

# Metacognition in Language Learning among Non-English-major Tertiary Students<sup>1</sup>

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## Abstract

Metacognition has been shown to play an important role in students' academic success and in their language learning process in particular. Therefore, it should be fostered among language learners. The present study sought to explore metacognition including metacognitive knowledge and metacognitive skills among non-English-major university students in the Vietnamese context. Questionnaires and semi-structured interviews were employed to collect data in a convergent parallel design of mixed methods research. A total of 1,565 undergraduates from seven public universities completed the surveys, 13 of which participated in the interviews. The findings indicated a high level of consistency between two types of data and showed that the students had sound metacognitive knowledge of the self and the learning context. However, they lacked metacognitive knowledge of the language matters and the learning process and were not proficient in metacognitive skills (i.e., planning, monitoring, and evaluating). Moreover, there were significant differences in metacognitive knowledge and metacognitive skills in terms of gender and years of study. Metacognitive skills were significantly different in terms of marks in the previous English course, but not in terms of metacognitive knowledge among students. Accordingly, the study put forward several important implications at macro-, meso-, and micro-levels to contribute to the improvement of metacognition among English as a foreign language learners in the Vietnamese context as well as the other international English as a foreign language context.

## Resumen

Se ha demostrado que la metacognición juega un papel importante en el éxito académico de los estudiantes y en su proceso de aprendizaje de idiomas en particular. Por lo tanto, debe fomentarse entre los estudiantes de idiomas. El presente estudio buscó explorar la metacognición, incluido el conocimiento y las habilidades metacognitivas entre estudiantes universitarios que no hablan inglés en el contexto vietnamita. Se emplearon cuestionarios y entrevistas semiestructuradas para recopilar datos en un diseño paralelo convergente de investigación de métodos mixtos. Un total de 1,565 estudiantes universitarios de siete universidades públicas completaron las encuestas, 13 de los cuales participaron en las entrevistas. Los hallazgos indicaron un alto nivel de consistencia entre dos tipos de datos y mostraron que los estudiantes tenían un sólido conocimiento metacognitivo de sí mismos y del contexto de aprendizaje. Sin embargo, carecían de conocimiento metacognitivo de los asuntos del lenguaje y del proceso de aprendizaje y no dominaban las habilidades metacognitivas (es decir, planificación, seguimiento y evaluación). Además, hubo diferencias significativas en el conocimiento y las habilidades metacognitivas en términos de género y años de estudio. Las habilidades metacognitivas fueron significativamente diferentes en términos de calificaciones en el curso de inglés anterior, pero no en términos de conocimiento metacognitivo entre los estudiantes. En consecuencia, el estudio presentó varias implicaciones importantes a nivel macro, meso y micro para contribuir a la mejora de la metacognición entre los estudiantes de inglés como lengua extranjera en el contexto vietnamita, así como en otros contextos internacionales de inglés como lengua extranjera.

## Introduction

Educators and researchers have increasingly drawn their attention to metacognition which has been acknowledged to be practically and theoretically important in learning in general (e.g., Callan et al., 2016; Coutinho et al., 2005; Flavell, 1979; Hartman, 2001; Lee & Mak, 2018; Tarricone, 2011) and in teaching English as a foreign language (EFL) in particular (Zhang, 2010). It is seen as the most prominent predictor of learning (Wang et al., 1990), and as an essential tool to facilitate lifelong learning and flexibility in the changing society (Haukaš et al., 2018). Also, it is closely related to "critical but healthy reflection and evaluation of thinking that may result in making specific changes in how learning is managed, and in the strategies chosen for this purpose" (Anderson, 2005, p. 99). Students' metacognition is greatly beneficial to many aspects of language learning (LL) such as vocabulary learning, reading, and writing (Carrell, 1989; Chamot, 2005; Haque, 2018; Haukaš et al., 2018; Pawlak, 2018; Wenden, 1991; Zhang, 2010). Metacognition itself contributes to differentiation among students regarding their academic success

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(Anderson, 2005; Raya, 2002). Students without developed metacognitive knowledge and skills learn languages “without direction or opportunity to plan their learning, monitor their progress, and review their accomplishments and future learning directions” (O’Malley & Chamot, 1990, p. 8).

Metacognitive knowledge (MK) and metacognitive skills (MS) should be acknowledged to be complementary components of the umbrella term metacognition because the former embodies information learners gain about their own learning, whereas the latter embraces skills to manage, direct, regulate, and guide their studies (Wenden, 1999). Developing metacognitive expertise plays a crucial role in learning (Rhem, 2013; White & Frederiksen, 2005). It can be indicated that more successful language learners possess a high level of metacognition in LL. As a result, metacognition is considered to be essential for a successful language learning process (Pawlak, 2018). The literature also points out the positive relationships between metacognitive awareness and/or metacognitive strategies and other variables such as English proficiency (e.g., Lai, 2009), listening comprehension (e.g., Li, 2013), and reading comprehension (e.g., Zhang, 2018). According to Le & Chen (2018), students, especially non-English-major ones, really need a good level of English for future employability and higher social status (Le & Chen, 2018). However, there is little research on metacognition in LL, especially regarding non-English major students. Therefore, this study aims to investigate how prevalent MK and MS are among non-English-major students at universities in the context of LL in Vietnam and to provide recommendations for the relevant stakeholders on the micro-, meso-, and macro-levels in the similar EFL contexts.

### Literature Review

The concept of metacognition was coined and defined by Flavell (1979) who claimed that metacognition represented “knowledge and cognition about cognitive phenomena” (p. 906). Accordingly, metacognition refers to knowledge and regulation of cognitive activities (Brown, 1987; Flavell, 1979), so it can be “a conscious process in the sense that the person is consciously aware of the monitoring and control processes” (Efklides, 2008, p. 278). Metacognition encompasses the two domains MK and MS (Schraw & Dennison, 1994; Veenman et al., 2006; Veenman, 2011).

