AN ANALYSIS OF WRITING ERRORS IN ENGLISH ABSTRACT OF MAHASARAKHAM UNIVERSITY VETERINARY STUDENTS

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN ENGLISH LANGUAGE STUDIES RAJABHAT MAHA SARAKHAM UNIVERSITY 2019
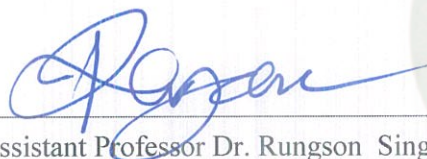
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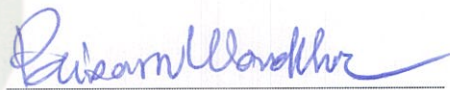University Veterinary Students

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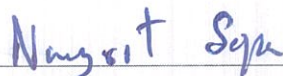
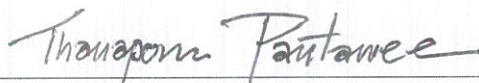Dean, Faculty of Humanities and Social Sciences   Dean, Faculty of Graduate Studies
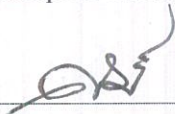
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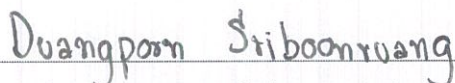_____ Member
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ชื่อเรื่อง	: การวิเคราะห์ความผิดพลาดทางการเขียนในบทคัดย่อฉบับภาษาอังกฤษของ นิสิตสัตวแพทย์ มหาวิทยาลัยมหาสารคาม
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บทคัดย่อ

การศึกษาครั้งนี้มีวัตถุประสงค์เพื่อ (1) ศึกษาชนิดของความผิดพลาดในบทคัดย่อฉบับภาษาอังกฤษของนิสิตสัตวแพทย์ มหาวิทยาลัยมหาสารคามที่ลงทะเบียนในรายวิชาสัมมนาทางคลินิก และ (2) วิเคราะห์ความถี่และร้อยละของความผิดพลาดทางการเขียนในบทคัดย่อฉบับภาษาอังกฤษ ในการศึกษาครั้งนี้ใช้บทคัดย่อฉบับภาษาอังกฤษจำนวน 26 ฉบับสำหรับการวิเคราะห์ความผิดพลาดทางการเขียนทั้งในระดับประโยคและระดับคำ

ผลการศึกษาพบว่า นิสิตสัตวแพทย์ มหาวิทยาลัยมหาสารคามเขียนบทคัดย่อฉบับภาษาอังกฤษภายในหนึ่งหน้า ประกอบด้วยจำนวนคำเฉลี่ย 157.58±38.15 คำ บรรทัดเฉลี่ย 10.23±2.52 บรรทัด และความผิดพลาดในการเขียนเฉลี่ย 16.65±8.83 ครั้ง จากการวิเคราะห์บทคัดย่อทุกฉบับ พบความผิดพลาดทางการเขียนทั้งหมด 433 ครั้ง โดยชนิดของความผิดพลาดทางการเขียนที่พบมากที่สุดและน้อยที่สุด ได้แก่ การเลือกคำ จำนวน 116 ครั้ง และตัวเลข 0 ครั้ง นอกจากนี้ยังพบว่าบทคัดย่อทุกฉบับประกอบด้วยความผิดพลาดทางการเขียนทั้งในระดับประโยคและระดับคำ พบความผิดพลาดในระดับประโยคทั้งหมด 238 ครั้ง และความผิดพลาดในระดับคำทั้งหมด 195 ครั้ง เมื่อพิจารณาเฉพาะระดับประโยค ความผิดพลาดที่พบได้แก่ อักษรพิมพ์ใหญ่ (88 ครั้ง คิดเป็น 36.97%) เครื่องหมายวรรคตอน (47 ครั้ง คิดเป็น 19.75%) ความสอดคล้องของประธานและกริยา (46 ครั้ง คิดเป็น 19.33%) ประโยคต่อเนื่อง (21 ครั้ง คิดเป็น 8.82%) ประโยคไม่สมบูรณ์ (19 ครั้ง คิดเป็น 7.98%) การเรียงลำดับคำ (9 ครั้ง คิดเป็น 3.78%) และกาล (8 ครั้ง คิดเป็น 3.36%) เมื่อพิจารณาเฉพาะระดับคำ ความผิดพลาดที่พบได้แก่ การเลือกคำ (116 ครั้ง คิดเป็น 59.49%) คำบุพบท (38 ครั้ง คิดเป็น 19.49%) คำนาม (31 ครั้ง คิดเป็น 15.90%) และคำนำหน้าคำนาม (10 ครั้ง คิดเป็น 5.13%)

การศึกษาครั้งนี้สรุปได้ว่า ความผิดพลาดทางการเขียนระดับประโยคที่พบมากในบทคัดย่อฉบับภาษาอังกฤษของนิสิตสัตวแพทย์ มหาวิทยาลัยมหาสารคาม ได้แก่ อักษรพิมพ์ใหญ่ เครื่องหมายวรรคตอน และความสอดคล้องของประธานและกริยา ส่วนความผิดพลาดทางการเขียนระดับคำที่พบมาก

ได้แก่ การเลือกคำ และคำบุพบท ซึ่งความผิดพลาดทางการเขียนที่เกิดขึ้นในการเขียนบทคัดย่อฉบับ
ภาษาอังกฤษมีสาเหตุจากความรู้ทางด้านภาษาศาสตร์ที่ไม่เพียงพอของผู้เขียน โดยเฉพาะอย่างยิ่ง
ความรู้ด้านวากยสัมพันธ์ และความหมายของคำ ส่งผลให้นิสิตใช้ระบบภาษาไทยในการเขียน
ภาษาอังกฤษ

คำสำคัญ : บทคัดย่อ ภาษาอังกฤษ นิสิตสัตวแพทย์ การเขียน

_____ อาจารย์ที่ปรึกษาวิทยานิพนธ์หลัก

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ABSTRACT

The present study was to 1) investigate types of errors in English abstract written by veterinary students of Mahasarakham University (MSU), who registered for "Clinical Seminar" course and 2) analyze frequency and percentage of writing errors in their English abstracts. In total, 26 English abstracts were included in the study. Error analyses were performed both in sentential and word levels.

The results demonstrated that MSU veterinary students produced abstracts within one page with approximately 157.58 ± 38.15 words, 10.23 ± 2.52 lines, and 16.65 ± 8.83 points of writing error. In total, 433 points of error were observed. Of those, the most and the least writing errors were word choice (116 points) and number (0 points). Moreover, all abstracts were composed of errors both in sentential (238 points) and word (195 points) levels. Based on sentential level, errors included capital letter (88 points, 36.97%), punctuation (47 point, 19.75%), subject-verb agreement (46 points, 19.33%), run-on (21 points, 8.82%), fragment (19 points, 7.98%), word order (9 points, 3.78%), and tense (8 points, 3.36%). Considering word level, errors included word choice (116 points, 59.49%), preposition (38 points, 19.49%), noun (31 points, 15.90%), and article (10 points, 5.13%). However, number error was not observed from any abstracts of the MSU veterinary students.

In summary, the most eminent errors in sentential level were capital letter, punctuation, and subject-verb agreement, meanwhile those in word level included word choice and preposition. These errors were derived from insufficient linguistic

knowledge of the students, especially in syntax and semantics, which made them write their abstracts relied on the first language system.

Keywords: Abstract, English, Veterinary Student, Writing

มหาวิทยาลัยราชภัฏมหาสารคาม
RAJABHAT MAHASARAKHAM UNIVERSITY

_____ Major Advisor

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<div align="right">Atthaporn Roongsitthichai</div>

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LIST OF ABBREVIATIONS

Abbreviation	Meaning	Unit
APP	Acute Phase Protein	-
Art	Article	-
Capt	Capital Letter	-
cOEC	Canine Oviduct Epithelial Cell	-
DIC	Disseminated Intravascular Coagulation	-
Dr	Doctor	-
DVM	Doctor of Veterinary Medicine	-
EFL	English as a Foreign Language	-
ESL	English as a Second Language	-
Frag	Fragment	-
GnRH	Gonadotropin-releasing Hormone	-
HIV	Human Immunodeficiency Virus	-
IGF-1	Insulin-like Growth Factor-1	-
IMHA	Immune-mediated Hemolytic Anemia	-
Inst	Institute	-
L1	The First Language	-
L2	The Second Language	-
MSU	Mahasarakham University	-
N	Noun	-
NC	North Carolina State	-
NF	Nuclear Factor	-
Num	Number	-
Prep	Preposition	-
Punct	Punctuation	-
RI	Resistive Index	-
RO	Run-on	-

Abbreviation	Meaning	Unit
SAS	Statistical Analysis System	-
SD	Standard Deviation	-
SVA	Subject-verb Agreement	-
Ten	Tense	-
USA	The United States of America	-
WC	Word Choice	-
WO	Word Order	-

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RAJABHAT MAHASARAKHAM UNIVERSITY

CHAPTER 1
INTRODUCTION

1.1 Background and Significance of the Problem

English is apparently regarded as a global language since the 1980s (Pan & Block, 2011). As a result, people from many countries communicate with one another with English in many aspects, such as economics, arts, science, and so on (Wulandari, 2014). Nowadays, English is considered an international language for scientific communication (Drubin & Kellogg, 2012). For scientific studies, they are not yet finished until they are published. As a result, most of the scientists have conducted the studies in various aspects and tried to convey the outstanding results to the global arena by publishing their papers in many scientific journals. (Day & Gastel, 2006). In addition, some prolific researchers focus on publishing in the journals with high impact factor, an important bibliometric parameter commonly used for comparing journal quality in health and scientific fields, in order to attract the readers for some reasons, such as citation (Kumar, 2018) and reputation (Day & Gastel, 2006).

An evidence from a previous study demonstrated that the growth rate of scientific research has been much higher than it was in the past, especially in engineering and computer science (Larsen & Von Ins, 2010). Moreover, a larger number of international publications can be easily accessed from people living all over the world and using internet. Consequently, the scientific researchers who anticipate to publish their papers in the international journals have to master not only science, but also English writing skill (Karimnia, 2013).

In the context of higher education, publishing scientific research works is considerably important for both instructors and students. As for instructors who always conduct research, they have high opportunity to both widen and deepen their specific knowledge successively from findings and problems occurred during the process of study. Thereupon, they can apply their findings to supplement their regular teachings

with illustration, exemplification, or epitomization, in order to make the lessons easy to understand for their students. For students, especially in the university level or higher, reading scientific publications is one of the beneficial ways to strengthen knowledge in specific area. In general, an academic course in the undergraduate level is composed of several important topics which have to be taught in a very tight schedule; one-credited subject takes approximately 15 hours. According to different learning capabilities of students, some cannot get any important ideas from the class; some may get only major ideas from the instructors. This points out that some of them are required to gain more information outside the classroom in order to enlighten their lessons. At present, a number of scientific publications are easy to access from various sources, specifically from the internet. Reading scientific publications may not only bolster up the comprehension of the students, but it sometimes also attracts them to conduct research and write science in the future.

To write science with English for international publication, it is considered a huge obstacle for the many authors (Drubin & Kellogg, 2012; Tychinin & Kamnev, 2005) since writing is regarded as a complicated and taxing process for several authors, especially for those who use English as a second language (ESL) (Singh, Singh, Razak, & Ravinthar, 2017). In addition, poor English writing may contribute to delayed acceptance for publication or, in worst case, rejection (Day & Gastel, 2006).

