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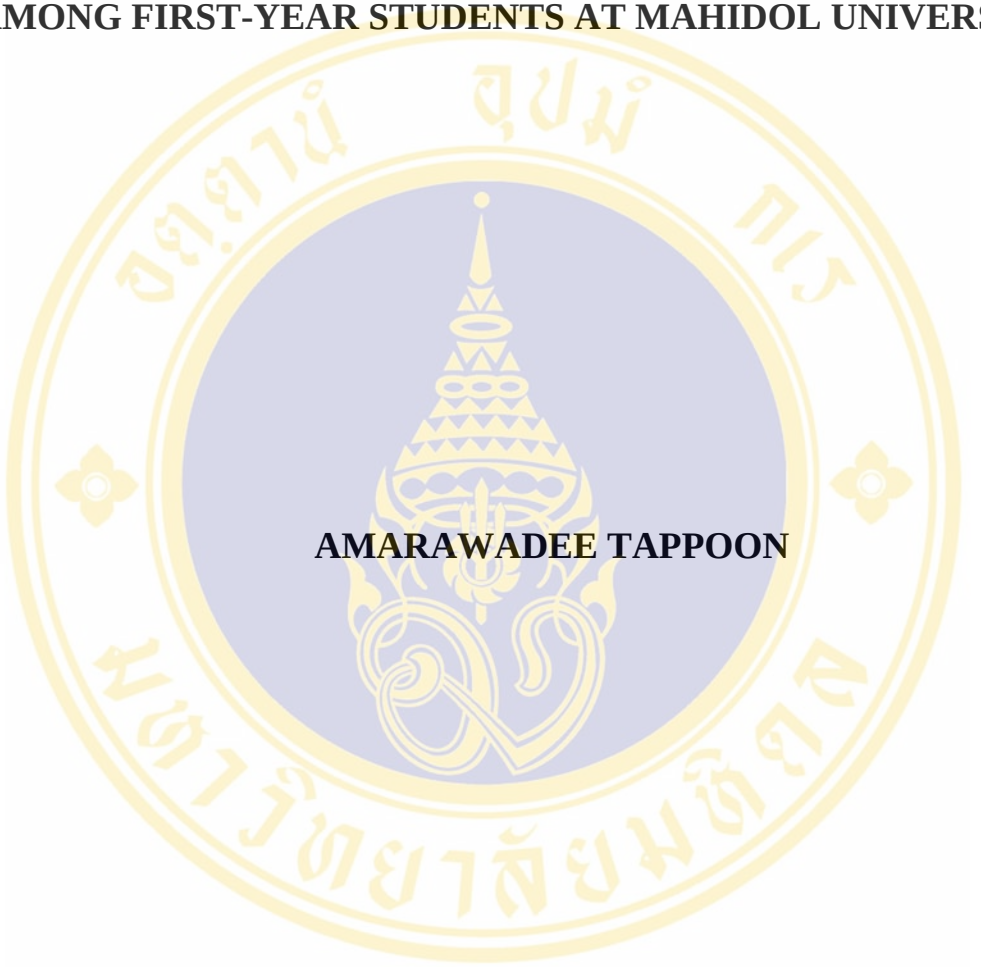

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OF THE REQUIREMENTS FOR
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Thesis
Entitled

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Amarawadee Tappoon

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RELATIONSHIP BETWEEN LANGUAGE LEARNING STRATEGIES AND THE COGNITIVE DOMAIN OF LIFE SKILLS AMONG FIRST-YEAR STUDENTS AT MAHIDOL UNIVERSITY

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ABSTRACT

The purpose of the present study was to examine the relationship between language learning strategies and the cognitive domain of life skills. The samples were 570 first year students attending in 24 study programs at Mahidol University in the 2006 academic year. The sample included 406 females and 164 males whose ages ranged from 17-27 years of age. Data were collected by two questionnaires. They were the Strategy Inventory for Language Learning (SILL) version 7.0 which has a reliability coefficient (α) at .94; and Life Skills Test which has a reliability coefficient (α) at .91. Statistical analyses used were Pearson's Product Moment Correlation Coefficient, Spearman Rank Correlation Coefficient, and Stepwise multi regression.

Results revealed that language learning strategies were significantly correlated with the cognitive domain of life skills at $p < .01$. All six strategy groups of language learning strategies – memory, cognitive, compensation, metacognitive, affective, and social strategies were significantly correlated with critical thinking and creative thinking of life skills at $p < .01$. Furthermore, memory, metacognitive, and affective strategies influenced the use of critical thinking and creative thinking skills among the students.

The findings suggest that language teachers should employ both language learning strategies and life skills, particularly the cognitive domain, composed of critical thinking and creative thinking skills in their classes. They are important learning skills helping students to improve their learning abilities and to succeed in language learning including handling different problems effectively.

KEY WORDS: LANGUAGE LEARNING STRATEGIES / LIFE SKILLS / COGNITIVE DOMAIN

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การศึกษาความสัมพันธ์ระหว่างกลยุทธ์การเรียนภาษาอังกฤษและทักษะชีวิตด้านพุทธิพิสัยของนักศึกษาชั้นปีที่ 1 มหาวิทยาลัยมหิดล (RELATIONSHIP BETWEEN LANGUAGE LEARNING STRATEGIES AND THE COGNITIVE DOMAIN OF LIFE SKILLS AMONG FIRST-YEAR STUDENTS AT MAHIDOL UNIVERSITY)

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บทคัดย่อ

การวิจัยนี้มีจุดประสงค์เพื่อศึกษาความสัมพันธ์ระหว่างกลยุทธ์การเรียนภาษาอังกฤษและทักษะชีวิตด้านพุทธิพิสัยของนักศึกษาชั้นปีที่ 1 มหาวิทยาลัยมหิดล จำนวน 570 คน แบ่งเป็นนักศึกษาหญิงจำนวน 406 คน และ นักศึกษาชายจำนวน 164 คน อายุระหว่าง 17 – 27 ปี เก็บข้อมูลโดยใช้แบบสอบถามจำนวน 2 ชุด คือ แบบสอบถามกลยุทธ์การเรียนภาษาอังกฤษซึ่งมีค่าความเชื่อมั่น (α) ที่ระดับ .94 และ แบบสอบถามทักษะชีวิตซึ่งมีค่าความเชื่อมั่น (α) ที่ระดับ .91 วิเคราะห์ข้อมูลโดยใช้สถิติสัมประสิทธิ์สหสัมพันธ์ของเพียร์สัน สัมประสิทธิ์สหสัมพันธ์ของสเปียร์แมน และการวิเคราะห์ถดถอยพหุแบบขั้นตอน

ผลการศึกษาพบว่ากลยุทธ์การเรียนภาษาอังกฤษมีความสัมพันธ์กับทักษะชีวิตด้านพุทธิพิสัยอย่างมีนัยสำคัญทางสถิติที่ระดับ $p < .01$ กลยุทธ์การเรียนภาษาอังกฤษทั้ง 6 ด้าน ประกอบด้วย กลยุทธ์การจำ กลยุทธ์ปริชาน กลยุทธ์การชดเชย กลยุทธ์อภิปริชาน กลยุทธ์ทางอารมณ์ และกลยุทธ์ทางสังคม มีความสัมพันธ์กับทักษะชีวิตด้านพุทธิพิสัย หรือ ทักษะการคิดวิเคราะห์ และการคิดสร้างสรรค์ อย่างมีนัยสำคัญทางสถิติที่ระดับ $p < .01$ นอกจากนั้น ผลการศึกษายังพบว่า กลยุทธ์การจำ กลยุทธ์อภิปริชาน และ กลยุทธ์ทางอารมณ์ มีอิทธิพลต่อการใช้ทักษะชีวิตในด้านการคิดวิเคราะห์และการคิดสร้างสรรค์ของกลุ่มตัวอย่าง

ดังนั้นการวิจัยครั้งนี้จึงมีข้อเสนอแนะว่าครูผู้สอนภาษาอังกฤษควรจะสอนกลยุทธ์การเรียนภาษาอังกฤษควบคู่ไปกับการสอนทักษะชีวิตในด้านการคิดวิเคราะห์และการคิดสร้างสรรค์ เนื่องจากทักษะดังกล่าวมีส่วนสำคัญที่จะช่วยให้นักศึกษาปรับปรุงทักษะการเรียนภาษาของตนให้ดีขึ้น

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CHAPTER I
INTRODUCTION

English and thinking skills are significantly important to equip students to become autonomous or life long learners. Office of National Education Commission (ONEC, 2001) state that all educational sectors should manage teaching and learning on the principles of lifelong education and continuous development of bodies of knowledge and learning process of all learners. To achieve these, educational institutions and agencies need to provide training in thinking and English skills to all learners in order to support them to succeed professionally in the globalizing world both in local and international arenas. Therefore, the present study attempted to investigate the relationship between language learning strategies and the cognitive domain of life skills consisted of critical thinking and creative thinking skills. This section will provide the rationale, the purpose, the significance, and the limitation of the study systematically.

