

**ENHANCING STUDENTS' ARGUMENTATIVE  
WRITING PERFORMANCE AND CRITICAL  
THINKING SKILLS THROUGH THE  
INCORPORATION OF CONCEPT MAPPING  
AND CONTENT-BASED INSTRUCTION**

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**UNIVERSITI SAINS MALAYSIA  
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by

**NUREEYAH MAEKONG**

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for the degree of  
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**MENINGKATKAN PRESTASI PENULISAN SECARA PENGHUJAHAN  
DAN KEMAHIRAN BERFIKIR SECARA KRITIS PELAJAR MELALUI  
PENGABUNGJALINAN KONSEP PEMETAAN DAN ARAHAN  
BERDASARKAN KANDUNGAN**

**ABSTRAK**

Kajian ini menekankan strategi perancangan penulisan yang diterbitkan daripada proses kognitif penulisan, teori pembelajaran bermakna, dan kemahiran berfikir secara kritis, yang dilaksanakan melalui penggabungjalinan daripada strategi pemetaan konsep (*concept mapping, CM*) dan arahan berasaskan kandungan (*content-based instruction, CBI*) Kajian ini bertujuan mengkaji kesan daripada strategi ini terhadap prestasi penulisan dan kemahiran berfikir secara kritis pelajar, dalam perancangan penulisan penghujahan. Kajian ini menggunakan metodologi penyelidikan kaedah bercampur terhadap 78 orang peserta kajian, yang dibahagikan kepada dua kumpulan: eksperimen (N=42), dan kawalan (N=36). Para peserta merupakan pelajar program bahasa Inggeris Pra-Universiti di English Center, International Language Academy, Fatoni University Thailand, yang mengambil kursus bahasa Inggeris penulisan, English Preparatory level 3 (EP 3), tahun akademik 2014. Ujian ANCOVA dijalankan untuk menganalisis data kuantitatif yang diperoleh daripada reka bentuk sebelum dan selepas ujian tidak rawak daripada eksperimen kuasi. Karangan pelajar dianalisis bagi skor atau markat prestasi penulisan dan kemahiran berfikir secara kritis menggunakan rubrik dan kriteria penulisan untuk menilai kemahiran berfikir secara kritis dalam penulisan. Dua orang penilai dijemput untuk menilai karangan pelajar dan memuktamatkan skor

bersama dengan penyelidik. Data kualitatif yang diperoleh daripada peta konsep pelajar, temu bual secara mendalam, dan pemerhatian dalam kelas digunakan untuk mengenal pasti kesan daripada strategi CM-CBI terhadap kemahiran berfikir secara kritis, dan pengalaman dan cabaran mereka menggunakan strategi juga dikenal pasti. Dapatan kajian menunjukkan penambahbaikan yang signifikan daripada prestasi penulisan dan kemahiran berfikir secara kritis pelajar dalam perancangan penulisan beragumen. Dapatan kuantitatif daripada penulisan karangan sebelum dan selepas ujian menunjukkan kesan positif terhadap strategi CM-CBI bagi kedua-dua prestasi penulisan dan kemahiran berfikir secara kritis pelajar. Skor selepas ujian bagi prestasi ujian dan kemahiran berfikir secara kritis, secara statistiknya mempunyai signifikan yang lebih tinggi daripada kumpulan kawalan. Dapatan kualitatif menyokong dapatan kuantitatif dan secara amnya dikenal pasti bagi penambahbaikan kemahiran berfikir secara kritis pelajar. Secara amnya, pelajar menunjukkan respon positif terhadap penggunaan strategi CM-CBI dalam perancangan kelas penulisan penghujahan. Implikasi pengajaran dan pembelajaran daripada penulisan EFL kebanyakannya tertumpu pada peranan penting yang dimainkan oleh guru, penggunaan bahan, tempoh masa, dan aspek budaya pelajar. Kekuatan bagi kedua-dua ini bergantung pada peranan guru dalam merancang, memudahkan, serta memotivasi pelajar ke arah yang lebih baik dan lebih berdikari.

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**ABSTRACT**

This study emphasizes the writing planning strategy, derived from cognitive process of writing, meaningful learning theory, and critical thinking skill, implemented by the incorporation of concept mapping strategy (CM) and content-based instruction (CBI). The purpose of this study is to investigate the effects of this strategy on student's writing performances and critical thinking skills, in planning argumentative writing. This study employed a mixed-method research methodology on 78 research participants which is designed into two groups, experimental (N=42), and control (N=36) groups. These research participants are intact groups of pre-university English program students at English Center, International language Academy, Fatoni University Thailand, which were taking English writing course of English Preparatory level 3 (EP 3), academic year 2014. The analysis of covariance, ANCOVA, was employed to analyze the quantitative data obtained from Non-randomized pre-test posttest design of quasi-experiment. The student's essays were analyzed in scoring the writing performances and critical thinking skills using the writing rubric and criteria for assessing critical thinking skills in writing. Two raters were invited to assess the students' essay and finalized the scoring with the researcher. The qualitative data obtained from student's concept maps, in-depth interview, and classroom observations to identify the effects of CM-CBI strategy on

student's critical thinking skills, and their experiences and challenges using the strategy are also identified. The findings from this study revealed significant improvement of student's writing performances and critical thinking skills in planning argumentative writing. Quantitative findings from pre-test and post-test essay writing revealed positive effects of CM-CBI strategy on both student's writing performances and critical thinking skills. Their post-test scores of writing performances and critical thinking skills have statically significant higher than the compared group. Qualitative findings have supported the quantitative findings and generally identified of the student's improvement of critical thinking skills. The students generally showed positive responses towards the use of CM-CBI strategy in planning argumentative writing class. Implications of teaching and learning of EFL writing are mostly drawn on the important roles of teachers, materials usage, length of time, and students' cultural aspects. The creditability of both concept mapping strategy and content-based instruction greatly depends on the teachers' roles in planning, scaffolding, facilitating, and motivating students towards a better and more independent learner.



## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Introduction**

Writing is normally considered one of the most complex and challenging skills for EFL learners and teachers. According to the cognitive theory, it is usually defined in terms of a problem-solving strategy that writers need to confront during writing (McCutchen, Teske, & Bankston, 2008). It obviously involves highly complex skills the writers have to concentrate on higher level skills during the planning and organization of their ideas of writing. The writers also require a cautious application of lower level skills of spelling, using punctuation, word choice, and facing numerous grammatical problems (Rechards & Renandya, 2002). One of the vital considerations in preventing or overcoming difficulties during writing is to help EFL writers improve their cognitive aspects of composing (Negari, 2011). In addition, the most powerful method for teaching adolescent students is to train them of the strategies of planning, revising and editing (Graham & Perin, 2007).

Since the writing skill is vital for being successful in school, college, and on the job (Ramasamy, 2009), especially when composing an argumentative essay (Wingate, 2012), well-planned teaching and learning strategies are required. Argumentative writing needs the involvement and coordination of a number of processes of cognitive abilities such as retrieving a schema and encoding information for the necessary sources to be applied in writing (Wolfe, 2009). Wolfe also believes that argumentation schema can be learned and culturally derived its position of anticipation and questions from argumentative texts. Therefore, through the

incorporation of reading and writing argumentative texts, the learners would most likely be different in the level of using schema, with a common preference for expending minimal cognitive effort. In addition, argumentative writing, in fact, is at ‘the heart of critical thinking and academic discourse; it is a kind of writing students need to know for success in college and in life’ (Hillocks, 2011). However, the traditional method of teaching writing often provides the students with writing assignments that address students’ problems as a tool for teaching rather than helping students in critical thinking skills and comprehensive course content (Çavdar & Doe, 2012). Typically, the critical thinking skills occupy a vital position in education in the modern world because it is the essence of thoughtful, democratic citizenship; therefore, the teaching of critical thinking is of concern at all levels in education (Dam & Volman, 2004) and language teaching (Stapleton, 2001).

The planning stage before writing, where the writers deal with generating and organizing ideas in pre-writing, is claimed to be an influential strategy and having positive effects on students who have difficulties in EFL writing; it helps students attend to writing tasks and control their learning more effectively (Mahnam & Nejadansari, 2012). Thus, the students need to be facilitated carefully during this planning phase. This current study utilizes the incorporation of the concept mapping strategy and content-based instruction in helping students during the planning of argumentative writing. The use of the concept mapping strategy: the graphical presentation of knowledge or ideas, is highlighted as it is claimed to be a helpful strategy in planning tasks and has tremendous positive effects on students’ writing performance (Fahim & Rahimi, 2011; Kozminsky, Nathan, Kozminsky, & Horowitz,

2012; Mahnam & Nejadansari, 2012; Negari, 2011; Oi & Toyoshima, 2011; Ojima, 2004), and also learners' critical thinking ability (Khodadady & Ghanizadeh, 2011).

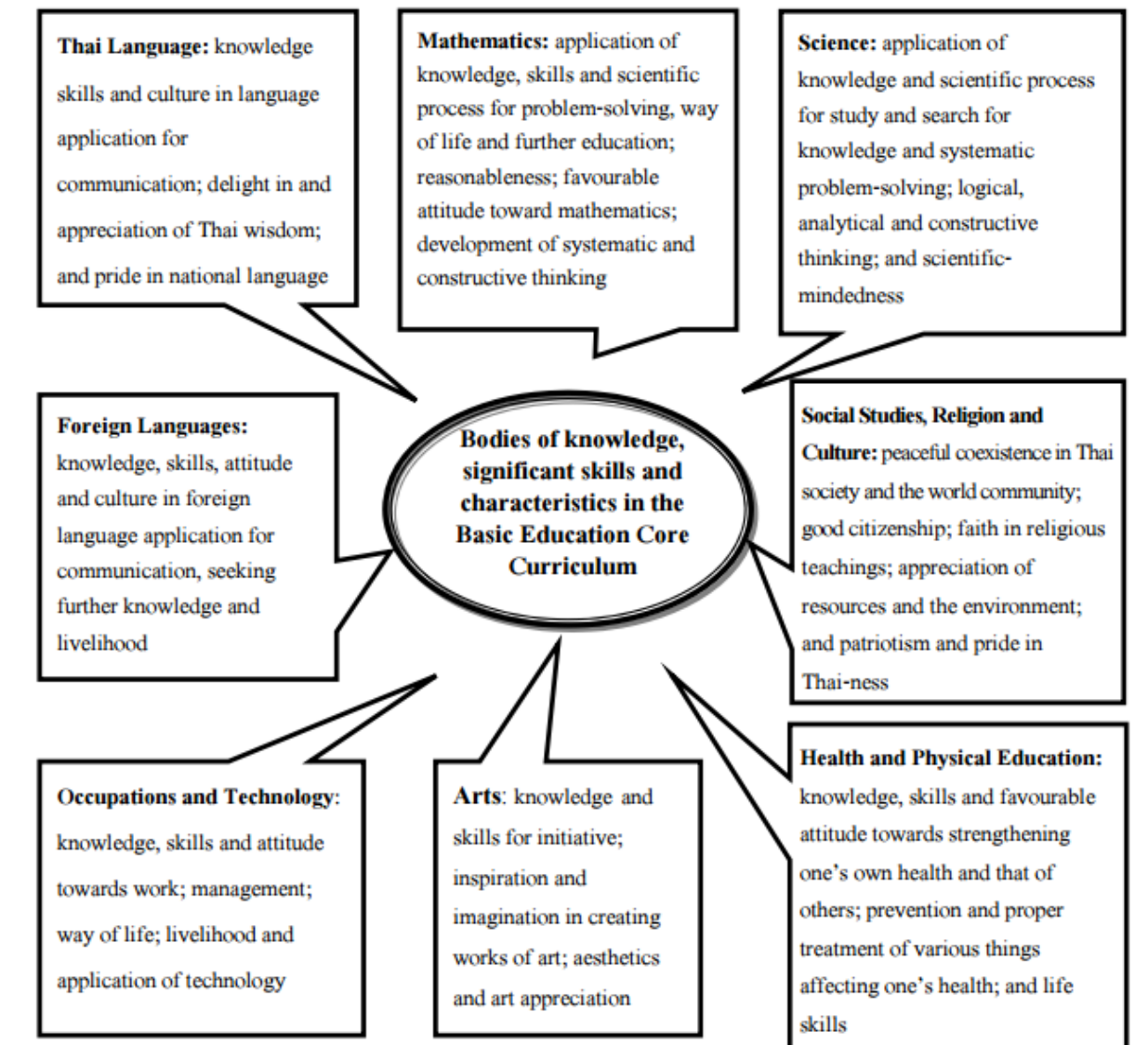
However, the strategy of concept mapping is suggested to be applied with other activities or support in order to enhance learners' accurate use of language (Ojima, 2004). In addition, to create an effective concept mapping, the learners are encouraged to search relevant written texts which are good sources for their writing tasks (Mahnam & Nejadansari, 2012). This is supported by the way of becoming an effective writer as stated by Graham (2008): that students need to acquire knowledge about the characteristics of good writing as well as the writing purpose and form of writing. Through reading, the students are able to obtain skills about writing. In addition, reading well-crafted literature enables students to learn a model that illustrates good writing characteristics; how authors use words to evoke specific images and feelings, manipulate sentences, organize ideas, and others. Therefore, the content-based instruction (CBI), a teaching approach that the learning purpose is emphasized on the integration of the goal language and content, is incorporated with the concept mapping strategy. The CBI is typically considered as an essential pedagogical approach that benefits ESL and EFL students in various aspects. The materials and activities implemented in content-based instructional programs provide students with rigorous learning and performing structure of linguistic and rhetoric within a context of meaningful activities (Kasper, 1997). Furthermore, the students performed significantly better in their English language proficiency test, and the CBI enhanced English language skills; the students had increased confidence and motivation in learning and thinking in English. The use of the content-based instruction also helps the students' critical thinking skills (Liaw, 2007).