Based on four major skills of learning English, writing is recognized as the hardest skill, especially for those who use English as a foreign language (EFL) (Kaweera, 2013; Phuket & Othman, 2015; Watcharapunyawong & Usaha, 2013). In Thailand, where English is not a mother tongue, a number of university students are required to produce academic writing in some courses. At the Faculty of Veterinary Sciences of Mahasarakham University (MSU), the curriculum of Doctor of Veterinary Medicine (DVM) has been recently adjusted to strengthen both scientific and English writing skills for veterinary students. All of them are required to accomplish two subjects: clinical seminar and research project in veterinary medicine. As for clinical seminar, it is fulfilled with one review article per one student on any topics relevant to veterinary science. To achieve the latter course, it is compulsory for all students to conduct the scientific experiment in veterinary aspect, present the study, and establish one experimental paper per group of 3-5 people. To compose those papers, either Thai

or English is allowed. It is undoubtedly that all of them preferred not to use English for writing the whole papers. Nonetheless, English abstract of the paper from both courses are mandatory.

Many people may speculate that veterinary students are accustomed to English writing as they have been taught with textbooks and papers written with English since the first year of study. According to personal experience, MSU veterinary students are mostly acquainted with English reading skill since they are always assigned to read a great number of English textbooks and papers in almost all subjects from first to sixth year. Nevertheless, they are hardly assigned to write English in return, except for the English abstracts from "Clinical Seminar" and "Research Project in Veterinary Medicine." Considering numerically, the requisite subjects requiring English writing for veterinary students at MSU account for approximately 0.01% (3 out of 247 credits). This may be one of the obstacles to develop English writing skill of veterinary students at MSU.

To establish abstract of those courses, the students are informed that abstract of the scientific paper is the preface (Grech, 2018) and is recognized as the most important part which the readers always pay attention to before reading the further parts of the paper (Goodman et al., 2016) since it always includes introduction or background, methods, results or findings, discussion, and conclusion within one section (Grech, 2018). Moreover, some scientific journals are literally strict about word number which is normally 100-300 words (Vitse & Poland, 2017). As a result, writing abstract in English is a challenging task for veterinary students since they do not have to only describe the matter with foreign language, but also arrange the concise matters under the limitation of word count. Moreover, this activity may be advantageous for those who would like to pursue higher education since they will have to conduct scientific research and publish their works in some journals.

As one of the instructors and supervisors in both clinical seminar and research project in veterinary medicine subjects, most of the MSU veterinary students always write abstract in Thai first and translate to English later with several approaches, such as word-by-word translation, sentence-by-sentence translation, various translation engines on the internet, and so on, regardless of the different language structures between Thai and English. These contribute to the first language (L1) interference

which is one of the potential causes of errors in writing of ESL and EFL writers (Kaweera, 2013; Phuket & Othman, 2015). As a result, it is inevitable that mistakes and errors are noticed in writing of ESL and EFL students (Kaweera, 2013).

Errors are regarded as the outstanding issue in learning target language (Phuket & Othman, 2015) since they reflect the ways of learning language and strategies of discovering language of individual learners (Corder, 1967). Error analysis is one of the applied linguistics accentuating on the errors produced by writers in any target languages (Murad & Khalil, 2015). It is beneficial for both teacher and learners to perform error analysis since it does not only help researchers point out the interference from mother tongue in the target language, but also enlighten the learners about the reasons of making errors, which make them subsequently correct the errors (Watcharapunyawong & Usaha, 2013). As a result, error analysis has been applied to several studies, especially the writing tasks produced by students whose English is not their first language, such as Turkey (Abushihab, 2014), China (Li, Re, & Zhao, 2016), Malaysia (Phuket & Othman, 2015), Indonesia (Kamlasi & Nokas, 2017), Vietnam (Ho & Duong, 2015) and so forth. Moreover, most of the studies on error analysis have been performed in graduate learners, especially in those majoring in Business Administration, Humanities, and Social Sciences. However, error analyses have been very scant in undergraduate level in life science.

At present, only a few studies have been conducted in medical students of Mahidol University (Sattayatham & Honsa, 2007; Sattayatham & Ratanapinyowong, 2008). In Thailand, the study on error analysis in scientific writing of veterinary students has never been reported. The findings may be beneficial for teaching in the future. Teachers can adjust the writing lessons, especially grammatical rules, based on the error types found in writing of their students. Afterwards, they may take more time to elucidate and exemplify the high percentage errors to their students in order to prevent these kinds of error in the future. The study will be more lucrative if it is conducted in an earlier stage since the findings will be applied to both teachers and students as soon as possible. Accordingly, the present study is destined to investigate the writing errors in English abstracts written by MSU veterinary students who enroll in the "Clinical Seminar" course provided by the Faculty of Veterinary Sciences of Mahasarakham University, Thailand.

1.2　Research Objectives

1.2.1 To investigate type of errors in English abstract written by veterinary students of Mahasarakham University, who registerd for "Clinical Seminar" course.

1.2.2 To analyze frequency and percentage of writing errors in English abstract both in sentential and word levels.

1.3　Scope of the Study

The present study intended to analyze types of writing error found in abstracts written in English by veterinary students of Mahasarakham University who enrolled in the "Clinical Seminar" course in academic year 2018. Every student in this course was synchronously informed of structures and functions of scientific abstract, and was required to produce an English abstract according to the course requirement. All of the analyzed abstracts were the first complete version from students prior to submitting for revision by their supervisors. Prior to the analyses, all of the personal information of the writers were blinded; every abstract was assigned with an individual code prior to being investigated. Finally, the analysis of errors was performed in both sentential and word levels.

1.4　Definitions of Key Terms

1.4.1 Abstract refers to a one-page summary of review article written in English according to the instructions of "Clinical Seminar" course.

1.4.2 Veterinary student refers to a student who enrolled in the DVM curriculum at the Faculty of Veterinary Sciences of Mahasarakham University.

1.5 Expected Outcomes

1.5.1 Primary information on writing errors in English abstract written by veterinary students of the Faculty of Veterinary Sciences, Mahasarakham University.

1.5.2 Database of frequent error types in writing tasks of the veterinary students for the forthcoming curricular improvements of the Faculty of Veterinary Sciences, Mahasarakham University.

CHAPTER 2

LITERATURE REVIEW

In the study entitled "An Analysis of Writing Errors in English Abstract of Mahasarakham University Veterinary Students," the author reviewed relevant documents and literatures as follows.

2.1 Writing Abstract in Scientific Papers

2.2 English Writing of Foreign Language Learners

2.3 Definitions and Sources of Writing Errors

2.4 Writing Errors from Interlingual Interference

2.5 Writing Errors from Intralingual Interference

2.6 Analysis of Writing Errors

2.1   Writing Abstract in Scientific Papers

A scientific research is a study performed by researchers on specific purposes by systematically collecting, interpreting, and evaluating data in a planned manner (Çaparlar & Dönmez, 2016). Most of the scientific works are further processed into scientific papers which communicate novel discoveries to the readers in particular fields of study (Vitse & Poland, 2017). To get published in scientific journals, the authors should know well about anatomy (structure) and physiology (function) of the scientific papers (Meo, 2018). In general, the structure of scientific papers is composed of four major sections: introduction, materials and methods, results, and discussion; it could be written with an acronym "IMRAD" (Peh & Ng, 2008).

Apart from IMRAD structure, an outstanding composition of the scientific papers is an abstract. The abstract is a concise summary, without references, of the research work which is separately placed prior to the introduction part (Simkhada, Van Teijlingen, Hundley, & Simkhada, 2013). For some readers, abstract acts as a selling point of the paper because they read this as the first part and then make a decision whether to read other parts of the paper (Driggers, 2010; Rhodes, 2010). As a result,

the abstract should be carefully prepared with core contents of the study in an apprehensible organization (Alexandrov & Hennerici, 2007), in order to enchant the readers to pursue reading the entire paper (Dewan & Gupta, 2016). Based on its succinctness, this part is limited with word count, approximately 250 words. Accordingly, the authors should not fill the superfluous information into this section (Cuschieri, Grech, & Savona-Ventura, 2019). To construct the abstract effectively, the authors should write the paragraph containing objective, methodology, results, and conclusion within the given word count (Dewan & Gupta, 2016).

Considering the pattern, abstract can be developed with either unstructured or structured patterns (Dewan & Gupta, 2016) which depend on format of each journal (Meo, 2018). According to the unstructured abstract, the authors can write the whole part in a running manner. On the other hand, for the structured abstract, the authors have to write the texts proportional to the required subheadings which generally consist of objective, methodology, results, and conclusion (four-point abstract). Moreover, the structured abstract, in some scientific journals, might be in the form of eight subheadings, including purposes, design of the study, setting of the study, attendees, methodology, measurements of outcome, results, and synopsis (eight-point abstract). Of those, the four-point pattern is widely used and easy to compose. The authors may start writing the objective session with a couple sentences of study background, and follow by the objectives of the study. For methodology which is generally the biggest proportion of the abstract, the authors should provide significant information so that the readers perceive the core way of the study, such as design of study, method of sampling, assessment of study, and others. According to results, the most crucial segment of the abstract, the authors should report the most significant data relevant to the objective of the study. Moreover, significance level, such as P values, should be demonstrated. For conclusion, the authors are literally recommended to provide take-home message to the readers. In addition, the concluding remarks should be written based on hypothesis and research question (Dewan & Gupta, 2016). Some of the former studies demonstrated that writing abstract with the structured pattern is decent as it consists of much information, is easy to read and be sought, and accelerates the review process (Hartley, 2004; Zhang & Liu, 2011).

Not only the contents and patterns, but the authors should also use past tense in writing abstract. Moreover, they should focus on completeness, succinctness, clearness, and cohesiveness of the texts arranged the abstract. As for the completeness, the abstract should represent every significant content by itself. For the succinctness, the authors should not write insignificant or excessive information on this part. Moreover, stating cliché, for example, "A number of studies are required," should be abstained from the good abstract. According to the clearness, the abstract should be constructed with easy-to-read and well-organized patterns. Accordingly, lavish jargons, tables and figures, citations, and discussion on the findings should be avoided. As per the cohesiveness, the authors should write the abstract with smooth flow and transition from the beginning to the end chronologically (Dewan & Gupta, 2016).

It is recommended for the authors to compose the abstract after the other parts have been finalized on account of its accuracy (Cuschieri et al., 2019; Dewan & Gupta, 2016). A previous study indicated that approximately 40% of the examined abstracts in selected medical journals are inconsistent with the information written in the body of paper (Pitkin, Branagan, & Burmeister, 1999).

2.2   English Writing of Foreign Language Learners

At present, the importance of English writing skill is apparently increasing, especially in a number of non-native English-speaking countries. It is not only in educational institutions, but also in professional environments (Leki, 2001). Moreover, the globalization makes English writing so much crucial as apparently seen that the world appears to be smaller than it was in the past, contributing to an incessant communication of humans. Apart from oral communication, an expression with comprehensible writing is also requisite to connect with the frontierless globe(Chen, 2007). As a result, a number of educational institutions have provided a number of writing classes, such as English for specific purposes, paragraph writing, academic writing, and so on, for their students so as to develop and improve their writing skills. This also entails the need for a great number of English writing experts (Silva, 2000). However, to teach English writing is not an easy job as it requires teachers with competency in several aspects, such as structures, vocabularies, organizations, and

capabilities of providing feedback to students' assignments (Watcharapunyawong & Usaha, 2013).

In aspect of learners, writing is regarded as the most difficult skill in learning English (Watcharapunyawong & Usaha, 2013). A previous study indicated that writing is also considered a complicated skill for the L1 learners (Heydari & Bagheri, 2012) since it is not only related to language, but also other factors, such as organization and content (Watcharapunyawong & Usaha, 2013). For this reason, it can be more intricate for the second language learners (L2) or those who study EFL and ESL to master English writing skill (Heydari & Bagheri, 2012; Phuket & Othman, 2015) because the learners are required to be acquainted with both syntax and semantics of English (Watcharapunyawong & Usaha, 2013). Moreover, English writing is one of the significant skills for those who wish to pursue the higher education since it takes major part in both instructing and studying sessions (Ho & Duong, 2015). Furthermore, writing is very beneficial to ESL or EFL learners since it automatically makes them start thinking of what to write, managing ideas, composing the texts, drawing a conclusion, and discussing the topics (Rao, 2007).

