Research article

# An investigation into EFL pre-service teachers' academic writing strategies

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ABSTRACT

Recent research has shown writing strategies to have a substantial impact on language learners' writing performance but little is known about what strategies EFL learners use and how they use them in writing academic texts such as reports, final assignments, and project papers. The study reported in this paper extends this line of research by investigating the strategies Vietnamese EFL pre-service teachers use in academic writing. Data included document analysis of 17 pre-service teachers' final assignment papers (one paper per teacher) and individual semi-structured interviews with ten teachers. The study adopted a content-based approach to qualitative data analysis with reference to a comprehensive research-based taxonomy for L2 academic writing strategies, including rhetorical, metacognitive, cognitive, and social affective strategies. The results show that rhetorical, metacognitive, and cognitive strategies were most frequently used by the teacher participants. The results further show that self-efficacy and self-regulation determined the teachers' use of strategies during the writing process. Implications for the L2 writing classroom focused on academic writing strategies to enhance pre-service teachers' writing quality will be discussed.

## 1. Introduction

Language learners who are fluent in all four major language skills, namely listening, speaking, reading, and writing are considered proficient speakers [1]. Of these major skills, writing is conceptualized as the writer's use of knowledge and skills to create a written text [2, 3, 4]. In second language (L2) education, learners' writing ability is attributed to their knowledge of vocabulary and grammar [5,6] because such lexical and grammatical competence in part contributes to high-quality essays, reports, and research papers [5,7]. As Bailey [8] has pointed out, proficient writing skills can assist learners in their pathways to academic achievements and future employment. However, statistics in 2020 by the Educational Testing Service (ETS) suggests that writing is the most challenging skill for many L2 test takers, especially those from Asian countries.

Research has shown that ESL/EFL learners' writing quality is determined by different factors and that problems commonly facing L2 learners in composition writing include their lack of vocabulary and grammar inventories, motivation, and confidence [9]. For many learners, anxiety has an impact on their writing quality [10,11] while content organization and development of a good piece of writing is a challenge for others [8]. For this reason, Quible and Griffin [12] have called for more attention to enhancing learners' writing competence within the language classroom. One response to this call has been the teaching of writing strategies to help learners

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become more effective writers since mastering a range of writing strategies assists learners to complete their tasks confidently and successfully [5,13]. In a similar vein, Oxford [14] holds that with different writing strategies in mind, learners can monitor their writing tasks and develop confidence and independence during the writing process.

Recent studies have sought to describe and understand ESL/EFL learners' writing strategies. Although there is qualitative research into writing strategies used by ESL/EFL learners of the undergraduate level, this line of research mainly used questionnaires and/or interviews for investigation [15, 16, 17, 18]. In addition, studies that investigated L2 learners' writing strategies mainly based themselves on short essays [19]. Little has been done to examine learners' academic writing strategies and how these are used in longer texts such as reports, final assignments, and project papers, especially those in post graduate programs that involve pre-service EFL teachers in Asian countries. This is important since inquiries into these sources of learners' academic works can provide useful insights into their actual use of writing strategies, which in turn help inform L2 academic writing pedagogy. The present study fills this research gap by examining what strategies Vietnamese EFL pre-service teachers use in academic writing and how they use these strategies in their final assignment papers. It seeks to answer the following research questions.

1. What strategies do Vietnamese EFL pre-service teachers use in their writing?
2. How do the teachers use these strategies in writing their papers?

## 2. Literature review

### 2.1. L2 writing strategies taxonomy

Writing as part of communication serves as a social site for writers to get advice and feedback on their production [15,20,21]. Such an action of seeking advice and feedback is considered a strategy that writers apply in their writing. Research shows that writers may use different strategies during the writing process to improve the quality of their texts [2,18]. Reinking and von der Osten [22], for instance, point out that rhetorical strategies help writers organize and present their ideas comprehensibly to the reader. Given writing as a dynamic process which requires writers to read, transform, and create information, cognitive strategies such as note-taking, summarizing, and synthesizing references with the writer's additional comments play an important part in enhancing the quality of a written text [14,23,24]. Also, writers may use metacognitive strategies including planning, drafting, monitoring, proofreading, and revising to self-regulate their writing process [18]. From the social and affective perspectives, writers may ask for advice and feedback from peers and/or professionals and reduce anxiety through self-talks.

An extensive survey of the literature shows that the development of writing strategies was first based on Oxford's [14] taxonomy including two main categories: (1) memory, cognitive and compensation strategies, and (2) metacognitive, affective, and social strategies. Grabill and Pigg [25] subsequently modified this taxonomy by moving social affective strategies to a third category and including rhetoric as another strategy category writers use to communicate in a logical and clear manner. According to Grabill and Pigg [25], rhetorical strategy is used to organize ideas or to make a rhetorical question about the writing topic in focus. From the literature survey, a comprehensive research-based taxonomy for academic writing strategies emerged (Table 1). This research-based taxonomy includes four main categories/groups: (1) rhetorical, (2) metacognitive, (3) cognitive and (4) social affective strategies. Under these categories/groups are 15 specific sub-strategies which are applicable within the academic context.