1.1 Rationale of the Study

Over decades, English has acquired the status of an international language. With a large number of users throughout the world approximately 1.5 billion people (Graddol, 1997), English is obviously accepted as one of the most influentially powerful languages, or regarded as a world language. In Thailand, where the use of English is recognized as EFL or English as a Foreign Language, Thai researchers (Akkakoson, 1993; Chumpavan, 2000; Prapphal, 2001; Kaotsombat, 2003; Wisaijorn, 2004) agree with its importance, and the development of English skills in Thai learners is an essential mission. They have agreed that being English proficient learners can benefit them to survive and succeed in the globalizing world. As stated by Dr. Wijit Srisa-arn, the previous Thai Minister of Education, he made a statement concerning the current role of Thai higher education institutes in Thai Education Conference on September 6th, 2007 (“Direction of Thai Higher Education”, 2007). He declared that the prospective Thai graduates must be competent at least two

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international languages – English and Chinese so as to succeed both locally and globally in the future education and employment. Consequently, being English competent users is one of the requirements among Thai learners.

Yet, being English competent users is complicated. According to Ellis (1994), he proposes five major aspects of successful language learning. He states that good language learners, first of all, must concern a language form or grammatical structure. Second, they must concern for communication and are willing to find opportunities to engage in a real communicative situation. Third, they need to be active learners who are willing to participate in any learning tasks and are not frightened to introduce new topics for conversations. Fourth, they are aware of their learning process. In other words, they need to manage their own learning by locating their goals and selecting their own preferred learning styles. Last, they are flexible strategy users who can choose learning strategies suiting particular types of tasks. For that reason, language learning strategies are necessary for Thai learners.

Referring to Oxford (1990), she specifies language learning strategies as effective tools helping language learners to develop their communicative abilities when they expose a target language. Besides, they enable them to play more roles in language classes, as well as, to nurture them to become more proficient language learners who can use a language independently and confidently without the help from their teachers. Furthermore, there have been numerous studies found that the successful language learners used a greater variety of language learning strategies than did the unsuccessful language learners (Vidal, 2002; Griffiths, 2003; Kaotsombut, 2003; Shmais, 2003; Takeuchi, 2003; Baker & Boonkit, 2004; Gan, Humphreys & Hamp-Lyons, 2004; Nisbet, Tindall, & Arroyo, 2005; Riazi & Rahimi, 2005; Xuan, 2005; Hong-Nam & Leavell, 2006; Magogwe & Oliver, 2007; Satta-Udom, 2007). Therefore, the proficient language learners are the strategic person who can adopt various types of language strategies to a particular task or situation appropriately (Oxford, 1989; Ellis, 1994).

Ellis (1994) mentions that the strategies that language learners selected to use in each situation can reflect their general stage of second language learning. In Kaotsombut's (2003) and Satta-Udom's (2007) studies, they examined language learning strategies used by Mahidol University students. Their findings found that

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compensation strategies were most favored strategies amongst Thai learners. Compensation strategies, defined by Oxford (1990), are strategies that learners use when they lack some knowledge or vocabulary while using a target language. By using these strategies, learners can overcome their language limitation. These findings support Fredrickson's (2003) report on the English proficiency of Thai learners. He revealed that on the International English Language Testing System (IELTS) scale, most Thai learners were "modest" users who enabled to communicate limitedly in their area of interests. On the other hand, the English ability of Thai learners was not recognized as the proficient English users.

Although most favored language learning strategies among Thai learners were compensation strategies, several studies (Shmais, 2003; Takeuchi, 2003; Gan, Humphreys & Hamp-Lyons, 2004; Nisbet, Tindall, & Arroyo, 2005; Riazi & Rahimi, 2005; Xuan, 2005; Hong-Nam & Leavell, 2006; Magogwe & Oliver, 2007) indicated that strategies that advanced learners used most often were metacognitive strategies. These strategies help them plan, organize, and monitor their own learning which later direct them to become autonomous learners (Oxford, 1990). Thus, to develop learners to be more proficient language learners, teaching and training Thai learners with the appropriate sets of language learning strategies is vital (O' Malley & Chamot, 1990; Oxford, 1990; Cohen, 1998). The language proficiency of each learner depends upon the frequency and patterns of strategies that he or she employed in each task (Oxford & Burry-Stock, 1995). In addition, Oxford (1990) states that training learners with relevant learning strategies enables them to understand and improve their language learning, and it enables them to master a target language proficiently. As a result, it is necessary for language teachers that they need to teach and train their learners to use language learning strategies. These strategies can help them learn and use a target language more effectively both in and outside language classes (Oxford, 1990).

However, teaching and training Thai learners to master their English ability is not sufficient. Wongboonsin (2007) states that to develop the potential of people involves a number of skills such as conceptual skills, operating skills, technical skills, management skills, human skills, and communication skills. Salpeter (2003) supports that learners need to know how to use knowledge and develop numerous skills in order to meet the changes of globalization and the demands of the knowledge

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economy. One important skill that learners need to have is thinking skills, particularly thinking critically and creatively (Salpeter, 2003). Critical thinking and creative thinking skills are classified as high-order thinking skills (Salpeter, 2003; Mulkham, 2006) which learners can enhance to assist themselves in making decisions, logical reasoning, and problem solving (WHO, 1994; Department of Mental Health, 2002; Salpeter, 2003; Mulkham, 2006). Learners can manage different problems in different situations throughout their lives by using those skills. From this viewpoint, life skills, particularly the cognitive domain consisted of critical thinking and creative thinking skills were highlighted in this study.

According to World Health Organization (WHO, 1994), life skills, or simply called social abilities, are necessary skills for all learners worldwide and are related to all aspects of life. They have been considered as the foundation of learning skills that enable learners to handle any situations in their lives effectively (WHO, 1994; Department of Mental Health, 2002). By applying life skills, learners are able to explore alternatives, make informed decisions, consider advantages and disadvantages of each action and situation, and select sensible solutions towards problems suitably. In addition, those skills enable learners to establish productive interpersonal relationships with others and enable them to improve their academic performance (WHO, 1994; Department of Mental Health, 2002).

In Supanratanarat's (2003) study, his finding discovered that the successful learners or learners who had higher academic achievement were able to think more critically than the lower academic achievement learners because the successful learners had the higher level of life skills in critical thinking skills. Besides, Nunan (1989) and Fehér (2007) support that when learners use a language either in writing or in speaking, they need to use their creativity to form a meaningful message to express their thoughts to others. Thus, Office of National Education Commission (ONEC, 2001) address the importance of thinking ability. They mention that to organize the effective teaching and learning process, educational institutions and agencies need to provide training in thinking process to all learners. Knowledge is constructed by the use of thinking, and thinking can lead people to the prosperities in life (Sternberg, 1997). Then training learners to think critically and creatively is an important mission that language teachers need to be applied in their classes as Huitt (1998) suggests that

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thinking skills can be developed more successfully when they are combined with other subjects instead of teaching them as a separate set of skills. A person who develops critical thinking and creative thinking skills can ask appropriate questions, gather relevant information, sort through the given information efficiently and productively, reason logically from this information, and attain the reliable and trustworthy conclusions about things in his life effectively and independently (WHO, 1994; Department of Mental Health, 2002; Salpeter, 2003; Mulkham, 2006).

Even though developing learners to think critically and creatively has been required for Thai teachers, Office of National Education Commission (ONEC, 2005) revealed the appalling results of thinking skills evaluation throughout the nation. Their results indicated that the level of thinking skills among Thai students were substandard, particularly critical thinking and creative thinking skills. Thai students were rated at low level of those. The findings awakened Thai educators in all sectors and led to cooperate in revising the assessment standard of education nationwide.

According to the results, ONEC (2005) determined the educational standards aimed at developing Thai learners to be the qualified persons. In the fourth and fifth educational standards, ONEC (2005) clearly mention that educational institutes and agencies need to educate students to be capable of thinking skills especially critical thinking, analytical thinking, and creative thinking skills. Students need to be fostered and enhanced the appropriate knowledge and skills related to the curriculums in order that they can apply and use those knowledge and skills suitably to a number of diverse situations. Consequently, the present study aimed at examining the relationship between language learning strategies accepted as the important tools for successful language learning and the cognitive domain of life skills consisted of critical thinking and creative thinking skills to discover whether they were related.

1.2 Statement of the Problem

According to Thai educational system, English is taught as EFL or English as a Foreign Language, and it is determined as a compulsory subject which Thai students are required to study at least twelve credits for each curriculum. Like Mahidol University, the first-year students were required to study two compulsory English courses during two semesters in their first academic year. In each English course,

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students had the opportunities to practice four fundamental English skills through strategy training which enabled them to develop and strengthen their English abilities. Even though they had been trained relevant learning strategies – reading and writing skills, their English proficiency was not accepted as the proficient English users. They were considered as the medium users whose reading and writing needed to be improved (Fredrickson, 2003; Wongsothorn, 2003).