However, a former study indicated that writing skill of L2 students, in Thailand, is under the satisfactory level even though a number of writing courses are provided, especially in the university level (Watcharapunyawong & Usaha, 2013). As a result, several research works on improving writing skills of L2 learners, classifying errors which L2 learners frequently made, and figuring out the ways of assisting L2 learners to enhance the writing precision, have been conducted. For example, some of the preceding studies indicated that the ineffective writing tasks of EFL learners are owing to the lacking competences of syntax and lexis (Olsen, 1999; Silva, 1993). In addition, a study in China demonstrated that one of the major obstacles of the L2 writers is the interference from the first language, contributing to the "syntactic transfer" or "language transfer" which is an amalgamation between both languages in their writing tasks (Wang & Wen, 2002). Likewise, an earlier study in Thailand pointed out that this interference is a severe problem of Thai EFL students as it was found that the students make a lot of mistakes and errors in translation from English to Thai because they write the assignment based on Thai language system (Sattayatham & Honsa, 2007). Not only Thailand, but this interference is also observed in the writing tasks of other EFL

students from various nationalities, including Cambodia, Vietnam, Italy, and Spain (Bhela, 1999).

A previous study determined a definition of L1 interference as a cross-linguistic and language transfer, which mother tongue dominates the language competency of writers (Hashim, 2017). It is obviously seen from many aforementioned studies that L1 interference is an unescapable problem of incompetent writing from both ESL and EFL writers. Considering organization, language, and content, which are the three major compositions of writing, a former study indicated that language is the most difficult part for L2 writers, especially the lacking knowledge on linguistics and the shortage of language skillfulness (Watcharapunyawong & Usaha, 2013). Likewise, a previous study stated that the difference between mother tongue and second language of the writers with lacking language knowledge may contribute to a low-quality writing task (Silva, 1993). In addition, poor writing from some of the L2 learners is caused by an inadequate competence in terms of syntax and lexicon (Olsen, 1999). In Thailand, a previous study clarified the huge differences between Thai and English systems, including pronunciation, grammar, word, and text, which make the writing seem to be difficult for Thai writers. Consequently, a number of writing errors, so-called the negative interference of mother tongue, can be usually found in the writing tasks of Thai people (Thep-Ackrapong, 2005). These demonstrate that the writing from L2 learners can be more ineffective if the syntax of both languages is considerably different, entailing their writings are more dependent on the first language. Apart from syntactic knowledge, lexicon is also considered the major hindrance of ESL and EFL learners, leading to various errors in their written tasks (Watcharapunyawong & Usaha, 2013).

2.3   Definitions and Sources of Writing Errors

In general, errors in writing can be unavoidably noticed in those who are learning language (James, 1998), especially from L2 writers since writing consists of complex procedures which test the capability of using language and expressing ideas of the writers. Corder (1981) indicated that an error is the consequence from some failed performance. Norrish (1983) stated that an error is a systematic deviation of the writers

who do not learn something and misunderstand it constantly. James (1998) depicted that an error is an unaccomplished part of language. Brown (2007) referred an error as an obvious alteration in grammatical rules of the learners in writing target language and is produced from insufficient linguistic knowledge of the learners. Of those, it can be apparently seen that errors can be identified by teachers or those who are proficient in grammatical knowledge. However, a number of people, including teachers, misconceive between mistakes and errors (Utanu, 2016). Accordingly, it is important to differentiate a mistake from an error in writing (Brown, 2007). As for writing mistake, it is the failure to express language with wrong grammatical rules of those who study language structures and know its system correctly. The mistakes may happen on account of some reasons, such as tongue slip and speaking tension. For writing error, it is associated with the use of wrong language performed by those who lack of knowledge on structure and system of the language, entailing the outstanding divergence from adult grammar of native speakers (Brown, 2007). In addition, Xu (2008) demonstrated that an error takes place due to the shortage of requisite language knowledge of the learners, meanwhile a mistake happens from some limitations but not a language proficiency (Xu, 2008).

Considering the sources of writing error, Richards (1971) categorized the writing errors into three groups: interference, intralingual, and developmental errors. Interference errors are caused by the predomination from the first language. Intralingual errors are characterized when the writers produce a writing with generalizing the rules of target language incorrectly. Developmental errors take place when the writers assume the rules of target language with inadequate linguistic knowledge. However, Schachter and Celce-Murcia (1977) pointed out that intralingual and developmental errors are considerably related to each other; accordingly, they should be re-classified within the same category. Moreover, James (1998) proposed another type of writing error so-called 'classroom-based' error which is induced from material, exercise, and teacher talk. In Thailand, a former study stated that the errors which are mostly found in writing of EFL learners include interlingual and intralingual errors (Kaweera, 2013).

2.4   Writing Errors from Interlingual Interference

An error from interlingual interference is defined as one which is dominated by the first language of the writer (Richards, 1971). This makes people who confront the new language establish the link between what they have learnt and what they have not. In addition, Ellis (1997) stated that it is mostly unavoidable to acquire foreign language without relying on certain features of native language. Moreover, the interference from mother tongue can be noticed in many linguistic areas (Ellis, 2008). A former study proposed that the learners whose first language is considerably different from target language have difficulty comprehending structures and applying rules of target language in their writings (Krashen, 1981). A great number of studies have proved that the interference from mother tongue is a major cause of writing errors for L2 writers. For instance, Bhela (1999) indicated that this kind of error is caused by the writer's presumption that both languages are equivalent. In Thailand, Tuaycharoen (2003) reported that a number of mistakes and syntactic errors, especially improper words and structures, were found extensively in the writing tasks of Thai students due to the lack of language knowledge. Moreover, Bennui (2008) proved that before writing English, Thai student always imagine what to write in Thai first (Bennui, 2008).

To improve the writing performance of L2 students based on the L1 interference, several studies have focused on this problem and reported in many aspects. For example, Bhela (1999) indicated that the errors in writing tasks of L2 learners from Cambodia, Italy, Spain, and Vietnam which are dominated by the first language include apostrophe, punctuation, spelling, preposition, capitalization, present and past continuous tenses, subject pronoun, vocabulary, and passive and active voices. In addition, Chan (2004) investigated the writing performance in relation to syntactic transfer of Hong Kong Chinese students and found that five major errors are affected from the first language predomination. First is the copula, the students always miss 'be' in the connection between a subject and its complement since it is not mandatory in Chinese to mention that subject and its complement. Second is the location of adverb, which can be placed either before or after verbs in English sentences. In contrast, adverbs in Chinese are always located prior to verbs. Third is the expression of existence, which results in the problem of using expletive structure (There be) in

English sentences for Chinese writers because some Chinese sentences do not require a subject to explain the presence of things. Fourth is the relative clause, which always follows a noun it modifies in English sentences. However, it exists before a noun which it modifies in Chinese. Last is the transitivity of verb, some transitive verbs in English may be intransitive verbs in Chinese. Furthermore, Thep-Ackrapong (2005) observed six types of errors that interfere with writing target language from mother tongue in Thai students: relative clause, subject-verb agreement, subordination, topic-comment structure, participial phrase, and passive voice. In addition, Bennui (2008) committed error analysis and contrastive analysis to examine the L1 interference in paragraphs written by Thai university students and illustrated three major interferences, including lexis, syntax, and discourse.

      2.4.1   Interference from Lexis

          Sereebenjapol (2003) reported that the writers in scientific field, in Thailand, mostly perform lexical errors in the discussion part of their theses in terms of conjunction and subordinate clause. In addition, Thep-Ackrapong (2006) conducted the study in Thai students and found the interference of lexis in writing collocation. Moreover, it was found that Thai students perform a direct translation from Thai word to English in writing their paragraphs. This make them use Thai collocation in English sentences, for example,

              - She plays a computer.

          The above sentence should be written as "She works on a computer."

          Sattayatham and Honsa (2007) indicated that the interference from mother tongue results in the main cause of writing errors which are mostly found in writing of Thai students. Of those, the errors frequently found are at lexical and syntactic levels. Bennui (2008) found that Thai students who wish to use English words, such as "serious," "meet," "use," and so on, compose the sentence on the basis of Thai words. A previous study opined that a number of lexical errors can be pervasively found since the creation of lexis is an open system (Leech, 1998). Accordingly, the generalization of lexis into a specific rule cannot be conducted (Kaweera, 2013) since the system to form lexis is unsystematic and irregular (James, 1998).

Apart from the interference of lexis, an error in writing can be taken place as a lexis-based semantic error (James, 1998) as follows.

2.4.1.1 Error in collocation

The writers always make this type of error in writing collocation when they translate the word directly. For instance,

- Marsha describes about her new house.

The above sentence obviously demonstrates the collocational error of Thai student since the preposition "about" in the above sentence is actually not in need. This can be surmised that the students translate Thai collocation into their English writing.

2.4.1.2 Confusion of sense relation

This error occurs on account of semantic limitation of the learners when they write English sentences, for example,

- Liza plays the internet overnight.

Thai students use the word "play" in every context according to the first language system. This sentence should substitute the word "play" with "surf" to communicate the accurate meaning.

2.4.2 Interference from Syntax

This interference is generally caused by a direct translation from the first language to target language and majorly seen as grammatical errors in the writing. Pongpairoj (2002) demonstrated three categories of errors resulting from syntactic interference in English writing of Thai university students: structure of word, construction of sentence, and boundary of sentence. Bennui (2008) proposed that seven categories of error are frequently found, based on syntactic interference, in writing of Thai learners: subject-verb agreement, the verb 'have,' tense, preposition, infinitive, word order of Thai structure, and noun determiner. In addition, he stated that an inadequacy of grammatical knowledge between Thai and English crucially contributes to word order error. Sentences showing errors from syntactic interference are exemplified as follows.

- <u>Have</u> a lot of green areas in the college.

This sentence demonstrates the failure of using expletive structure of writers. As a result, they produce the sentence with the predomination of the first language instead of writing "There are a lot of green areas in the college."

- I love partying, but I don't drink liquor it is unhealthful.

The above sentence shows an error of sentence boundary as a run-on sentence. The writer connects an independent clause "it is unhealthful" to the prior sentence without any suitable conjunctions or punctuations. This run-on sentence is influenced by the first language of Thai students.

2.4.3   Interference from Discourse

Kaplan (1966) demonstrated that discourse is dominated by cultural, oral, and social values. The discourse interference contributes to writing errors due to the differences of writing style between first and target languages (Watcharapunyawong & Usaha, 2013). This makes the writing of EFL learners different from that of native speakers. As for Thai students, Sattayatham and Ratanapinyowong (2008) reported that most of them develop paragraphs without a rational connection, which contributes to an incoherence of the paragraph. Another influence of Thai language in writing paragraph is a topic sentence: it is necessary to contain a topic sentence in each paragraph of English writing, meanwhile it is not essential for Thai paragraph (Watcharapunyawong & Usaha, 2013). Moreover, some of Thai learners place a topic sentence at the end of the paragraph. This results in the disunified paragraph because the topic sentence is responsible for carrying a topic and manipulating an idea of each paragraph; moreover, this makes all of the supporting sentences work inappropriately (Kaweera, 2013).

2.5   Writing Errors from Intralingual Interference

Apart from interlingual interference, especially in lexis, syntax, and discourse, the errors are also found in writing by EFL learners on account of intralingual interference. Kaweera (2013) indicated that this type of error is not associated with the language transfer from mother tongue; however, it can be defined as the deviating

features of written expression resulted from the conflicting information of the target language. In addition, it can be classified into seven items, including misanalysis, false analogy, redundancy, incomplete rule application, overgeneralization, hypercorrection, and overlooking co-occurrence restriction (Scovel, 2001).