Since the advent of cognitive development, language teachers and linguistics have recognized the close connection between language learning and the thinking process (Dunham, 1997). Therefore, this current study realizes that concept mapping and content-based instruction may complement each other meaningfully in order to provide a better choice for enhancing EFL learners' writing performance and critical thinking skills. This study also aims at examining the effects of this incorporation into the planning stage of argumentative writing to identify its credibility on students' improvement of writing and critical thinking skills.

## **1.2 Background of Study**

Foreign language is considered as one of the important learning areas as prescribed in the Basic Education Core Curriculum in Thailand B.E. 2551 (A.D. 2008). According to this Basic Education Core Curriculum, a foreign language is one of the learning areas provided for the entire basic education: grades 1-6 primary and 7-12 secondary education levels, for Thai students (Thailand, 2008). The main contents of the foreign language learning area are focused on how to use language for communicating, applying language with its culture, integrating language with other learning areas, and the relationship of a language with the community and the world. The Ministry of Education in Thailand (2008) claims that a foreign language is required, especially in the current global society. It is essential to daily life as it serves as an important device for communication, education, knowledge acquisition, day-to-day living, and cultural understanding and vision of the world community. Among all the foreign languages, the English Language is a core curriculum that is prescribed for the entire basic education, while languages of neighboring countries

are left to the discretion of the educational institutions for preparing courses and providing learning management appropriately.



*Source: Ministry of Education Thailand (2008)*

Figure 1.1 Basic Education Core Curriculum in Thailand B.E. 2551 (A.D. 2008)

Since English is considered as an essential component of the development for most people around the world, this language has played an important role in Thailand. Furthermore, with the upcoming ASEAN community meeting in 2015, Thailand is really concerned with the improvement of English skills. However, the

study of Thais' level of English proficiency revealed that Thais have a low English proficiency compared to other countries in Asia such as Malaysia, Philippines, and Singapore as presented in the average TOEFL scores (Wiriyachitra, 2002). Thai learners, in addition, perceive English as a challenging language to be competent in because of the interference from their mother tongue.

Fatoni University (FTU), which was previously named as Yala Islamic University (YIU), is one of the higher educational institutions in the Southern part of Thailand that has also realized the importance of the English language. This university maintains its main objective to providing a higher level of education in Islamic education, modern science and technology for Muslim students, especially local Muslim students. FTU has a total of 4,500 students; comprising local students and international students from China, Cambodia, Iran, Malaysia, Sudan, France, and others. In 2005, Fatoni University proposed international programs, particularly in information technology and English language. Hence, English has become the medium language of instruction. The university has emphasized on being proficient in English due to its prior requirement for the students who enroll in international programs: Information Technology in the faculty of Science and Technology, and English major in the faculty of Liberal Arts and Social sciences. These programs require the students' readiness of English language proficiency by achieving a certain standard in the pre-university English program carried out by the English Language Center, International Language Academy, FTU.

This pre-university English program provides the students with an 825-hours course, a one year curriculum. This program enables the students to develop their

language skills as English is the medium language of instruction. The objectives of this program are (1) to provide the students with the practice of basic knowledge and skills of the English language required by their majors, (2) to enhance students' proficiency in learning English, (3) to increase students' confidence in using English, (4) to give the students opportunities in improving their English skills through various learning activities in class and outside the class, (5) to create the readiness in students by using English skills for their undergraduate studies and beyond, (6) to inculcate in the students the Islamic values through an English program, and (7) to develop the students' critical thinking when using English.