The four strategy categories/groups resulting from the literature survey revisit key strategies within the L2 writing process. The taxonomy is holistically comprehensive as it takes into account various strategies learners may apply at different stages of writing. The validity of the taxonomy is also supported by the range of the literature survey. Literature was sourced from recent studies focused on L2 writing strategies. For the purposes of this study, we took all reasonable measures into consideration to ensure that the literature survey was extensive, any contradictory findings across research were explored, and findings from empirical research were prioritized. As such, we believe that this taxonomy is valid and applicable for data analysis conducted in the current study.

**Table 1**
A research-based taxonomy for L2 academic writing strategies.

| Strategy categories/groups | Sub-strategies |
| --- | --- |
| **1. Rhetorical** | 1.1 organizing ideas |
| | 1.2 making a rhetorical question/statement |
| **2. Metacognitive** | 2.1 planning |
| | 2.2 drafting |
| | 2.3 monitoring |
| | 2.4 evaluating |
| | 2.5 revising and editing |
| **3. Cognitive** | 3.1 note-taking |
| | 3.2 relating concepts |
| | 3.3 elaborating |
| | 3.4 summarizing |
| | 3.5 translating from L1 into L2 |
| **4. Social affective** | 4.1 seeking advice and sharing information |
| | 4.2 getting feedback |
| | 4.3 reducing anxiety |

*2.2. Previous research on L2 writing strategies in ESL/EFL contexts*

The past few decades have witnessed a growing number of studies on ESL/EFL learners' writing strategies with particular strands focused on the relationship between learners' writing strategies and their L2 proficiency (e.g., Ref. [26]), the effects of strategy use on learners' writing performance [2,17,18,27, 28, 29] and overall L2 writing strategies [8,30]. Other studies classified learners' writing strategies from a pedagogical perspective with reference to existing taxonomies [31,32]. Overall, this body of research revealed that learners used various strategies during the writing process and that writing strategies had an influence on learners' writing quality.

Recent research has provided vigorous evidence on the impact of writing strategies on L2 learners' writing performance. For example, Bailey and Judd [27] examined the effects of different writing strategies used by Korean EFL learners from a social approach. The study involved 65 EFL students from a Korean university who were divided into an experimental (n = 32) and a control group (n = 33). Students of the experimental group attended an online collaborative writing course in which they made weekly posts and engaged in discussions by commenting and responding to peers' comments on the posts. In the meantime, students of the control group focused on the TOEIC tests to practice their English skills individually. The results showed that students of the online collaborative writing group outperformed the control group in respect of L2 writing accuracy. This finding aligns with Oh et al.'s [29] research which suggested that the use of planning as a metacognitive strategy contributed more to students' writing quality than language proficiency. Similarly, Cer [2] found that metacognitive strategies could help students improve their writing quality more than free writing activities. This finding is generally consistent with studies by Chien [31] and Gibriel [17].

Another strand of research pertaining to L2 writing strategies looked at writing strategies used by ESL/EFL learners in different contexts. Al-Zankawi [19], for instance, explored what strategies Polish EFL learners used in their writing. The study involved 18 EFL learners from a Polish secondary school. Data were collected through a survey, the students' short paragraphs and individual interviews with seven students. The results showed that the students used different writing strategies to plan, execute and revise their papers and that the strategies most students applied in their writing were cognitive (77%), social (77%) and metacognitive strategies (76%). The interview data revealed that the students were not aware of the compositional aspects of L2 writing and did not regularly apply peer collaboration in their writing process. Within the EFL context of Asian countries, Zhang and Qin [18] validated a questionnaire to measure Chinese EFL learners' metacognitive awareness of writing strategies in multimedia environments. A 23-item writing strategies survey was administered to 400 Chinese tertiary EFL students of seven different majors. The results showed that the students demonstrated metacognitive development and their flexible use of three types of writing strategies including planning, monitoring, and evaluating corresponding with the three stages of the writing process, namely pre-, while- and post-writing.

Research on overall L2 writing strategies in EFL contexts fell into two directions. The first direction was the use of Oxford's [14] writing taxonomies, and the other was the classification of L2 writing strategies during the pre-, while- and post-writing process from a pedagogical perspective. Using questionnaires to investigate students' use of writing strategies, Kao and Reynolds' [30] study showed that students used four writing strategy groups, namely cognitive, compensation, social and affective strategies. This finding in part confirms previous research which revealed that apart from these four strategy categories, students also applied memory and metacognitive strategies in their writing [6]. Although these studies demonstrated partial consistency in their results, Bailey [8] has argued that the application of Oxford's [14] classification of strategies inventory for language learning remains controversial because most items in this inventory "refer to language learning in general and not English writing specifically" (p. 137). Thus, there is a need for further research within the sector of English language education.