The first domain, MK was theorized as “that segment of your (a child’s, an adult’s) stored world knowledge that has to do with people as cognitive creatures and with their diverse cognitive tasks, goals, actions, and experiences” (Flavell, 1979, p. 906). It is considered to be stable, stable, fallible, and interactive (Brown et al., 1983). MK is classified into three categories: MK about person, MK about task, and MK about strategy. Knowledge about person is delineated as everything a person believes about himself/herself and about others as learners. Thus, this person may be aware of the own strengths or weaknesses in learning and knows his/her trait position in the world. Furthermore, knowledge about task emphasizes knowledge about the information and the resources a person needs to do the task (Cotterall & Murray, 2009). Meanwhile, knowledge about strategy focuses on why and how to use a strategy. These three categories play important roles in learning (Chamot, 2014; Jessner, 2018; Pintrich, 2002; van Velzen, 2015). In LL, MK covers knowledge about the self, the language, the learning context, and the learning process (Cotterall, 2009; Hsu, 2005; Le, 2013; Sinclair, 2000a). For example, a language learner may think that he is not good at listening comprehension (knowledge about the self, and the language), but he knows that one of his close friends has strong English listening skills (knowledge about the learning context), so he makes more effort to listen to English news on the internet everyday and asks his friend for help if necessary (knowledge about the learning process).

The second domain is MS which is manifested in planning, monitoring, and evaluating (Veenman et al, 2006; Wenden, 1998, 2014). These skills are regulated on the basis of MK to improve critical thinking and enhance intellectual performance (Ku & Ho, 2010). The distinction between MK and MS lies in the built-in feedback mechanism (Veenman, 2011), which can be reflected in the cycle of planning, monitoring, and evaluation.

In the Vietnamese context of foreign LL, the previous studies (e.g., Do & Phan, 2021; Nguyen & Phung, 2021; Nguyen & Trinh, 2011) focused mainly on the relationship between metacognitive awareness and/or metacognitive strategies and reading comprehension. The studies indicated that these played important roles in the LL process and affected reading comprehension and language proficiency levels. However, it is apparent that there has been a lack of systematic empirical research on self-reported metacognition in terms of its two components (i.e., MS & MK). The researcher considers that the extent to which MK and MS are adequate among non-English-major students should be explored so that the educational stakeholders will be informed of the students’ level of metacognition before implementing any programs or interventions to enhance their metacognitive expertise. As a result, the present study was conducted to examine three research questions:

1. How do the non-English-major students describe their MK regarding the self, the language matters, the learning context, and the learning process?
2. How can the students' MS (i.e, planning, monitoring, and evaluating) be described?
3. Are there any differences in MK and MS among groups of students in terms of demographic variables?
  - a. male and female students?
  - b. students in different years of study?
  - c. different marks in the previous English course?

## Material and Methods

### Participants

In this study, a total of 1,565 students from seven public universities completed the survey. They had at least one semester of studying English at university so that they were already familiar with the tertiary LL process and their marks in previous English course varied from A to D. Mark A represented an overall course score of 8.5 to 10 out of 10, mark B from 7.0 to 8.4, mark C from 5.5 to 6.9, and mark D from 4.0 to 5.4. The 19-to-22-year-old students studied different areas including information technology (IT - 21.7%), electrical and electronic engineering (EEE - 16.5%), mechanical engineering (ME - 12.2%), law (12%), economics (11.8%), civil engineering (CE - 7.9%), and other fields (17.9%). They were in the different years of study including second year (62%), third year (23.7%), fourth year (11.9%), and final year (2.4%). Among the students, 62.2% were male and 37.8% were female. Thirteen students who also completed the questionnaires participated in the interviews later, 53.8% of these were male and 46.2% were female. All the interviewees were second-year students in different majors: IT (15.38%), EEE (15.38%), CE (15.38%), ME (15.38%), economics (15.38%), law (7.69%), and multi-media (7.69%).

### Instruments

The data were collected using the survey questionnaire entitled *Metacognition in language learning* extracted from the instrument developed and validated by Nguyen & Habók (2021) and the semi-structured interview questions were developed on the basis of the literature review above.

The survey itself was psychometrically sound ( $\alpha = 0.917$ ;  $\chi^2 = 1738.926$ ;  $d.f. = 477$ ;  $\chi^2/d.f. = 3.65 < 5.0$ ;  $p < 0.01$ ;  $SRMR = 0.046 < 0.06$ ;  $RMSEA = 0.039 < 0.05$ ;  $RMS\_theta = 0.113 < 0.12$ ) (see more at Henseler et al., 2015; Tabachnick & Fidell, 2007; Teo, 2013; Teo et al., 2013). Specifically, the first scale (i.e., metacognitive knowledge) included four sub-scales: (1) MK about the self – MKS (three items adapted from Cotterall (1995, 1999) and Hsu (2005)); (2) MK about language matters - MKL (seven items adapted from Hsu (2005) and Dixon (2011)); (3) MK about context – MKC (five items adapted from Hsu (2005)); and (4) MK about learning process – MKP (six items adapted from Cotterall (1999) and Hsu (2005)). The second scale (i.e., metacognitive skills) consisted of three sub-scales: (1) planning – MSP (four items); (2) monitoring – MSM (nine items); and (3) evaluating – MSE (three items). All items in Metacognitive skills were adapted from Yang (2007) and Dang (2012). Then, the questionnaire was translated into Vietnamese on the basis of back-translation method (see more at Behr, 2017) so that the respondents could fully understand the content of each item. The items were designed using five-point Likert-scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) and the students were asked to select the number that best reflected their opinions, practices, and experiences. The questionnaire is demonstrated in Table 1 below.

	Statements
MK Self	I'm responsible for the success of my English learning.
	I understand my own personality.
	I know my strengths and weaknesses in learning English.
MK Language Matters	It's important to have excellent pronunciation in English.
	The most important part of learning English is learning vocabulary.
	It's important to understand every word when you listen to English.
	It's necessary to know about English-speaking cultures to learn English well.
	It's important to understand every word when you read an English text.
MK Context	The most important part of learning English is translating from Vietnamese.
	The most important part of learning a foreign language is learning grammar.
	There are a lot of opportunities to learn English in Vietnam
	The university treats English as a very important subject.