2.5.1   Misanalysis

This is caused by a misconception of specific rules in writing target language. For example,

- Flint Stone is my favorite <u>who</u> has many gorgeous scenes.

It can be implied from this example sentence that the writer mentions a movie by describing the scene of this movie. However, he or she misanalyzes that the movie title is a man. He or she, therefore, selects 'who' to be a relative pronoun referring to that man.

- My dad adopts three pets to the house. <u>Its</u> is a cat, a dog, and a fish.

In this case, the writer may think that 'it' is a pronoun used to mention animals or things. Afterwards, he or she adds "-s" to pluralize that pronoun instead of using "They are."

2.5.2   False Analogy

This is made from the writer who does not wholly understand the obvious differences of target language; therefore, the cross-association subsequently takes place as follows.

- My sister goes to feed two <u>geeses</u> behind the house.

- <u>Childs</u> from another county come to join the festival.

These show that the writers understand the ways of pluralizing noun with an addition of "-s" into the particular noun. Thus, "goose" and "child" are pluralized by adding "-s" in place of changing them to "geese" and "children," respectively.

2.5.3   Redundancy

This results from those who apply words or phrases to the text, but they have already existed, contributing to a provision of nothing to the meaning of the entire sentence. The EFL writers may perform the redundancies in terms of word, qualifier, and synonym. In addition, example sentences describing the redundancy in each category are exemplified as follows.

2.5.3.1 Word

- My lecture today is about HIV virus.

It is well-known that "HIV" stands for Human Immunodeficiency Virus. The writer performs a redundancy by mentioning the word 'virus' twice.

2.5.3.2 Qualifier

- Mario is a very perfect student since he is smart and industrious.

The word "perfect" vividly explains itself as being absolutely correct or being excellent. Therefore, the word "very" is a repetitive word without adding more meaning to the overall sentence.

2.5.3.3 Synonym. For example,

- Can you repeat that sentence again?

This shows the unnecessity of word addition. Without the word "again," the purpose of this sentence is also to emphasize the intention.

2.5.4 Incomplete Rule Application

This is characterized when the writers would like to use interrogative sentences in a declarative sentence by stating "wh-word" but subject and verb are not inverted. The exemplifications are as follows.

- I don't know where is my purse.

- Who knows what should I dress up tonight?

To state the correct declarative statements, the writers have to shuffle the positions of "… where is my purse." and "… what should I …" to "… where my purse is." and "… what I should…," respectively.

2.5.5 Overgeneralization

This is observed when the authors perceive a rule of target language and surmise that it can be applied without any exceptions. For example,

- She teaches very good as I understand her all today.

- She has so much businesses in her hometown.

In fact, the words 'good' and 'much' are in need to be replaced by 'well' and 'many' in order to explain both sentences correctly.

2.5.6   Hypercorrection

This is generated by those who apply their known rules to others. For instance,

- She is a second years veterinary student.

This clarifies that the writer thinks that the word 'second' should be in a plural form. Hence, they add "-s" to the following noun in order to express the plurality.

- Speaking in front of the mirror makes him improves his personality.

This demonstrates that the writer is likely to be confused with subject-verb agreement. In those two mentioned sentences, the word 'years' and 'improves' are required to be 'year' and 'improve,' respectively.

2.5.7   Overlooking Co-occurrence Restriction

This happens if the writers do not well notice the restrictions of L2 existing structures. For example,

- I enjoy to eat a lot of fruits.

This error is caused by the overlooking of the writers that the word 'enjoy' appears together with gerund. Furthermore,

- She is willing to joining the pool party.

This demonstrates that the writers neglect the rule of infinitive. As a result, "to eat" and "joining" must be changed to "eating' and "join," respectively.

2.6   Analysis of Writing Errors

The analysis of errors in writing is considered one of the most important ways of second language acquisition (James, 2013) since it is the procedure of identifying occurrence, nature, cause, and sequel of unaccomplished language (James, 1998). Moreover, it is widely used by a number of language researchers focusing on the interference from mother tongue. The error analysis can be conducted with comparison and contrast between target language and mother tongue in order to figure out the factors affecting the second language acquisition. In the past, language researchers used both contrastive analysis and error analysis to study the L1 interference. However, error

analysis is more convenient for both learners and teachers since the students are required to produce only one writing, while the contrastive analysis requires two tasks per one assignment (Watcharapunyawong & Usaha, 2013). This is in accordance with several studies, for example, Xu (2008) stated that error analysis is eminently chosen for analyzing errors dominated by the first language. Moreover, a former study indicated that the contrastive analysis is supplanted by the error analysis, which is regarded as an important part of applied linguistics (Maicusi, Maicusí, & Carrillo López, 2000). As a result, a number of studies on error analysis have been conducted in many countries, such as Israel (Murad & Khalil, 2015), Vietnam (Ho & Duong, 2015), Iran (Khansir & Shahhoseiny, 2013), and others.

In Thailand, several studies have been undertaken on the error analysis in writing of learners. For example, Noojan (1999) indicated that the most frequent errors found in writings of Thai students are classified into sentential and word levels. Those errors in sentential level are fragments, run-ons, subject-verb agreements, word orders, and tenses. As for the errors in word level, they include articles, prepositions, and singular and plural nouns. Furthermore, Hengwichitkul (2006) defined the errors only in the sentential level which include subject-verb agreements, parts of speech, participial phrases, relative clauses, passive voices, parallel structures, punctuations, fragments, and run-ons. In addition, Runkati (2013) analyzed the writing tasks and classified the errors taken place into sentential and word levels as follows.

2.6.1 Errors in Sentential Level

2.6.1.1 Fragment

A fragment of a sentence is characterized as a word group or a piece of sentence, which is usually not connected with the main clause. This makes fragments cannot relay the whole message of the sentence (Sawalmeh, 2013). Some fragments look like a complete sentence, especially those initiated with after, because, before, since, so, or when. For example,

- As he is a veterinarian at the rural veterinary hospital.

- While the doctor is investigating the origin of disease.

- The immunohistochemical study in swine ovaries.

- The barn behind the house with red fence.

2.6.1.2 Run-on

The error happens when two or more sentences are placed within one period. Some run-on sentences require conjunction or any punctuation marks in order to complete the sentence. For instance,

- My mother's name is Mary she is sixty years old.

- The house which he bought was white it is also expensive.

- It rains heavily people are not going outside the house.

- The boss called his secretary she cannot answer immediately.

2.6.1.3 Subject-verb agreement

This is considered the most pervasive errors among the grammatical errors in writing tasks of the students. This error results from the incapability of selecting correct verb in relation to its subjects (Singh et al., 2017). According to the rule, singular subject requires singular verbs; plural subjects need plural verb in aspect of number and tense (Sawalmeh, 2013). For example,

- She wake up before everyone in the house.

- Children drinks soda without a permission from parents.

- One-third of the students skips the evening classroom.

- The symptoms ranging from mild to severe diarrhea is developed in people with foodborne allergy.

2.6.1.4 Word order

This error occurs when the writers place words in wrong position, especially adjectives and adverbs. For Thai students, this is one of the most common types of error found in the writing because the positions of adverb and adjective in Thai sentences are considerably different from English sentences; adjective is placed following the noun in Thai sentences and vice versa in English sentences. Examples are as follows.

- This is a statue priceless from my grandmother.

- He is a student, fifteen-year-old.

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2.6.1.5 Tense

A tense in English sentences is usually identified by an adverb of time. For Thai students, the adverb of time does not affect the tense used in Thai sentence, entailing the errors in writing of Thai students. For example,

- He is buying a lot of toys yesterday.

- The pigs are injected with GnRH vaccine last weeks.

- I and my mother live in Bangkok for 12 years.

- I go to travel in New York next year.

2.6.1.6 Capital letter

Apart from the beginning of sentence, the capital letter may be requisite in some other parts of the sentence (Butler, 2007), for instance,

- Pronoun "I"

- My father and I live in the same condominium.

- If you come to my house, I will prepare a dinner.

- People's name and title

- My daughter's name is Rosy.

- If you need more information, please ask Dr Morrel.

- Nationality and language

- He is Swedish.

- She speaks Chinese.

- Place name

- My professor comes from the Fifth Avenue.

- The venue for annual meeting is Robinson.

2.6.1.7 Punctuations

In general, a sentence in English starts and ends with capital letter and period, respectively. In addition, some sentences may be terminated with other punctuation marks, such as a question mark for an interrogative sentence, as well as an exclamation mark for an expressive sentence. For example,

- Where is the nearest post office?

- What is your nationality?

- What a surprise!

- Don't forget!

Apart from those, apostrophe, quotation mark, comma, colon, semicolon, and dash are the punctuation marks which are frequently found in writing tasks of many EFL learners.

- Apostrophe: it is used for demonstrating possession or abbreviation. For example,

- That building is the President's garage.

- People's life in the big city is time-consuming.

- They're going to school together.

- He's kind to everyone.

- Quotation mark: it appears before and after spoken statement. For instance,

- My teacher says "Please be on time for the class."

- The patient is told that "the surgical room is not here."

- Comma: it is normally used for separating words, phrases, and clauses. For example,

- My pets are dogs, cats, and fish.

- If you were busy working, I would go home alone.

- I am studying for the exam, while my sister is cooking for the party.

- After the examination, we will go to celebrate at the gorgeous restaurant.

- Colon: it is used for modifying its preceding clause:

- Human's mind is like a door: it functions when it opens.

- Semicolon: it is used for connecting two independent clauses which have the relevant meaning:

- Ruth is very shy; he has never presented himself in any public places.

2.6.2 Errors in Word Level

2.6.2.1 Article

In English, articles include "a," "an," and "the" and are placed prior to a countable noun. The two first articles are so-called 'indefinite articles' which precede a singular noun. Of those, "an" is used in front of a noun starting with letters

of vowel sound. As for "the," it is regarded as a "definite article" which can precede both singular and plural nouns. Considering an uncountable noun, it is normally stated with zero article; moreover, such article is used to precede a noun stating abstraction, custom, an institution. Examples of using article are as follows.

- A toddler practices to hold things.

- My neighbor just bought a new car.

- An elephant is drinking water in the canal.

- The sun rises in the morning.

- She always drinks milk before bedtime.

2.6.2.2 Preposition

In general, preposition, such as in, on, at, under, and by, is used in the sentences before place, location, and time. Moreover, other forms of prepositions can be found, including adjunct or prepositional phrase. For example,

- She wakes up in the early morning.

- A new textbook is now on the shelf.

- My dog always jumps into the pond when the weather is

very hot.

- Her boss leaves from the office at midnight.

- With his language competency, he passed the first round of

interview.

2.6.2.3 Word choice

When the writers use incorrect words in a sentence, it contributes to a word choice error. For example, using do or make, participle, using much or many, and so on. Some of the examples of this error are demonstrated as follows.

- Using do or make

- I do a mistake in writing my assignment.

(It should be "make" for a mistake')

- I will do a phone call for more information.

(It should be "make" for a phone call)

- I will make my homework with friends this evening.

(It should be "do" for homework.)

- Participle

    - I am afraid of stepping on the breaking glass.

    (It should be "broken" glass.)

    - We should not buy the stealing car from unknown dealers.

    (It should be "stolen" car.)

- Using much or many

    - Joey has so much friends at my college.

    (It should be "many" for friends, which is a countable noun.)

    - There are many information of surgery on the internet.

    (It should be "much" for information which is an uncountable noun.)