Taken together, research has shown some congruence in ESL/EFL learners' writing strategies. However, the use of writing strategies by L2 learners in different contexts varied depending partly perhaps on task requirements and learners' competence [33], discourse (academic versus non-academic) and discipline and writing purposes [34]. From the literature survey, we have found that previous studies mainly used questionnaires and/or interviews as a means of investigation. Such an investigation answers the questions of what and why but not how. To obtain in-depth understandings about L2 learners' use of strategies in their writing process, analyzing learners' written texts is essential since it can provide a detailed account of what actually happens when students write [19]. More importantly, what has been missing recently is a comprehensive academic writing taxonomy to guide researchers' and practitioners' understandings of what strategies L2 learners use and how they use them in academic writing. The present study addresses these research gaps by examining what writing strategies Vietnamese EFL pre-service teachers use and how they use these strategies in writing their academic texts, i.e., their final assignment papers.

## 3. Methods

### 3.1. Research setting and participants

The study was conducted in an EFL teacher training program at a Vietnamese university. Convenience sampling was employed to select participants based on who were available and willing to participate [35]. An invitation email was sent to all 17 Vietnamese EFL pre-service teachers in the program; they all replied and consented to their final assignments being used for research purposes. The teachers' English proficiency was at C1 level of the Common European Framework Reference for Languages (CEFR). To ensure their confidentiality, the teacher-participants were given the pseudonyms T1-T17. By the time of data collection, the teachers had finished two compulsory courses: one focused on approaches and methods in English language teaching, and the other on practical techniques for teaching specific language skills and elements. In this study, part of the data set was collected from the participants' final assignments of the second course.

The main aim of the final assignment was for the pre-service teachers to critically review published studies on the teaching and

learning of a particular English skill and to discuss the extent to which those reviewed research findings are applicable within the Vietnamese EFL context. By the end of the course, the teachers had eight weeks to complete and submit their assignments. To put the participants at ease, they were advised to consult with their lecturer (teacher educator) for further advice where necessary, which was included as part of the data set. That means seeking advice from the lecturer was documented as the teachers' use of social strategies. Once they finished their assignments, the teachers handed them in for their lecturer's feedback, followed by revisions of the papers and then submission to the university library. The lecturer's feedback on the participants' assignments at this stage did not count in the writing strategy identification process.

Pre-service teachers were targeted in the current research for two reasons. First, they were engaging in a teacher training program whereby in-length texts such as final assignments, reports and project papers were required, which allowed for more convenience in data collection. Second, upon completion of this teacher training program, the teachers would start their teaching job part of which would involve teaching writing to their EFL learners. Before the data were collected, ethics approval had been granted by Hong Duc University and all informed consents had been signed by the participants.

### 3.2. Data collection

We started our data collection by analyzing 17 final assignments by the teacher-participants to identify the writing strategies they used in their works. Given that some writing strategies are process-based and not evident in the text [36], the use of different sources of information allows for further investigation into learners' writing strategies [31,36] and so increases the research trustworthiness [37, 38]. For this reason, we, after conducting document analysis, invited the teachers for semi-structured interviews to further explore other strategies they might have used during their writing process. This interview session also enabled the teachers to elaborate on their use of those writing strategies in their assignments.

Through an invitation email, ten of the teachers (T1-2, T5, T8, T11–12, T14-17) agreed to participate in individual stimulated recall interviews which lasted for approximately 30 min each and were audio recorded. The interviews were conducted in Vietnamese to ensure mutual understandings between the interviewer and the participants. After looking at instances of writing strategies taken from their assignments, each teacher was asked to reflect and elaborate on each strategy they used. Here, the teachers' stated beliefs about the writing strategies they used in their papers were elicited.

### 3.3. Data analysis

Content-based analysis of qualitative data which involved an iterative, cyclical, and inductive process of identifying and refining themes and categories [35] was employed in the present study. First, authors 1 and 2, as two independent coders, read and identified all instances of writing strategies used in each of the teachers' final assignments. Then, these writing strategies were coded with reference to the research-based taxonomy for academic writing strategies as presented in Table 1. Inter-coder agreement was 92%. All disagreements were resolved through follow-up discussions between the two coders. Table 2 depicts an example of how the documentation data were coded.

The interview data were analyzed thematically with the support of Nvivo. First, all the interviews were transcribed verbatim and emailed back to the teacher-participants for confirmation, clarification and/or modification. Second, the transcripts were read and reread several times for a thorough understanding of the interview data. Third, phrases and sentences with similar meanings were grouped into categories. Finally, initial themes were revised to develop broader themes through an iterative process of re-reading and refining the thematic categories. Authors 1 and 2 independently coded the full data set to check the trustworthiness of the coding process. Inter-coder agreement was over 90% and disagreements were all resolved through follow-up discussions. Table 3 presents an example of the interview data coding process.