	<p>People in Vietnam who can speak English well have a better social status (e.g., they make more money, they are more educated, etc.).</p> <p>I feel my English teacher is like a friend.</p> <p>My classmates are active English learners.</p>
MK Learning Process	<p>To learn English well, it's important to know one's personality, motivation, personal needs, expectations, learning styles, my strengths, weaknesses, etc., in English.</p> <p>I know how to set my own learning goals.</p> <p>I know how to find my own ways to practice English.</p> <p>I know how to plan my English learning.</p> <p>I know how to measure my progress.</p> <p>I know how to check my work for mistakes.</p>
MS Planning	<p>I set my goals in learning English.</p> <p>Before I do class work or homework, I analyze what's required.</p> <p>I make my schedule, so I'll have enough time to study English.</p> <p>I plan how I learn English.</p>
MS Monitoring	<p>I try to complete things I have decided to do.</p> <p>I notice my mistakes and use that information for my betterment.</p> <p>I deal with things related to English but not necessarily related to English class.</p> <p>I study things which were not from my class.</p> <p>I put great effort into learning English.</p> <p>I check to make sure I understood the lesson.</p> <p>I make good use of materials and resources when studying English.</p> <p>I carry out the learning plans once they have been made.</p> <p>I try to study English regularly even with limited time.</p>
MS Evaluating	<p>After I get my English work back, I always read it again to correct my mistakes.</p> <p>I reflect on what I learn and look for something important.</p> <p>I give myself a reward or treat when I do something well in English.</p>

Table 1: The survey questionnaire used in this study with permission from Nguyen & Habók (2021)

Furthermore, semi-structured interview questions were developed to obtain more data that describe the students' MK and MS in detail and in emerging themes. Due to the nature of semi-structured interviews, additional questions might be raised subject to each interview's condition to provide the study with more insights. The general questions were focused on:

*(Metacognitive knowledge)* As a learner, do you know your own strengths and weaknesses in studying English? What are your strengths and weaknesses? What do you believe about the English language? What do you think about the environment where you study English at your university, around you, in Hanoi and in Vietnam?

*(Metacognitive skills)* Do you often include goals in your learning plans? Why/Why not? Do you often stick to a learning plan? Do you make modifications to your original plans such as changing the deadline of a task or replacing an activity with another? How often do you do that? Do you often check your learning progress such as asking friends to evaluate your pronunciation, comparing your work with others, talking to teachers about the evaluation of the tasks, and taking practice tests that you see?

All the questionnaire items and interview questions were reviewed by seven experts in the field of English language education to assess clarity, readability, face, and content validity.

#### Data collection

After the researchers obtained the approval from the Institutional Review Board at University of Szeged and the participating institutions, they came to English language classes and provided the students with full information about our study including aims, significance, methods, and ethics. Any questions about the study asked by the students were answered immediately and in detail. Then, the paper-and-pencil survey questionnaires were delivered to the respondents and it took them about 20 minutes to fill in and return the questionnaires. Out of 1600 questionnaires sent out, 35 questionnaires were discarded because of either incompleteness or the respondents' wishes, so 1,565 questionnaires were used for data analysis and the response rate was approximately 98%.

The students who completed the questionnaire were also asked to provide email contacts if they wished to participate in the interviews. Out of 164 students who provided us with their email addresses and were requested to participate in the interviews, 59 could not be reached, 25 did not reply, 67 refused to

participate, and only 13 consented to participate. It was a coincidence that the interviewees came from seven participating institutions. They chose the time and venue that were suitable to their own schedule. Each interview, totally in Vietnamese, lasted 15 minutes on average and was audiotaped with the interviewees' consent. Then the data was transcribed into English and the back-translation method was employed (see Liamputtong, 2010).

Data analysis

The quantitative data were analyzed using SPSS version 24.0 on the basis of descriptive statistics such as frequencies, mean, standard deviation, and percentages and inferential statistics from statistical tests such as ANOVA, Mann-Whitney *U* and Kruskal-Wallis tests. These statistics provided us with trends in the participants' responses and differences in MK and MS among students. Normal distribution should be evaluated before the decision can be reached on whether ANOVA or its non-parametric counterpart would be applied (see more at Carver & Nash, 2012; Field, 2018).

Meanwhile, regarding the qualitative data, to guarantee anonymity, the students' identities were changed into codes from S1 to S13. Then, with the support of ATLAS.ti software, the themes and subthemes were identified, grouped, and analyzed to answer the aforementioned two research questions. An example of themes, codes, and subthemes can be found in Table 2 below.

Quotes	Code	Subtheme	Theme
My objective is to attain 6.5 IELTS and then I plan my learning such as how much time I need, who can help me, and where I can get help.	objective planning	Metacognitive skills	Metacognition
When my goals and plans have been set, I try to stick to them. If there is a sudden change, I will change them but I will do my best to be with them to complete them...	goal setting plan setting effort adjustment		

Table 2: An example of interview codes, subthemes, and themes

Afterwards, two types of data were combined, compared, and contrasted in the principles of a mixed methods research with convergent parallel design in which quantitative and qualitative data were collected simultaneously, and analyzed separately before being mixed (see Creswell & Plano Clark, 2017). The results would describe the current situation regarding metacognitive knowledge and metacognitive skills among the non-English-major students in Vietnamese higher education institutions.

Findings

*Research question 1: Metacognitive knowledge*

The data analysis showed that many students in our study did not have much MK. The summary of the descriptive statistics on MK is presented in Table 3.

