English Medium Instruction in Taiwan: From the Perspective of International Students as Thesis Writer

Dani Puspitasari
Graduate Institute of Digital Learning and Education,
National Taiwan University of Science and Technology, Taipei, Taiwan
Email: puspitadani@gmail.com

Cathy Weng
Graduate Institute of Digital Learning and Education,
National Taiwan University of Science and Technology, Taipei, Taiwan
Email: cathyhaien@hotmail.com

Yu-Fen Hsieh
Applied Foreign Language department,
National Taiwan University of Science and Technology, Taipei, Taiwan
Email: yfhsieh@mail.ntust.edu.tw

Abstract
The establishment of English medium instruction (EMI) brings opportunities for non-native English speaking institutions to compete with Anglophone universities and attract international students to join their program. More policies were designed to improve the academic environment quality and attract international students. As a thesis becomes the graduation requirement, there is a weight of difficulties and high expectations to produce good writing. This study explores thesis writing problems and strategies perceived by L2 writers as international graduate students in Taiwanese EMI classrooms in Taiwan. The participants were 152 international students who pursued a graduate degree in Taiwanese tertiary education; their major was categorized into engineering and social studies. The data was collected through questionnaires and in-depth interviews. The quantitative result indicates both students across the major were experiencing the same challenges in thesis writing and utilizing similar strategies to overcome the problem. Later, the qualitative result provides explanations to what really happen among these graduate students while writing thesis. The result serve reference and suggestion for academics in assisting their supervisee. It also suggests to the university to assist these L2 writers by providing writing correction services to the betterment of the EMI programs in their institution.

Keywords: Thesis writing, L2 writer, International students, EMI courses.

Introduction

English language teaching and learning is growing significantly in the "expanding circle" (Kachru, 1985), and Asia is becoming the largest market area for education (Hengsadeekul, et al., 2014). The use of English in teaching a subject at the graduate and post-graduate level also becomes a parameter of internationalization in education context (Basibek,

Mustafa, Cengiz, Bur, Dilek, & Kara, 2014). English is used not only for a subject course, but now it is used as a tool for learning knowledge. The current trend of EMI (English medium instruction) arises in Southeast Asian universities as well as European higher education (Barrios, Lopez-Gutierrez & Lechuga, 2016; Kaufhold, 2015; Kim, Son, & Sohn, 2009; Keefe & Shi, 2017; Tatzl, 2011). The establishment of EMI generates the number of non-native English speakers greater than the number of native English speakers (Kaur, 2014).

This trend alters chances for international students to enroll at a university in a country which uses different official language (Wilkinson, 2013; Agai-Lochi, 2015), including Taiwan where English is deemed as a foreign language (Chen & Tsai, 2012), the Ministry of Education (MOE) of Taiwan promoted EMI courses at higher education institution programs to elevate local student's English ability (Huang, 2015) and attract international students (Ishikura, 2015). High number of international students came to Taiwan pursued degree in the Taiwanese colleges. According to the Ministry of education website, about 65.000 international students were entering Taiwanese higher education in 2018. Approximately 40 Taiwan tertiary institutions were offering more than 171 English programs in 2018 (tweduvn.org, 2018). The establishment of an English medium classroom offers non-native English-speaking institution the opportunity to compete with English speaking universities and encourage foreign students to join their program.

One of the requirements to graduate from a graduate program in EMI is the thesis (Hou, Morse, Chiang, & Chen, 2017). This study defines a thesis as individual research done by a graduate student with supervisory help from a thesis advisor. This compulsory task demonstrates a student's performance and becomes a measurement to graduate. This task requires not only hand on skill to do a research project in a specific field, but also the academic writing skill to report the findings. The thesis writing became a daunting task for graduate students because of the weight of challenges and high expectations to produce good paper (Dong, 1998). Educators also recognised being able to effectively and adequately incorporate source material into composition writing is a paramount and necessary prerequisite (Cumming, Lai, & Cho, 2016; Kuzborka, 2017). It is considered a critical and important intellectual skill and it takes a long time for students to show significant improvement in this skill (Wu and Zhang, 2017). In general, writing a thesis is a complex task for graduate student, and in particular the execution of this writing assignment becomes a more significant challenge for non-native English student. Thus, in this study we want to seek deeper the perspective of non-native English author in EMI context.