Moreover, ONEC (2005) indicate that Thai students have been facing the difficulties in applying thinking skills especially critical thinking and creative thinking skills. ONEC (2005) reported that the level of thinking skills among Thai students was unsatisfactory. They revealed that the secondary students and junior high school students needed to improve thinking skills. They had the low level of thinking ability at 42.66% and 48.82% which were below 50% and underestimate. Additionally, ONEC (2005) disclosed the evaluation report on the average achievement scores of the students attending in 200 private schools and 100 public schools. The result indicated that students' average achievement scores were satisfactory except critical thinking, analytical thinking, and creative thinking scores. The students obtained the moderate scores on these thinking skills, so their abilities in thinking critically, creatively, and analytically were needed to be trained and improved urgently.

Besides, studies on language learning strategies have mainly been conducted in listing and classifying strategies that learners used when they exposed a target language (Khaldieh, 2000; Wharton, 2000, Koatsombut, 2003; Shmais, 2003; Hong-Nam & Leavell, 2006). In addition, there have been a number of studies investigated the relations between strategy use and various types of factors affecting language learning such as age (Oxford, 1989) gender (Ehrman & Oxford, 1989; Green & Oxford, 1995; Sheorey, 1999), ethnicity (Shmais, 2003; Riazi & Rahimi, 2005; Satta-Udom, 2007), level of course that students studied (Griffiths, 2003; Magogwe & Oliver, 2007), and language proficiency (Vidal, 2002; Takeuchi, 2003; Nisbet, Tindall, & Arroyo, 2005; Magogwe & Oliver, 2007).

Similarly to life skills studies, they have been conducted on factors related to the life skills level among Thai learners (Saimai, 2003; Supanratanarat, 2003; Termsrirat, 2003; Luksamijarulkul, Thongvichien & Triamchaisri, 2007). The researchers reported that the factors were gender, birth order, family, personality,

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academic achievement, and field that the students chose to study (Science or Non Science). Their findings also found that the students used problem solving, critical thinking, and creative thinking skills at the moderate level. Furthermore, there have been numerous studies addressing the effectiveness of life skills training programs (Nukuludompanich, Kumarn, Dilokwattana, 2000; Lapsirianankul, 2001; Sunsiri, 2002; Prommobol, 2003; Punyapet, 2004; Klatthong, 2006) These studies proved that life skills training programs were effective and applicable in lessening unhealthy behaviors such as violence, sexual abuse, and the use of drugs, tobacco, and alcohol. In addition, the findings indicated that life skills training programs can foster and enhance the desirable skills particularly critical thinking, decision making, problem solving, and self-awareness skills, as well as, the positive behaviors and attitudes among the learners.

Because learning and learners' health are significantly related, learners cannot learn well when they have health problems (United States Department of Health and Human Services, 1998). There have been studies investigated the relationships between substance abuse (drug, alcohol, and tobacco) and decreased school performance (Eggert & Hertin, 1993; Bachman, Johnston, & O'Malley, 1998) and the relationship between decreased substance abuse behaviors and the improvements of academic performance (Hawkins, Vatalano, Kosterman, Abbott, & Hill, 1999). From these studies, none of the connection between language learning strategies and life skills had been conducted.

Nevertheless, one research has been emerged. Suwannaprut (2007) examined the relationship between language learning strategies and the affective domain of life skills. Her findings indicated that there was a positive relationship between language learning strategies and the affective domain of life skills. Moreover, her study investigated the relationship in one single domain, that is, the affective domain, so she recommended that the rest domains of life skills: cognitive and psychomotor domains should be examined the relationship. Therefore, according to the students' English and thinking skills problems and Suwannaprut's suggestion, the present study aimed to investigate the relationship between language learning strategies and the cognitive domain of life skills among the first-year students at Mahidol University. In what follows, the purpose of the study will be addressed.

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1.3 Purpose of the Study

The purpose of this study was to examine the relationship between language learning strategies and the cognitive domain of life skills used by the first-year students at Mahidol University in the academic year 2006. The study addressed three main research questions as follows:

1. Is there any relationship between language learning strategies and the cognitive domain of life skills of the first-year students at Mahidol University?

2. Are there relationships between two strategy classes of language learning strategy (direct and indirect strategies) and the cognitive subdomain of life skills (critical thinking and creative thinking)?

3. Are there relationships between six strategy categories of language learning strategies (memory, cognitive, compensation, metacognitive, affective, and social strategies) and the cognitive subdomain of life skills (critical thinking and creative thinking)?

1.4 Conceptual Framework

The present study was grounded on two basis theories: language learning strategies proposed by Oxford (1990) and life skills proposed by Department of Mental Health (2002). Language learning strategies were divided into two main categories (direct and indirect strategies) which were further divided into six strategy groups: memory, cognitive, compensation, metacognitive, affective, and social strategies. For life skills, they composed of three main domains – cognitive, affective, and psychomotor domains which were equally important and reinforced each other (Department of Mental Health, 2002). However, the main focus of this study was limited to the cognitive domain which is composed of critical thinking and creative thinking skills. These two skills are important skills that Thai students must have and need to be developed so as to become life long learners (ONEC, 2001). Furthermore, the cognitive domain has been considered as the central concern of learning process. It involves the recall or recognition of knowledge that the students have learnt and involves the development of intellectual abilities and skills that lead these students to be successful in their learning. Thus, this study aimed at investigating the relationship

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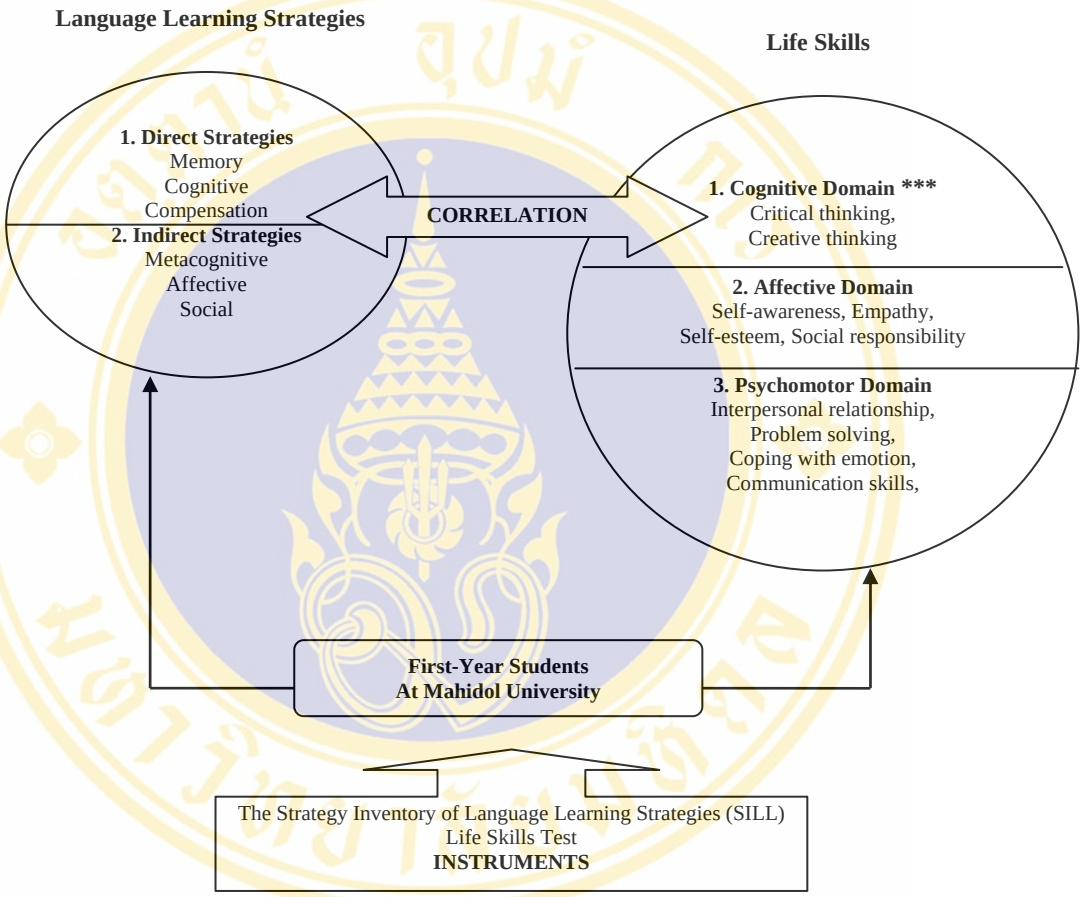
between language learning strategies and life skills in one single domain, the cognitive domain.