## 4. Results

This section reports on the findings related to the two research questions. To answer Research Question 1, we will report on the strategies the teachers used in writing their final assignments and provide the most representative excerpts from the teachers' papers as evidence for each of these strategies. For Research Question 2, we have chosen the most representative extracts from the teachers' responses in the interview data to illustrate each of the main themes.

**Table 2**
Example of coding documentation data.

| Excerpts from the paper | Strategies | Categories | Explanations | Interview confirmation |
| --- | --- | --- | --- | --- |
| - *Finally*, I will explain vocabulary or grammar of the lesson and then give homework. | Organizing | Rhetorical | Using cohesive devices to link paragraphs and sentences. | "I used cohesive devices to link ideas within and between paragraphs" |
| - The last method is CLT – Communicative Language Teaching in the 1970s. | Elaborating | Cognitive | Using punctuation (hyphen, brackets) | "I wanted to explain the term CLT" |

**Table 3**
Example of coding the interview data.

| Responses | Strategies | Categories | Explanations |
|---|---|---|---|
| **I spent the first week <u>planning</u> my assignment. The next five weeks were used to write. I used the last 2 weeks to <u>edit my paper</u>.** | Planning revising and editing | Metacognitive | How the writer evaluated reading materials: reading carefully and choosing relevant information. |
| **When I read, I <u>typed and copied</u> main important information for my paper. I also used Font Color and Text highlight color to <u>mark important information</u> when reading.** | note-taking | cognitive | How the writer took notes: using font, color, and text highlighting, typing, and copying important information. |
| | note-taking | Cognitive | |

### 4.1. What strategies do Vietnamese EFL pre-service teachers use in their writing?

Overall, 635 instances of writing strategies were identified in the teachers' final assignment papers. These strategies fell into two strategy categories/groups: cognitive and rhetorical as summarized in Table 4. Of the two categories/groups, instances of cognitive strategies accounted for a higher percentage in the teachers' papers than that of rhetorical strategies (53.39% and 46.61% respectively).

Given that the teachers may have used other strategies which were not evident in their assignment papers, it is necessary to examine these using interviews. During the interviews, the teachers confirmed their use of those strategies identified in their assignment papers and reported using other writing strategies of metacognitive (e.g., revising), cognitive (e.g., note-taking) and social affective (e.g., getting feedback) categories. With reference to the research-based writing taxonomy in Table 1, analysis of the 17 final assignment papers and the interview data showed that the teachers used all the four strategy categories/groups, namely rhetorical, metacognitive, cognitive, and social affective strategies, at different levels of frequency. The data are summarized in Table 5.

As seen in Table 5, the strategies identified in the teachers' assignments included seven specific writing strategies: organizing ideas, making a rhetorical question or statement, relating concepts, elaborating, summarizing, and translating from L1 into L2. First, the teachers utilized rhetorical strategies in writing their papers. Specifically, they organized their ideas within paragraphs and throughout the paper by using cohesive devices. ST16, for example, used *"The first method is"* and *"Another method is"* to organize the selected teaching methods in a parallel manner. In order to draw the reader's attention to the following information, ST7 added a rhetorical question *"What do they learn English for?"*. Second, the teachers presented their arguments by integrating different resources into their papers. In her assignment, ST14 wrote: *"James Asher pointed out that (…). However, in the post-methods era, pedagogical proposals should combine different approaches and methods (Richards & Rodgers, 1999)"*. Although this citation did not strictly follow APA 6th as instructed in the assignment guidelines, ST14 related the concepts she had read from different resources. Third, the teachers used elaboration to further explain their ideas by providing detailed information or definitions. This is evident in ST2's paper: *"Communicative language teaching (CLT) is a language teaching method which places an emphasis on communication"*. In this excerpt, ST2 used a non-restrictive relative clause to provide readers with further information about CLT. Fourth, all 17 papers had a conclusion section to summarize the main points discussed throughout the paper as in *"In conclusion, each method has both pros and cons"* by ST17. This example indicates that ST17 summarized previously stated ideas regarding the teaching methods discussed in the section. However, some papers did not include a brief summary in each section. Finally, instances of word-by-word L1-L2 translation were identified as in *"Can my ability be poor, but I'll try"*, which means "Perhaps I'm not very good but I'll try" by ST2. Clearly, this excerpt illustrates the influence of L1 syntactical features (Vietnamese in this case) on the teachers' language use. This L1-into-L2 translation strategy was confirmed by most teachers during the interviews, such that they generated ideas in Vietnamese and subsequently translated these into English.