Previous studies about EMI has been explored, but most of them focused on the effectiveness of this course in the undergraduate level (Agai-Lochi, 2015; Barrios, E., et al., 2016; Huang, 2015; Ishikura, 2015; Kim, Son, & Sohn, 2009). Also, though studies of writing difficulties and strategies in graduate programs have been addressed (Dong, 1998; Imani & Habil, 2012; Yeh, 2010), most of them were conducted in the English speaking countries. For instance, the writing perception of L2 students who pursued a graduate degree in the EMI classroom is still rare (Bitchener & Basturkmen, 2006). This study explores the writing problems and strategies used by L2 writers as international graduate students in the Taiwanese EMI classroom. We employed a mix-methods approach to investigate the issue. The participants were international students, these students only spoke English as a foreign language and did not possess any Chinese proficiency for educational purposes. Therefore, this study addresses two research questions:
1. What challenges do these international graduate students face in the thesis writing process?
2. How do students cope with the thesis writing problems in an EMI classroom?

Literature review

EMI classroom in Taiwan

English has been the most spoken language in the world (Smokotin, Alekseyenko, & Petrova, 2014; Kawamura, 2017), and the number of its non-native speakers is higher than the native speaker (Kaur, 2014). The use of English facilitates knowledge exchange and dialogue among scientists and elevates the development of science (Polo and Varela, 2009). The trend of using English as lingua franca of science and many other of human activity had been acknowledged by researchers (Hengsadeekul, et al., 2014; Kaypak & Ortactepe, 2014). This impact brings rapid growth of English to be adopted as the medium of instruction in international education contexts, even when a majority of the population speak a local language.

English medium instruction course is an educational program that is delivered in English, where English works in the target community as a second or foreign language. Dafouz and Camacho-Minano (2016) further clarify a class can be classified as EMI courses when additional language or L2, referring to English, is required. For the host university, the EMI course brings some benefit such as: endorsing international profile of the institution (Chen & Tsai, 2012; Ishikura, 2015), developing trans-national research and networking (Dafouz & Camacho-Minano, 2016), being stand out among other universities (Basibek et al. 2014), and counterbalancing the shortage of local student's enrolment (Wilkinson, 2013). In these recent years, there is an increased number of EMI programs offered by Taiwanese universities. The government and academic institutions provide financial support for international students to pursue degree in Taiwan.

In the Taiwanese EMI courses, both instructor and international students have different native languages, English becomes the transactional language in the classroom These students are also required to finish a thesis in English as a graduation requirement since they do not have Chinese language mastery. Linguistic boundaries become a new problem arose in the relationship between student and thesis advisor, since both parties possessed different native language. Thus, study about the L2 writer's challenge and strategy during the thesis writing process is needed to bring insight of what happening in EMI course. Such study, also can evaluate the EMI policy and it can lead to the betterment of future EMI course design

Studies on thesis writing

A thesis is a substantial research project carried out by students independently with supervisory support (Kaufhold, 2015); previous studies reported L2 students struggled in finishing thesis (Dafouz & Camacho-Minano, 2016; Kuzborska, 2017). A graduate student as researcher and writer should conduct a research and report the finding scientifically. Strauss (2012) reported three non-native English speaker as master and doctoral students who struggled in composing thesis and dissertation at English speaking university, and those students sought help from language center because their language barrier impeded the writing process. The linguistic difficulties faced by L2 writes impacted negatively on the supervisory relationship. These L2 writers often felt disappointed because they failed to accomplish their advisor's expectation in writing a thesis.

