mapping is influenced by their perceived

usefulness and ease of use, which in turn affects their motivation and learning outcomes. In the context of EFL writing instruction, understanding how learners experience and respond to such techniques is crucial for evaluating pedagogical effectiveness.

In summary, previous studies indicate that mind mapping offers substantial pedagogical benefits over traditional approaches in business writing instruction, as it enhances idea generation, supports logical organization, improves contextual awareness, and facilitates grammatical development, particularly for EFL learners. By addressing both cognitive and linguistic challenges in business communication, mind mapping emerges as a valuable and effective instructional tool.

## 3. RESEARCH METHODOLOGY

### 3.1 Research Procedure and Timeline

The study was conducted over 15 weeks in a 60-period *Business Writing 1* course for 26 third-year English majors at LHU, Vietnam. Designed to develop students' skills in writing professional emails and memos, the course adopted a qualitative action research design, allowing the teacher-researcher to iteratively implement and reflect on the integration of mind mapping [24]. In Weeks 1–6, students received traditional instruction in common business correspondence formats. A diagnostic writing task revealed issues with idea development, coherence, and language. To address these, mind mapping was introduced in Week 8, emphasizing its cognitive and organizational benefits in pre-writing [25]. From Weeks 9–14, mind mapping was integrated into weekly writing assignments. Students primarily created individual mind maps during planning stages, supported by lectures, practice tasks, and formative feedback. Table 1 presents the instructional phases and data collection points, including the diagnostic task (Week 4), post-intervention writing (Week 14), and course reflections (Week 15).

**Table 1:** *Research Procedures and Timeline*

Week(s)	Instructional Focus	Description
1	Course introduction	Introduction to the course and business writing principles
2-6	Traditional instruction	Lessons on introductory, travel arrangements, and meeting emails
4	Diagnostic writing task	Students completed a diagnostic task to assess initial writing skills.
7	Mid-term test	Administration of the midterm exam; no instructional intervention applied
8	Mind mapping introduction	Instruction on mind mapping concepts, demonstration of techniques, and practice tasks
9-14	Mind mapping-integrated instruction	Use of mind maps as pre-writing tools for writing emails and memos, with individual practice

14	Post-intervention writing task	Students completed a second writing task to evaluate post-intervention improvement.
15	Course review	Final reflections, course summary, and preparation for final assessments

### 3.2 Data Collection

Data were collected after the course ended, and students received their final grades. This ensures candid responses without academic pressure [26], enhancing the study's credibility. Three data sources were used: a post-course questionnaire, student interviews, and writing samples. Triangulating these sources strengthened the research validity [27].

The questionnaire was administered via Google Forms for accessibility and to encourage honest answers [28]. It comprised 17 items in four sections: personal information (1–2), experiences with traditional instruction (3–8), perceptions of mind mapping (9–13), and open-ended feedback (14–17). Identifying information was anonymized following ethical guidelines [29]. Items were developed based on relevant literature on mind mapping and EFL writing. Although not formally piloted, the questionnaire was carefully reviewed to align with research goals. Its internal consistency was low (Cronbach's  $\alpha = 0.58$ ), likely due to the exploratory design, small sample size, and limited items, so results were used descriptively. This limitation is acknowledged, with recommendations for future studies to include piloting and validation to improve reliability.

Semi-structured interviews were conducted via Zoom with nine students, audio-recorded with consent to ensure flexibility and comfort [30]. Participants were selected based on questionnaire responses to items 14–17, which represent both supporters and neutral or less favorable views of mind mapping.

Student writing samples from two tasks administered in Weeks 4 and 14, representing pre- and post-intervention performance, were analyzed using a rubric developed by the Faculty of English. The rubric comprised four key criteria: task fulfillment (including content relevance and idea development), organization, grammar, and business language use. All samples were assessed by the course instructor (the researcher), who had taught the students throughout the semester. While student names were visible during scoring to allow for pedagogical insight into individual progress, the rubric was applied consistently to ensure fairness and reliability. Due to student absences, sample sizes differed slightly (Task 1:  $N = 23$ ; Task 2:  $N = 24$ ). This discrepancy was taken into account in the data analysis to ensure the validity of comparisons.

### 3.3 Data Analysis

To provide both breadth and depth in understanding students' experiences and attitudes, a mixed-method approach was adopted to analyze the data.

Closed-ended questionnaire items (Items 3–7 and 9–13) with Likert-type and multiple-choice formats were analyzed using descriptive statistics. According to [31],

descriptive statistics are appropriate to identify trends in students' reported challenges and perceptions of mind mapping, particularly concerning idea generation, organization, grammar, and vocabulary use.

Open-ended responses (Item 8 and Items 14–17) and interview transcripts were examined using thematic analysis following the six-phase thematic analysis approach initially developed by [32] and later expanded in their updated guide [33]. The approach includes familiarization, coding, theme development, review, definition, and reporting. This reflexive, data-driven process enabled the identification of key themes such as improved idea development, enhanced organization, and increased language awareness. For illustrative purposes, coding samples and a thematic map are provided in Appendix A.