	Statements	M	Sd	SD & D (%)	NE (%)	A & SA (%)
MK Self	I'm responsible for the success of my English learning.	4.11	0.73	2.1	13.5	84.4
	I understand my own personality.	3.86	0.91	7.4	21.1	71.5
	I know my strengths and weaknesses in learning English.	3.70	0.86	8.7	26.7	64.6
MK Language matters	It's important to have excellent pronunciation in English.	4.31	0.78	2.6	9.9	87.5
	The most important part of learning English is learning vocabulary.	3.73	0.98	10.4	27.3	62.3
	It's important to understand every word when you listen to English.	3.70	0.96	11.6	25.6	62.8
	It's necessary to know about English-speaking cultures to learn English well.	3.67	0.93	9.5	30.9	59.6
	It's important to understand every word when you read an English text.	3.41	1.07	22.5	26.6	50.9
	The most important part of learning English is translating from Vietnamese.	3.07	0.99	28.3	39.9	31.8
	The most important part of learning a foreign language is learning grammar.	2.91	1.0	35.6	36.2	28.2
MK Context	There are a lot of opportunities to learn English in Vietnam.	3.93	0.80	4.9	19.2	76.9
	The university treats English as a very important subject.	3.86	0.89	5.9	26.3	67.8



	People in Vietnam who can speak English well have a better social status (e.g., they make more money, they are more educated, etc.).	3.81	0.96	9.4	22.1	68.5
	I feel my English teacher is like a friend.	3.48	0.92	11.7	37.6	50.7
	My classmates are active English learners.	3.45	0.89	12.1	37.4	50.5
	To learn English well, it's important to know one's personality, motivation, personal needs, expectations, learning styles, my strengths, weaknesses, etc., in English.	4.22	0.79	3.0	11.5	85.5
MK learning process	I know how to set my own learning goals.	3.44	0.81	10.7	41.4	47.9
	I know how to find my own ways to practice English.	3.36	0.88	15.0	40.1	44.9
	I know how to plan my English learning.	3.30	0.85	15.8	43.2	41.0
	I know how to measure my progress.	3.26	0.85	15.2	47.5	37.3
	I know how to check my work for mistakes.	3.22	0.87	18.9	43.6	37.5

Note: M = Mean, Sd = Standard deviation, SD = strongly agree, D = disagree, NE = neutral, A = agree, SA = strongly agree

Table 3: Non-English-major students' metacognitive knowledge in this study

With regard to MK about self, a large proportion of students surveyed believed that they understood their own personalities (71.5%), took responsibility for the success or failure of their language learning (84.3%), and were aware of their strengths and weaknesses in learning English (64.6%). Nevertheless, there existed students who were uncertain of (21.4%) or did not understand their personality (7.4%). A number of respondents remained neutral (26.7%) and did not think that they knew their strengths and weaknesses in learning English (8.7%).

Turning to MK about language matters, according to more than half of the students surveyed, successful English language learning requires a mastery of pronunciation (87.5% for A & SA), and vocabulary (62.3%). Meanwhile, they seemed to undervalue grammar (28.3% for A & SA), and translation from Vietnamese (i.e., mother tongue) (31.7%). Better language competence was also attributed to knowledge of English-speaking cultures (59.6%) and to comprehension of every word in a text when reading (50.8%) or in a speech when listening (62.8%). However, among the students, quite a few of them stayed neutral or had no ideas about the aforementioned issues. For example, students felt uncertain of the importance of translation from Vietnamese (39.9%), grammar (36.2%), and understanding of English-speaking countries (30.9%).

A high percentage of students were aware of the learning context around them. The students in the survey (76%) concurred that currently, there are a variety of English learning opportunities in Vietnam. Besides, students believed that people in Vietnam who are proficient in English will have a better social status (e.g., they make more money, they are more educated, etc.) (68.5% for A & SA). Quite a few students surveyed (67.7%) agreed that their universities treat English as an important subject, even though some remained uncertain of (more than 25%) or disagreed with this (5.9%). Students felt their teachers were friends (50.8%) and had different thoughts about their classmates being active English learners (50.5%, 37.4%, and 12.1% for A & SA, NE, and D & SD respectively).

Regarding MK about the learning process, the majority of students (85.5%) acknowledged the significance of knowing their personality, motivation, personal needs, expectations, learning styles for betterment of English language learning. However, students lacked confidence in some MK of learning processes with regard to how to set learning goals (47.9% for A & SA), how to find own ways of practicing English (44.9%), how to plan learning English (41.1%), how to check work for mistakes (37.4%), and how to measure progress (37.3%).

The interview data indicated four important themes corresponding with different types of MK. In terms of MK about self, all the students interviewed ( $N = 13$ ) appeared to well understand themselves. This point manifested itself in the awareness of their characteristics, strong points, weak points, and the responsibility for language learning, and the belief in their abilities. Specifically, one student reflected, "I am sure that I understand my own personalities. I know clearly about my strong as well as weak points in learning English....It is myself, not anyone else who can be responsible for successful language learning or not" (S10). Meanwhile, S5 affirmed that s/he could overcome his/her weaknesses if s/he could make more efforts and spend more time studying at home. Another one detailed,

*My strong point focuses on my ability to understand and translate all the tasks in class, but I am not good at pronunciation and spelling because I sometimes make mistakes in one or two letters in a long word. But I believe that I can overcome that weakness. Evidently, I was very bad at English at high school. My first English course at university was B, but due to my effort, I got A for the second course. (S1)*

The interviewees shared several points regarding their strong and weak points. Those points emphasized all the language elements (i.e., grammar, pronunciation, and vocabulary) and two language skills (i.e., listening and speaking). Their strengths typified grammar and vocabulary, whereas their drawbacks lay in pronunciation, speaking, and listening skills.