### 4.2. How do the teachers use these strategies in writing their papers?

This section reports on specific strategies Vietnamese EFL pre-service teachers used and reported using in completing their final assignments. Instances were extracted from the papers to illustrate each strategy use, followed by the teachers' confirmation and elaboration during the interviews.

**Table 4**
Strategies used in the teachers' final assignment papers.

| Strategies | Number of instances | Percentage | Ranking |
|---|---|---|---|
| **Cognitive** | 339 | 53.39% | 1 |
| **Rhetorical** | 296 | 46.61% | 2 |
| **Metacognitive** | 0 | 0% | 3 |
| **Social affective** | 0 | 0% | 3 |
| Total | **635** | **100%** | |

**Table 5**
Writing strategies used by the teachers.

| Strategy use | 1. Rhetorical | | 2. Metacognitive | | | | | 3. Cognitive | | | | | 4. Social affective | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.1 | 1.2 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 4.1 | 4.2 | 4.3 |
| ST1 | X | X | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | V | V | V | V | V | V | V | V | V | V | V | V | V | – | V |
| ST2 | X | X | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | V | V | V | V | V | V | V | V | V | V | V | V | – | V | V |
| ST3 | X | – | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| ST4 | X | – | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| ST5 | X | X | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | V | – | V | – | V | – | – | V | V | V | – | V | V | V | V |
| ST6 | X | – | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| ST7 | X | – | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| ST8 | X | – | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | V | – | V | V | V | V | V | V | V | V | V | V | V | V | V |
| ST9 | X | – | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| ST10 | X | – | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| ST11 | X | – | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | V | V | V | V | V | V | V | V | V | V | V | V | V | – | V |
| ST12 | X | – | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | V | V | V | V | V | V | V | V | V | V | V | V | – | V | V |
| ST13 | X | – | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI |
| ST14 | X | X | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | V | V | V | V | V | V | V | V | V | V | V | V | – | V | V |
| ST15 | X | – | – | – | – | – | – | – | – | X | X | X | – | – | – |
| | V | V | V | – | V | V | V | V | – | V | V | V | V | – | V |
| ST16 | X | – | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | V | V | V | V | V | V | V | V | V | V | V | V | V | – | V |
| ST17 | X | – | – | – | – | – | – | – | X | X | X | X | – | – | – |
| | V | V | V | V | V | V | V | V | V | V | V | V | – | V | V |

Note: (X): this strategy was identified in the teachers' assignment papers.(V): the teachers reported using this strategy during the interviews. (–): this strategy was not identified in the papers or reported during the interviews.(NI): this teacher was not interviewed.

### 4.2.1. Rhetorical strategies

#### 4.2.1.1. Organizing ideas.
As reported in Section 4.1, all 17 teachers employed rhetorical strategies in their writing process. Overall, each paragraph in each paper began with a topic sentence accompanied by supporting ideas. The orders in which the teachers organized their ideas relatively varied, including parallel, cause and effect, chronological, compare and contrast, argumentative, refuting and inductive. Cohesive devices, adverbials (conjuncts and adjuncts), bullet points and conjunctions were used to connect ideas within and between paragraphs. For instance, ST8 organized ideas chronologically by saying "*In the early 1960s, Silent Way was developed by Gattegno.*" whereas compare and contrast was used by ST2 as in "*Unlike the Direct Method, Communicative Language Teaching places an emphasis on real dialogs in second language acquisition*". Text analysis suggested that without this writing strategy, arguments developed in the papers were less likely to be as strong. This is consistent with the teachers' stated beliefs during the interviews.

#### 4.2.1.2. Making rhetorical statements or questions.
The use of rhetorical statements or questions was evident in only four out of the 17 papers. Typically, the teachers used this strategy at the beginning of a discourse or their major/minor opinions on the presented content as in "*What is the most appropriate teaching method for these target learners?*" by ST1 and "*What do they learn English for?*" by ST5. In the interviews, these four teachers reasoned that their main aim of using this strategy was to emphasize their points or to attract the reader's attention.

### 4.2.2. Metacognitive strategies
Given that metacognitive strategies refer to what learners do during the writing process, none of these was evident in the assignment papers. However, the teachers' responses during the interviews showed that they used metacognitive writing strategies throughout their writing process, including planning ideas before writing, drafting the papers, monitoring and evaluating the writing process and revising their papers.

*4.2.3. Planning*

All the teachers' responses during the interviews showed that they planned their manuscripts before writing through four main activities: thinking about an approach to tackling the task, determining the purpose of the paper, sketching the main ideas and giving supporting details. The teachers believed that planning plays an important part during the writing process since it helps guide them through the writing structure and avoid irrelevant and/or overlapping ideas. Thus, with planning strategy, they can make their papers more informative with more logically convincing arguments. While ST17 believed planning strategy could help avoid "missing key arguments or current criticisms on the topic", ST1 paid more attention to a writing approach by "choosing an appropriate tone".