Students' writing samples were assessed based on four criteria outlined in the course rubric: Task Fulfillment, Organization, Grammar, and Language. Notably, the Task Fulfillment criterion encompasses students' ability to generate relevant ideas and respond appropriately to the writing prompt. To evaluate the impact of the mind mapping intervention, students' scores on each criterion were analyzed using descriptive statistics and independent-sample t-tests. The use of independent (rather than paired) t-tests was necessitated by the unequal sample sizes between Writing Task 1 ( $N = 23$ ) and Writing Task 2 ( $N = 24$ ). To complement statistical significance, Cohen's  $d$  was also calculated to estimate the effect size of the intervention. This dual approach provided a more nuanced understanding of how mind mapping influenced students' performance, capturing not only whether the observed differences were statistically reliable but also how substantial they were in practical terms [34].

## 4. FINDINGS AND DISCUSSIONS

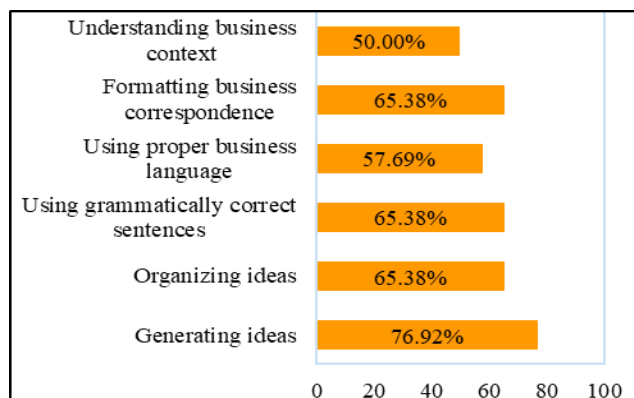
This section presents and discusses the findings in addressing the study's three research questions. To contextualize the impact of mind mapping, Section 4.1 first outlines students' difficulties with business writing before the intervention. Based on Questionnaire Items 3–8 (Table 2, Figure 1) and interview responses, it highlights challenges in idea generation, organization, grammar, and language use. These baseline issues serve as a reference point for evaluating the effectiveness of the mind mapping strategy. Sections 4.2 and 4.3 directly address Research Questions 1 and 2 by analyzing post-intervention data (Items 9–12) and interview insights. They examine how mind mapping supported students in improving content development, structural clarity, grammatical accuracy, and stylistic appropriateness in their writing. Finally, Section 4.4 responds to Research Question 3 by exploring students' attitudes toward the use of mind mapping based on data from questionnaire items 13–17 and interviews.

### 4.1 Students' Difficulties Before the Intervention

As shown in Table 2, idea generation emerged as the most pressing concern, with 84.6% of students rating it as "Difficult" or "Very Difficult." Consistently, Figure 1 shows that 76.9% of respondents also identified idea generation as a major difficulty.

**Table 2.** Pre-intervention difficulties in *Generating and Organizing Ideas* (N = 26) (Items 3–6)

Skill area/ Item	Indicator	f	%
<b>Idea Generation</b> (Item 3)	Difficult or	22	84.62
	Very difficult		
<b>Idea Organization</b> (Item 4)	Poorly or	14	53.85
	Very Poorly		
<b>Business Language Use</b> (Item 5)	Often or Very often faced difficulties	16	61.54
<b>Grammatical Confidence</b> (Item 6)	Unconfident or	16	61.54
	Very unconfident		



**Figure 1.** Student Difficulties in Business Writing Before Mind Mapping Intervention (N=26, Items 7-8)

Interview data reinforced these findings, with 8 out of 9 (88.9%) interviewees expressing uncertainty when facing new writing prompts, particularly in business contexts. For example, one student shared, “I find it hard to select the main ideas to suit the task requirements” (translated: 'khó khăn ở đây là em nghĩ là bây giờ mình phải lựa ý chính như thế nào cho nó phù hợp với lại cái yêu cầu của bài'). Another added, “I can't even think of how many ideas to find, or if I can come up with about three ideas? In general, I'm still confused about creating ideas” (translated: 'Em không suy nghĩ nổi là tìm được khoảng bao nhiêu ý hay là tầm 3 ý cho lên nổi không? Nói chung là vẫn lúng túng trong cái việc mà tạo ra ý tưởng').

In terms of conceptual structuring and document presentation, 53.85% of students rated their ability to arrange ideas as “Poor” or “Very Poor,” and 65.38% identified proper layout as a major difficulty. One student explained, “I often write in a way that makes the body paragraphs overlap with the introduction... This is my regular mistake” (translated: 'Thường em sắp xếp thì phần thân bài nó lại trùng với mở bài...'). An interviewee remarked, “At the start of the task, I didn't know how to properly arrange my thoughts” (translated: 'Ban đầu em

không biết sắp xếp như thế nào cho nó đúng đó cô'). These struggles suggest a lack of structural awareness in business writing.

Grammar was another major concern. As indicated in Table 2, 61.54% of students reported feeling “Unconfident” or “Very Unconfident” about correct grammatical usage, and 65.38% (Figure 1) identified this aspect as a major difficulty. Interview data also echoed this issue. One student shared: “At present, the most difficult parts for me are remembering words and writing correct grammar structures” (translated: 'Trong trường hợp hiện tại thì chắc thứ nhất là phần ghi nhớ, thứ hai là ngữ pháp, công thức đúng'). This highlights students' struggles with building accurate sentences.