The model (Figure 1) showed the research process of the study including two main theories, the participants, and the instruments.



*** highlighted on the cognitive domain which was the main focus of the study

Figure 1 Conceptual Framework Model of Relationship between Language Learning Strategies and the Cognitive Domain of Life Skills

Since this study was a correlational research and its purpose was to examine the relationship between language learning strategies and the cognitive domain of life skills, two research questionnaires consisting of the Strategy Inventory of Language Learning Strategies (SILL) developed by Oxford (1990) and Life Skills Test

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developed by Department of Mental Health (2002) were used as the research instruments. They were selected to investigate the frequency of strategy use and the level of life skills among the first-year students at Mahidol University. After the participants completed the questionnaires, the questionnaires were collected and analyzed through the program of Statistical Package for Social Science (SPSS) for window; for instance, descriptive statistics, Pearson product-moment correlation coefficient (*r*), Spearman rank correlation coefficient (Spearman *rho)*, and Stepwise multiple regression to determine what degree extent to the relationship between language learning strategies and the cognitive domain of life skills among the first-year students at Mahidol University.

1.5 Significance of the Study

The findings of this study are valuable as follows:

1. They will provide useful information for language teachers to better understand their learners' learning process and the application of language learning strategies and life skills into their language classes. Moreover, the findings can facilitate language teachers to develop teaching methods and learning materials and tasks suiting their learners' learning process, their cognitive level, and their individual difference.

2. If the relationship between language learning strategies and life skills is confirmed, the findings of this study might provide the useful information for designing English syllabuses that integrate language learning strategy and life skills training in a Thai EFL context, which may be contributed to other EFL contexts.

1.6 Limitations of the Study

This study aimed to examine the overall relationship between language learning strategies and the cognitive domain of life skills among the first-year students at Mahidol University in the academic year 2006. Therefore, the study was limited to one single domain, that is, the cognitive domain of life skills which consisted of critical thinking and creative thinking skills. Then generalizations of the study may not provide the complete relationship between language learning strategies and life skills. In addition, this study was limited to one particular Thai university context, so

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the generalizations can be conducted differently in other EFL universities where students study at the same level and share a similar background the same as the participants in this study.

1.7 Definition of Terms

1. *Language Learning Strategies* are specific actions, behaviors, or techniques that learners use to assist themselves in understanding and producing a new language more effectively, enjoyably, and independently (Oxford, 1990; Scarcella & Oxford, 1992).

2. *Strategy Inventory for Language Learning (SILL)* is a self-rating questionnaire developed by Oxford (1990). It is designed for exploring the pattern and frequency of strategy use among language learners. There are two revised versions of SILL: the 80-item version 5.1 questionnaire designed for foreign language learners who are native speakers of English; and the 50-item version 7.0 questionnaire designed for other learners who are non native speakers of English. The responses are range from 1 to 5, that is, 1 = never or almost never true of me, 2 = generally not true of me, 3 = somewhat true of me, 4 = generally true of me, and 5 = always or almost always true of me.

3. *Life Skills* are psycho-social competence or social abilities that enable people to handle different situations and problems in their daily lives effectively. They consist of three main domains – cognitive, affective, and psychomotor domains (WHO, 1994; Department of Mental Health, 2002).

4. *Cognitive domain* is a primary concern of learning process. It involves the recall or recognition of knowledge and involves the development of intellectual abilities and skills that lead students to the intellect and desirable behaviors (WHO, 1994; Department of Mental Health, 2002).

5. *Critical Thinking Skills* involves thinking systematically. It refers to an ability to analyze information and experiences in an objective manner. It enables people to differentiate the various types of information and help them make logical judgments towards the received information (Department of Mental Health, 2002).

6. *Creative Thinking Skills* refers to a mental ability incorporating divergent thinking or the flow of thoughts which compose of originality, fluency, flexibility,

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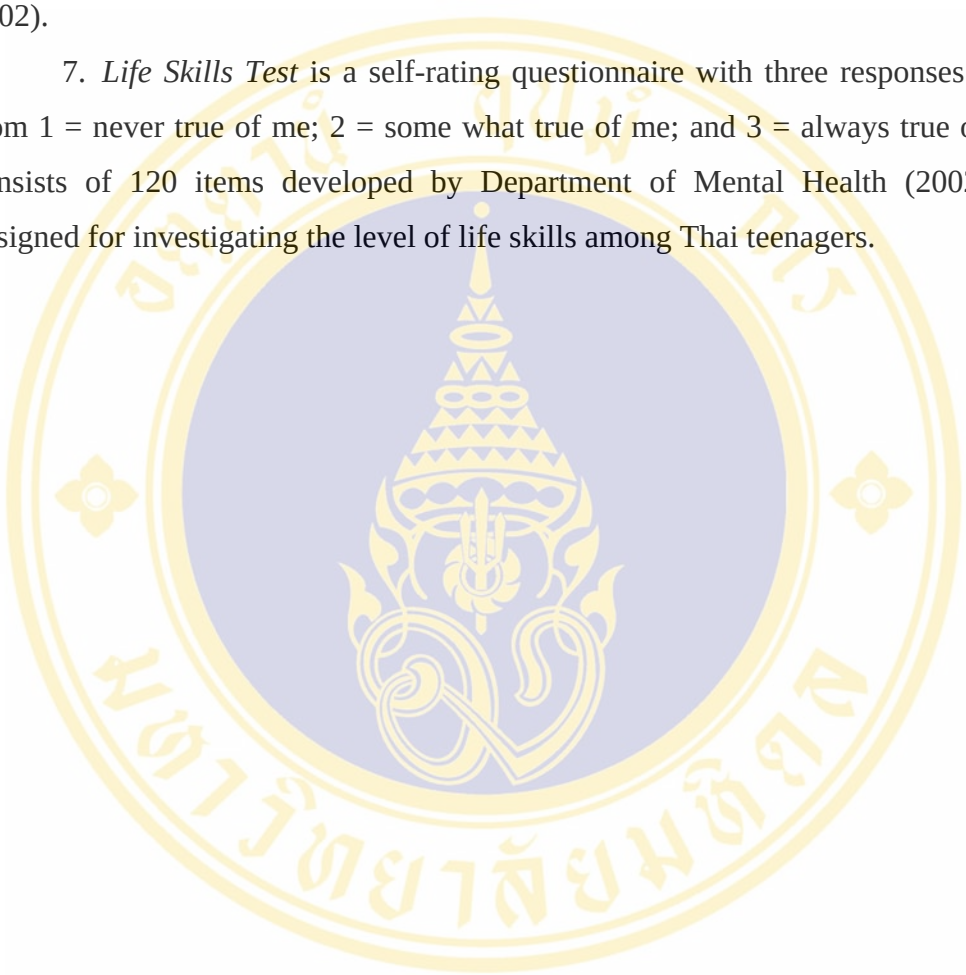
and elaboration. It contributes to both decision making and problem solving. It enables people to explore the available choices and various consequences of their action and non-action. It also helps them to respond adaptively and flexibly to different situations (Guilford, 1950; WHO, 1994; Department of Mental Health, 2002).

7. *Life Skills Test* is a self-rating questionnaire with three responses ranging from 1 = never true of me; 2 = some what true of me; and 3 = always true of me. It consists of 120 items developed by Department of Mental Health (2002). It is designed for investigating the level of life skills among Thai teenagers.



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CHAPTER II
LITERATURE REVIEW AND RELATED RESEARCH

The purpose of this study was to examine the relationship between language learning strategies and the cognitive domain of life skills among first-year students at Mahidol University in the academic year 2006. Previous chapter provides introductory information about language learning strategies and life skills. For a better understanding, this chapter presents the relevant literature and some previous studies of language learning strategies and life skills in a full detail. The chapter is outlined as follows:

2.1 Language Learning Strategies
- 2.1.1 Background
- 2.1.2 Definition
- 2.1.3 Classification

2.2 Previous Studies of Language Learning Strategies

2.3 Learner-Centered Approach

2.4 Learner Autonomy

2.5 Life Skills
- 2.5.1 Definition
- 2.3.2 Components

2.6 Previous Studies of Life Skills

2.1 Language Learning Strategies

In the last two decades, teachers and researchers in the field of foreign language learning have been shifted their interests from teacher-centered approach to learner-centeredness which highlights the roles of language learners. Since then there have been significant researches on strategies that learners used while learning a foreign language. Thus, this section will provide the background of language learning strategies, the definition and classification of language learning strategies, and previous studies of language learning strategies.