Supervisors take a significant contribution to the writing process; they determine students' thesis topics, provide assistance in written English, and give reading preferences (Dong, 1998; Yeh, 2010). Thesis advisor was motivated in thesis supervision and encouraged to produce satisfying paper (Tatzl, 2011). Furthermore, the advisor's guidance gives a significant role during the process of thesis writing, and the student as advisee should actively consult his idea and progress to produce a satisfying research project.

It is important to highlight, advanced research skills and academic writing for academic publications are crucial for graduates of soft or hard science (Ho, 2017). Previous study also

emphasized on the different writing style between soft and hard science major. The writing style of the field of social sciences generally required fewer casual glossaries than used textbooks (Kaufhold, 2015; Gea-Valor, Rey-Rocha, & Moreno, 2014). A research on L2 writing preferences found that scholars from history backgrounds assumed they needed to produce "beautiful" and "elegantly written" as a native researcher, whereas scholars from computer science major thought they needed to generate simple and straight phrases in their article (Hynnien & Kuteeva, 2017).

Study on first-year graduate student's perception toward thesis writing in Taiwan by Yeh (2010) highlighted that topic selection was the biggest concern for graduate students, they were motivated to have an original and outstanding idea for their thesis title. The writer also mentioned graduate students from natural science program might deem the thesis title was less stressful because their thesis work was part of their team project. On other contrary, the freedom in social sciences students might raise confusion to determine the thesis topic. Another issue that arose was writing the literature review, students struggled to gather the correct literature and synthesize the idea and paraphrase those sentences using their own words. Besides the reading load, unfamiliarity with certain terminologies also challenged the participants.

Researchers from social science were reported to feel more capable and confident to write in their L1 comparing to those who were from the medical field (Gea-Valor, Rey-Rocha, and Moreno, 2014). It is due to their English proficiency level and the urgency of study which focuses on local or national social issues. A study conducted by Dong (1998) investigated a non-native graduate students' thesis/dissertation writing in science in U.S. institutions. This study reported writing perspectives from both students and advisor and yielded the urgency of advanced writing training for graduate students to provide the practical knowledge in writing a thesis. It also compared the difference between the English native speaker and non-native speaker students, and the result revealed that non-native students were reluctant to seek help during the writing process compared to the other. Also, native speaker students were apparently utilized a language tool such as thesaurus to improve their writing quality; the main reason was lack of writing experience for L2 students; thus they did not know how to optimalize their writing quality. Studies on graduate students' perception in writing bring insight of what really going on in these L2 writers. Especially, study in thesis writing using EMI context will provide evaluation for education stake holder to create friendly academic environment for international students.

Methodology

This study used a mix-methods approach to answer the research questions. A convenience sampling was employed to recruit the participants through social media cites. We sent more than 300 notifications message to International graduate students in social media platfroms to fill the survey. A consent letter was also attached in the survey to respects the individual right. The message invitation describes the aim of the survey and requires the respondents to confirm their involvement. The participants was voluntary and for the sake of participant's privacy all the personal informatin was anonymously reported. Initially there were 180 students registered the survey, after the data cleaning there were 152 participants included for the survey.

Participant

The participant of this study were 152 international students from five different countries, Indonesian (86.6%), Russian (2.6%), Vietnam (9.2%), El Salvador (.7%), and Ethiopia (.7%), where the majority of citizen speaks English as a foreign language. They were students from sixteen universities across Taiwan. There were more than twenty different majors,

most students from hard science disciplines were majoring in chemical engineering, computer science, electrical engineering, civil and construction engineering, architecture, industrial management, material science, pharmaceutics, and nursery. While the soft science disciplines were majoring in business administration, applied foreign language, digital learning, finance, international management, and psychology. For qualitative data collection, there were six students from both social and science majors participated in the semi-structured interview, and for the sake of privacy, the identity of participants was a pseudo name (see table 3.1).