Difficulties with business-appropriate language were also common. According to Table 2 and Figure 1, 61.54% of students reported frequent problems with using formal or context-appropriate expressions in business writing. This was reinforced by five interviewees who expressed uncertainty about tone and word choice. One noted, “I was unsure if the sentence was appropriate or if I used the correct salutation” (translated: 'Em nghĩ là xem là cái câu đấy nó có đúng... xung hô có đúng với người ta hay không?'). Limited contextual understanding further complicated students' ability to use appropriate language. Figure 1 shows that 50% of students cited difficulties in understanding business contexts. One student commented: “I think it was partly because I didn't understand the email they sent me or had no information about them, so I felt hesitant” (translated: 'Em nghĩ là cũng chắc do độ chưa hiểu email họ viết cho mình nó như thế nào... nên là mình cũng hơi ngại ngại'). Such comments reflect students' uncertainty when facing unfamiliar communicative roles or scenarios.

These converging data reveal consistent pre-intervention challenges across all key assessment criteria, Task Fulfillment, Organization, Grammar, and Language Use, underscoring the need for a structured strategy such as mind mapping to enhance students' business writing skills.

#### 4.2 Impact of Mind Mapping on Idea Generation and Organization

This section examines how mind mapping supported students in generating and organizing ideas in business writing, drawing on questionnaire items 9, 10, and 14, writing scores, as well as interview responses.

##### Idea Generation

Questionnaire data from item 9 indicated that 92.3% of participants (24 out of 26) rated mind mapping as “helpful” or “very helpful” for idea generation. This suggests a high level of perceived support in developing relevant content for business writing tasks. This perception was reflected in writing performance. As shown in Table 3, the average Task Fulfillment score, associated with idea generation, improved from 1.74 (SD = 0.38) in Writing Task 1 to 2.23 (SD = 0.28) in Writing Task 2 (out of 3). The improvement was statistically significant (p = 0.0002) with a large effect size (Cohen's d = 1.47), providing empirical evidence that mind mapping helped students meet content requirements more fully.

**Table 3.** Task fulfillment and Organization average scores before and after the mind mapping intervention

Criterion	Writing 1	Writing 2	p	d
	(M ± SD)	(M ± SD)		
Task fulfillment	1.74 ± 0.38	2.23 ± 0.28	0.0002	1.47
Organization	1.3 ± 0.33	1.55 ± 0.2	0.0003	0.92

In addition, interview data revealed how mind mapping contributed to cognitive clarity during the idea generation process. One student shared, “Mind maps are more visual... I retain ideas faster and can develop them better” (translated: ‘Sơ đồ tư duy nó mang tính trực quan hơn... em lưu giữ lại nhanh hơn và em có thể triển khai ý’). One student noted using a mind map helped him identify the specific writing task required and avoid going off-topic (translated: ‘Biết được chính xác dạng bài mình cần trình bày theo đề bài, tránh lạc đề’). This indicates that mind mapping supported clearer topic identification and better alignment with the writing prompt. Examples of student-generated mind maps illustrating this process are included in Appendix B

#### Idea Organization

Questionnaire responses indicated that mind mapping was widely perceived as a valuable tool for organizing ideas. Specifically, data from item 10 showed that 84.6% of students (22 out of 26) agreed that it helped them structure their thoughts more effectively. Responses to open-ended item 14, which inquired about students' most favored aspects of mind map use in the Business Writing 1 course, consistently indicated that 18 out of 26 participants (69.24%) valued their role in promoting clearer content organization and enabling logical arrangement of supporting points. One student elaborated on this, explaining, “What I like most about using mind maps in this Business Writing 1 course is how they help me organize my ideas clearly and visually. Instead of writing everything in a long list, I can see the main topic and all related points at a glance. This makes it easier to plan business documents, stay focused, and ensure my writing is more logical and effective.” This comprehensive statement underscores the practical utility of mind mapping in fostering structured and effective business communication.

As a whole, the quantitative and qualitative results from Section 4.2 illustrate that mind mapping supported both conceptual clarity and logical sequencing, enhancing students' ability to structure business writing more coherently.

#### 4.3 Impact of Mind Mapping on Grammar and Language Use

This section explores the influence of mind mapping on students' grammatical control and ability to use appropriate business language. The analysis integrates data from questionnaire responses (Items 11 and 12), writing assessments, and student interviews.

##### Grammar

According to responses to Item 12 of the questionnaire, 73.1% of students agreed that mind mapping helped them reduce grammatical errors when composing business emails and memos. This self-reported outcome aligned with gains observed in students' writing scores. As shown in Table 4, students' average Grammar score rose from 1.34 (SD = 0.33) in Writing Task 1 to 1.59 (SD = 0.25) in Writing Task 2. The increase was statistically significant ( $p = 0.0004$ ) with a large effect size (Cohen's  $d = 0.86$ ), suggesting that the use of mind maps contributed meaningfully to students' grammatical development.