Turning to MK about language matters, all interviewed participants ( $N = 13$ ) believed that learning English is learning four language skills and cultural features with the support of pronunciation, vocabulary, and grammar. They focused more on listening, speaking, pronunciation, and vocabulary. One student commented, "Learning English, in my opinion, refers to learning foreign cultures, listening, and speaking. Listening and speaking are the most important" (S3). Another one said, "I learn four skills which are listening, speaking, reading, and writing, and speaking is the most critical. Vocabulary, pronunciation, and grammar are also necessary" (S9). Meanwhile, S11 postulated that learning English entailed learning the four skills and the three language components, and learning vocabulary is the most vital as a foundation to learn other things. Notably, when asked about differences between Vietnamese and English, the interviewed participants indicated an unconsciousness, as illuminated in the quotes: "Vietnamese and English are different but it is difficult for me to express my points here..." (S11), or "...I do not see any differences between Vietnamese and English. Vietnamese is my mother tongue, so it is easier. We learn English as beginners, not innately born..." (S5).

In terms of MK about context, the interviews concurred that currently, there were a variety of English learning opportunities in Vietnam, as specified in the following interview quote:

*...there are a lot of centers teaching English in Vietnam. If you do not want to spend money on English centers, you can go around Sword lake, West lake, or pedestrian zones, meet foreigners, and talk to them to practice English. You may also learn English on the internet... (S4)*

However, some interviewees admitted that many English centers merely provided exam-oriented courses (e.g., S10). All the respondents interviewed agreed that their university regarded English as an important subject; however, the only reason they provided was that they had to learn English at university and it was compulsory. To illustrate, S13 shared that English was considered important at his/her university because it was one of the subjects s/he had to learn. Having the same viewpoint, S5 said that English played an important role at his/her university because they asked all students to learn English.

Regarding MK about learning processes, the interviewed participants recounted what they know about learning processes. Their stories were mainly associated with the order of learning what and how of the language ( $n = 11$ ). They presented which element of the language or which skill should be acquired before the others. To exemplify, one interviewee (S2) shared that, "I think first we learn listening, then writing, next reading, and speaking." Another (S9) described the process: "...In my opinion, we start with listening. Next, we learn how to speak, then read, and write. The process is like a child learns a language." Only one student (S7) mentioned two stages of the learning process including "...having a plan, monitoring that plan, doing the best for it, and completing it perfectly" without referring to evaluation.

#### *Research question 2: Metacognitive skills*

Many participants in this study did not possess considerable MS (i.e., planning, monitoring, and evaluating), even though many others felt uncertain of those skills and the others demonstrated a slight degree of the skills (see Table 4).

In terms of planning, students indicated that they planned how they learned English (44.9%), set their goals in learning English (61.9%), made their schedule to have enough time to learn English (52.4%), and analyzed task requirements before work or study (55.5%). Quite a large percentage of respondents remained unsure about whether they had the abovementioned planning skills or not. Many students did not know if they planned their English learning (41.8%) or did not plan how they learned English (13.4%).

Students used monitoring skills by trying to complete previously decided things (66.8%), and noticing their mistakes for their betterment (65%). However, they did not appear to be confident of fulfilling their learning plans once those plans had been made (36%) and in endeavouring to study English frequently despite time limitations. The percentages of the respondents who chose *strongly disagree*, *disagree*, and *neutral* among these items were quite high.

Regarding MS of evaluating, students reported that they always read their English work again to correct mistakes after getting it back (56.3%), reflected on what they had learned and looked for something important (48%), and gave themselves a reward when they did something well in English (32.1%). A large number of students surveyed exhibited an uncertainty with the aforementioned activities related to

evaluating (33%, 41.1%, and 43.2%, respectively) or they did not undertake those activities (10.8%, 10.9%, and 24.6% respectively).

	Statements	M	Sd	SD & D (%)	NE (%)	A & SA (%)
MS Planning	I set my goals in learning English.	3.65	0.80	7.5	30.6	61.9
	Before I do class work or homework, I analyze what's required.	3.53	0.81	9.5	35.0	55.5
	I make my schedule, so I'll have enough time to study English.	3.50	0.80	9.4	38.2	52.4
	I plan how I learn English.	3.37	0.85	13.3	41.8	44.9
MS Monitoring	I try to complete things I have decided to do.	3.73	0.73	4.8	28.4	66.8
	I notice my mistakes and use that information for my betterment.	3.66	0.82	8.5	26.5	65.0
	I deal with things related to English but not necessarily related to English class.	3.64	0.86	9.1	30.3	60.6
	I put great effort into learning English.	3.44	0.89	12.8	38.5	48.7
	I check to make sure I understood the lesson.	3.40	0.82	12.6	39.3	48.1
	I make good use of materials and resources when studying English.	3.38	0.91	15.9	39.1	45
	I carry out the learning plans once they have been made.	3.25	0.83	14.9	49.1	36.0
	I try to study English regularly even with limited time.	3.16	0.87	20.2	47.0	32.8
MS Evaluating	After I get my English work back, I always read it again to correct my mistakes.	3.56	0.88	10.7	33.0	56.3
	I reflect on what I learn and look for something important.	3.43	0.83	10.9	41.1	48.0
	I give myself a reward or treat when I do something well in English.	3.10	0.96	24.6	43.2	31.2

Table 4: Students' metacognitive skills

Additionally, the interviews revealed three main themes concerning three MS of planning, monitoring, and evaluating. When it comes to MS of planning, 13 students in the interviews endorsed the importance of planning in their learning. However, around two thirds of them ( $n = 9$ ) showed that they did not practice MS in planning, whereas the others sometimes planned their learning, but their planning was exam-oriented and they defined goals without planning. One participant said:

*For example, my objective is to attain 6.5 IELTS and then I plan my learning such as how much time I need, who can help me, and where I can get help. I think that planning is important especially for big goals. (S13)*

Another one admitted that "...I rarely plan my study. I do not get used to it..." (S6). One interviewee provided some more details: "I do not often make plans for my study.....I identify some objectives, but not often either and I usually fail to achieve them..." (S9).