The students are classified into different levels according to their results from a placement test and an interview conducted by the English Language Center or their respective departments. The classification of the students comprises of three levels of English Preparatory (EP): EP 1, EP 2 and EP 3 based on their marks from the test ranked from 1-50, 51-70 and 71-90 marks. However, the students who gain more than 90 marks will not be required to enroll in the Pre-university English program and will be considered excellent English performers, who can automatically enroll in their degree program at the respective departments. The classes of pre-university English program are carried out through a trimester system: the first trimester is conducted from June to August, the second trimester from October to December and the third trimester from January to March. Each trimester requires the students to achieve 60% score in all subjects provided by the center, and pass the activities conducted by the students' affairs department.

EEW or Effective English Writing subject is a core course for all levels of English preparation classes, EP 1- EP 3, and the course is provided in three different levels of the classes:

1. Effective English Writing I (EEW I) [6 hrs / week]

This course is an initial writing course that focuses on the common sentence structures, basic grammar, and paragraph writing. The students are given real-life and Islamic topics to practice writing and develop simple sentence structures with the emphasis on simple grammar.

2. Effective English Writing II (EEW II)[6 hrs / week]

Students need to develop their writing proficiencies through paragraph writing.

The course focuses on a paragraph structure and its types, and a variety of general and Islamic themes are given.

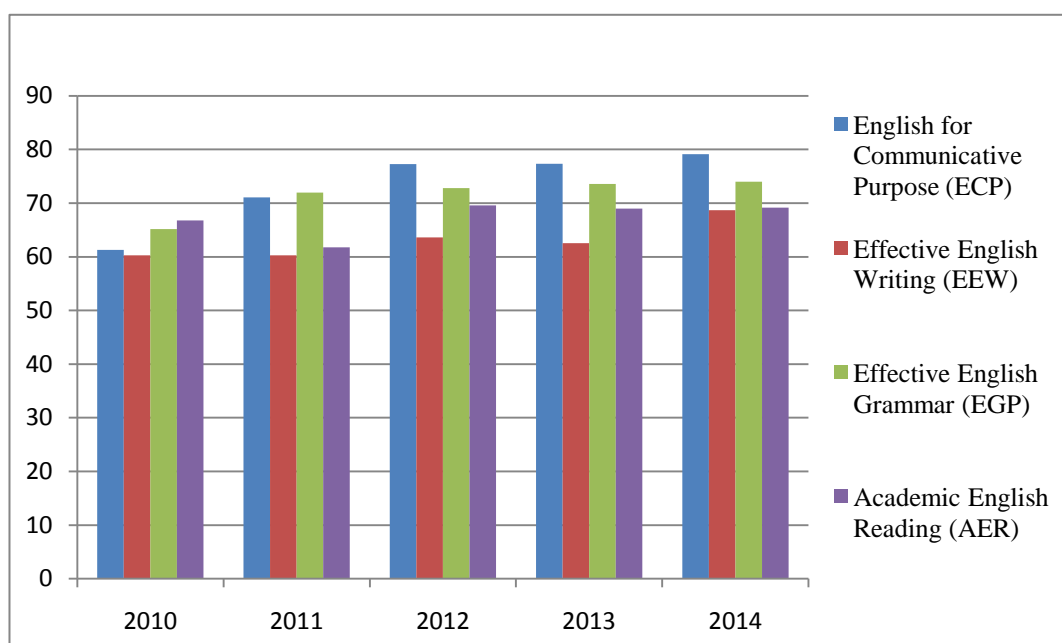
3. Effective English Writing III (EEW III)[6 hrs / week]

This course provides opportunities for students to practice the process of academic writing from writing paragraphs to essay composition. The course focuses more on different kinds of essays such as narrative, descriptive and so on. The integration of Islamic themes will be included which enables students to achieve the course objectives and use English confidently in their writing.

For further improvement of students' English language proficiency, the English Language Center also provides the students with extra activities to enhance students' English skills dealing with various well known universities from Thailand and other countries such as Brunei, Malaysia, and Singapore. Therefore, it is the responsibility of the English language educators to provide appropriate and effective



instructional strategies in helping students improve their English skills. Since writing is one of the main skills emphasized by the center, it is, therefore, necessary for the students to be provided with essential writing skills that enable them to be competent in their writing performances. Nevertheless, writing is currently a serious problem at English Language Center, FTU, as presented in Figure 1.2.



*Source: Administration and Record Office, English language Center, FTU, 2014*

Figure 1.2 Students' English Language Performances (2010-2014)

Figure 1.2 presents the students' scores from the English Preparation level 3 (EP 3). The graph clearly displays the students' mean scores from each year's final assessment, and EEW, Effective English Writing, is the subject which has the lowest competencies compared to other skills. In addition, the students' writing performances have remained as the lowest proficiency for many years although they perform well in grammar. This result indicates that the students' writing skills need to be improved.

### **1.3 Statement of Problem**

In learning English writing as a second or foreign language, Deane et al. (2008) claim that a skilled writer usually confronts an astonishing hierarchy of problem-solving that include generating and organizing tasks, relevant ideas, phases, grammatically correct sentences that flow; correct punctuation and spelling, ideas, tone, and wording to the desired audience; and naming some of the more relevant rhetorical and linguistic tasks. The novice writers, however, normally face the problem of a knowledge-telling approach (Deane et al., 2008). From the study of Pawapatcharandom (2007), it is found that the most serious problem of Thai students in English language learning is the writing skill and the students are normally unable to write an essay within a limited time. This is because many students compose English assignments by firstly writing in Thai then translating into English, and they seldom compose an essay at secondary school or high school level. Therefore, they do not have effective strategies in writing essays and lack writing practice.