**Table 4.** Grammar and Language average scores before and after the mind mapping intervention

Criterion	Writing 1	Writing 2	p	d
	(M ± SD)	(M ± SD)		
Grammar	1.34 ± 0.33	1.59 ± 0.25	0.0004	0.86
Language	1.66 ± 0.41	2.20 ± 0.25	$1.59 \times 10^{-5}$	1.60

Interview excerpts reinforced this improvement. Two students specifically noted greater attention to grammar when planning with mind maps... One explained: “I learned from the structures in the mind maps I created, so I found it significantly helped improve my grammar” (translated: em học theo những cấu trúc từ những cái bài mind map mà em đã làm cho nên em thấy nó cũng cải thiện rất là tốt ở phần ngữ pháp'). Another echoed this view: “I find that my grammar has improved since I started using mind maps” (translated: 'Em thấy ngữ pháp thì được cải thiện hơn khi em sử dụng sơ đồ tư duy').

These findings suggest that mind mapping, by supporting idea structuring at the sentence level, facilitated increased grammatical awareness during the drafting process.

##### Language

In terms of business language use, 80.8% of students responded affirmatively to Item 11, indicating that mind mapping enhanced their understanding and application of professional vocabulary and tone. This was corroborated by writing scores. As shown in Table 4 above, the average Language score increased from 1.66 (SD = 0.41) in Writing Task 1 to 2.20 (SD = 0.25) in Writing Task 2. The improvement was highly significant ( $p = 1.59 \times 10^{-5}$ ) with a large effect size (Cohen's  $d = 1.60$ ), confirming the positive effect of mind mapping on vocabulary range and stylistic appropriateness.

Interview responses elaborated on these quantitative results, highlighting two key themes: vocabulary development and pragmatic awareness. Approximately half of the participants reported that mind mapping enriched their business-related vocabulary. One student estimated, “I'd say mind maps support my vocabulary by roughly 80–90%” (translated: ‘Sơ đồ tư duy hỗ trợ vốn từ cho em chắc tầm 80–90%’), while another stated, “Mind maps provided me with a good amount of vocabulary for workplace writing” (translated: “Sơ đồ tư duy cung cấp cho em khá khá từ vựng mà trong văn phong đi làm”).

Additionally, four students described improved sensitivity to audience and tone. One noted that mind maps helped her understand how to use words appropriately for different contexts (translated: ‘Sơ đồ tư duy giúp em biết đc cách sử dụng từ đúng theo từng hoàn cảnh.’). Another added: “When writing to friends, I use more casual and funny language. However, when writing to customers, I know I must use more polite and formal language” (translated: ‘Nếu viết cho bạn bè thì mấy cái ngôn từ mình dùng nó sẽ gọi là kiểu funny hơn. Còn nói với khách hàng thì phải dùng ngôn ngữ lịch sự hơn’). These insights indicate that beyond supporting lexical range, mind mapping enhanced students’ ability to adjust their language to different communicative contexts—an essential skill in business writing.

Cumulatively, from the questionnaire, writing tasks, and interviews, Section 4.3 demonstrates that mind mapping substantially enhanced students’ grammatical control and professional language use. Its structured yet flexible nature fostered not only linguistic accuracy but also genre awareness, two key elements in effective business communication.

#### 4.4 Students’ Attitudes toward Using Mind Mapping as a Writing Aid

To address Research Question 3, this section presents findings on students’ attitudes toward the use of mind mapping in business writing. Thematic analysis of questionnaire responses (Items 13–17) and interview transcripts identified two key dimensions: (1) students’ positive attitudes toward mind mapping as a writing aid, and (2) their suggestions for improving its instructional application.

##### 4.4.1. Student Positive Attitudes toward Mind Mapping

Students’ supportive stance on mind mapping, beyond its cognitive benefits detailed in Sections 4.2 and 4.3, encompassed emotional engagement, practical convenience, and strong support for continued use. Data from questionnaire items 13, 14, and 17, along with interview responses, suggest that the technique was perceived as enjoyable, effective, and appropriate for future academic writing tasks.

Responses to item 13 showed that 46.15% of students (12 out of 26) found the activity enjoyable, visually engaging, or less anxiety-inducing than traditional outlining. Interview feedback aligned with this affective view, with 44.44% (4 out of 9) noting that mind maps made writing feel more approachable. For example, one student commented, “I enjoyed decorating my mind map on my own, and when using it, I felt able to generate more ideas” (translated: ‘Đó là việc em được tự trang trí cái sơ đồ tư duy... khi dùng nó, em có cảm giác có thể viết ra được nhiều ý hơn’). Another remarked that using mind maps was “more enjoyable than writing an outline” (translated: ‘Dạ em thấy là dùng sơ đồ tư duy sẽ thú vị hơn so với việc là em viết một cái outline’).

Beyond emotional appeal, many students valued mind mapping for its practical advantages. Open-ended responses to item 14 emphasized its usefulness in saving time, clarifying prompts, and improving retention. One participant noted that “Mind mapping made it easier for

me to analyze prompts... allowing me to analyze ideas for my writing in more detail.” (translated: “Việc sử dụng sơ đồ tư duy khiến tôi không còn khó khăn trong việc phân tích đề bài nữa... khiến em phân tích ý tưởng cho bài viết được chi tiết hơn”). Another shared: “Mind maps help systematize content visually and make it easier to remember.” (translated: ‘Sơ đồ tư duy giúp hệ thống lại kiến thức một cách trực quan và dễ nhớ.’).