*4.2.4. Drafting*

As all the teachers explained, drafting strategy enabled them to update their papers prior to submission. They said they relied on Microsoft Word processing or drafted their papers in pencil. Further implied in the teachers' responses was the act of seeking advice and feedback from the lecturer and/or friends, which in turn contributed to the development of their texts. In other words, multiple revisions helped improve the quality of the teachers' papers since the more time they spent on drafting, the more ideas they came up with. For example, ST16 said:

I drafted on my computer. I could integrate my lecturer's and friends' opinions and comments into my paper easily. I drafted several times, including the outline and the whole paper. I saved different drafts with modifying dates in the file name to search for the right file later.

### 4.3. Monitoring and evaluating

Monitoring and evaluating strategies were employed by all the teachers throughout their writing process. As they described, they usually considered the ideas they had several times before joining them together to make sure their papers read well. The teachers' responses about their use of these two strategies show that they were careful about their ideas in writing. They self-regulated their writing and reconsidered both content and language during the writing process. After reading the materials, they considered the relevance of a focused content and made critical comments based on their knowledge gained from other references. For instance, ST2 evaluated the ideas she generated from reading resources. She said:

I usually evaluated if a material was relevant before incorporating it into my paper. When I embedded my comments on a concept, I considered whether my comments are valid.

*4.3.1. Revising and editing*

While some teachers mainly focused on editing language errors such as spelling, grammar and word choice, others took into consideration writing issues (e.g., cohesion, coherence, unity, completeness, and style) and revised their texts accordingly. The language problems they paid most attention to during the stage of revision were mainly word forms, subject-verb agreement, spelling, and word choice. For example, ST17 reported focusing more on writing style, cohesion, coherence, and unity when revising her paper. She explained:

Writing problems, such as the connections and development of ideas, are crucial. When editing the paper, I also cared if all the ideas support the central argument and my paper followed fundamental academic writing principles.

The teachers' responses revealed that they also considered the validity of ideas in revising and editing their papers since the papers were content-based. That means they were concerned about the alignment between the arguments they made in the papers and the contemporary knowledge of the field. The interview data showed that the teachers were well aware of the impact of revising and editing on the quality of their assignment papers.

*4.3.2. Cognitive strategies*

Four specific cognitive strategies, namely relating concepts, elaborating, summarizing and L1-L2 translating, were identified in the assignment papers and were subsequently confirmed by the teachers during their interviews. They also reported applying note-taking as a cognitive strategy prior to writing their papers.

*4.3.2.1. Note-taking.* The teachers reported noting down any ideas they found relevant and/or important to their papers before they started to write. In particular, they took notes on ideas and concepts from reading resources which they thought to be useful for building up arguments in their papers. They also considered "where these ideas or concepts can fit in the paper" as ST8 reported.

*4.3.2.2. Relating concepts.* Upon reading different resources, the teachers synthesized different concepts related to the topic they chose and then contrasted them in the final papers. This strategy was identified in the form of those argumentative comments the teachers added following the presentation of some concepts. Surprisingly, ST15's paper did not include any references apart from her personal comments, which means her paper did not represent a critical evaluation with reference to the current literature. During her interview, ST15 reasoned that she was not aware of the importance of in-text citations and did not read the assignment guidelines carefully. She added that "the curriculum includes some writing courses, but they mainly aim to develop L2 writing proficiency".

*4.3.2.3. Elaborating.* In using elaboration strategy, the teachers employed a wide range of sub-strategies to clarify and provide further information regarding the ideas previously stated in their papers. The sub-strategies most frequently used amongst the teachers were

providing definitions, exemplification and clarification. For instance, ST17 used a relative clause to provide further information about task-based learning as in "*Task-based learning, which was developed to enhance engagement in learning, has been widely applied in language teaching recently*". When interviewed, the teachers cited that elaborating was essential as it helped clarify a text chunk to facilitate comprehension for "readers who might not specialize in the field or make the paper read well" (ST15).

*4.3.2.4. Summarizing.* All assignment papers included a conclusion in the final section to summarize all the main points discussed in the text. To signpost this, the teachers used different cohesive devices such as 'in conclusion', 'in summary', 'all in all', etc. as evident in "*In conclusion, each method has strong points and weak points*" by ST5 and "*All in all, each method has advantages and disadvantages (…). However, all of the eight methods are useful for teaching*" by ST17. However, some papers did not include a concluding sentence at the end of each section in the text. In response to this issue, the teachers said that they lacked knowledge and skills necessary for writing an assignment paper.