2.6.2.4 Noun

    A noun is used to mention people, places, things, animals, and thoughts. Basically, it is categorized into countable and uncountable nouns. For countable noun, it can be either singular or plural ones. The plural noun is ordinarily created by adding "-s" or "-es" to the end of singular noun, which is called regular plural noun. For some words, the pluralization is done by adding nothing at the end of the singular noun, or changing into another new word, such as people, police, children, women, and so on. Furthermore, some words appear in the plural form only, such as shorts, scissors, glasses, and so forth.

2.6.2.5 Number

    The demonstration of quantity can be performed with number or letter. In general, the number less than ten should be written with letters, whereas ten onwards should be shown with figures. However, the writers ought to use letter in commencing the sentence regardless of the quantity. For example,

    - Patrick received <u>two</u> cats from his uncle yesterday.

    - Sarah are <u>30</u> centimeters taller than Sunny.

    - <u>Sixty</u> female students are affected with flu.

In addition, decimal point, proportion, and date should be described with figures. For instance,

- The surgeon incises the skin for <u>0.5</u> inch before exploring the lesion underneath.

- Patricia was born on April <u>15, 2018</u>.

- Approximately <u>two-thirds</u> of teachers in the Department of Surgery come from Australia.

According to error analyses, a number of previous studies demonstrated writing errors in several aspects. Some authors categorized errors on the basis of language interference into those from interlingual and intralingual interferences. Another study analyzed writing errors in sentences and words. The present study majorly aimed to investigate errors in writing of Mahasarakham University veterinary students both in sentential and word levels.

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CHAPTER 3
RESEARCH METHODOLOGY

The methodology of the study entitled "An Analysis of Writing Errors in English Abstract of Mahasarakham University Veterinary Students" was proceeded on the basis of the following procedures.

3.1 Target population

3.2 Research Instruments

3.3 Data Collection

3.4 Data Analyses

3.5 Statistical Analyses

3.1 Target Population

Subjects for the present study were the undergraduate students, signing up for "Clinical Seminar" course organized by the Faculty of Veterinary Sciences, Mahasarakham University in the second semester of academic year 2018. This course is one of the compulsory subjects in clinical level of those pursuing the DVM curriculum at Mahasarakham University, Talad Subdistrict, Mueang District, Maha Sarakham province, Thailand.

3.2 Research Instruments

The instrument for the current study was English abstracts written by undergraduate students, registering for the "Clinical Seminar" subject. Moreover, such abstract was required to be written by each student as a first complete version and have never been rectified by any of supervisors or friends.

According to the "Clinical Seminar" course, every student was first introduced with an overall information related to this course, such as introductory lessons, course regulations, topic selection, and others. At the end of the first period, the course

organizer notified all the students that everyone was required to produce a review article, which was synthesized from previous and present literatures, with either Thai or English languages. In addition, an abstract of each article was compulsory to be written in English as formatted in the instructions for students. In the present study, all abstracts were required to be written in non-structure pattern because it was an abstract of a review article; therefore, methodology and results sessions were deducted.

After the introductory session, every student was required to contact one or more instructors in the Faculty of Veterinary Sciences, Mahasarakham University to be a major supervisor. For minor supervisors, they could be experts in any academic or research institutions, but were not mandatory. Thereafter, students and supervisors discussed for paper topic, based on veterinary science, with each other and turned in the selected topic to the course organizer in a given time. Afterwards, the course organizer officially announced individual topics and supervisor names.

Apart from major assignment and supervisor names, this course also provided several introductory lectures related to scientific paper establishment, such as writing patterns of seminar papers, mind-mapping for drafting papers, using online scientific databases and referencing programs, and so on. These topics were supplied in order to enlighten the ways of constructing a good scientific paper to all the students.

3.3 Data Collection

All of the students, registering for "Clinical Seminar" course, were required to submit the first complete version of their English abstracts in form of a document file (.doc) to a teaching assistant via an email. The abstracts in this version included personal details of the writers, including first and last names, student identification number, major and minor supervisors' names, and date of submission. Afterwards, the teaching assistant modified all of the abstracts electronically via blinding all personal information and assigning a new specific code for each file. Finally, all the abstract files with newly assigned code were transferred to the analysts for investigating writing errors both in sentential and word levels. In sentential level, errors in each abstract were identified based on fragment, run-on, subject-verb agreement, word order, tense, capital

letter, and punctuation. In word level, errors in each abstract were identified based on article, preposition, word choice, noun, and number.

3.4   Data Analyses

The analyses of data collected from English abstracts written by MSU veterinary students were performed as follows. First was an analysis of descriptive data, including sex, word count, line count, and error points. Second was a frequency analysis of each error found in the abstracts. Finally, percentage of each error was calculated using the formulae.

$$\text{Percentage of sentential errors} = \frac{Number\ of\ each\ sentential\ error}{Total\ number\ of\ sentential\ errors} \times 100$$

$$\text{Percentage of word errors} = \frac{Number\ of\ each\ word\ error}{Total\ number\ of\ word\ errors} \times 100$$

3.5   Statistical Analyses

The statistical software used in the present study was SAS version 9.0 (SAS Inst, Cary, NC, USA). Moreover, the statistics used in the present study included mean, standard deviation, and frequency distribution.

CHAPTER 4
RESULTS

The findings of the study entitled "An Analysis of Writing Errors in English Abstract of Mahasarakham University Veterinary Students" were classified into two categories as follows.

4.1 General Information

4.2 Error Analyses

4.1   General Information

The present study investigated writing errors, based on sentential and word levels, in the abstracts written with English by veterinary students of Mahasarakham University. All of them were those who enrolled in "Clinical Seminar" course in the second semester of academic year 2018. In total, 26 English abstracts were retrieved from 11 male and 15 female veterinary students. All of the abstracts were the first complete version without any prior corrections. Moreover, all abstracts were submitted online with the given format so that the number of words and lines could be counted with the same manner. Table 4.1 demonstrates descriptive data from 26 the abstracts written by MSU veterinary students.

Table 4.1

Descriptive Statistics (Mean±SD) from English Abstracts (n=26) Written by Veterinary Students of Mahasarakham University.

Variables	Mean±SD	Range
Word count per abstract	157.58±38.15	95.00-240.00
Line count per abstract	10.23±2.52	7.00-15.00
Error point per abstract	16.65±8.83	4.00-39.00

4.2   Error Analyses

In total, the number of writing errors from all abstracts was 433 points. Of those, they were 238 (54.97%) and 195 (45.03%) points of errors in sentential and word levels, respectively. Based on the analyses of errors in sentential level, all types of writing errors, including fragment, run-on, subject-verb agreement, word order, tense, capital letter, and punctuation, were observed. Due to the investigation of error in word level, the students made errors in articles, preposition, word choice, and noun. However, an error in number was not observed. Figure 4.1 illustrates the frequency of writing errors categorized by sentential and word levels. The most and least common writing errors in English abstract written by veterinary students of Mahasarakham University was word choice (26.79%) and number (0.00%), respectively.
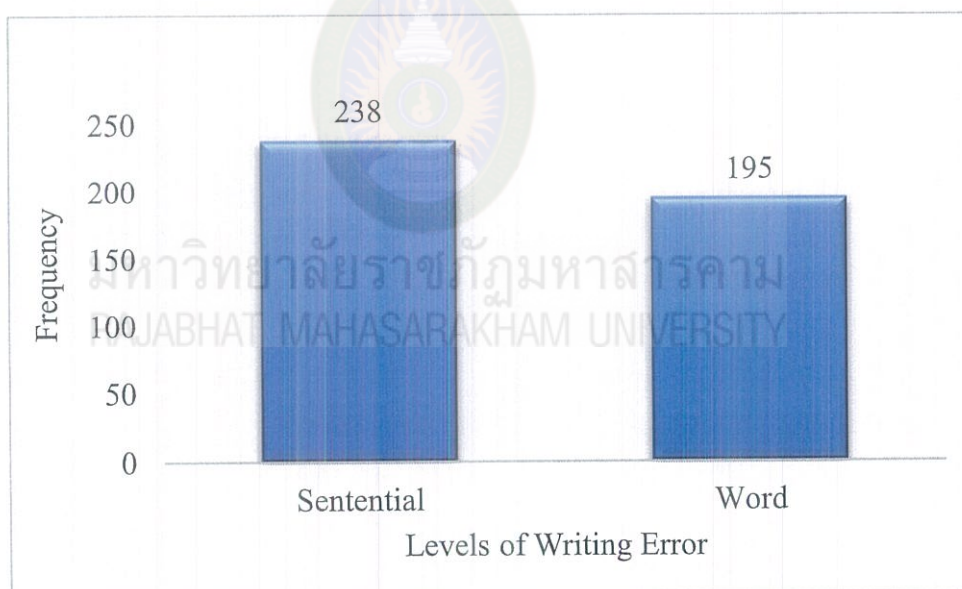
Figure 4.1 Frequency distribution (n=433) of writing errors from English abstracts (n=26) categorized by level of writing error.

Based on sentential level, frequency and percentage of writing errors are demonstrated in Figures 4.2 and 4.3, respectively. The most common error type in sentential level found in the present study was capital letter (88 points, 36.97%), meanwhile the least one was tense (8 points, 3.36%).
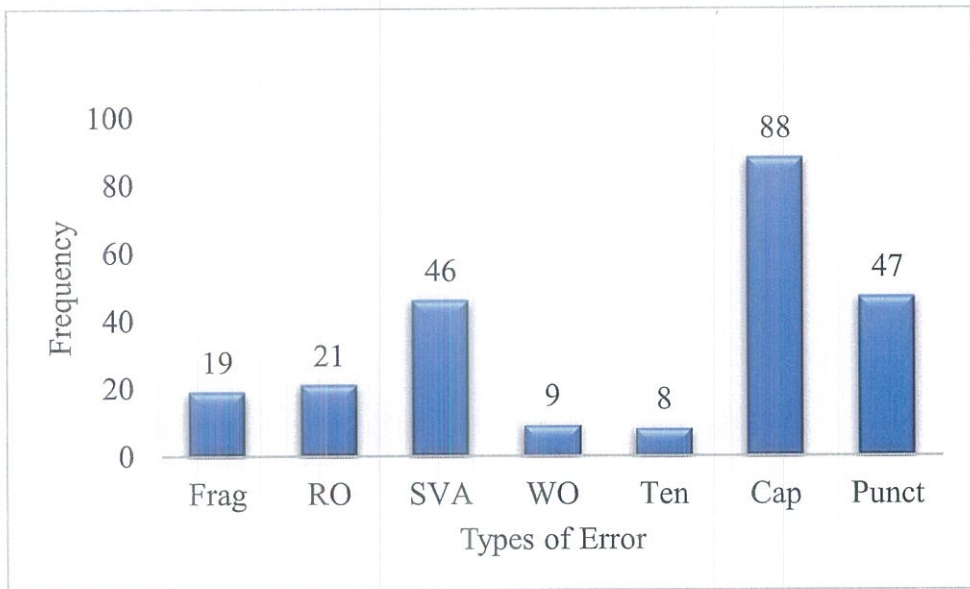
Figure 4.2 Frequency distribution of writing errors in sentential level from English abstracts (n=26) written by veterinary students of Mahasarakham University. Frag = fragment, RO = run-on, SVA = subject-verb agreement, WO = word order, Ten = tense, Cap = capital letter, and Punct = punctuation.