In terms of MS of monitoring, generally, there was uncertainty and shyness among the interviewees. None of them said how important monitoring skills were, as can be seen in the following excerpt:

*...Well, it is a difficult question. I do not know how to talk about it. I just say what I understand...I usually have plans, define objectives in learning English, and do my best to accomplish them. I never give up on them. I aspire to have victory over myself and do better than what I expected... (S2)*

This echoed most interviewed students when they shared about monitoring. What they said reflected their limited understanding and practices of monitoring. They neither felt confident when asked about monitoring nor gave details about this MS. They principally reported on whether they made efforts to keep pace with original plans and objectives despite unexpected changes, as illustrated in the following quotes: "...I keep to my plan and I also make changes in deadlines and activities because there are things happening which do not go according to plan..." (S6) or,

*"...Whenever I have spare time, I usually set learning plans and goals for all the subjects and English is not an exception. Then when I have such goals and plans, sometimes there are unexpected issues in my school and daily life. However, I keep in mind that I need to stick to the original plans and I will compensate the time for the change made". (S9)*

Asked about the MS of evaluating, all the students highly appreciated the role of evaluation in their learning process because evaluation helped them to reflect on what had been done so far and to identify the next steps:

*...I found these activities [evaluating] useful for my learning English. They supported me in detecting mistakes, errors, or what is missing in my learning. I self-corrected these mistakes or deficiencies to learn something and to become a better language learner.... (S1)*



Some students ( $n = 5$ ) revealed in the interviews that they evaluated the efficacy of their work by themselves or with the support of teachers and/or peers. The students asked their teacher to check their work or had their friend compare results to investigate their progress. Their teacher or friend could help them to correct their pronunciation and sometimes they self-recorded their voice to check pronunciation. They also “download[ed] and [did] tests or exercises on the Internet...then, check[ed] answers” (S11) by themselves to observe progress. Meanwhile, the others ( $n = 8$ ) did not regularly exercise this skill because they had neither been told about it (e.g., S3) or had enough ideas about it (e.g., S8). In fact, their language learning was mainly about learning some vocabulary, grammatical patterns, and sometimes practising some skills tasks including listening, reading, speaking, and writing (e.g., S2).

To sum up, the interviews allowed insight into participants’ views regarding metacognition. The interview data and the survey data were consistent to discover how the students’ MK and MS were represented in their language learning processes. Generally, they had MK about the self and the learning context, but they appeared to lack MS in planning, monitoring, and evaluating as well as MK about language matters and learning process.

*Research question 3: Inferential statistics*

To examine the differences in MK and MS among different groups of respondents with regard to gender, years of study, and marks in the previous English course (i.e, A, B, C, and D), the researchers employed inferential statistics. The initial statistical tests indicated that the data were not normally distributed (see Table 5 below). As a result, a non-parametric Mann–Whitney *U* test was used to compare MK and MS between male and female students. The non-parametric Kruskal–Wallis test was utilized to compare the responses among participants with different English marks and in their different years of training.

			Standard error SE	
Metacognitive skills	Skewness	-.194	.062	
	Kurtosis	.553	.124	
	Asymp. Sig. (2-tailed)			.000
Metacognitive knowledge	Skewness	-.453	.062	
	Kurtosis	1.060	.124	
	Asymp. Sig. (2-tailed)			.000

Table 5: Tests for normality

A Mann–Whitney *U* test was conducted to determine whether there was a difference in the MS and MK of males and females. Results of that analysis indicated that there was a difference in both MS ( $U=260484$ ;  $z=-3.2$ ;  $p<.01$ ;  $M_{\text{male}}=811$ ;  $M_{\text{female}}=736$ ) and MK ( $U=238889$ ;  $z=-5.7$ ;  $p<.01$ ;  $M_{\text{male}}=833$ ;  $M_{\text{female}}=700$ ) with male students scoring higher in both constituents of metacognition than their female counterparts (see Tables 6 & 7).

	Student's gender	N	Mean Rank	Sum of Ranks
Metacognitive knowledge	Male	974	833.23	811,570
	Female	591	700.21	413,824
Metacognitive skills	Male	974	811.06	789,975
	Female	591	736.75	435,420

Table 6: Ranks-Mann-Whitney *U* test

	Metacognitive knowledge	Metacognitive skills
Mann-Whitney <i>U</i>	238,889	260,484
Wilcoxon <i>W</i>	413,824	435,420
<i>Z</i>	-5.7	-3.156
Asymp. Sig. (2-tailed)	.000	.002

a. Grouping Variable: Student’s gender

Table 7. Mann–Whitney *U* test

A Kruskal–Wallis *H* test was carried out to explore the MK and MS scores as students came from years of study (i.e., year 2 to year 5). There was a statistically significant difference between the MK scores and

years of training [ $\chi^2(3, N=1565) = 53, p < .01$ ] with a mean rank MK score of 899 for the second year ( $Mdn=4.0$ ), 841 for the third year ( $Mdn=3.67$ ), 717 for the fourth year ( $Mdn=3.52$ ), and 653 for the final year ( $Mdn=3.48$ ). The MS scores also differed in terms of years of study [ $\chi^2(3, N=1565)=15.28, p < .01$ ] with a mean rank MS score of 814 for the second year ( $Mdn=3.6$ ), 773 for the third year ( $Mdn=3.51$ ), 715 for the fourth year ( $Mdn=3.47$ ), and 677 for the final year ( $Mdn=3.4$ ) (see Tables 8 & 9). In general, the senior students scored lower in both MK and MS than the junior ones did.

	Student's years of study	N	Mean Rank
Metacognitive knowledge	Second year	971	898.73
	Third year	371	840.88
	Fourth year	186	717.18
	Final	37	652.97
Metacognitive skills	Second year	971	814.72
	Third year	371	773.15
	Fourth year	186	715.81
	Final	37	677.05

Table 8: Ranks-Kruskal-Wallis test, Years of training

	Metacognitive knowledge	Metacognitive skills
Chi-Square	53.10	15.283
Df	3	3
Asymp. Sig.	.000	.002

Table 9: Kruskal-Wallis test statistics, Years of training

A Kruskal-Wallis test, a nonparametric alternative to a one-way ANOVA, was used to compare four-group means according to marks in a previous English course. The significant difference was regarding MS,  $\chi^2(3, N=1565)=20.62, p < .01$ , with a mean score of 763 for mark A ( $n=233; Mdn=3.53$ ), 740 for mark B ( $n=469; Mdn=3.47$ ), 687 for mark C ( $n=421; Mdn=3.4$ ), and 623 for mark D ( $n=285; Mdn=3.33$ ). However, there was not a significant difference in MK based on the marks,  $\chi^2(3, N=1565)=1.64, p = .65$  (see Tables 10 & 11). Generally, the students with a higher mark in the previous English course scored better in MS than those with a lower result, whereas the marks did not influence the students' MK.