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2.1.1 Background

Language teachers and researchers have long observed that some learners acquire English as a second or foreign language more quickly and effectively than others (Abraham & Vann, 1987; Vann & Abraham, 1990; Green & Oxford, 1995; Oxford & Ehrman, 1995; Park, 1997; Vance, 1999; Khaldieh, 2000; Wharton, 2000; Vidal, 2002; Griffiths, 2003; Kaotsombut, 2003; Shmais, 2003; Takeuchi, 2003; Baker & Boonkit, 2004; Gan, Humphreys & Hamp-Lyons, 2004; Nisbet, Tindall, & Arroyo, 2005; Riazi & Rahimi, 2005; Xuan, 2005; Hong-Nam & Leavell, 2006; Magogwe & Oliver, 2007; Satta-Udom, 2007). In addition, they have indicated that the successful language learners are the strategic person who can use strategies more greatly and appropriately to the learning tasks. The nature of this difference among learners has captured the attention of practitioners and researchers worldwide. According to Oxford (1989) and Lightbrown and Spada (1999), there are a number of factors affecting language learning; for instance, intelligence, aptitude, personality, motivation and attitudes, learner preferences (age, gender, nationality origin), learner's belief, period of second language study, learning styles, and language teaching methods. Amongst these variables, language learning strategies have consistently emerged as a primarily significant factor in language learning (Skehan, 1989).

Research into language learning strategies originally began in the 1960s due to the development in the cognitive psychology (Williams & Robert, 1997). In 1966, Aaron Carton published his study entitled *The Method of Inference in Foreign Language Study*, which was the first attempt to examine strategies used by learners (Hismanoglu, 2000). Then the primary concern in conducting language learning strategies researches were emphasized the language learning strategies used by learners (Stern, 1975; Rubin, 1987; Wenden, 1987). These studies did not address the connection between strategy use and success. Afterwards, there have been numerous researches on language learning strategies conducted extensively, and they are not restricted in examining strategy used by learners (Ehrman & Oxford, 1989; Oxford, 1989; Oxford & Nyikos, 1989; Green & Oxford, 1995; Park, 1997; Sheorey, 1999; Wharton, 2000; Vidal, 2002; Griffiths, 2003; Kaotsombut, 2003; Ok, 2003; Peacock & Ho, 2003; Shmais, 2003; Takeuchi, 2003; Baker & Boonkit, 2004; Gan,

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Humphreys & Hamp-Lyons, 2004; Nisbet, Tindall, & Arroyo, 2005; Riazi & Rahimi, 2005; Xuan, 2005; Hong-Nam & Leavell, 2006; Magogwe & Oliver, 2007; Satta-Udom, 2007).

2.1.2 Definition

The term “language learning strategies” and “learning strategies” have been used interchangeably and defined considerably since the late 1970s (Rubin, 1975; Rigney, 1978; O’ Malley, Chamot, Stewner-Manzanares, Russo, & Kupper, 1985; Rubin, 1987; O’ Malley & Chamot, 1990; Oxford, 1990; Wenden, 1991; Nunan, 1999; Brown, 2000). Rubin (1975), one of the earliest researchers in the field, provides a very broad definition of language learning strategies. She defines language learning strategies as the techniques that learners use to manage their learning and attain knowledge. Then Rigney (1978) proposes the fundamental and familiar definition of language learning strategies. He defines them as “the often-conscious steps or behaviors used by language learners to enhance the acquisition, storage, retention, recall, and use of new information” (p. 165). This definition clearly states that learning strategies are mental process assisting learners in learning a new language, and afterwards his definition has been restated by the prominent researchers (O’Malley, Chamot, Stewner-Manzanares, Russo & Kupper, 1985; O’Malley & Chamot, 1990; Oxford, 1990; Wenden, 1991). Consequently, the subsequent definitions of language learning strategies are similar to Rigney’s (1978) definition. For example, Weinstein and Mayer (1986) describe learning strategies as “behaviors or thoughts that a learner engages in during learning that are intended to influence the learner’s encoding process” (p. 315). Their definition confirms that learning strategies involve mental activity which learners use to make the meaningful understanding towards things they learn in classes. Similarly to O’ Malley and Chamot (1990), they define learning strategies as “the special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information” (p. 1). For Oxford (1990), she agrees with those definitions that learning strategies are techniques that learners use consciously to progress their learning, but she specifies the more precise definition of language learning strategies. She defines them as “specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed,

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more effective, and more transferable to new situations" (p. 8). She highlights the importance of personal enjoyment, the increase of existing information transferability and learner autonomy. As a result, learning strategies for second language learning are specific actions, behaviors, or techniques that learners use to assist themselves in making understanding meaningfully toward situations and producing a new language more effectively, enjoyably, and independently (Oxford, 1990; Scarcella & Oxford, 1992). Moreover, learning strategies can help learners to manage and control their learning to achieve their desired goals because learning strategies are controllable (Rubin, 1987; Pressley & McCormick, 1995).

2.1.3 Classification

Since language learning strategies have been classified by scholars (Naiman, Frohlich, Stern & Todesco, 1978; Rubin, 1981, O'Malley, Chamot, Stewner-Manzanares, Russo & Kupper, 1985; O'Malley & Chamot, 1990; Oxford 1990; Wenden, 1991; Stern 1992; Brown, 2000), their classifications share some similar aspects as shown in Table 1 below:

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Table 1 Classification of Language Learning Strategies

Researchers	Classification System
Naiman, Frohlich, Stern, and Todesco (1978)	a) Realization of a language as a system b) Active task approach c) Realization of language as a means of communication and interaction d) Management of affective demands e) Monitoring L2 performance
Rubin (1981)	**1) Direct Learning Strategies** a) Clarification/ Verification b) Guessing/ inductive inferencing c) Deductive reasoning d) Practice e) Memorization f) Monitoring **2) Indirect Learning Strategies** a) Production tricks b) Creating opportunities for practice
O'Malley and Chamot (1990)	a) Metacognitive Strategies b) Cognitive Strategies c) Socioaffective Strategies
Oxford (1990)	**1) Direct Strategies** a) Memory b) Cognitive c) Compensation **2) Indirect Strategies** a) Social b) Affective c) Metacognitive
Wenden (1991)	**1) Cognitive Strategies** a) Selecting b) Comprehending c) Storing d) Retrieving **2) Self-Management Strategies** a) Planning b) Monitoring c) Evaluating
Stern (1992)	a) Cognitive strategies b) Communicative- experiential c) Interpersonal d) Affective e) Management and planning
Brown (2000)	a) Cognitive strategies b) Socioaffective strategies c) Metacognitive strategies

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In what follows, three main classifications of language learning strategies namely Rubin's (1981), O'Malley and Chamot's (1990) and Oxford's (1990) will be addressed respectively. Firstly, it is Rubin's (1981) classification. According to Rubin (1981), she identifies two types of learning strategies – strategies which involve directly with learning, and strategies which involve indirectly with learning. In direct learning strategies, they compose of six strategy types; for example clarification/verification, monitoring, memorization, guessing/inductive inferencing, deductive reasoning, and practice; while in the indirect learning strategies, there are only two strategy types, that is, creating opportunities for practice and production tricks. Secondly, O'Malley and Chamot (1990) divide language learning strategies into three categories: metacognitive strategies which require learners to plan, think, and evaluate their learning; cognitive strategies which involve the manipulation of learning materials and are limited to some specific learning tasks such as repetition, resourcing, grouping, and note taking; and socioaffective strategies which involve contacting with others. Finally, Oxford (1990) classifies language learning strategies into two broad categories: direct strategies and indirect strategies. In direct strategies, they involve directly with learning and using a target language, and they compose of three subcategories such as memory strategies, cognitive strategies, and compensation strategies. In indirect strategies, on the other hand, they involve supporting techniques that learners use while learning and producing a target language. They compose of three subcategories such as metacognitive strategies, affective strategies, and social strategies.

It is obvious that, from these classifications, they overlap. For instance, both Rubin's (1981) and Oxford's (1990) are similar in that direct strategies refer to those which involve directly with learning and using a target language. However, there are some differences between them. In Rubin's (1981), clarification/verification and monitoring are grouped in direct strategies, but in Oxford's (1990), asking questions for clarification/verification appears in social strategies; and monitoring are found in metacognitive strategies (Hsiao & Oxford, 2002). In addition, cognitive strategies exist both in O'Malley and Chamot (1990) and in Oxford's (1990); but cognitive strategies in O'Malley and Chamot (1990) are specific to some learning tasks, while cognitive strategies in Oxford (1990) involve how a learner think about his learning.

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Furthermore, inferencing is found in cognitive strategies in O'Malley and Chamot (1990); but inferencing or guessing from contexts is grouped in compensation strategies in Oxford (1990). Lastly, memory strategies are unique strategies in Oxford (1990); but in O'Malley and Chamot (1990), memory is part of the cognitive strategies (Hsiao & Oxford, 2002). Thus, Oxford (1990) memtions that classifications of language learning strategies can be different because "there is no complete agreement on exactly what strategies are; how many strategies exist; how they should be defined" (p. 17), so arguments can arise.