Support for continued application was also strong. In item 17, students described mind mapping as “Wonderful” and “Very good for this subject because it helps us visualize and complete writing better” (translated: ‘Rất tốt cho môn này vì có thể giúp sinh viên tại em dễ hình dung và làm bài tốt hơn’). These comments suggest that students regarded mind mapping not only as a planning tool but also as a sustainable strategy suitable for long-term use.

These findings indicate that students not only welcomed mind mapping as an emotionally supportive and cognitively helpful technique but also endorsed its continued use as a long-term writing support strategy in academic settings.

##### 4.4.2. Addressing Post-Intervention Challenges: Student Recommendations for Mind Mapping Implementation

While student responses were generally favorable, data from Questionnaire Item 15 and interview comments revealed that a notable proportion of students continued to face several challenges even after the mind mapping intervention. These included difficulties with identifying key ideas and applying visual elements effectively. In response to these issues, participants proposed several improvements for enhancing future mind mapping use, as reflected in Questionnaire Item 16 and interview suggestions. Three key recommendations emerged: (1) the need for clearer and more contextualized guidance with in-class practice, (2) the integration of digital tools, and (3) increased opportunities for peer collaboration.

First, students highlighted the importance of more detailed and task-specific instruction, supported by guided examples and class-based practice. This recommendation was closely linked to difficulties reported in Questionnaire Item 15, where six students expressed uncertainty in distinguishing between main and supporting ideas, an issue that limited the effectiveness of their planning. Additionally, five students reported unfamiliarity with using mind maps and with applying visual elements such as symbols and colors to emphasize key information. To address these issues, students suggested that instruction should include clearer scaffolding in both the conceptual and visual aspects of mind mapping. One questionnaire respondent, for instance, recommended “provid[ing] more guided examples and templates, especially for beginners,” noting that this would help learners “understand how to structure their ideas more effectively.” Echoing this, an interviewee proposed that “teachers should provide different mind map examples for each writing type so that we can apply them more easily” (translated: ‘Mỗi cái bài nó theo một cái dạng khác nhau nên sẽ dễ hơn’).

Second, both questionnaire and interview responses pointed to the potential benefits of integrating mind mapping applications to enhance visual clarity and ease of

creation. One student suggested, “Introduce apps like XMind, MindMeister, Canva to help students create diagrams more easily and visually” (translated: “Giới thiệu các app như XMind, MindMeister, Canva... để sinh viên tạo sơ đồ dễ dàng và trực quan hơn”). However, an interview participant noted that while such tools could be helpful, they might be more appropriate for use outside of class due to time constraints: “I think mind map apps should be used at home because they can be time-consuming in class” (translated: “Dạ thì em nghĩ nên dùng app tạo mind map ở nhà tại vì nó sẽ cũng hơi tốn thời gian một chút.”).

Third, some students expressed a desire for more group-based activities to facilitate idea sharing and collaborative learning. One questionnaire respondent noted, “Using a mind map alone sometimes doesn't lead to the best or most complete results, so I suggest working in groups. That way, generating ideas will be easier and more effective.” An interviewee who shared this view elaborated further, suggesting that “Teachers should project students' mind maps in class so we can learn from each other's effective approaches” (translated: “Chiều những cái bài của các bạn lên để học hỏi hiểu lẫn nhau.”). This response highlighted both a method, classroom sharing, and a rationale: learning from peers' strategies to enhance mind map quality.

The listed suggestions demonstrate that while students valued mind mapping for its cognitive and affective benefits, they also identified concrete ways to optimize its implementation. According to students, future instruction can be enhanced by incorporating scaffolding, digital support, and collaborative opportunities to maximize student engagement and learning outcomes.

## 5. CONCLUSIONS

This study examined the impact of mind mapping on EFL students' business writing performance and perceptions, with reference to three research questions. Drawing on data from post-course questionnaires, writing assessments, and follow-up interviews, the findings offer a synthesized understanding of how mind mapping supported learners in a Business Writing 1 context.

In response to the first research question regarding idea generation and organization, questionnaire responses indicated that students perceived mind mapping as a helpful planning tool. Many noted that it enabled clearer thinking and more systematic content development. These perceptions aligned with improved writing outcomes, particularly in content relevance and structural organization. Interview participants also emphasized how the visual nature of mind mapping facilitated prompt analysis and logical arrangement of ideas.

Concerning the second research question on grammar and language use, students reported increased awareness of sentence structure and vocabulary selection after using mind maps. Improvements in writing performance were evident, particularly in grammatical accuracy and the use of context-appropriate language. Interviews further revealed that learners relied on mind maps as a reference for recalling patterns and generating appropriate expressions in formal business writing.

Regarding the third research question on student attitudes, participants generally expressed positive perceptions of mind mapping as a learning strategy. Questionnaire data showed strong agreement on its usefulness, and interviewees described it as a motivating and effective approach for their greater confidence during writing. While some challenges were acknowledged, such as time constraints or initial unfamiliarity, students overall viewed mind mapping as a beneficial support for both the planning and drafting stages.