Moreover, the study of Sattayatham and Ratanapinyowong (2008) reveals that most students do not produce a reasonable connection between ideas in their writing. That is, one thought does not connect to the previous one and the sentences composed are not directly related to the main idea. The students' writing tasks, therefore, are short and unclear because they only put forward the content without expanding their ideas. Thus, it seems that most of the students do not have the skills of organization (Sattayatham & Ratanapinyowong, 2008). This problem usually occurs when the students are influenced by the topic-specific background knowledge and pay attention only to language matters rather than making meaning (Ahmed, 2010).

In addition, many researchers claimed that the problems that students suffer from, particularly a weakness in articulating their original ideas in writing in a foreign language, seem to be connected with critical thinking skills (Ahmadi, Maftoon, & Mehrdad, 2012; Barry K Beyer, 1995; Buranapatana, 2006). Furthermore, Báez (2004) indicates that language competence and critical thinking are on-going or never-ending processes, especially writing an argumentative essay which requires the ability of critical thinking in supporting claims with related evidence and clear reasoning (Hillocks Jr, 2010). Thinking critically, thus, is a fundamental factor to be successful in writing argumentative essays. In fact, being skillful in writing argumentation can also help students improve their writing performance (Wingate, 2012). However, according to the PISA test, an international study that assesses worldwide educational systems, Thai students attain academically some of the lowest scores in East Asia.

Many studies show that most Thai lecturers still employ the traditional way of instruction, and that their teaching methods emphasize on transferring knowledge rather than developing critical thinking and problem-solving skills (Tripatara, 2000; Office of the National Commission, 2000; Ponsarum & Thepasdin Na Ayuthaya, 2001; Wiratchai, 2002). In addition, it is widely agreed among Thai scholars that the teaching methods which are used in schools are a major problem in the Thai educational system. More time is devoted to rote learning rather than to practice and train on how to think (Wright, 2004). The important point to state here is the skills which students learn in class cannot be applied in their real life, and the method of teaching which emphasizes on memorization fails to challenge Thai learners in 'learning how to learn' as well as 'learning how to think critically and creatively'

(Office of the National Commission, 2000). The research team of the Thailand Development Research Institute (TDRI) has also found that the educational system of Thailand does not provide students with the skills necessary for contemporary living and critical thinking skills. These young people have been trained to read, write and do sums but abandoned in adding other important learning abilities such as the skills of doing research and critical thinking (Tangkitvanich, 2013). Therefore, it is suggested that the students must be trained on the skills and knowledge required for living and working in the 21st century. Moreover, the innovative with an integrated component of critical thinking curriculum and interdisciplinary should be proposed (Tangkitvanich, 2013). The aim of Thai education is to have learning environments that give out the instruments for a globalized world.

A major feature of educational reform in Thailand is to strengthen intellectual health in Thai students; it is imperative that Thai individuals must be equipped with the knowledge and skills for critical thinking (Ministry of Education, 2004), especially in this globalized era. The students are surrounded with online databases information, articles, and newspapers through websites, blogs, and community networking interfaces. Students can access to exceptional amount of information without ever leaving their study rooms. However, what remains a challenge is to develop the skills needed for assessing and proceeding this easy-obtained-information. Particularly, when providing the students with the practice of the writing skill which is considered as “thought on paper”; the students will have a unique opportunity to develop critical thinking skills (Çavdar & Doe, 2012).

#### **1.4 Research Objectives**

1. To compare the effects of incorporation of concept mapping (CM) and the content-based instruction (CBI) strategy and traditional teaching method in planning argumentative essays on students' writing performance.
2. To compare the effects of the CM-CBI strategy and traditional teaching method in planning argumentative essays on student's critical thinking skills.
3. To examine how far the CM-CBI strategy affects the students' critical thinking skill in planning argumentative essays.
4. To examine students' experiences after using the CM-CBI strategy in planning argumentative essays.

#### **1.5 Research Questions**

1. Is there any significant difference in the results of the post-test of the students' writing performance between students who used the CM-CBI strategy and students who used a traditional teaching method to plan an argumentative essay after the influences of the pretest of writing performance is controlled?
2. Is there any significant difference in the results of the post-test of the students' critical thinking skills between students who used the CM-CBI strategy and students who used a traditional teaching method to plan an argumentative essay after the influences of the pretest of critical thinking skill is controlled?
3. How far does the CM-CBI strategy affect the students' critical thinking skills in the experimental group?

4. What are students' experiences in planning argumentative essays when using the CM-CBI strategy?

### **1.6 Hypotheses**

The following hypotheses are provided to test research questions 1 and 2.

1. There is no significant difference in the results of the post-test of the students' writing performance between students who used the CM-CBI strategy and students who used a traditional teaching method to plan an argumentative essay after the influences of the pretest of writing performance is controlled.
2. There is no significant difference in the results of the post-test of the students' critical thinking skills between students who used the CM-CBI strategy and students who used a traditional teaching method to plan an argumentative essay after the influences of the pretest of writing performance is controlled.

### **1.7 Significance of the Study**

The findings from this study provide evidence on how the incorporation of concept mapping and the content-based instruction can be used in writing classes. This study obviously contributes to the knowledge in the field of teaching and learning writing in Thai EFL classrooms. It could be beneficial to English teachers, curriculum designers and policy makers in helping learners improve their writing as well as increase their critical thinking skills, especially to EFL learners in Thailand. The information derived from this study can be adopted and adapted to suit students' and teachers' needs in an English writing course. This ensures the quality of English writing teachers and enhances students' writing and critical thinking skills.

The most important findings of this study indicated that the teachers would gain some pedagogical implications of the CM-CBI strategy for teaching argumentative writing, particularly in an EFL classroom. If it is verified that the CM-CBI strategy could enhance students' writing performances and critical thinking skills in many aspects, the teacher could design essential learning strategies, necessary for their argumentative writing class.