Still, Griffiths (2003) states that some classification is unclear especially Oxford's (1990) in classifying compensation strategy, but Oxford's (1990) classification is more detailed, understandable, and systematic than Rubin's (1981) and O'Malley and Chamot's (1990). Oxford's (1990) classification links individual strategies and strategy groups with four language skills, and it promotes teaching and learning improvement, as well as, fostering learners with the sense of learner autonomy (Vidal, 2002). Consequently, the present study employed Oxford's (1990) classification of language learning strategies as a main scheme for classifying language learning strategies.

Oxford's (1990) Classification of Language Learning Strategies

The main goal of language learning strategies is to foster the communicative competence of learners (Oxford, 1990). According to Oxford (1990), there are 62 strategies, and they are divided into two main categories: direct and indirect strategies. In direct strategies, they involve directly with learning and using a target language, and they compose of three subcategories such as memory strategies, cognitive strategies, and compensation strategies. In contrast to direct strategies, indirect strategies are strategies that support and manage language learning without involving directly with the target language, but they are useful and applicable to all language skills and language learning situations. They compose of three subcategories such as metacognitive strategies, affective strategies, and social strategies. In Oxford's (1990) classification, memory strategies are strategies used for storing and recovering the information; whereas cognitive strategies are mental strategies that learners use to recognize their learning. Compensation strategies help learners to overcome

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knowledge limitations and to continue the communication with others in varied situations. Metacognitive strategies help learners to plan and arrange their learning. Affective strategies are concerned with feelings that learners experience while learning a language. They help learners to manage and control their feelings in an appropriate way. Last, social strategies involve the social contact that learners need to communicate with others through a target language.

To better understand, below is the clarification of Oxford's (1990) classification of language learning strategies.

1. Direct Strategies

The direct strategies are strategies that learners use to handle a new language. They are beneficial for learners because they help them store and recover information. They also help them produce a new language whenever they have some difficulty. Three strategy groups belonging to these are memory strategies, cognitive strategies, and compensation strategies.

Memory strategies, sometimes called mnemonics, have been existed for years and considered as the basic strategies for learners. They can help learners to store and recover the existing information that they had experienced. They consist of four subcategories: (a) creating mental linkages, (b) applying images and sounds, (c) reviewing well, and (d) employing action.

Cognitive strategies are perhaps the most popular strategies with language learners, and they are important for learners when they learn a new language. These strategies can help learners understand their learning process. They help them to think how they learn a new language. They consist of four subcategories: (a) practicing, (b) receiving and sending messages, (c) analyzing and reasoning, and (d) creating structure for input and output.

Compensation strategies are useful for all learners. They help learners to comprehend the target language when they have insufficient knowledge of that language. They consist of two subcategories: (a) guessing intelligently when listening and reading and (b) overcoming limitations of speaking and writing.

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2. Indirect Strategies

The indirect strategies are useful in all language learning situations and are applicable for all language skills. They involve supporting, planning, monitoring, and managing learners' learning process, along with, managing emotion, motivation, and attitudes without dealing directly with a new language.

2.1 Metacognitive strategies are essential for successful language learning. They help learners to plan and arrange their learning in an efficient way. They consist of three subcategories: (a) centering their learning, (b) arranging and planning their learning and (c) evaluating their learning.

2.2 Affective strategies involve emotions, attitudes, motivations, and values. They help learners to manage and control any feelings that happen while they learn a new language appropriately. They consist of three subcategories: (a) lowering their anxiety, (b) encouraging themselves, and (c) taking their emotional temperature.

2.3 Social strategies are important in learning a language. They involve the interaction with others. Learners are required to communicate with people such as friends, teachers, or native speakers to develop their language use. These strategies consist of three subcategories: (a) asking questions, (b) cooperating with others, and (c) empathizing with others.

Below is the diagram illustrated Oxford's (1990) classification of language learning strategies with two strategies classes and six main strategy groups.

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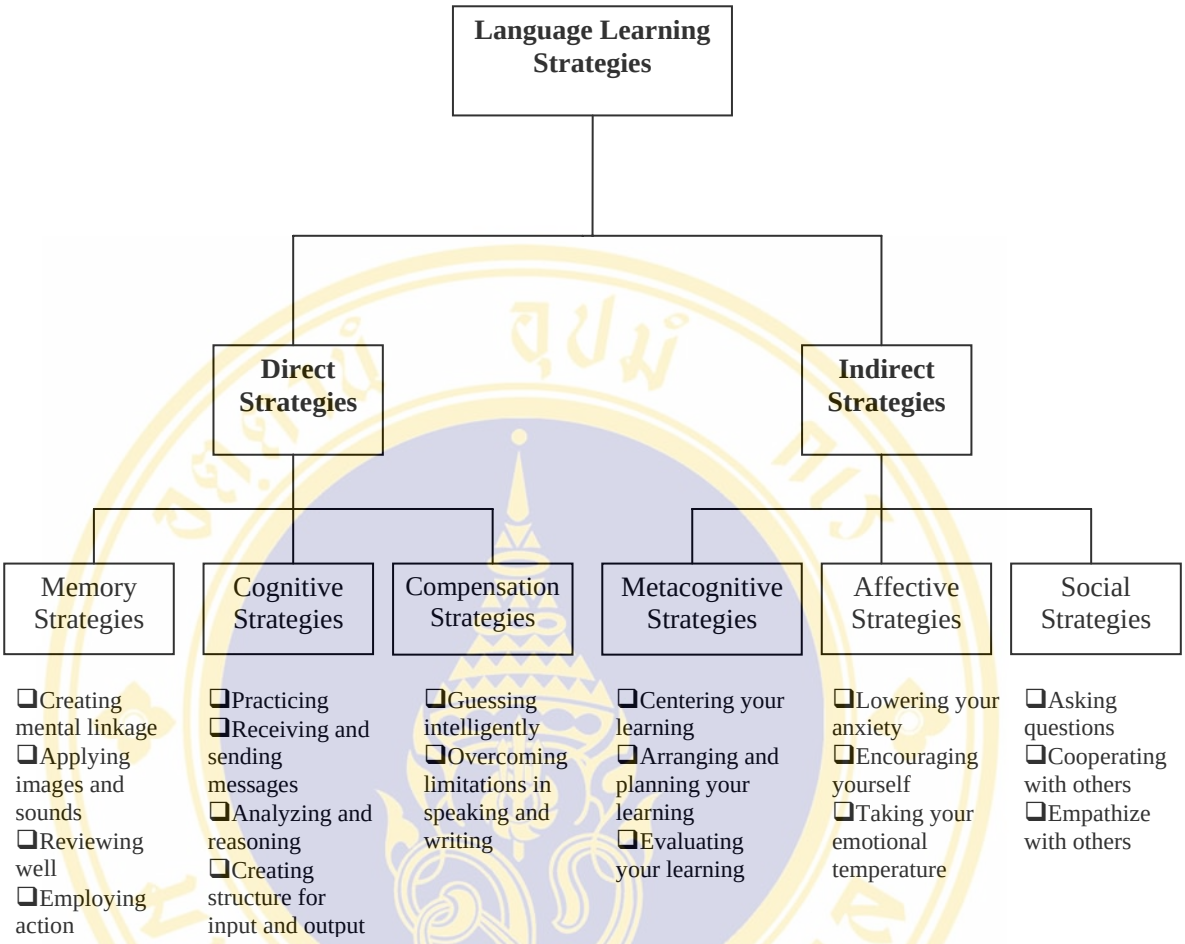

Figure 2 Diagram of the Strategy System Showing Two Classes, Six Groups, and Nineteen Sets adapted from Oxford (1990)

From the Oxford's (1990) classification of language learning strategies, it is noticeable that these strategies are important for language learners because they are learning tools aiding learners to develop and maximize their language abilities. As Oxford (1990) states that language learning strategies are "especially important for language learning because they are tools for active, self-directed movement, which is essential for developing communicative competence" (p. 1). Therefore, with these strategies, learners can improve their language abilities particularly communicative abilities, which are the main purpose in language learning. Moreover, these strategies enable learners to use a language more effectively, independently, and confidently without the help from their teachers. Above all, language learning strategies are

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important tools enhancing learners to become more autonomous language learners who are responsible and manage their own learning. Thus, understanding strategies that learners used in each particular task is valuable for teachers. It can help teachers to understand learners' learning process and manage teaching and learning materials and environments suiting their individual differences. The next section will present some related researches on language learning strategies.

2.2 Previous Studies of Language Learning Strategies

Early researches in language learning strategies have emphasized strategies that good language learners used (Rubin, 1975; Stern, 1975; Wenden, 1987). They indicate that good language learners used more and better learning strategies than did poor language learners. Rubin (1975), one of the pioneer researchers in the field, suggests some characteristics of good language learners. She indicates that good language learners have a strong desire to communicate with a target language, and they are willing to guess even though they make mistakes. In addition, they are willing to find more practice opportunities to expose the language and enable to monitor their conversations with others. However, early studies (Rubin, 1975; Stern, 1975; Wenden, 1987) have limited to strategies used by learners. They did not state the connections between strategy use and success in language learning.