Taken together, the findings suggest that mind mapping served as a pedagogically valuable tool in business writing instruction for EFL learners. It supported more effective planning and organization of content, contributed to greater grammatical and lexical accuracy, and was generally perceived by students as a useful and motivating strategy for enhancing their writing performance. This research was limited to a single class of 26 students over a single semester, and due to teaching assignment constraints, the findings should be interpreted with caution in terms of generalizability. Nevertheless, the depth and consistency of the data suggest meaningful pedagogical implications for teaching business writing to EFL learners.

## 6. RECOMMENDATIONS

Drawing on the findings, this study offers pedagogical recommendations for integrating mind mapping into future Business Writing 1 courses at LHU. Aligned with the pre-writing, while-writing, and post-writing stages, these ideas aim to support idea generation, collaborative learning, language development, and personalized feedback to better address student needs and enhance instructional effectiveness.

### *Recommendations for the pre-writing stage*

Firstly, to integrate mind mapping in the pre-writing stage more effectively, the instructor should provide clear instructions and guided practice in key techniques such as idea linking, hierarchical structuring, and color coding. Despite prior training, several students in this study still expressed a need for more guidance. Some suggested adding more in-class practice, especially across varied business writing contexts. This highlights the need for extended and contextualized training to help learners internalize strategies. Recent research confirmed that sustained and structured practice with visual planning tools like mind mapping can significantly enhance idea generation, coherence, and writing confidence [35].

Secondly, based on interview feedback, instructors had better clearly explain the advantages of mind mapping over less structured planning tools. Students' hesitation about using mind maps in every task suggests a need to clarify how mind maps can facilitate visual organization, emphasize idea relationships, and support genre-specific conventions. This may increase learners' willingness to engage more fully with the technique.

Thirdly, the instructor should integrate more pair or group-based mind mapping discussions to facilitate collaborative idea generation and content organization for specific writing genres, such as business emails or memos. Such collaborative mapping activities can foster peer

learning, stimulate creativity, and promote multiple perspectives, which are especially beneficial in business communication where clarity and purpose are essential. Group interaction at this stage encourages learners to co-construct knowledge and make more deliberate decisions regarding content relevance and hierarchy [36].

Subsequently, rather than focusing solely on idea generation and organization, mind mapping can also be used to reinforce topic-specific business vocabulary, a need highlighted by students in interviews. Instructors may incorporate mind mapping into targeted lexicogrammatical activities, helping students visually cluster and apply functional expressions specific to email and memo genres and thereby enhancing both fluency and appropriateness in written business discourse.

#### **Recommendations for the while-writing stage**

Alongside these pedagogical adjustments, it is also important to address the practical challenges students faced when using mind maps under time pressure. Some students reported in the survey that creating mind maps was time-consuming or difficult during timed classroom activities, and suggested that instructors introduce digital tools such as XMind or Canva to support the process. However, from my standpoint, such tools should primarily be used outside of classroom hours, as not all students have access to personal laptops or digital devices during in-class sessions. This approach ensures that digital tools enhance learning without creating equity issues in the classroom.

To optimize the integration of mind mapping into the writing process, instructors should also provide continuous scaffolding, including formative feedback on both students' visual plans and their written products. This support is essential to help students fully benefit from the planning stage and improve their writing quality [37].

#### **Recommendations for the post-writing stage**

In the post-writing stage, instructors may consider utilizing asynchronous feedback tools, such as annotated comments or screen-recorded responses. These can offer detailed, personalized feedback on both the mind maps and the drafts without requiring additional in-class time, thus addressing instructional time limitations [38].

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### **8. REFERENCES**

[1] Buzan, T. (1993). *The Mind Map book: How to use radiant thinking to maximize your brain's untapped potential*. BBC Books.

[2] Soar, E. (2024). *Mind Maps: Learning Through Discovery*.

[3] Sukprasert, P. (2022). Using Mind-Mapping to Develop EFL Students' Writing Performance. *English Language Teaching*, 15(11), 14–23.  
DOI: <https://doi.org/10.5539/elt.v15n11p14>

[4] Alred, G. J., Brusaw, C. T., & Oliu, W. E. (2019). *The business writer's handbook* (12th ed.). Bedford/St. Martin's.

[5] Bhowmik, S. (2021). Writing Instruction in an EFL Context: Learning to Write or Writing to Learn Language? *BELTA Journal*, 5(1), 30–42.  
DOI: <https://doi.org/10.36832/beltaj.2021.0501.03>

[6] Jitpanich, P., Kawinvasin, S., & Low, P. (2022). Assessing the English writing needs of undergraduate business students. *LEARN Journal: Language Education and Acquisition Research Network*, 15(2), 104–128. <https://files.eric.ed.gov/fulltext/EJ1358670.pdf>

[7] Al-Khasawneh, F. M. (2023). Analysis of factors affecting students' business writing skills. *World Journal of English Language*, 13(1), 1–9.  
DOI: <https://doi.org/10.5430/wjel.v13n1p1>

[8] Nguyen, N. H. T., & Pham, N. T. T. (2022). Difficulties in writing skill of Master of Business Administration students at Tay Do University, Vietnam. *International Journal of Social Science and Humanities Research*, 5(4).

[9] Nunan, D. (1999). *Second language teaching and learning*. Heinle & Heinle.