Table 1. List of interviewee

Name	Major
Interview 1	Information management
Interview 2	Applied foreign language
Interview 3	Architecture
Interview 4	Applied foreign language
Interview 5	Industrial management
Interview 6	Industrial management

Instruments

Questionnaire

This study adapted some surveys used by Chang (2006), Dong (1998), and Cheng (2004) to obtain the exact answers to the research questions. The questionnaire originally consisted of 38 items and was divided into 6 categories. After formulating the initial items of the questionnaire, this study consulted with the expert in this field to check the content validity of this instrument. A pilot study was also conducted to twenty-six international graduate students from a university in northern part of Taiwan to check the reliability and readability of the instrument. Several changes were done, such as paraphrasing the sentence and adding more items into one categories. After the process, there are 32 items left.

Furthermore, an exploratory factor analysis (EFA) was conducted from the 152 participants. The results of EFA showed that the KMO measure of sampling adequacy index had a value of .708 and the Bartlett's test of sphericity was significant ($x^2 = 1788.411$, $p < .05$), indicating that the samples were appropiate for such analysis. To validate this survey, an exploratory factor analysis with varimax rotation was performed to to clarify it's structure. The eigene value of the six factors from the principle component analysis were all larger than one. As a result, the items were grouped into six factors: Thesis problem; advisory problem; reading strategy; speer discussion trategy; writing strategy; and advisory strategy. To determine the appropiate items, those items with a factor loading of less than .40 and with cross loading were omitted from the measurements. As shown in table, a total variance explained is 52%.

Table 2. Factor loadings and Cronbach's alpha values for the scales

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Factor 1: Thesis problem Cronbach's α =.671						
Item 1	.781					
Item 2	.760					
Item 3	.715					
Item 4	.697					
Item 5	.672					
Item 6	.609					
Item 7	.536					

Item 8	.529				
Item 9	.496				
Factor 2: Reading strategy Cronbach's α = .769					
Item 10		.760			
Item 11		.703			
Item 12		.695			
Item 13		.693			
Item14		.599			
Factor 3: Peer discussion Cronbach's α =.673					
Item 15			.715		
Item 16			.603		
Item 17			.596		
Item 18			.539		
Item 19			.524		
Factor 4: advisory problem Cronbach's α = .638					
Item 20				.672	
Item 21				.662	
Item 22				.549	
Item 23				.524	
Item 24				.512	
Factor 5: writing practice strategy Cronbach's α = .644					
Item 25					.753
Item 26					.711
Item 27					.540
Item 28					.526
Factor 6: advisory strategy Cronbach's α = .570					
Item 29					.799
Item 30					.705
Item 31					.568
Item 32					.412

KMO: .708; total variance explained = 52%; overall Cronbach's α =.796

The questionnaire use a five-point Likert scale from one to five, with the value from strongly disagree, disagree, neutral, agree, and strongly agree. The statements with a mean score closer to 5 strongly agree from the students' point of view, whereas the comments with a mean score closer to 1 are considered strongly disagree. A detailed description of these factors and their sample items are presented below:

1) Thesis problem: included nine items assessing the thesis writing problems that the students face during the writing process. Two sample items are: My thoughts become jumbled when I write English compositions under time constraint, paraphrasing for literature review is difficult task for me.
2) Advisory problem: included five items assessing the advisory problem that the students face during the thesis writing process. Two sample items are: I feel that my thesis advisor has little understanding of the difficulties I face in writing thesis; I receive an inadequate amount of time for thesis consultation from my thesis advisor.
3) Reading strategy: included five items assessing the reading strategy that students employ in dealing with the difficulties during thesis writing process. Two sample items are: I read extensively from many sources (book, blog, website) in my discipline in order to improve my vocabulary and grammar for the thesis writing; I am actively updated with the recent journal in my field to enlarge my knowledge for thesis writing.

4) Peer discussion and translation tool strategy: included five items assessing the strategy that students employ to overcome their problem in writing thesis. The questions are focusing on how students use peer discussion (whether they discuss their problem with local friends or other international friends or fellow friends from the same nation) or use some translations app (such as: google translate). Three sample items are: when I have problem in writing thesis, I discuss it with my Taiwanese friend using English; when I have problem in writing thesis, I discuss it with my friend from the same nation using our native language; I use English to my native language dictionary when I find difficult terminology.