The findings from this study as indicated by students' responses regarding their requirements on the application of the CM-CBI strategy, are also useful for teachers with some practical guidelines. The topic selection for the students should be at the level of their language ability. The students should have sufficient language training for example in using words and grammar. The teachers should guide the students more on other learning strategies such as the methods of classifying, summarizing and paraphrasing. Creative skills might also be provided for the students to gain better products. The students' problems should be emphasized individually as they differ in language capacity, particularly the poor writers. Finally, the learning atmosphere should be well taken care of, as the students usually feel uncomfortable in large mixed gender classes, because these cause them to be less confident and stressed while learning or doing activities.

The findings from this study can be used for professional development of institutions and universities to conduct training sessions that would address the issues related to the use of concept mapping in planning writing or other tasks. It is also hoped that argumentative writing, which is at the heart of critical thinking and academic discourse, can facilitate the students who need to apply it further in their

field of study. In fact, argumentative writing is claimed to be a necessary skill for success in college and in life (Hillocks, 2011). Moreover, the focus on critical thinking skills during the planning of writing can be an essential guideline for teaching writing or helping students master the critical thinking skills. The various strategies proposed by this study can also be applied for the teaching and learning methods in other fields.

Finally, it is hoped that this study will contribute to the growing body of new knowledge in applying concept mapping and the content-based instruction in EFL classes. As the vital role of EFL teachers in writing classrooms, it is encouraged teachers focus on a meaningful learning class rather than being teachers in a traditional way; using teaching methods which emphasize on rote learning. The teachers, who are the curriculum implementers, can hopefully benefit in applying most of the activities in this study and use them as crucial guidelines to invent more effective teaching and learning strategies for the improvement of their career and students' achievement.

### **1.8 Limitations of the Study**

There are some limitations in this study. The first limitation is confined with the small sample of this study. The samples are two English teachers teaching writing and seventy-eight students who enrolled in English writing classes in the academic year 2013/2014 at English Language Center of Fatoni University, Southern Thailand. The results from this small size intact group of this study might not be generalized to other groups. The other limitation regards the duration of the experiment of this study. This study was conducted over eight weeks, whereby the



period of six hours per week may not be suitable for the various learning activities which cover many needed skills.

## 1.9 Theoretical Framework

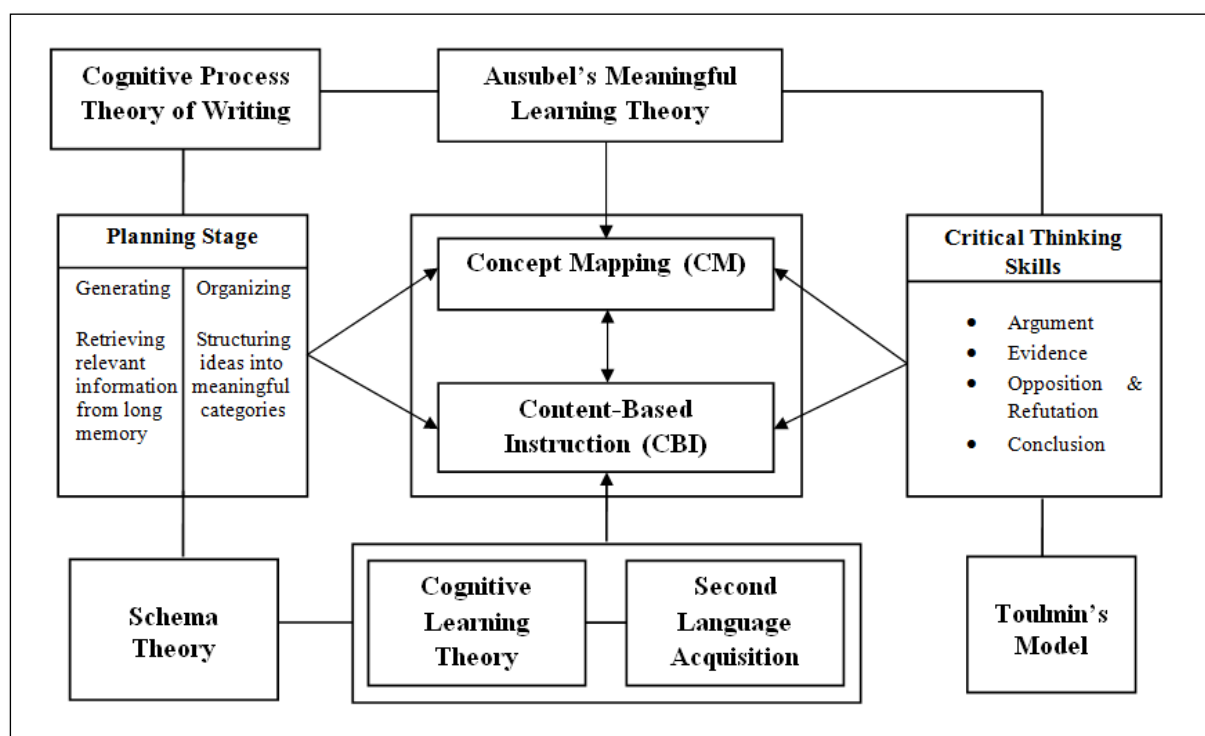


Figure 1.3 Theoretical Framework

The present study is designed based on a number of fundamental theories, a teaching and learning strategy, and a teaching approach, which share some relations between them including fundamental values for teaching and learning writing. The main theory for planning writing is shaped by the cognitive process theory of writing. Ausubel's meaningful learning theory is a fundamental theory for the strategy of concept mapping (CM) whereas the cognitive learning theory and the theory of second language acquisition serve as essential theories for the teaching approach of the content-based instruction (CBI). The CBI requires a guideline from

the schema theory in helping students planning their argumentative writing. Both CM and the CBI need to be encouraged with critical thinking training to produce effective outcomes in students' writing and critical thinking skills.