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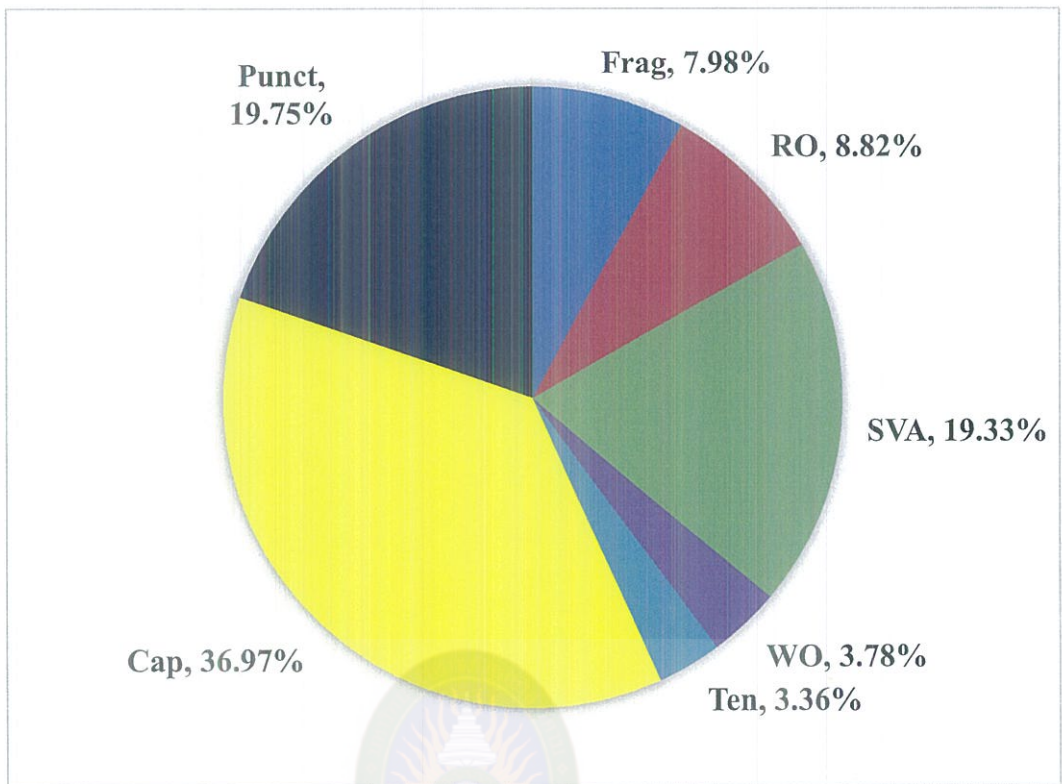
Figure 4.3 Percentage of writing errors in sentential level from English abstracts (n=26) written by veterinary students of Mahasarakham University. Frag = fragment, RO = run-on, SVA = subject-verb agreement, WO = word order, Ten = tense, Cap = capital letter, and Punct = punctuation.

As for word level, Figures 4.4 and 4.5 illustrate frequency and percentage of writing errors found from English abstracts of the students, respectively. In addition, the highest error in word level was word choice (116 points, 54.49%), whereas the lowest one was number (0 point, 0.00%).

Figure 4.4 Frequency distribution of writing errors in word level from English abstracts (n=26) written by veterinary students of Mahasarakham University. Art = article, Prep = preposition, WC = word choice, N = noun, and Num = number.
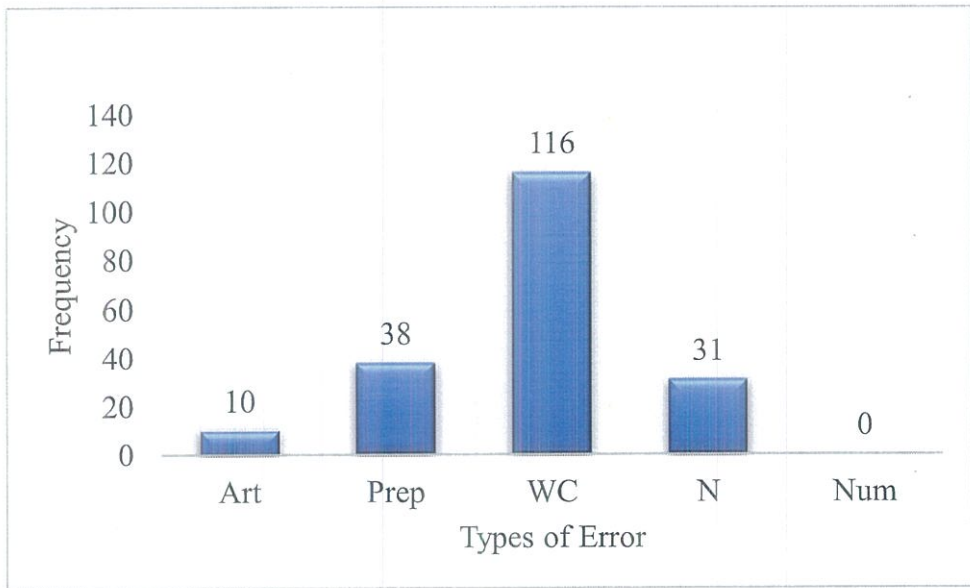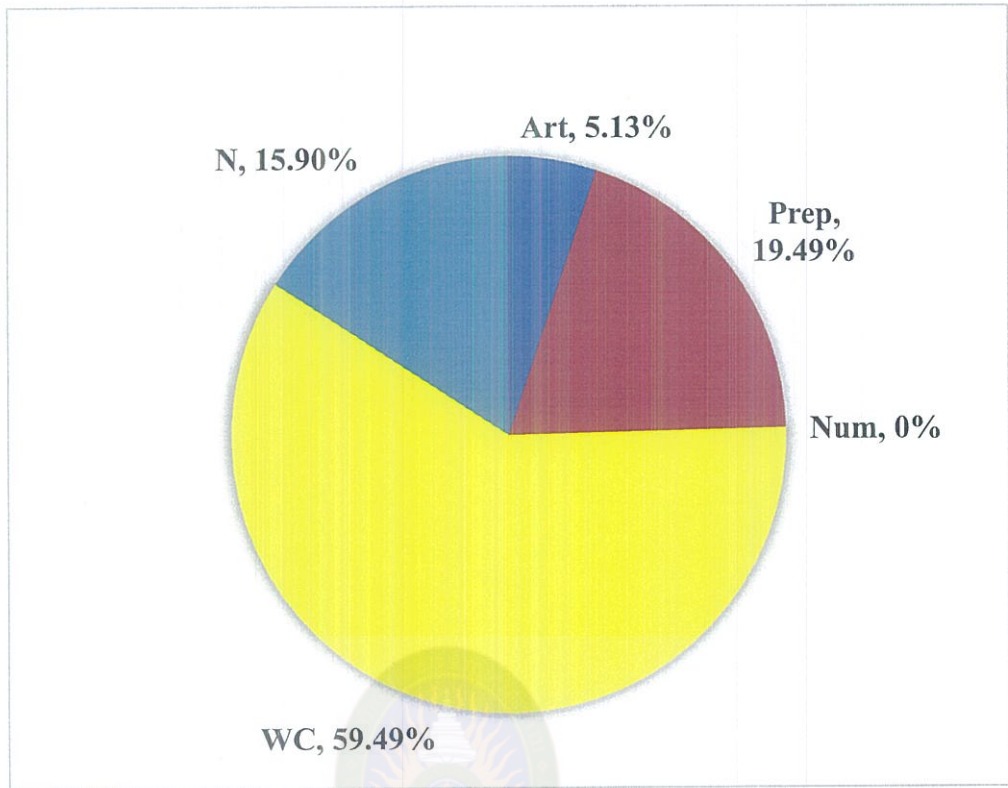
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Figure 4.5 Percentage of writing errors in word level from English abstracts (n=26) written by veterinary students of Mahasarakham University. Art = article, Prep = preposition, WC = word choice, N = noun, and Num = number.

CHAPTER 5

DISCUSSION CONCLUSION AND

RECOMMENDATIONS

This chapter of the study entitled "An Analysis of Writing Errors in English Abstract of Mahasarakham University Veterinary Students" was elaborated with the following topics.

    5.1 English Abstracts Written by Veterinary Students of Mahasarakham University

    5.2 Writing Errors in Sentential Level

    5.3 Writing Errors in Word level

    5.4 Conclusion

    5.5 Recommendations

5.1 English Abstracts Written by Veterinary Students of Mahasarakham University

All of the abstracts in the present study were written with English within one page according to the instruction of the "Clinical Seminar" course. In general, scientific abstracts should be composed of objective, methodology, results, and conclusion (Cuschieri et al., 2019). However, the composition of abstracts in the present study was different since it was an abstract of review articles; it was deprived of methodology and results sections. According to the patterns of scientific abstract, Dewan and Gupta (2016) stated that abstracts for the scientific publications can be written in either structured or non-structured formats on account of journal preferences. As for non-structured abstract, objective, methodology, results, and conclusion, were written within one paragraph, meanwhile the structured needed apparent subheadings. Several studies recommended the latter type of abstract because it provided much information, was easy to read, and expedited review process for publication (Hartley, 2004; Zhang

& Liu, 2011). In the present study, all abstracts were composed in a non-structured pattern which described the entire compositions of the paper in one paragraph. This was because review article did not consist of experiments, so it lacked methodology and results sessions. Moreover, it was beneficial for the students to organize academic essay prior to graduation.

Considering the length of abstract, the current study demonstrated that the veterinary students in the "Clinical Seminar" course wrote their abstracts with approximately 160 words. This corresponded with the previous study indicating that academic abstracts should be written up with approximately 150 words; it could be ranging from 150 to 200 words, depending on journals (Fletcher, 1988). Moreover, Dewan and Gupta (2016) demonstrated that the appropriate length of scientific abstracts could be up to 250 words. However, the shorter or longer abstracts might affect its quality. One of the abstracts from students in the current study was written with only 95 words. This might affect the completeness of the abstract to convey core contents of the paper. On the other hand, a very long abstract might consist of excessive information and not be so fascinating that the readers continued reading that paper to the last page (Dewan & Gupta, 2016).

5.2   Writing Errors in Sentential Level

In this study, error types which were analyzed in the sentential level included fragment, run-on, subject-verb agreement, word order, tense, capital letter, and punctuation. The results revealed that the first three errors which were found in the abstracts written by veterinary students of Mahasarakham University included capital letter, punctuation, and subject-verb agreement. As for capital letter, it accounted for approximately 37% of the errors in sentential level. Correspondingly, the use of capital letter was the biggest problem in writing of many countries, such as in Saudi Arabia which demonstrated that ESL/ EFL learners in a scientific college produced a large number of wrong capital letters in their homework and examinations (Alamin & Ahmed, 2012). Likewise, the study in the Philippines also reported that capitalization was the most prominent error in sentential level from essays written by Filipino ESL writers (Gustilo & Magno, 2012). In Thailand, a former study indicated that one of the

possible reasons for conducting errors with capital letter of Thai ESL/ EFL learners was due to the fact that capital letter does not exist in Thai language system. As a result, they were not familiar with capitalization and made their writings erroneous (Runkati, 2013). Some of the example sentences showing errors in capital letter are demonstrated in Figure 5.1 and 5.2.

Currently, Anticoccidials have been used for coccidiosis control so far. Due to uses of Anticoccidials, it causes widespread of anticoccidial resistance which make Unsuccessful treatment.

Figure 5.1 An example of error in capital letter from a veterinary student.

The capitalizations are found with two words which are "Anticoccidials" and "Unsuccessful." According to Butler (2007), capitalization is performed in five major cases, including pronoun "I," initial letter of the sentence, people's name and title, nationality and language, and place. As a result, the words "anticoccidials" and "unsuccessful" should not be capitalized. According to the interview with the writer of this abstract, he or she thought that "anticoccidials" was a specific name of a substance killing a microorganism named coccidian. Therefore, it should be a proper noun and capitalized. This demonstrated an interlingual interference in writing of Thai EFL learners because the capitalization is not found in Thai language system. Moreover, an error according to intralingual interference was found in form of redundancy. Apart from capital letter, some other writing errors are observed from these example sentences, including redundancy, pronoun, preposition, tense, and subject-verb agreement. Figure 5.2 illustrates the corrected sentences without errors in capital letter and others.