*4.3.2.5. Translating from L1 into L2.* L1-L2 translation (Vietnamese into English) was a common strategy employed by the teachers since instances of such a strategy were identified in all the papers. This suggests that the teachers had communication difficulty due in part to syntactic and/or lexical dissimilarities between English and Vietnamese. For example, ST14 used 'automatically' instead of 'mechanically' as in "*On the one hand, the Audiolingual Method can train students to respond automatically in familiar situations*". During their interviews, the teachers reported considering L1-L2 translation as part of the writing process, thus they usually generated ideas in Vietnamese and then translated them into English.

*4.3.3. Social affective strategies*

The use of social affective strategies was not evident in the assignment papers but reported by the teachers during the interviews. While some discussed their papers with peers, others sought advice from their lecturer. Some teachers also tried different ways to reduce anxiety.

*4.3.3.1. Exchanging ideas and getting feedback.* Six of the ten teachers involved in interviews reported getting feedback from their lecturers or exchanging ideas through peer discussions, either by seeing them in person or through email. They believed that the lecturer who they asked for feedback had the expertise and/or experience in the field and that "two heads are better than one" as explained by ST12. For instance, ST2 and ST8 emailed the lecturer to get feedback on their papers before the deadline while ST5 saw different people for discussions when she had problems during the writing process. The teachers held strongly to a belief that getting the lecturer's feedback and exchanging ideas with peers helped improve the quality of their papers in terms of both content and language use. However, the other four teachers decided to regulate their own writing process as part of self-efficacy. ST11 said:

> I proofread and revised my document without getting feedback from anyone. I used a tool to edit my paper. I thought the teacher was very busy. I did not ask my classmates for help because I did not see any difference in our knowledge. We were in the same class, so I knew their competences well.

*4.3.3.2. Reducing anxiety.* The interview data showed that all the ten teacher-participants experienced anxiety while writing their assignment papers. To reduce their anxiety, they reported relying on different strategies including self-regulated problem-solving, taking sporadic breaks to refresh their mind and seeking for available tips from other people. Some teachers also used a social approach such as socializing and getting feedback and advice from others.

Taken together, text analysis and the interview data showed that the teacher-participants employed all 15 writing strategies under the four strategy categories/groups in the taxonomy, namely rhetorical, cognitive, metacognitive, and social affective strategies as presented in Table 1. Text analysis also provided a detailed account of how they used those identified strategies throughout their final assignment papers. The teachers' responses during the interviews further revealed that they simultaneously combined different writing strategies during the writing process such as metacognitive (e.g., planning) and cognitive strategies (e.g., note-taking).

## 5. Discussion and implications

While most, if not all, previous studies used either an ESL writing taxonomy or a taxonomy for language learning strategies in general, the present study based itself on an academic writing taxonomy to examine what and how Vietnamese EFL pre-service teachers used writing strategies to accomplish their final assignment papers. With reference to a research-based taxonomy for academic writing strategies, the study has found that the teachers applied all 15 strategies across the four strategy categories/groups. Analysis of the final papers showed that the teachers mainly used strategies of the rhetorical and cognitive categories/groups. During the interviews, they confirmed their use of these identified strategies and reported other strategies of the four groups which were not evident in their papers.

The findings showed that rhetorical, cognitive, and metacognitive strategies were more commonly used by the teachers than social affective strategies. Such marginalized use of the social affective strategies was attributed to the teachers' beliefs in their capacity and individual learning style preferences. The teachers who did not seek advice and/or feedback from their lecturer or share experience and knowledge with peers were self-efficacious and thus preferred self-regulated learning. This finding lends support to Refs. [9,18], and [39] who argue that more competent learners are usually more independent and so prefer self-regulated learning. However, given

writing as a social process in which learners share their knowledge and experiences with each other [40,41], asking for the lecturer's feedback is insufficient. In our study, although the course of study was academic in nature, seeking peer feedback allowed the teachers to improve the quality of their papers prior to submission. This finding aligns with previous research which shows that peer feedback plays an important part in learners' writing process [41,42]. Thus, it might be useful that the instructor makes their writing classroom a social venue to promote interaction and knowledge sharing amongst learners.

The study has also found that the teachers used different writing strategies for different purposes. To update a particular argument, for example, they provided as many in-text citations as possible. This suggests that the teachers were well aware of the importance of including in-text citations throughout their academic papers. However, they reported lacking training in writing academic assignment papers. Accordingly, some teachers did not follow APA 6th for in-text citations as instructed in the assignment guidelines while others did not include a brief summary for each section in their papers. This finding suggests that Vietnamese ESL undergraduate students did not receive instruction focused on APA citations and were not similar with reference systems in writing their assignments. This finding supports Hartley's [43] argument that L2 learners need instruction on academic writing principles apart from guidelines for citations and references. According to Chien [31] and McNamara et al. [5], effective use of writing strategies contributes substantially to learners' writing quality. Thus, it is necessary for L2 learners to be instructed to use writing strategies effectively [3] and that academic writing be an integral part of tertiary education to provide students with knowledge and skills to enhance their writing competence. According to Fu and Wang [44], developing pre-service teachers' academic literacy is an initial step that ESL/EFL teacher education can take to help teachers function effectively when they get back to their classroom. In this regard, teaching academic writing strategies as part of pre-service teachers' academic literacy development is particularly of paramount importance since it provides teachers with a knowledge base that might help them become effective writing instructors. In addition, given the importance of proper citations and references in academic works, it is necessary to include instruction on proper referencing in teacher training programs [45]. The study findings suggest that it may be useful for writing instructors to encourage students to apply more of the social affective strategies such as seeking teacher and/or peer feedback and reducing anxiety during the writing process to help improve their writing quality [6].