The main theory is the cognitive processes theory of writing. This theory emphasizes on composing as clarified by Flower and Hayes (1981): the process of writing is hierarchical, and planning is one of the crucial stages in the writing process. In this study, planning involves a number of sub-processes: the skill of generating ideas which includes 'retrieving relevant information from long-term memory', and the sub-process of organizing tasks that will help the writers make meaningful structures of their ideas. The sub-process of organization enables the writer to group ideas and form new concepts for subordinate ideas. This develops a current topic towards a rhetorical decision and plans for reaching the audiences.

The planning process in this study refers to the application of an integration in a teaching and learning strategy, concept mapping, and an explicit teaching approach of English language teaching and the content-based instruction. Concept mapping (CM) is clarified as a graphical tool to organize and represent knowledge; it is expanded according to Ausubel's meaningful learning theory (Novak & Cañas, 2006, 2007), which perceives knowledge as a representing and incorporating system. The ideas of this representing knowledge are connected to each other in an arranged fashion, and the human mind applies logical rules to organize information into respective categories (Ivie, 1998).

However, based on the cognitive process theory of writing, the quality of individual retrieving information depends on an individual's English proficiency whereby some writers may produce inadequate or poor concept mapping in the planning stage. Despite its enormous effectiveness, concept mapping, therefore, is suggested to support other skills in order to strengthen its utilization in writing classes. In this study, the teacher provides some activities that can support the students' accurate use of language (Ojima, 2004), and the learners are suggested to search relevant written texts which are good sources for their writing tasks as a way to create an effective concept mapping (Mahnam & Nejadansari, 2012). This study, therefore, applies the content-based instruction to help learners develop their language skills for academic use as well as provides them with access to new concepts through meaningful content (Crandall, 1999 cited in Heo, 2006).

As a goal-setting, which is a major aspect of the planning process (Flower & Hayes, 1981), this study emphasizes on argumentative writing. The argumentative schema that is guided by the schema theory, thus, is the main source to be analyzed by the learners. The learners are encouraged to analyze the argumentative texts in order to realize the way of generating and organizing ideas or information to plan their writing. According to the schema theory, knowledge in stories and events is reconstructed in the human mind for further recall (Nassaji, 2007) and the term 'schema' refers to a dynamic organization of previous reactions, or experiences, which must always be assumed to be operating in any well-adapted natural reaction (Bartlett (1932). Furthermore, schema serves as a reference stock up from which a person can retrieve related knowledge that exists in human's memory and into which new information is assimilated. When encouraging a topic in reading or listening, the

reader activates the schema for that topic and makes use of it to anticipate, infer, and make different kinds of judgments and decisions about it.

In second language reading, in addition, when individuals obtain knowledge, they attempt to fit that knowledge into some structure in memory that helps them make sense of that knowledge (Ajideh, 2006). There are two different types of the schema theory: content schemata and formal schemata. This study focuses on formal schemata that are the rhetorical structure of language and person's knowledge of a particular genre structure (Richards and Schmidt, 2002). In some recent studies, it is found that the schema theory is useful for teaching second language writing (Xia, 2008). Because the schemata are dynamic and can be developed all the time based on our experiences, it is thus a very appropriate tool for teachers to consider when teaching writing. In addition, it focuses on how the structures of thoughts are incorporated into the structure of language in both speaking and writing; it provides us with a set of concepts and terminology which can be used to present and discuss writing productively, and emphasizes on the prior knowledge in comprehension.

This schema theory also has some relationship with the cognitive learning theory and Second Language Acquisition (SLA) research, whereby the CBI is derived from it. The cognitive learning theory conceives that students' progress through a series of three stages in the process of acquiring literacy skills: the cognitive, the associative, and the autonomous'. According to Krashen's model, people only acquire second languages when they obtain comprehensible input (Du, X., 2009). Krashen's model offers a theoretical foundation for the CBI that provides students' contextualized language curricula built around meaningful and

comprehensible input through which not only language but information is required (Krashen, 1982). Krashen also mentioned that there are four affective factors that can influence the learners' SLA: motivation, attitude, anxiety, and self-confidence. These are affective filters which can be utilized in second language teaching (Du, X., 2009).

In addition, since writing is claimed as a process of both critical thinking and a product that communicates the results of critical thinking (Bean, 2011), this study encourages students to acquire the critical thinking ability, supported by Toulmin's model, to strengthen their writing performance and critical thinking skills. According to Toulmin's model, the basic conception of argument, the argument has several important elements: 1) a claim based on evidence of some sort, 2) a warrant that explains how the evidence supports the claim, 3) backing that supports the warrants, and 4) qualifications and rebuttals or counter arguments that refute competing claims. This study tried to help learners to acquire the critical thinking skills based on this basic conception of argument, so they can finally produce their concept maps using some effective filters of Krashen's model which serves the CBI. Therefore, through utilizing the strategy of CM-CBI, it is assumed that the students can improve their writing performance and abilities in critical thinking.

### **1.10 Conceptual Framework**

The conceptual framework for this study is designed and developed based on the incorporation of concept mappings strategy, and teaching approach of the content-based instruction. These two methods are integrated in planning the argumentative essay. The CM is applied with the support from the CBI in the planning stage, and they both are complementary to one another. This CM-CBI

strategy is strengthened with critical thinking training in order to produce an effective concept map before writing an argumentative essay. Teacher’s facilitating is an essential factor in implementing this strategy during the planning stage. Thus, the students should be supported and guided through a number of activities, especially, the activity that can enhance their critical thinking skills. This strategy is observed for its effects related to the outcomes of writing performance and critical thinking skills. The conceptual framework for this study is presented in the following figure.