5) Writing practice strategy: included four items assessing the strategy that students employ when they face difficulty in writing thesis by practice writing. The sample question: anytime I take note, I always write in English.

6) Advisory strategy: included four items assessing the strategy that the students use to overcome their problem in writing thesis. The questions focus on how students use the advisory relationship to help them overcome problem when they find difficulties in writing thesis. The sample question: I ask my advisor for assistance when I stuck with my ideas in thesis writing.

Semi-structured interview

To obtain deeper insight of what happened among the international students while writing thesis in EMI program, an in-depth interview was employed (see table 3) as a supporting tool to complement the finding (Petrick, 2012). After the interview, the researcher listened and typed the conversation into a script. Then re-read the text and coded into some two main categorizations thesis writing problems and thesis writing strategies.

Table 3. List of interview questions

1.	When you have difficulties to develop idea or doing your research do you receive sufficient help from advisor? Do you seek help from friends?
2.	Would you discuss your thesis problems with your friends from same nation or other international friends? Why?

Finding and discussion

The findings are divided into two sections; the first category discusses findings from the quantitative data then it is followed by the qualitative data. We tried to examine the challenges and strategies used by students across major, but the statistical result indicates no significant different. Therefore, the qualitative findings provide explanations of what happened among these students.

Quantitative findings

Table 4. Independent t-test

Variables	Major	N	Mean	SD	t	Cohen's d
Thesis problem	HS	83	3.18	.55	.85	.14
	SC	69	3.11	.45		
Advisory problem	HS	83	2.97	.65	.26	.18
	SC	69	2.85	.66		
Reading strategy	HS	83	3.89	.67	.02	.36
	SC	69	3.65	.66		
Peer discussion strategy	HS	83	3.64	.72	.07	.29
	SC	69	3.43	.71		

Writing strategy	HS	83	3.83	.66	.94	.01
	SC	69	3.82	.68		
Advisory strategy	HS	83	3.60	.72	.30	.16
	SC	69	3.48	.66		

*p<.05 HC = hard science SC = soft science

An independent sample t-test was conducted to examine the significant differences in the problems and strategies across major in thesis writing process across disciplines. Levene's test of thesis problems for equality of variances showed no violations, p = .03. Result indicates that there is no significant different in thesis writing problems between hard science major (M = 3.18, SD = .55) and soft science major (M = 3.11, SD = .45) in Taiwanese EMI program, t (149.97) = .85, p > .001, Cohen's D = .14. For the advisory problem, the Levene's test of the advisory problem shows no violations, p = .72. Result indicates that there is no significant different in advisory problems between hard science major (M = 2.97, SD = .65) and soft science major (M = 2.85, SD = .66) in Taiwanese EMI program, t (145.56) = 2.25, p > .001, Cohen's D = .18. For the reading strategy, the Levene's test of the reading strategy shows no violations, p = .53. Result indicates that there is no significant different in reading strategy between hard science major (M = 3.89, SD = .67) and soft science major (M = 3.65, SD = .66) in Taiwanese EMI program, t (150) = .26, p > .001, Cohen's D = .36. For the peer discussion strategy, the Levene's test of the reading strategy shows no violations, p = .53. Result indicates that there is no significant different in the peer discussion strategy between hard science major (M = 3.89, SD = .72) and soft science major (M = 3.43, SD = .71) in Taiwanese EMI program, t (150) = .07, p > .001, Cohen's D = .29. For the writing strategy, the Levene's test of the writing strategy shows no violations, p = .68. Result indicates that there is no significant different in writing strategy between hard science major (M = 3.83, SD = .66) and soft science major (M = 3.82, SD = .68) in Taiwanese EMI program, t (150) = .94, p > .001, Cohen's D = .01. For the aadvisory strategy, the Levene's test of the reading strategy shows no violations, p = .45. Result indicates that there is no significant different in writing strategy between hard science major (M = 3.60, SD = .72) and soft science major (M = 3.48, SD = .66) in Taiwanese EMI program, t (150) = .30, p > .001, Cohen's D = .16.