	Student's grade-last English course	N	Mean Rank
Metacognitive knowledge	D	285	697.27
	C	421	720.12
	B	469	707.43
	A	233	679.23
Metacognitive skills	D	285	623.23
	C	421	687.35
	B	469	740.14
	A	233	763.15

Table 10: Ranks-Kruskal-Wallis test, Previous grade

	Metacognitive knowledge	Metacognitive skills
Chi-Square	1.638	20.620
Df	3	3
Asymp. Sig.	.651	.000

Table 11: Kruskal-Wallis test statistics, Previous grade

Discussion

This study has provided insights into two general constituents of metacognition in English language learning among non-English-major students (i.e., metacognitive knowledge and metacognitive skills). The former manifests itself in MK about self, language matters, learning context, and learning process, whereas the

latter refers to three important skills, namely planning, monitoring, and evaluating. Both MK and MS perform a crucial role in the achievement of language learners. After being analyzed, compared, and contrasted, both quantitative and qualitative data showed a consistency to a large extent.

It was found that the students in this study had good MK about self and about the learning context. It is clear that MK about self is beneficial for learners, as they “can adjust their own cognition and thinking to be more adaptive to diverse tasks and, thus, facilitate learning” (Pintrich, 2002, p. 222). Arguably, it becomes obvious that students have a clear viewpoint of self because it is no one but themselves who can well understand their strengths and weaknesses. Also, MK about the physical, political, social, and cultural learning context is vital (Hsu, 2005; Le, 2013; Sinclair, 2000a, 2000b) in the current context of globalization which necessitates high English language competence. As previously stated, the majority of the participants were well aware of their self and the learning context, whereas there were still a number of students who had insufficient knowledge of these two aspects.

The students in the current study, however, appeared to lack MK about language issues and about learning processes. Specifically, MK about language matters refers to language awareness which can be delineated as reflectivity in, sensitivity to, and ability to explore matters of language/language learning (Dufva, 1994). This type of MK was considered to develop students’ thinking skills, to help them gain insights into and link aspects of language learning (van den Broek et al., 2019), and to increase motivation, as a result of task-based activities to promote student involvement by enhancing the inductive learning of language rules (Carter, 2003). Hence, students should be encouraged to compare and contrast languages (e.g., Vietnamese and English) and given tasks that enable them to analyze the language (Dufva, 1994). MK about learning process, as we would argue, embodies “how best to approach language learning” (Wenden, 2014, p. 46) with “strategies which are likely to be effective in achieving certain goals and undertaking certain tasks” (Cotterall, 2009, p. 89). In other words, students are advised to gain more and more MK about the learning process for increased effectiveness of language learning. Nevertheless, the students’ MK about language matters and MK about learning process were not comprehensive enough, as remarked by disagreements with and uncertainty about aspects of these MKs.

There is a recognition that metacognitively skilled students will achieve better academic result than those without MS (Öz, 2005). MS exert a positive impact on the development of critical thinking (Magno, 2010). Notably, MS help students to transfer what was learned from one context to the next, or from a previous task to a new task (Metacognition, 2019). However, this study found that non-English-major students lacked MS of planning, monitoring, and evaluating. This skills shortage can be attributed to the lack of MK and the influence of MK on MS (Flavell, 1979; Jacobs & Paris, 1987; Veenman et al., 2006; Wenden, 1998; 2014). Quite a few students were uncertain of, had inadequate understandings about, and even did not practice these skills during their learning process. They, despite valuing MS in planning, did not get familiar with it. It has yet to become one part of their learning, whereas goal setting in planning is one of the factors in language learning that determine the extent to which students persist in their efforts to become more proficient (Dörnyei, 2001). Although metacognitive monitoring has a decisive influence on learning (Loizidou & Koutselini, 2007), the students were not skilled enough in it. They shared too general information on how they monitor learning, their responses showed remarkable uncertainty, and a number of students did not exercise monitoring. Evaluating is defined as “appraising the products and efficiency of one’s learning, such as re-evaluating one’s goals and conclusions” (Vrugt & Oort, 2008, p. 126). Good language learners need to be able to evaluate the effectiveness of their learning more than poor learners (Anderson, 2005). The students acknowledged the role of evaluating; however, apparently, evaluating was not a frequently practiced and familiar skill among them.

The roles of MK and MS are widely recognized. Nonetheless, the non-English-major students lack some aspects of MK and MS. We strongly emphasise the deficiency of MS in planning, monitoring, and evaluating as well as that of MK about language matters, and learning process. This was similar to the results of the study by Inayati et al. (2021) that their participants showed low frequencies in goal setting, planning, and evaluation. The shortage in metacognition among the students in this study can be explicated by the following reasons. Firstly, students did not have chances to approach the notions of metacognition during their previous educational experiences. English language learning at high schools is described by limited time, inadequate language learning conditions and exam-oriented systems (Pham & White, 2018). Students are under pressure of heavy workloads from many subjects and a large number of examinations. Upon entering university, time allocation for English language courses is quite modest and those students have to deal with a totally different environment and workloads from general subjects. Secondly, teachers of

English struggle to cover all the contents required and to develop students' communicative competence, so they, particularly those who are in charge of large-sized classes and many classes simultaneously, cope with considerable pressure (Trinh & Mai, 2018). Thirdly, pre-service and in-service teacher training programs are proven not to be adequate (Le, 2020a; 2020b; Mai & Pham, 2018), so teachers may not familiarize themselves with training metacognitive practices in order to help their students with these useful procedures. It is assumed that if teachers lacked preparedness in metacognition, there is not much likelihood that they can introduce it to their students.