Currently, anticoccidials have been used for coccidiosis control. Due to the use of anticoccidials, it caused widespread anticoccidial resistance which contributed to unsuccessful treatment.

Figure 5.2 Sentences without writing errors in capital letter and others.

Another example of error in capital letter is displayed in Figure 5.3.

> There were also have other factors that were necessary to develop oocytes to metaphase II, such as oocytes co-culture with <u>Bovine</u> granulosa cell monolayers directly collected from the ovaries, co-culture with <u>Canine</u> oviduct epithelial cell (cOECs) and co-culture with <u>Insulin</u>-like growth factor-1 (IGF-1).

Figure 5.3 An example of error in capital letter from another veterinary student.

This sentence demonstrates that capital letters were applied with "Bovine," "Canine," and "Insulin" which make the sentence erroneous since all of them do not meet the criteria of capitalization proposed by Butler (2007). Moreover, all of them are not proper nouns in scientific term. In general, "bovine" and "canine" are used as adjectives in veterinary term referring to "of bull, cows, or oxen" and "of dogs," respectively. As for "Insulin," it is a name of hormone controlling blood sugar level in living humans and animals. Based on the interview, this writer opined that both "bovine" and "canine" were specific names indicating bulls, cows, or oxen and dogs, respectively, in the veterinary field. Accordingly, it should be always capitalized. As for "insulin," In scientific publications, hormonal names are not required to be capitalized in ordinary sentences (Day & Gastel, 2006). Figure 5.4 shows the rectified sentence without errors in capital letter and other kinds of writing errors.

> There were also other factors that were necessary to develop oocytes to metaphase II, such as the co-culture with bovine granulosa cell monolayers directly collected from the ovaries, canine oviduct epithelial cell (cOEC) and insulin-like growth factor-1 (IGF-1).

Figure 5.4 A sentence showing corrections of errors in capital letters and others.

Nonetheless, the results from the present study were different from others conducted in ESL/ EFL learners from different countries. For example, preceding studies in the Middle East region demonstrated that tense was the topmost writing error in sentential level of Jordanian (Khuwaileh & Shoumali, 2000) and Iranian learners (Khansir & Shahhoseiny, 2013). Focusing on the studies in Asian learners, some

researches exhibited the corresponding results that tense occupied the largest proportion of writing error in sentential level, such as in Vietnam (Ho & Duong, 2015), and Thailand (Runkati, 2013). In addition, a previous study conducted in 40 undergraduate students majoring in English, who accomplished English Structure in Use, English Structure in Context, and two grammar courses in a university located in southern Thailand, reported that verb tense was the most outstanding error in sentential level from their narrative writings (Watcharapunyawong & Usaha, 2013). Based on the current study, tense error occupied the least proportion of writing error in sentential level written by veterinary students of Mahasarakham University. It might be due to the fact that all of them were instructed in the classroom of this course that past simple tense should be used as a major form to report the results from previous studies.

As for punctuation, it took approximately 20% of writing errors in sentential level of veterinary students in this study. In Malaysia, this was one of the conspicuous problems in writing of Malaysian EFL students. Major problem related to their punctuation errors included semicolon, colon, comma, apostrophe, and question mark (Ghabool, Mariadass, & Kashef, 2012). According to the present study, an example of error in punctuation from English abstracts of veterinary students is displayed in Figure 5.5.

There are some diseases that have normal values, such as end-stage kidney disease. Hypronephrosis, etc.

Figure 5.5 An example sentence showing error in punctuation.

This sentence illustrates the error in punctuation with a period which is generally used to terminate a sentence. However, this example sentence contains two periods in one sentence; the last one is used correctly to end the sentence, meanwhile the first one should be changed to "comma" to make the whole sentence correct, together with the rectification of capital letter. Accordingly, the sentence in Figure 5.6 demonstrates the correction of error in punctuation.

> There are some diseases that have normal values, such as end-stage kidney disease, hypronephrosis, etc.

Figure 5.6 A sentence showing corrections of errors in punctuation.

As for subject-verb agreement, it is indispensable in English sentences that verb form is used according to number and person of subject. Even if it is simple that singular subject is followed by singular verb and plural subject requires verb in plural form, some errors in its agreement take place. In the present study, an example sentence of this error type from abstracts written by veterinary students is illustrated in Figure 5.7.

> The acute phase protein (APP) is a protein which response to inflammatory and infection.

Figure 5.7 An example sentence showing error in subject-verb agreement.

This sentence demonstrated that the writer was not capable of selecting an appropriate verb for subject of relative clause. Therefore, he or she selected plural verb for the subject "which" referring "protein" which indicates singularity, causing error in subject-verb agreement. This was derived from interlingual interference (syntax) of the students because verb form in ordinary Thai sentences does not have to agree with its subject. Figure 5.8 shows the sentence without error in subject-verb agreement.

> The acute phase protein (APP) is a protein which responses to inflammation and infection.

Figure 5.8 A sentence with correction of error in subject-verb agreement.

Relied on my personal experience, a number of veterinary students at Mahasarakham University made this error for several times, especially the agreement of verb following relative pronoun. A former study from Thailand stated that error in subject-verb agreement was also considerably observed in the writings of graduate

students from southern Thailand. Moreover, she stated that subject-verb agreement in English sentences was difficult for Thai students since this rule does not exist in Thai language system (Runkati, 2013). In Malaysia, Singh et al. (2017) reported that this error occupied the highest percentage in writing of the students. Moreover, this error was higher when they encountered a phrase between subject and verb, and subject in form of number and pronoun. Correspondingly, Hourani (2008) stated that the agreement between subject and verb was considered the most problematic in writing of learners in the United Arab Emirates. Moreover, the author elucidated that this was because they overgeneralized the grammatical rule by omitting and adding –s after singular and plural verbs, respectively. In France, errors in subject-verb agreement were majorly found in aspect of attraction error which the writers form a verb based on an adjacent noun in place of a sentence subject (Franck, Vigliocco, & Nicol, 2002). In the present study, Figure 5.9 demonstrates an attraction error in the abstract of a veterinary student.

RI values are not correlated with sex and weight But has a relationship with the age of cats that were studied.

Figure 5.9 An example sentence showing an attraction error.

The subject of this sentence is "values" which is in a plural form. Therefore, its verb must also be in plural form in order to make an accurate agreement. In this case, the student intended to write two verbs which were "are not" and "has" for the subject "values." The first verb "are not" was written in plural form since it existed next to the sentence subject. Nonetheless, verb "has" was not proportional to its subject. This might be because the preceding noun "weight" was in singular form which attracted he or she to write singular verb in the given position, contributing to attraction error for this sentence. To obviate error in subject-verb agreement and others, this sentence should be corrected for suitable tense and rewritten as shown in Figure 5.10.

RI values did not correlate with sex and weight but had a relationship with the age of cats that were studied.

Figure 5.10 A sentence showing correction of an attraction error.

5.3 Writing Errors in Word Level

The current study investigated writing errors in word level from English abstracts of veterinary students at Mahasarakham University in terms of article, preposition, word choice, noun, and number. The two most outstanding errors in word level, in the present study, were word choice and preposition, respectively. As for word choice error, it resulted in the deviation of sentence meaning due to the improper word (Phuket & Othman, 2015). A former study which conducted an error analysis in the Philippines by categorizing Filipino EFL learners on the basis of writing proficiency into low, medium, and high, revealed that word choice error occupied the highest percentage from all proficiency groups (Gustilo & Magno, 2012). In Thailand, a previous study indicated that word choice possessed the highest frequency of grammatical error in word level found in narrative writing of the university students who accomplished several English writing-related courses. Moreover, word choice occupied the second and third ranks of error found in their comparative-contrastive and descriptive writings, respectively (Watcharapunyawong & Usaha, 2013). Based on the present study, Figures 5.11 and 5.14 display examples of abstract consisting of word choice error.

In addition, biomarkers have been examined for <u>diagnosis</u> comorbidity with IMHA e.g. Disseminated Intravascular Coagulation (DIC) leading to multi organs failure.

Figure 5.11 An example sentence showing error in word choice.

The writer chose the word "diagnosis" to go after a preposition "for." However, it should be a "gerund" after this preposition in order to complete the sentence. Based on the interview, the writer has learned that a word following preposition could be either

gerund or noun. However, he or she has not known that the composition after that noun or gerund must be taken into consideration to place either noun or gerund. Thereby, this sentence should be corrected for other grammatical errors and rewritten as shown in Figures 5.12 and 5.13.

In addition, biomarkers have been examined for <u>diagnosing</u> comorbidity with IMHA e.g. disseminated intravascular coagulation (DIC), leading to multiorgan failure.

Figure 5.12 A sentence showing correction of word choice error.

In addition, biomarkers have been examined for <u>a diagnosis of</u> comorbidity with IMHA e.g. disseminated intravascular coagulation (DIC), leading to multiorgan failure.

Figure 5.13 A sentence showing another correction of word choice error.

Another example of word choice error is illustrated in Figure 5.14.

Recent studied have been shown that ruminitis is a <u>majority</u> cause of systemic inflammation by induced a nuclear factor (NF)-κB pathway.

Figure 5.14 Another example sentence showing word choice error.

The writer made an error by placing the word "majority" in front of the word "cause." From an interview, he or she perceived that noun could come after copula "be." Moreover, two nouns could be adjacent to each other as a compound noun. Thereafter, he or she translated from Thai to English in the writing. For this case, the major noun "cause" required an adjective "major" in order to make this sentence correct grammatically. Consequently, this sentence should be rewritten as depicted in Figure 5.15.

Recent studied have shown that ruminitis is a <u>major</u> cause of systemic inflammation by inducing a nuclear factor (NF)-κB pathway.

Figure 5.15 A sentence showing corrections of error in word choice and others.

However, different studies from various countries reported different results. A number of former studies indicated that the topmost writing errors in word level found in ESL/ EFL learners were noun for Malaysians (Singh et al., 2017), preposition for Vietnamese (Ho & Duong, 2015) and article for Iranians (Khansir & Shahhoseiny, 2013), Iraqis (Mohammed, 2016) and Thais (Runkati, 2013). In addition, Watcharapunyawong and Usaha (2013) assessing writing errors in undergraduate students majoring in English in Thailand reported that article is the most eminent error in word level found in both of their narrative and descriptive writings.

Apart from word choice, preposition took the second place of writing error in word level from English abstracts of veterinary students. Preposition was considered one of the distinguished errors in writing of ESL/ EFL learners from many countries. Hourani (2008) reported that prepositional errors took the third place of writing errors in the United Arab Emirates. The author also stated that prepositional errors found from their learners were dominated by mother tongue. Moreover, it might be owing to the negligence of grammatical rules of Emirati learners. Likewise, Henning (1978) proposed that the improper use of prepositions in English writing of Arab learners was frequently observed due to language transfer from Arabic to English. Corresponded with the present study, a preceding research in the Philippines demonstrated that preposition took the second rank of writing error in word level subordinate to word choice (Gustilo & Magno, 2012). In Malaysia, Singh et al. (2017) exhibited that prepositional errors held the second rank of those in word level. This seemed to be caused by the recklessness in using preposition of Malaysian learners since they thought that prepositions did not affect the sentence meaning. As a result, Malaysian learners in that study did not focus on using proper prepositions in English sentences. Moreover, errors from using preposition of EFL/ ESL learners were also the common problem in Iraqi (Mohammed, 2016) and Turkish learners (Abushihab, 2014). According to the present study, the use of inappropriate preposition found in an abstract of a veterinary students is represented in Figure 5.16.

> Chemotherapy in the brain tumors is difficult to treat due to the blood-brain barrier that regulates the transport of substances to enter the brain.

Figure 5.16 A sentence showing error in preposition.