While the current literature shows most, if not all, previous research on writing strategies investigated the strategies L2 learners used in writing, this study provides insights into how pre-service teachers used writing strategies in their academic assignments which were content-based in nature. First, although their English proficiency was at C1 level (CEFR), the participants needed further lexical and syntactic assistance to complete their academic papers. Interestingly, the study has provided evidence of L1-L2 translation strategy in all the teachers' final papers due largely to their lack of L2 syntactic and lexical resources. The use of L1-L2 translation strategy has been found to be commonly used by L2 learners [46], and research has shown translanguaging to be helpful for learners who rely on translation to complete their writing [47,48]. As such, training on translanguaging and pedagogy is necessary since it can enable the writing instructor to make informed pedagogical choices to help learners use L1 more efficiently in L2 learning [49]. Second, some of the teacher-participants preferred seeking lecturer feedback to peer feedback during their writing process. This finding adds evidence to the current literature which shows that lecturer feedback and peer feedback have different roles and effects on writing in that peer feedback is usually more meaning-focused than instructor feedback [50]. Another new finding of the present study is that the teachers combined different writing strategies across the four strategy categories/groups, namely rhetorical, cognitive, metacognitive, and social affective strategies. For instance, when they encountered difficulty in outlining and revising their papers, they sought advice from discussions with their lecturer and/or classmates. From their perspectives, the teachers believed that this combination helped increase the quality of their assignment papers.

One of the main strengths of our study lies with the analysis of the learners' academic writing. This analysis has provided robust evidence on what strategies Vietnamese EFL pre-service teachers actually used and how they used them to write their final assignment papers. This is important given that some teachers might not have been able to recall their use of some strategies until being showed the evidence extracted from their final papers. With the data being triangulated, we believed that our research trustworthiness was achieved.

## 6. Conclusions

The present study provides an exploratory step in understanding Vietnamese EFL pre-service teachers' use of academic writing strategies. As a first attempt to discover pre-service teachers' stated beliefs about their use of writing strategies, this study has important contributions to research on L2 writing strategies and pedagogy. The study involved broad descriptions of the writing strategies the teachers used in their final assignment papers and the beliefs they held about how they used these strategies. Analysis of the teachers' final assignment papers and the interview data showed that the teachers employed all 15 strategies across the four strategy categories/groups in the research-based taxonomy for academic writing strategies, namely rhetorical, cognitive, meta-cognitive, and social affective strategies. In particular, translanguaging (L1-L2 translation) has been shown to be useful for those teachers who needed lexical and syntactic support for their writing accomplishment. Despite the same level of English proficiency, some teachers preferred self-regulation in assignment writing, and others utilized social affective writing strategies more frequently.

A possible limitation of the present study is that it only involved a small number of participants from a particular setting of EFL teacher training in Asia. Thus, future studies can collect bigger data sets with participants from different settings to provide more insights into L2 learners' use of strategies in academic writing. Another limitation is that the definition of writing strategies in our study is rather broad. This follows that one may consider using questions as attention-getters and taking advantage of available resources as a writing skill. For this reason, it is important that L2 learners' assignments be academic in nature so that the strategy repertoire reported will not be applied to less formal genres. It would also be interesting to examine the effects of some strategies in the

research-based taxonomy for academic writing on L2 learners' writing performance in experimental or action research. This research would advance our understandings about the efficacy of particular writing strategies on EFL/EFL learners' writing performance, thus adding more evidence to the existing body of research into the teaching and learning of L2 writing.

In conducting this study, we were motivated by the overall goal of contributing to the current international literature on what strategies L2 students use in academic writing and how they use them in their works. We believe that the study findings are of value for writing instructors and curriculum designers within the Vietnamese EFL sector and beyond.

## Author contribution statement

Hung Phu Bui; Loc Tan Nguyen: Conceived and designed the experiments; Analyzed and interpreted the data; Wrote the paper. Nguyen Thi Viet: Performed the experiments; Contributed reagents, materials, analysis tools or data.

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## Data availability statement

The data that has been used is confidential.

## Declaration of interest's statement

The authors declare no competing interests.

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