[10] Rungwaraphong, P. (2021). Inductive teaching approaches in business English writing in an EFL context: Paper-based and product-based instructions. Retrieved from <https://www.academia.edu/84617157>

[11] Nga, P. T. (2025). A study on writing approaches and its application in higher education. *International Journal Of All Research Writings*, 6(8), 47-52.

[12] Hyland, K. (2018). Genre and Second Language Writing. In *Teaching Writing: Core Issues in Second Language Writing*.  
DOI: <https://doi.org/10.1002/9781118784235.celt0535>

[13] Gintings, M. F. M. (2022). Promoting Students' Writing Skill: Genre-Based Approach in Indonesia EFL Context. *Lexeme: Journal of Linguistics and Applied Linguistics*, 2(1), 1–10.

[14] Vu, P. H., & Bui, T. K. L. (2021). Genre-Based Approach to Writing in EFL Contexts. *World Journal of English Language*, 11(2), 95–102.

[15] Uamsiri, R., & Sukavatee, P. (2022). Effects of Genre-Based Approach with Graphic Organizers on Argumentative Writing Ability of EFL Secondary School Students. *An Online Journal of Education*, 17(1), 1–15.

[16] Badger, R., & White, G. (2000). A process genre approach to teaching writing. *ELT Journal*, 54(2), 153–160.

[17] Tran, L. T. (2022). Passive learning in Vietnamese higher education: Causes and pedagogical interventions. *Journal of Language and Education*, 8(2), 34–45.

[18] Tarin, A., & Yawiloeng, R. (2022). Using mind maps to support EFL learners' brainstorming in business English writing. *Indonesian Journal of Applied Linguistics*, 12(3), 657–665.  
DOI: <https://doi.org/10.17509/ijal.v12i3.45678>