In general, preposition "in" is used in English sentences to describe the existence of something in particular area. However, the writer selected preposition "in" so as to describe the difficulty of using some chemicals to treat brain cancers. This apparently illustrated the first language predomination in writing target language. Therefore, the sentence should be corrected for preposition and other error points as displayed in Figure 5.17.

> Chemotherapy for brain tumors is difficult due to the blood-brain barrier that regulates the transport of substances to the brain.

Figure 5.17 A sentence showing corrections of error in preposition and others.

5.4   Conclusion

The present study identified writing errors found in 26 abstracts of Mahasarakham University veterinary students enrolling in "Clinical Seminar" course in academic year 2018. All of the abstracts were written in English with unstructured pattern within one page. The analyses of writing errors were conducted in both sentential and word levels. The results revealed that 433 points of writing errors were found from a total of 26 English abstracts. Of those, word choice tenanted the largest proportion of writing error, whereas none of them made error in number.

Based on sentential level, the most common errors from their abstracts were capital letter, punctuation, and subject-verb agreement, respectively. According to word level, the topmost errors in their abstracts were word choice, and followed by preposition. According to the major findings, it could be concluded that writing errors in English abstracts written by veterinary students of Masasarakham University were

derived from an inadequacy of linguistic knowledge, especially in terms of syntax and semantics, which made them write their abstracts based on the first language system.

5.5   Recommendations

The present study has been the first evidence of error analyses in scientific writing of veterinary students in Thailand. In this study, abstracts of review article written by those of Mahasarakham University were used as an instrument for investigation. Even if the analyses of writing errors in this study were conducted only in sentential and word levels, it was found that every abstract was composed of errors in both levels. The recommendations from the current study consisted of practical applications and further studies.

5.5.1   Practical Applications

The results from the present study will be beneficial to both students and instructors of the Faculty of Veterinary Sciences, Mahasarakham University in teaching and evaluation methods, characteristics of English teachers for veterinary students, and curriculum improvements.

5.5.1.1 Adjustments of teaching and evaluation methods

Nowadays, Mahasarakham University veterinary students have been taught in three major patterns, including lecture, laboratory, and clinical practice. Even if purposes and processes of each learning method are different, an evaluation is similar to one another. Since the Faculty of Veterinary Sciences, Mahasarakham University was founded, almost all examinations were established dependent on paperwork, which have never required answers in form of English essay. This has been one of the potential drawbacks of Mahasarakham University veterinary students to develop their English writing skills. Based on the results of this study, a number of error types were found from every abstract of veterinary students who enrolled in the "Clinical Seminar" course. One of the possible reasons for them to produce writing errors is that they have lacked opportunities to practice writing English essay during academic years. Most of the instructors at the Faculty of Veterinary Sciences of Mahasarakham University have been unintentionally focusing on English reading skill as apparently seen from assignments they gave to their students from the first to the

sixth years of study, such as textbook chapters and research articles. The students have been assigned to read, extract, and present core contents from those English materials. Nonetheless, the students have always presented their assignments with Thai. This points out that teaching and evaluation methods should be modified in order to ameliorate English writing skill of the veterinary students. In my opinion, it will be beneficial for the students if teachers design some lessons or exercises which require English essay as an answer. Moreover, those essay should be assessed for both content and language aspects so as to identify students' capabilities in both ways.

5.5.1.2 Characteristics of English teachers for veterinary students

The findings of the present study should be reflected to English teachers for students of the Faculty of Veterinary Sciences at Mahasarakham University in order that they can prepare lessons, exercises, and relevant teaching materials for improving English writing skill of their students. As lucidly seen from the results of this study, the top priority which English teachers should pay attention to is word choice error. In addition, errors in capital letter, punctuation, and subject-verb agreement should also be minimized since they tenanted the largest proportion of writing errors. In my opinion, English teachers for veterinary students should master both in language and content in one person. In terms of word choice error, teachers specializing in both content and language used in veterinary field know the most suitable word for each context. Therefore, they will not only identify word choice error in the student's writing, but also get rid of that error with confidence and explain the reasons why students should or should not use this word in veterinary contexts. This approach can also be applied to any other error type.

5.5.1.3 Curriculum improvement

The findings of this study vividly pointed out that all the veterinary students of Mahasarakham University wrote English abstracts with writing errors both in sentential and word levels. Curricular adjustment will be one of the lucrative ways of improving their writing skills. According to the DVM curriculum of Mahasarakham University, the students are required to achieve only three fundamental English courses. Afterwards, they have to write scientific English in abstracts for two subjects: Clinical Seminar and Research Project in Veterinary Medicine. In my point of view, three basic English courses are literally meager for enhancing students' writing

skill. As a result, the upcoming DVM curriculum should be adjusted by an addition of more bridging courses which highlight on necessary knowledge and skills for writing academic and scientific English, such as basic English structure, paragraph development, principles of scientific writing for veterinary students, and so on.

Apart from veterinary students and instructors of the Faculty of Veterinary Sciences at Mahasarakham University, those suggested methods can be applied to any other field of study in order to improve English writing skill of the students

5.5.2 Further Studies

The present study demonstrated the analyses of writing errors only in sentential and word levels. Based on sentential level, the analysis was conducted only for seven types of writing errors, including fragment, run-on, subject-verb agreement, word order, tense, capital letter, and punctuation. As for word level, the errors were investigated on the basis of article, preposition, word choice, noun, and number. These reflected only points of error found from writing of the students. In addition, some of the writers were summoned to interview for errors took place in their writings. According to several interviews, it was found that their errors were derived from the first language interference, especially when they did not know the actual sentence structures, correct grammatical rules, and appropriate vocabularies. Further studies should not analyze only error types in the writing, but also the interference of those errors. The detailed analyses from both interlingual and intralingual interferences will give rise to more information on error analyses. This will be advantageous for both students and teachers in order to develop English writing skill for veterinary students of Mahasarakham University.

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APPENDICES

APPENDIX A
Error Recording Sheet

No	Sentential level							Word level				
	Frag	RO	SVA	WO	Ten	Cap	Pun	Art	Prep	WC	N	Num
1	-	-	3	-	-	-	1	-	1	4	-	-
2	-	1	2	1	-	-	2	1	1	5	-	-
3	-	3	3	-	-	6	4	-	3	7	-	-
4	-	1	2	2	-	3	5	-	1	4	-	-
5	3	-	2	1	-	1	1	1	3	9	-	-
6	-	2	1	-	-	7	-	2	2	6	-	-
7	1	1	1	1	2	1	3	2	3	3	-	-
8	1	2	8	-	1	12	3	2	2	8	-	-
9	2	-	2	-	-	5	2	-	-	3	1	-
10	4	2	1	-	-	5	2	-	2	7	5	-
11	-	-	-	-	-	1		-	3	1	1	-
12	-	-	2	-	-	6	2	-	1	5	2	-
13	1	-	1	-	-	7	2	-	1	3	1	-
14	-	-	2	-	1	-	-	1	-	2	2	-
15	-	-	3	-	-	-	1	-		2	3	-
16	-	1	1	-	-	-	2	-	-	-	-	-
17	1	1	4	-	-	6	3	-	1	3	-	-
18	1	2	-	1	1	5	3	-	-	6	7	-
19	1	-	1	1		3	-	1	2	8	1	-
20	-	-	-	1	1	-	-	-	-	3	1	-
21	-	1	4	1	-	13	6	-	-	2	4	-
22	-	1	1	-	-	2	-	-	1	2	-	-
23	1	-	-	-	-	1	1	-	1	4	-	-
24	1	1	1	-	1		1	-	4	4	-	-
25	2	1	1	-	1	4	3	-	4	10	-	-
26	-	1	-	-	-	-	-	-	2	5	3	-

APPENDIX B

Examples of Students' Writings

Protocals for treatment of *Malassezia pachydermatis* dermatitis in dog

Malassezia pachydermatis is normal flora found on the skin of dog but This yeast may become a pathogen whenever have factor to increase the number yeast and can causing clinical sign in dogs, such as itching, redness and otitis externa .Treatment of *Malassezia pachydermatis* dermatitis in dog are many protocols Including the use of antifungal drugs such as itraconazole ketoconazole and terbinafine, Use of cleansing skin products or the use of antifungal combination with cleansing skin products and combination with antibiotics.Each protocols is different out come depending on each dog.The objective of this study was to study and collect protocals for treatment of *Malassezia pachydermatis* dermatitis in dog for alternative to the treatment of *Malassezia pachydermatis* dermatitis in dog.

63

Clinical significance of microRNA in canine mammary gland tumor

Mammary tumors are the most common tumor in female dogs. miRNA have become an interesting topic due to their role as oncogenes or tumor suppressor genes which make these small molecules can easily be detected from biopsy samples and blood and have potential for early diagnosis and prognosis. This review aims to provide a short summary of the role of miRNA as oncogenes or tumor suppressor genes in canine mammary tumors, detection of miRNA and potential of miRNA for early diagnosis and prognosis as a promising biomarker. Although many studies have been published so far, the estimation of biomarkers in cases of canine mammary tumors is still not a common practice, and more detailed research should be done.

64

Comparative features of early detection and diagnostic methods for white spot syndrome in Whiteleg shrimp (*Litopenaeus vannamei*)

Whiteleg shrimp (*L. vannamei*) is the most aquatic cultured in the world causes disease outbreaks that will affect the shrimp farming industry. White spot syndrome is an important disease due to there high morbidity rate and high mortality rates. Currently, there are methods for detecting and diagnosing white spots syndrome. Recommended method is Polymerase chain reaction (PCR) for screening and confirmation diagnosis according to high sensitivity and high specificity and can be detected in shrimp almost every stage. The method by using parameter including clinical sign, gross pathology, histopathology should be diagnosed with an immunological method or molecular techniques including Polymerase chain reaction (PCR), Antigen-antibody detection methods, DNA sequencing, in-situ hybridisation (ISH) and Loop-mediated isothermal amplification techniques (LAMP). Other the transmission electron microscope, Biological analysis method, Cell culture and gene sequencing analysis can detecting and diagnosing for confirmation, but not recommended due to there low susceptibility.

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Diagnosis guidelines for systemic inflammation caused by subacute ruminal acidosis cattle

Systemic inflammation is an inflammatory response throughout body caused by ruminitis which stimulates inflammatory process via nuclear factor (NF)-κB pathway. Currently, acute phase protein has been used for diagnosis of systemic inflammation. However, the method has low specificity for the disease. Recent studied have been shown that ruminitis is a majority cause of systemic inflammation by induced a nuclear factor (NF)-κB pathway. Due to this pathway, gene expression of nuclear factor (NF)-κB pathway can be detected for diagnosis of systemic inflammation. This review article aimed to provide a gene expression controlled by NF-kB pathway and compare to diagnosis of systemic inflammatory by using acute phase protein for potential diagnosis and treatment

Comparison of Reproductive Hormonal Analysis for Artificial insemination in Bottlenose dolphin (*Tursiops truncatus*)

Bottlenose dolphins (*Tursiops truncatus*) are marine mammals that have steadily decreased in the population because of the deterioration of marine and coastal resources and the threat of marine animals from human activities. Therefore, the artificial insemination in bottlenose dolphins have existed since 1987. The purpose of this study was to validate the use of enzyme immunoassay (EIA) methods from blubber and blow samples and liquid chromatography–tandem mass spectrometry (LC–MS/MS) methods from plasma and serum samples to measure reproductive hormonal profiles such as progesterone, estrogen, testosterone and cortisol for monitoring estrous cycle and checking sexual maturity in females and male bottlenose dolphins. As a result of the reproductive hormonal analysis is the efficiency difference is statistically significant due to stress from animals during restraint and the difference analysis method that affect the estrus cycle and the sexual maturity of both male and female bottlenose dolphins.

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