The statistical tests pointed out significant differences in MK and MS according to three demographic variables (i.e., gender, years of training, and marks in the English course). To be more specific, firstly, male students scored higher in both MS and MK than their female counterparts. One possible reason for this finding is that owing to the deep influence of Confucianism, females are described as more dependent than males and they have more limited choices and resources (Vu & Pham, 2021); as a result, despite the progress in gender equality, males appeared to score higher in some aspects of learning (e.g., metacognition). However, this finding is comparable within this study only. More studies are called for to confirm the finding and reach any generalizations. Secondly, like the finding in the section of motivation and desire, the later the years of study, the lower the mean rates of MK and MS. This can be understood based on the fact that English has not been the senior students' concern anymore because most of them have taken all the English courses at universities and apparently they are dealing with other subjects, courses, and programs upon graduation. Therefore, they do not tend to accumulate MK and practice MS and their existing MK and MS seem to fade away. It is advisable that educational stakeholders and investors design and provide metacognition-supporting programs or online platforms to maintain and enhance the level of metacognition among the EFL learners whenever those students need to foster metacognition for their language learning improvement. Thirdly, the students with higher marks in the previous English course had higher scores in MK and MS. This entails that the better MK and MS, the better the marks. As we would argue, metacognition has been recognized as a key part in the language teaching and learning success and good language learners are those who possess a certain level of metacognition (Anderson, 2005; Pawlak, 2018), so it becomes convincing that the students who had more remarkable MK and MS did better and got higher marks.

There are two limitations in this study. Firstly, the number of interviewees was small when compared to the large number of participating students in the quantitative strand although it was due to the low response rate from the participants. Secondly, other variables such as academic achievement, language proficiency, attitudes towards English and other affective factors were not taken into consideration regarding the relationship between them and metacognition to investigate how metacognition can be improved on the basis of those variables. Therefore, further studies can consider the limitations and develop more directions.

#### Pedagogical implications

Another purpose of this study is to offer some recommendations regarding metacognition for the stakeholders in English tertiary education not only in the Vietnamese context but also in the broader international contexts. It is hoped that the implications are beneficial for the stakeholders in other countries having the shared EFL features with those in Vietnam.

At macro level, policy makers need to include the hotly discussed topics in ELT such as metacognition or autonomy into teacher training programs on the basis of an eclectic approach, so that pre-service teachers may acquire some basics regarding these fields and utilize them in their future teaching. Also, in-service teachers need to have more opportunities for professional development (PD) because "they have to work in isolation with minimum support for PD from the education system" (Le, 2020b, p. 74). Experts in these topics can be invited to train the teachers via lectures, seminars, practical workshops, or webinars. Besides, "everyone in the learning community needs to speak and do metacognition" (White & Frederiksen, 2005, p. 211), so along with other contents of language elements and language skills, the concept of metacognition should be introduced in the syllabi of English courses subject to informed pedagogical methods and socio-cultural factors. Then, the experts in metacognition will give advice on how to integrate greater metacognition into these syllabi.

At the meso level, universities should technically and financially support teachers' participation in PD programs regarding metacognitive expertise. Also, higher education institutions can develop research initiatives to investigate metacognition to contribute to Vietnamese perspectives to the extensive literature and to enhance metacognitive practices in their contexts. The authorities are encouraged to better learning conditions and to consider reducing the number of students in each class so that teachers can manage



classes and promote metacognitive aspects. Additionally, the English course syllabi, especially assessments, should be flexibly revised to provide more space for teachers to harmonize metacognition and development of language skills.

At the micro level, teachers need to be aware of their roles in developing students' metacognition (Anderson, 2005; Dufva, 1994; Lee & Mak, 2018; Öz, 2005). Teachers should self-equip and be equipped with proper understandings of metacognition in order that they may apply these theoretical backgrounds into real teaching. One of the classroom practices is learner metacognitive training (see more at Hsu, 2005; Huang, 2005, 2006; Le, 2013) because we argue that language education signifies coaching and training more than teaching and learning. Teachers should help students to understand and control the language learning process rather than only focus on language issues learning knowledge for exams. Training and practising MS and MK are considered crucial parts of instructional time (Anderson, 2012; Dhieb-Henia, 2003; Wenden, 1998). These trainings should be conducted on a regular basis and on each learning activity. Teachers can clarify goals, help students plan strategies, try reciprocal teaching in reading, and employ visual materials to facilitate MS (Metacognition, 2019). Several pedagogical choices are suggested to enhance metacognition, including language learning surveys, learning journals, self-evaluated video, the groupwork evaluation form, think aloud protocols, self-assessments (Anderson, 2005), and feedback for reflection (Coutinho et al., 2005). The trainings and the tool utilizations need frequent revisions and reflections to improve the quality of metacognitive expertise.

### Conclusion

This study investigated metacognition (i.e., metacognitive knowledge and metacognitive skills) of a Vietnamese sample of 1,565 non-English-major students at seven public institutions, 13 of whom were interviewed later. The data were collected using questionnaires and semi-structured interviews. Accordingly, metacognition plays a critical role in the LL process, but among the non-English-major students, it is yet to fully develop and needs much more advancement. The students had MK about the self and the learning context, but they did not have or felt uncertain of MK about language matters and the learning process. The skills of planning, monitoring, and evaluating were insufficiently remarkable and the students did not get familiar with these skills. The previous schooling, the teachers, and some other institutional factors can explain the students' metacognitive aspects. With the considerations above in mind, the recommendations to promote metacognition among students were provided on the macro-, meso-, and micro-levels. Further studies on metacognitive practices and metacognitive interventions are highly encouraged to present a comprehensive overview of metacognition in language learning.

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