The independent t-test shows there is no significant different in problems faced by graduate students across the major and no significant different in strategies used by students across the discipline. The statistical result explains that both students from hard science and soft science major were experiencing similar challenges and strategies in the thesis writing. Therefore, to obtain deeper understanding on how these nonnative writers face problems and use strategies, our study reports the qualitative findings in the following section.

Qualitative findings

This section is divided into two main sections, the first section discusses the thesis challenges, then the thesis writing strategy. In this section, we address the point of view of the graduate student in the in-depth interview centered. The details and quotes from the interview is provided.

Student's perception of thesis writing challenges

Interview with two students from the Department of Applied Foreign Language showed their concern to arrange and integrate ideas in order to avoid plagiarism. A student major in architecture also explained her struggle in describing the final project in a written academic format, since she used to explain her work to the client most of her time in a verbal presentation using pictures or other realia. These students became aware of the different types of verbal and written English, the written texts are generally more nuanced than the spoken word, although

the central idea is the same, a writer must be imaginative in order to avoid a monotonous vocabulary (Imani & Habil, 2012).

Dang (2018) also outlined the soft science student deem richer vocabularies than hard science student. The social and behavioral field utilizes more extravagant language to report and explain the results. While, the engineering field usually presents graph and diagram that requires shorter words in presenting the results because the conclusion was clarified in the attached table and the author did not need to put long sentences to interpret the meaning. Below, few quotes from the interview with students demonstrating their anxiety regarding producing a practical and readable product for academic work:

It is difficult, also the most challenging part, sometimes we think that just a reorder the sentence can be called paraphrasing. As long as I understand, we have to convey and express in our way our idea based on the scholar's theory or statement. I found it challenging to connect with the previous research I reviewed. Organizing the paper, and I do not have enough knowledge to hold the article, then the moves, how it takes. I wrote and revised, and did this repeatedly. I do not know the model, how a research paper should be written. (Applied Foreign language student 1)

> Yes, a little bit difficult. Because I have to understand what I should include in the sentence, I should use my word and keep the coherence of the paper, care about the overall idea. And it takes time (Applied foreign language student 2)

> For me, yes, because I am not used to doing it. I usually present using pictures, then I describe it orally, and I only need the daily vocabulary without the complexion of word and grammar. I am not used to writing a journal. So it's difficult for me how to put my idea in the written form. (Architecture student)

The challenges in reporting research into thesis is admitted by both students from hard and soft science majors. They found paraphrasing to be the most challenging part of their writing process and felt unable to be a good thesis writer, thus increased writing anxiety. Students relize that paraphrasing is not simply rearranging or rewording phrases, but also involves a comprehensive understanding. As stated by Shi et al. (2017), paraphrasing is a process of integrating, interpreting, and transforming some sources of information into newly formed sentences with credit to the original author. Plagiarism is the plausible reason of these participants' weary. Similarly, Petric (2012) also found that non-native English graduate students have some trouble in distinguishing the language used when paraphrasing for the literature review. Many of them seemed oblivious of certain glossary which makes them into just a direct quote from a published author, and somehow the borrowing sentences are not compatible with their overall prose.

Writing anxiety also one of the difficulties encountered by graduate students. The source of their writing anxiety was explained by interviews with students from information management and industrial management. They admitted that their low confidence in the quality of writing was due to negative evaluation of previous work, lack of familiarity with advanced yet academic vocabulary, and insufficient grammar structures awareness. L2 writers perceived the quality of their writing as not rich in vocabulary range (Hynninen & Kuteeva, 2017). They also were aware of the importance of familiarizing themselves with distinctive terminology in their field of research (Wette & Furneaux, 2018). Bellows are quotations taken from an interview with students; they reported their concern about being incapable of writing a thesis.