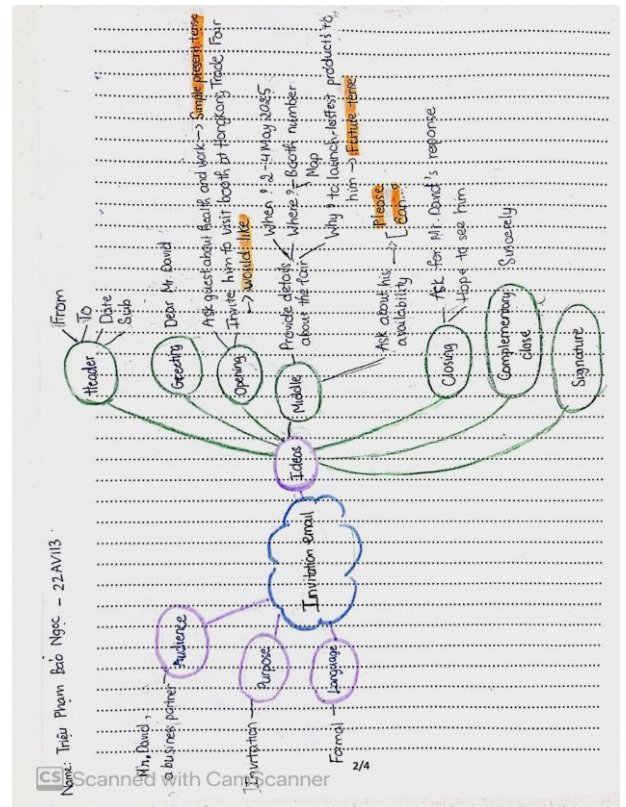
- [19] Sbaa, M., Faouzi, L., Eljahechi, M., & Lghdaich, F. (2022). The Mind Map at the Service of Learning. *International Journal of Multidisciplinary Research and Analysis*, 5(12), Pages.  
DOI: <https://doi.org/10.47191/ijmra/v5-i12-37>
- [20] Doan, V. H. (2022). Mind mapping in EFL business writing classes: A tool for communication planning and learner engagement. *Journal of Language Teaching and Research*, 13(6), 1194–1202.  
DOI: <https://doi.org/10.17507/jltr.1306.10>
- [21] Al Kamli, H. M. (2019). The effect of using mind maps to enhance EFL learners' writing achievement and students' attitudes towards writing at Taif University. *Arab World English Journal (AWEJ)*.
- [22] Nguyen, T. K. N. (2023). The effect of using mind mapping technique on non-English major students' grammar achievement at Dong Nai Technology University. *Journal of English Language Teaching and Applied Linguistics*, 5(2), 128–134.  
DOI: <https://doi.org/10.32996/jeltal.2023.5.2.16>
- [23] Amansyah, F., Nur, S., & Anas, I. (2023). Digital mind mapping as a pedagogical tool to support the student's business plan writing performance. *JOALL Journal of Applied Linguistics and Literature*, 8(2), 433–453.  
DOI: <https://doi.org/10.33369/joall.v8i2.27757>
- [24] Wijaya, K. F. (2023). The Positive Effects of Mind Mapping Strategy Integration on Improving EFL Learners' Writing Skill. *Edukasi: Jurnal Pendidikan dan Pengajaran*, 10(1). Retrieved from <http://bit.ly/4kBEftw>
- [25] Efron, S. E., & Ravid, R. (2020). *Action Research in Education: A Practical Guide* (2nd ed.). Guilford Press.
- [26] Alemu, M. (2020). The Role of Pre-writing Strategies to Enhance the Students' Idea Generating Abilities: The Case of First-Year Computer Science Students of Haramaya University. *International Journal of Education & Literacy Studies*, 8(1), 1–8.  
DOI: <https://doi.org/10.7575/aiac.ijels.v.8n.1p.1>
- [27] Downing, V. R., Cooper, K. M., Cala, J. M., Gin, L. E., & Brownell, S. E. (2020). Fear of Negative Evaluation and Student Anxiety in Community College Active-Learning Science Courses. *CBE—Life Sciences Education*, 19(2), ar20.  
DOI: <https://doi.org/10.1187/cbe.19-09-0186>
- [28] Donkoh, E. (2023). Application of triangulation in qualitative research. ResearchGate. <https://bit.ly/4mBt93b>
- [29] Onuoha, J. C., & Ekpoto, D. F. (2021). Effects of Google Forms Question Tool on Reducing Geography Students' Test Anxiety and Enhancing Achievement. *International Research Journal of Modernization in Engineering Technology and Science*, 3(6), 3381–3387. <https://bit.ly/3SwInIS>
- [30] Badampudi, D., Fotrousi, F., Cartaxo, B., & Usman, M. (2022). Reporting consent, anonymity and confidentiality procedures adopted in empirical studies using human participants. *e-Informatica Software Engineering Journal*, 16(1), Article 220109.  
DOI: <https://doi.org/10.37190/e-Inf220109>
- [31] Archibald, M. M., Ambagtsheer, J., Casey, M. G., & Law, M. (2019). Using Zoom videoconferencing for qualitative data collection: Perceptions and experiences of researchers and participants. *International Journal of Qualitative Methods*, 18, 1–8.  
DOI: <https://doi.org/10.1177/1609406919874596>
- [32] Carlucci, M. E., & Wright, D. B. (2021). *Descriptive Statistics: Graphical and Numerical Methods*. In *Research Methods in Psychology* (5th ed., pp. 259–284). SAGE Publications.
- [33] Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.  
DOI: <https://doi.org/10.1191/1478088706qp063oa>
- [34] Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. SAGE Publications.
- [35] Vankelecom, L., Loeys, T., & Moerkerke, B. (2024). How to safely reassess variability and adapt sample size? A primer for the independent samples t test. *Advances in Methods and Practices in Psychological Science*, 7(1), 1–15.  
DOI: <https://doi.org/10.1177/25152459231212128>
- [36] Tu, N. Q., & Nguyen, H. B. (2021). Teachers' beliefs and practices of scaffolding students' paragraph writing through mind-mapping at pre-writing stage. *European Journal of English Language Teaching*.  
DOI: <https://doi.org/10.46827/ejel.v0i0.4957>
- [37] Chen, T. J., Mohanty, R. R., Rodriguez, M. A. H., & Krishnamurthy, V. R. (2019). Collaborative mind-mapping: A study of patterns, strategies, and evolution of maps created by peer pairs. In *Proceedings of the ASME 2019 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference* (Vol. 7). American Society of Mechanical Engineers.  
DOI: <https://doi.org/10.1115/DETC2019-97467>
- [38] Peltzer, L., To, D., & Lipnevich, A. A. (2024). Differential effects of formative feedback on argumentative writing in English and German: A randomized controlled intervention study at secondary school. *Reading and Writing*. Advance online publication. <https://bit.ly/3Hkz78r>

## 9. APPENDICES

### Appendix A. Illustrative Coding Samples and Thematic Map (Q = Questionnaire; I = Interview)

Data Source	Extract (VN + EN)	Code	Theme
Q14	“Đó là việc em được tự trang trí cái sơ đồ tư duy... khi dùng nó, em có cảm giác có thể viết ra được nhiều ý hơn” (“I enjoyed decorating my mind map on my own, and when using it, I felt able to generate more ideas”)	Support in idea generation	Idea generation
I	“Sơ đồ tư duy nó mang tính trực quan hơn... em lưu giữ lại nhanh hơn và em có thể triển khai ý.” (“Mind maps are	More visual, supports idea	Idea generation

	more visual... I retain ideas faster and can develop them better.’)	generation	
Q14	Có thể sắp xếp ý theo đúng trình tự. Có nhánh bổ sung, chi tiết rõ ràng để giúp phát triển bài memo, emails tốt hơn.  (‘I can organize main ideas in the correct order, with clear supporting points’)	Logical structuring of main ideas and supporting points	Idea organization
I	“This ensure my writing is more logical and effective.”	Easier to plan and follow structured ideas	Idea organization
I	"Em học theo những cấu trúc từ những cái bài mind map mà em đã làm cho nên em thấy nó cũng cải thiện rất là tốt ở phần ngữ pháp." (‘I learned from the structures in the mind maps I created, so I found it significantly helped improve my grammar.’)	Learning through structures	Grammar
I	“Sơ đồ tư duy hỗ trợ vốn từ cho em chắc tầm 80–90%.” (‘mind maps support my vocabulary by roughly 80–90%.’)	Vocabulary enrichment	Language



Appendix B. Student-generated mind map