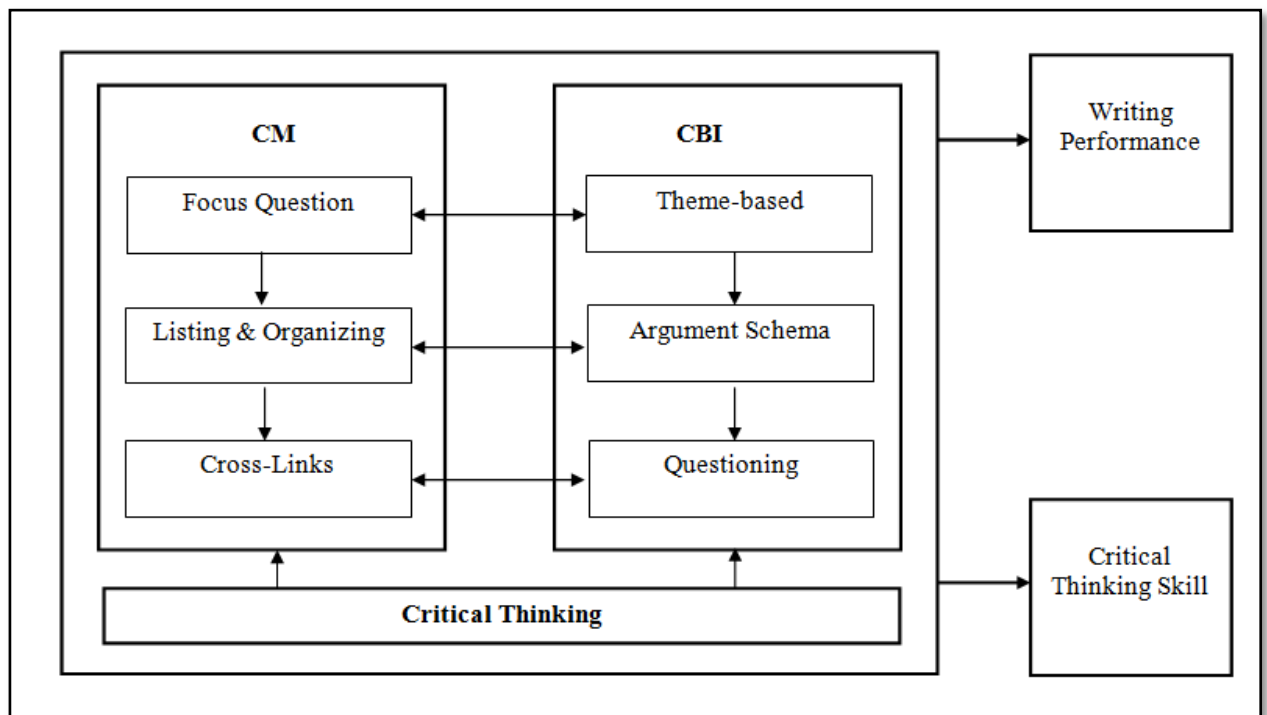


Figure 1.4 Conceptual Framework

This CM-CBI strategy can be applied in planning writing through some steps. Firstly, the step of creating a concept map (CM) facilitated by content-based instruction via a focus question and theme-based instruction of the CBI. The concept mapping (CM) is clarified as a strategy that includes concepts and relationships

between concepts, and the label for most concepts is a word and sometimes more than one word called proposition. This proposition contains two or more concepts connected using linking words or phrases to form a meaningful statement; this sometimes is called a semantic unit. In the planning stage or pre-writing, the learners plan their writing by using the strategy of concept mapping. Before constructing the concept map, the learners need to create an appropriate 'focus question' to be answered by the knowledge of the learning theme. The students are trained on how to produce good questions that should be 'why...?' and 'how...?' the less useful question is 'what...?' During this step, the content-based instruction (CBI) is applied in the learning activity to encourage students to think critically. The teacher prepares some learning materials based on learning themes to elicit students' critical thinking skills.

Then, the students need to identify key concepts to answer the focus question through the step of listing and organizing the key concepts. According to Novak and Cañas (2006), it is usually 15-20 concepts that should be listed and arranged in the order from broadest to the most specific. The inclusion of cross-links is another characteristic of the concept maps which connects between concepts in different domains of the concept map. They help knowledge producer to see the relationships between the concepts in one area and another area of knowledge represented on the map. Through this step, the students are introduced to the argumentative schema which is required for writing an argumentative essay. The teacher can apply the critical thinking skill to help students familiar with the rhetorical structure: argument, evidence, opposition and refutation, and conclusion, necessary for an argumentative

writing. This also enables students to see the relationship between the concepts regarding the meaning they plan for their concept mapping.

Finally, the students engage in clarifying the meaning of their concept maps using the cross-links to label the relationship between the constructed concepts. The revision is always necessary to construct a better concept map and help improve students' critical thinking skills and writing performance. The content-based instruction which employs a theme-based model is provided to facilitate students' revision and adding more ideas to the argumentative schema into their concept maps. It is claimed that the possible poor argumentative writing is the writer's insufficient argumentative schema (Wolfe, Britt, & Butler, 2009). This writing class therefore, tends to incorporate numerous types of texts and discourse samples (such as the knowledge of the teacher's presentation, video sequences, and so on) with written materials (such as newspaper articles, essays, informative texts, literary passages and so on). During this revision and addition of more concepts to the preliminary constructed map, the teacher can use the questioning technique to facilitate student's reflective thinking. By repeating this step several times, it helps produce an effective concept map (Novak & Cañas, 2006). Accordingly, it is assumed that the learners' writing performances and critical thinking skills are improved through the strategy of CM-CBI. Concept mapping and the content-based instruction complement each other perfectly. As the theme-based model constitutes an outstanding tool for the combination of language and content, this study utilizes the theme-based instruction, one of the CBI models. It is the best practice for teaching English as a foreign language and typically the theme-based model deals with clear aims and objectives of language that are normally more significant than the learning objectives of the