From this viewpoint, current studies have shifted interest to the connections between strategy use and language proficiency (Ehrman & Oxford, 1995; Green & Oxford, 1995; Park, 1997; Wharton, 2000; Vidal, 2002; Griffiths, 2003; Kaotsombut, 2003; Shmais, 2003; Takeuchi, 2003; Baker & Boonkit, 2004; Gan, Humphreys & Hamp-Lyons, 2004; Nisbet, Tindall, & Arroyo, 2005; Riazi & Rahimi, 2005; Xuan, 2005; Hong-Nam & Leavell, 2006; Magogwe & Oliver, 2007; Satta-Udom, 2007). The findings from these studies indicated that language learning strategies could influence performance in language learning, and using different strategies led to different learning performance. In addition, the results found that the proficient language learners used language learning strategies more greatly and frequently than did the less proficient learners. Nevertheless, researchers (Ehrman & Oxford, 1989; Oxford, 1989; Oxford & Nyikos, 1989; Green & Oxford, 1995; Park, 1997; Sheorey, 1999; Wharton, 2000; Vidal, 2002; Griffiths, 2003; Kaotsombut, 2003; Ok, 2003;

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Peacock & Ho, 2003; Shmais, 2003; Takeuchi, 2003; Baker & Boonkit, 2004; Gan, Humphreys & Hamp-Lyons, 2004; Nisbet, Tindall, & Arroyo, 2005; Riazi & Rahimi, 2005; Xuan, 2005; Hong-Nam & Leavell, 2006; Magogwe & Oliver, 2007; Satta-Udom, 2007) have not restricted to language proficiency. They examined other factors contributing to success in learning a language such as age (Oxford, 1989), gender (Ehrman & Oxford, 1989; Green & Oxford, 1995; Sheorey, 1999), number of years of language study (Oxford & Nyikos, 1989), level of course (Green & Oxford, 1995; Wharton, 2000; Griffiths, 2003; Magogwe & Oliver, 2007), field of study (Satta-Udom, 2007), and motivation (Ehrman & Oxford, 1989; Wharton, 2000).

For instance, compared with males, females are more frequent users of strategies (Ehrman & Oxford, 1989; Green & Oxford, 1995; Sheorey, 1999). Advanced learners use strategies more often and more effectively than beginning learners (Green & Oxford, 1995; Wharton, 2000; Griffiths, 2003; Magogwe & Oliver, 2007). Griffiths (2003) discovered the positive relationship between course level and reported frequency of language learning strategies use by private language school students in New Zealand. She indicated that the advanced learners used strategies more frequently and widely than did the elementary learners. Like Griffiths (2003), Magogwe and Oliver (2007) examined the different pattern of strategy use by three groups of students: primary, secondary, and tertiary students in Botswana, South Africa. They reported that the more proficient learners used language learning strategies more often than did the less proficient learners. The primary students preferred using social strategies, whereas both secondary and tertiary students preferred using metacognitive strategies.

However, among those factors, national origin or ethnicity has a strong influence on the strategy types that language learners used (Oxford, 1989), and the types of strategies used by language learners depend on the kinds of learners and settings in which the learning occurred (Wharton, 2000). For that reason, studies on language learning strategies in different Asian contexts were addressed in this study.

First of all, Takeuchi (2003) conducted the use of strategy types in Japanese contexts through analyzing the strategy use reported in 67 books on “How I have learned a foreign language. He reported that metacognitive strategies were most preferred strategies among Japanese. Like Takeuchi (2003), Shmais (2003) studied

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the strategy use of Arab EFL English majors in Palestine. His study showed that the participants were moderate strategy users. The most frequent used strategies were metacognitive strategies, but the least frequent used strategies were compensation strategies. Moreover, Riazi and Rahimi (2005) investigated the pattern of language learning strategy use by Iranian learners. Their findings were similar to Takeuchi (2003) and Shmais (2003) in that Iranians learners were moderate strategy users, and they used metacognitive strategies at the highest level. Cognitive, compensation and affective strategies were found at a medium level; while memory and social strategies were used at a low level. These results were repeated by Nisbet, Tindall, and Arroyo (2005) and Xuan (2005). Nisbet, Tindall, and Arroyo (2005) discovered that metacognitive strategies were the most frequently used strategies among learners. Social and cognitive strategies were used at the medium level, while memory strategies were used the least. Xuan (2005) found that the Chinese graduate students of science at Qingdao Technical University were medium strategy users. They used metacognitive strategies most often and social strategies least often. Furthermore, Hong-Nam and Leavell (2006) found that 55 ESL students preferred using matacognitive strategies most, followed by social, compensation, and cognitive strategies. The least preferred strategies were affective and memory strategies.

Unlike those findings, Peacock and Ho (2003) examined the strategy use of 1006 Hong Kong university students. They reported that students were medium strategy users with compensation category as the most frequently used strategies followed by cognitive, metacognitive, social, memory and affective strategies respectively. Similarly to Ok (2003), he investigated the strategy use of Korean secondary school students. He found that compensation strategies were used most frequently among students, whereas affective strategies were used the least. Finally, Kaotsombut (2003) and Satta-Udom (2007) studied the strategy use among Thai learners. Kaotsombut (2003) conducted the strategy use of Thai graduate science students and found that students used compensation strategies at the highest level, followed by metacognitive, cognitive, social, affective, and memory strategies. Similarly to Satta-Udom (2007), he studied the strategy use of first year students at Mahidol University. He found that compensation strategies were most frequently used, while social strategies were least frequently used.

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From these studies, it can conclude that different cultural groups used different strategy categories. For Asian students, the results revealed that most of them were medium strategy users, and metacognitive and compensation strategies were reported as the most frequently used strategies. The followings will address two approaches – learner-centeredness and learner autonomy which underlie the application of language learning strategies and life skills in the educational areas.

2.3 Learner-Centered Approach

In the past two decades, teaching and learning a language have been shifted to more communicative approach and become more learner-centered (Yang, 1998). For language teachers, learners are important. They have been recognized as the main source of information for designing classroom lessons, learning tasks, materials, and other related learning activities (Hutchinson & Waters, 1987). Prabhu (1987) supports that learners can learn more successfully when they are willing to participate in learning tasks. From this viewpoint, teacher-centered, the traditional teaching method, has been lessened the importance, and the rise of learner-centered has been replaced (Tudor, 1996; Yang, 1998).

Admitted by educators and researchers (Tudor, 1996; McCombs, 1997; Yang, 1998; Altan & Trombly, 2001; Schuh, 2004) the teacher-centered approach lacks the inclusive interaction between teachers and learners. Since it has been realized as a passive form of learning, learners play inactive roles and often perform as the listeners or the recipients of information. The key person in classes is teachers instead of learners. Teachers are responsible for leading the instructions and managing learning activities without learners' sharing ideas. This has been awakened the participation of all learners. Due to the diversity of each learner, Alan and Trombly (2001) address that teaching and learning might be ineffective if students' learning styles mismatch teachers' teaching styles. With this respect, Brown (2003) suggests that the teacher's roles should be decreased, and the increase of students' participation should be more accepted so as to adjust the more effective teaching and learning in classes. As a result, the learner-centered approach has been recognized and promoted.

Because learners are the most important part in a learning process, the learner-centered approach emphasizes the active roles of the learners (Tudor, 1996; Schuh,

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2004). In classes, learners were not the passive receivers, but they have become the initiators or creators who can participate in designing and organizing learning and teaching process. By this approach, they have the opportunities to negotiate with teachers and others stakeholders about the contents that they need to study, as well as, the teaching methods that are most suitable with them (Nunan, 1988). Consequently, learners' learning process has not been restricted in the teacher's hands. It has been in the learners' instead. Learners need to be responsible for their learning because their needs and preferences are mainly concerned in this approach (Hutchinson & Waters, 1987).

In Thailand, the learner-centeredness was implemented since 1999. Referring to the National Education Act of 1999, it aims at the full development of all learners in all aspects; for example, physical and mental health, intellect, knowledge, morality, integrity, and desirable lifestyles in order that they can live in harmony with other people (ONEC, 2001). Moreover, the National Education Act of 1999 addresses the importance of learners as the individuals. It states that all learners have the capacity of learning. Therefore, learners must be trained to use their wisdom in thinking, analyzing, creating, decision making, problem solving, and synthesizing what they have learnt both in and outside classes to construct the essence of knowledge meaningfully to themselves (ONEC, 2000). According to this, teachers need to know their learners and to encourage them to make their learning individually suiting their own preferred ways and interests.