> Well, because I have written an English paper before, then I gave it to my professor, and she said I have some problems with my writing, that's why I lack confidence now, even though I improved a lot over one and half year now because we have like English written exam and

report, maybe I have improved but I still do not know whether I improved or not. (Information Management student 1)

Yes, absolutely. Because when we write, we should avoid subjectivity, such as using we or our study. I should use this study, and when I apply this style, I sometimes feel this is so challenging. I'm not familiar with this. I think my writing does not have good quality. (Industrial Management student 1)

Students' perception of strategies used

Engineering students typically have a regular meeting schedule with the advisor as part of lab meeting, whereas student from social science only have a meeting with the advisor if it needed. The interview conducted with two students who majored in applied foreign language summarized that they only had met if they had made some progress and arranged an appointment with the advisor, which usually not as regular as engineer students did. Interview with two students from both disciplines concludes that advisory meeting helps them to solve the writing problem.

Well, I have a weekly meeting with my advisor, but the discussion just focusses on the result, not my writing quality. He always asks about my result, and ask me to compare with different methods whether the result will be different or not. So, he just asked me to focus on the outcome first then rest is later (Industrial management student)

We meet once every two weeks, and he does not guide me step by step, he just provides the general and conceptual idea, and I should develop it by myself. My advisor asked me to investigate and compare a color choice of a modern product design by a famous architect, and recently, he asked me to do another project about the color of the temple and church in Taiwan, due to the originality of the building. (Architecture student)

It just depends if I need to consult, and I will send her a message and make an appointment. It's not a routine appointment. (Applied foreign language student)

Although there were no regular meetings for students from soft science majored, these students optimize the value of advisory assignments as a way to improve their work output. dialogue with two graduate students from the Department of Applied Foreign Language reveals how the researcher led to the success of his thesis:

Yes, my advisor is outstanding, giving advice, especially to my writing quality, she said that more meticulous and care about what I write, especially coherence and cohesiveness. She does not guide step by step because I am a graduate student. Of course, I can do it by myself, but she points out the part that my thesis is not coherence or cohesive. (interview AFL student 1)

My advisor gave me a lot of comments, like reshuffle my idea. It means lots of help to me. She doesn't give me a specific comment about grammar or my word choice, and she just gives me general ideas about how a research paper should be written and how my research goal. and sometimes how my literature review related to my research goal. (Interview AFL student 2)

Shehadeh (2011) clarified the advisor's written and oral feedback leads to the student's writing accuracy; the advice rendered students more effective in following up on the advisor's suggestion and more confidence in what they are doing. In this stage, advisor provides instructional direction, gives guidance on research progress, and establishes quality control (Fard et al., 2014).

> Yes. Reading is helpful, as long as we know what we should read. If I read the different papers, the more I found it challenging to organize the idea of the article. Be selective with the papers that are relevant to my topic. (Applied Foreign Language student 1)

> Related to my thesis, journal reading helped me gain more insight, it also helped me to make useful construct in my writing, how to organize the idea, especially the theories in the literature review, to make my study better. (Applied Foreign Language student 2)

Reading is a metacognitive process which involves planning, monitoring, and evaluation skill (Sen, 2009). Reading breadth supplies significant contributions to the writing quality (Kuzborska, 2015). For non-native English readers to comprehend a text entirely might be challenging for them. As McDonough, Crawford, and De Vleeschauwer (2014) reported less proficient L2 writers tended to copy or cite almost entire author's statements, with minor changes, because of limited vocabulary knowledge to synthesize the existing theory. Interview with students from information management and industrial management reveals the frequent use of an online dictionary:

> Both, because if I have a word that I do not know, usually I type in google what this word means and then use the translation. But when I think in Indonesian, and I don't understand the meaning, I just merely translate the meaning. (Information management student)

> I read the paper, then summarize in my language and explain it. I often use google translate, and I have an app integrated with my word software to check my grammar. (Industrial management student)

The peer discussion is another important conclusion drawn from the interview. This research demonstrates that peer discussion leads favorably to the writing process of the thesis, while peer discussion has been unplanned startegy but students could take benefit from it. Sharing has a significant part in the thesis writing strategy since students could share their problems with their fellow friends. These can be seen in the data below in the interview:

> Well, I think both. Because I am writing in English thesis so sometimes in terms of writing, I ask a friend whose native language is English, but in terms of the idea, I prefer to discuss with friends from the same nation. (Information management students)

> Yes, it is for me. I prefer someone who knows about the field of my research and also about the statistic, so I will ask friends who are good at the statistic. (Applied Foreign Language student 2)

Furthermore, these international students chose to share the burden with their fellow students from the same nations. Their lack of chines proficiency hinders their interaction with local classmate, thus they admitted that it was easier to share the burden with those who share the same native language without considering linguistic boundaries. Several interviews reveal these desires of foreign students to share their academic burden with friends:

> Maybe because the word, I can express the idea and get more in-depth and I just think that we understand each other better. (Information Management student)

> My native friends. Because the thesis itself is challenging, if I communicate this with my Taiwanese friends using English is made more complicated, I'm afraid that they

don't understand my problem. So I'd prefer to discuss it with my same nation friends. (Industrial management student 1)

With my friends from the same nation, It's easier to communicate (Architecture student) I'd prefer to discuss it with my friends from the same country because my Taiwanese friends seldom speak English, even more, write in English. (Industrial management student 2)

Fellow friends from the same nations were chosen in peer review, usually because it is easier for them to explain problems without misinterpretation. This finding echoes a study conducted by Yu and Lee (2014; 2016), who said that students mainly used their first language (in that case, mandarin) to maintain the peer review dialog among them.

Peer feedback enhances the learning process of students; there are two sides that can benefit students. As the one who requests for help from others, a student might examine current understanding of one topic and evaluate the suggestion. On the other hand, the student who gives answers also learns how to criticize the research output of others. Switching language from English to its native language can enhance the content focus of the discussion. It therefore serves a deeper understanding. In reality, sharing can provide emotional support. It gives opportunity to share their mental aspects, such as anxiety and distress, and get encouragement.

A similar study by To and Carless (2015) reported some advantages of writing group discussion in a Western university for international graduate students, the discussion among fellow students increased the member's writing motivation resulting in improved writing output. A positive attitude towards peer discussion was also reported by Tang and Tithecott (1999). A collaborative writing study shows peer discussion significantly influences student writing enhancement, although progress includes only content, organization, and vocabulary, but not mechanics or grammar (Shehadeh, 2011).

Conclusion and implication

The mix-method approach serves a deep and comprehensive explanation of what really happened in the EMI course in terms of thesis writing. The results suggest that there is a need for graduate students to have more training in writing academic paper because it is mandatory to submit their scientific research for a graduation requirement. It also implies the necesity of reading habit as this metacognitive practice provides tremendous benefit to them. Reading not only serves as a source of an idea, but it also provides some sentence patterns and academic writing style examples. Chen (2017) also proposed the graduate programs should offer a course in reading English academic journals for their students to help these non-native English writers minimalize their linguistic and educational boundaries during the writing process.

It also implies the urgency of advisor guidance during the drafting and revision process for graduate students. Some students have a thesis topic as part of the laboratory project, and this made them rely on the advisor's advice. As suggested by Ho (2017), a thesis writing workshop or support writing discussion can be provided to help advisors in guiding their advisee to write and publish a research paper. These courses should cooperate with a discussion about issues and strategies in academic writing for graduate students. Another suggestion in assisting these L2 writers is providing writing correction services at university. This service will significantly contribute to providing writing assistance for the L2 writer to improve the paper quality.

Limitation

The small sample size cannot conclude in general, but it can provide a suggestion for future study. These findings only provide participants' partial perspective and may not reflect

the whole writing difficulties and strategies. The writer also admits there is a tendency of the less reliable questionnaire because of the untruthful or careless response. Future studies should involve the advisor's and advisee's perspective. Thus a better conclusion can be drawn. Second, this study recruited international students with small sample size, thus the findings cannot be generalized to all international students in EMI programs at university level.

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