Nevertheless, Nunan (1988) accepts that teachers cannot teach learners everything they need to know because of time constraints. Consequently, with the limited time in each class, it is imperative for language teachers that they need to teach learners the necessary language aspects in order to help them develop and strengthen their language abilities, along with, to increase their motivation to learn a language. Therefore, teachers are required to provide learners with efficient learning strategies, and at the same time they need to help them identify their preferred ways of learning (Nunan, 1988). Furthermore, it is more benefited for learners if teachers help them determine and evaluate their learning objectives, and develop other needed skills for their learning (Nunan, 1988). As Reid (1996) mentions that language teachers need to "provide a wealth of information to students in order to raise their awareness

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about learning styles and strategies; and finally to work with students' learning strengths" (p. 3).

Not only have the roles of the learners been changed, but the roles of the teachers have also been changed. In the learner-centered approach, learners are more involved in decision making about their own learning process, whereas teachers tend to play less roles in classes. Thus, teachers' roles have been transformed from the directors or controllers of the class to become helpers, facilitators, and advisors who offer the relevant learning guidance to the learners and assist them in developing better techniques for their learning (Nunan, 1988). Then in this approach, teachers need to perform the active roles the same as the learners. Teachers are responsible for creating the suitably supportive learning conditions in which learners can develop their language abilities and discover their own favored learning strategies and styles to manage their learning (Carter, 1993). As a result, it is vital for teachers that they need to encourage learners to set and assess their learning objectives and be conscious of their learning process (Nunan, 1988). Besides, teachers need to foster and prepare learners to become autonomous or life-long learners who enable to plan, organize, and be responsible for their learning including being curious to search for knowledge throughout their lives without the teachers' support and guidance (Rausch, 2000).

2.4 Learner Autonomy

Oxford (1990) states that language learning strategies are aimed at fostering self-management in language learning and self-directed in language use, or they are aimed at promoting autonomy in learning a language. Consequently, language learning strategies and autonomy are closely related as Oxford (1990) describes learning strategies as effective tools facilitating learners to become more independent language users. Researchers and educators in the areas of general education and second language learning have recognized the importance of learner autonomy and viewed the development of autonomous learners as the long term goal of education (Holec, 1981; Dickinson, 1987; Macaro, 1997; Cotterall, 2000).

"Autonomous" or "autonomy" has been initially defined by Holec (1981) as "the ability to take charge of one's own learning" (p. 3). For him, autonomy is an attribute of learners assisting them in controlling and managing their learning. This

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definition has been remained the most cited and restated by numerous researchers (Benson, 2007). For example, Dickinson (1987) defines autonomy as the situation rather than ability. He describes autonomy as "the situation in which the learner is totally responsible for all of the decisions concerned with his learning" (p. 11). Cotterall (2000) identifies autonomy as the learners' ability to use a set of tactics for taking control of their learning. Macaro (1997) explains autonomy as "an ability which is learnt through knowing *how* to make decisions about the self as well as being *allowed* to make those decisions" (p. 168). From these definitions, the basis concern of learner autonomy is that learners accept their responsibilities for their learning (Holec, 1981; Dickinson, 1987; Cotterall, 2000, Macaro, 1997).

Wenden (1991) describes the characteristics of an autonomous learner. She explains that an autonomous learner is a person who has gained the learning strategies and knowledge in order to take responsibility for his learning. In addition, he should be confident to express those appropriately. Later, Littlewood (1996) proposes three qualities of being an autonomous learner – (a) autonomy as a communicator, (b) autonomy as a learner, and (c) autonomy as a person (p. 431). For him, the autonomous communicator enables to express personal meanings through linguistic creativity and through the use of effective communication strategies. Second, the autonomous learner enables to develop effective learning strategies and to work independently. Lastly, the autonomous person enables to express personal meanings and create personal learning conditions through interacting with other people outside the classroom.

From these qualifications, to foster the autonomous characteristics for language learners, language learning strategies solely are not sufficient. Since the use of language requires several skills, it is necessary for language teachers to teach learners other strategies and skills related to their life such as life skills in order to help them manage several problems that happen both in and outside classes effectively. Bloom and his colleagues (1956) state that the ultimate goal of learning outcome is that the students can apply the knowledge and information that they have learnt to new situations and problem appropriately. To attain that goal, students need to acquire numerous techniques for handling new problems and new materials so that whenever they encounter a new problem or situation, they will select an appropriate

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technique for attacking it. Consequently, teaching and training learners to use learning strategies and life skills are important to develop them to become the life long learners.

Learners cannot develop those characteristics independently. Even though in the learner-centeredness learners need to be responsible for their learning, they still need the support and guidance from the teachers. Yang (1998) suggests that to develop language learners to become proficient language users and autonomous learners simultaneously, teachers need to combine learning strategy instruction with the content course of second language acquisition. Cotterall (2000) supports that implementing learner autonomy concept through language classes can increase learners' learning responsibility and develop learners' language proficiency. In what follows, skills relating to life or life skills will be described.

2.5 Life Skills

Since there was a need to educate young people with appropriate skills related closely to all aspects of life, the concept of life skills was raised in education in 1990 at the World Conference on Education for All, Jomtien, Thailand (United Nations Educational, Scientific and Cultural Organization; UNESCO, 2004). This concept, suggested by WHO (1994), addresses real-life applications of three main areas – knowledge, attitudes, and skills. Further, life skills are grounded on the learner-centered approach highlighting the participatory and interactive teaching and learning methods. Besides, they can be applied to several issues, problems, and environments. As a result, in 1994, life skills were introduced to Thai country because they are necessary skills that enable people to handle difficulties during their lifetime and to protect themselves from risks which are increasing in society these days (Department of Mental Health, 2002).

2.5.1 Definition

Life skills are psycho-social competence or simply called social abilities (WHO, 1994; Department of Mental Health, 2002). Proposed by World Health Organization (WHO, 1994), life skills are necessary skills for all learners from all parts of the world. They are relevant to all aspects of life, and they comprise of three

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balanced areas: knowledge, attitudes, and skills. WHO (1994) define life skills as “abilities for adaptive and positive behavior that enable individuals to deal effectively with the demands and challenges of everyday life”. Specifically, life skills are a combination of psycho-social competencies and interpersonal skills that enable people to make informed decisions, solve problems, think critically and creatively, communicate effectively, build healthy relationships, empathize with others, and manage their lives in a healthy and productive manner. Thus, through these skills, learners can foster and develop the appropriate manner, along with, the underlying knowledge and positive behaviors. More importantly, they can increase the higher sense of taking a responsibility for their own lives that lead to succeed in life eventually (WHO, 1994; Department of Mental Health, 2002).

However, United Nations Educational, Scientific and Cultural Organization (UNESCO, 2004) argue that life skills are not a set of skills, nor are they equal to survival or livelihood skills, but they are a combination of applicable skills assisting people in handling any difficulties in their lives effectively. For this reason, depending on diverse cultures and settings, WHO (1994) purpose skills that can be specified to be life skills are countless, and the nature and definition of life skills are likely to be different. Therefore, in Thailand, the definition of life skills corresponds with WHO (1994)’s definition. Thai educators and an organization (Tunsakul & Sittitri, 1995; Wongpiromsan 1997; Department of Health, 2002) define life skills as abilities or capabilities consisting of a wide range of knowledge, attitudes, and skills that enable people to confront and handle any challenges and difficulties in their daily lives effectively in order to live successfully and harmoniously with others in societies.

2.5.2 Components

World Health Organization (1994) divides core life skills into 10 skills which can be categorized into 5 pairs: (a) decision making and problem solving, (b) creative thinking and critical thinking, (c) communication and interpersonal relationships, (d) self-awareness and empathy, and (e) coping with emotions and stressors. However, to suit Thai culture and teaching and learning process, Department of Mental Health (2002) categorizes core life skills into three board domains: cognitive, affective, and psychosocial domains according to learning

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behavior and combines one pair (self-esteem and social responsibility) in the affective domain. As a result, life skills applying in Thai society are classified into 6 pairs or 12 skills related to three domains as following:

1. **Cognitive domain**

Cognitive domain involves the cognitive development. It refers to the mental development of knowledge, thinking, and understanding of a phenomenon. It comprises of critical thinking and creative thinking.

2. **Affective domain**

Affective domain involves the emotional development. In other words, it is the mental development of beliefs, interests, attitudes, and values of the individual. It consists of self-awareness and empathy; and self-esteem and social responsibility.

3. **Psychomotor domain**

Psychomotor domain involves the physical development. It refers to the physical movement that leads to various skills development such as playing sports or musical instruments. Nevertheless, according to Department of Mental Health (2002), psychomotor domain includes skills in interpersonal relationship and effective communication; decision making and problem solving; and coping with emotion and coping with stress.

In these three domains, they are categorized into 12 life skills components according to Department of Mental Health's (2002) definition as follows:

1. **Critical thinking** involves thinking systematically. It refers to an ability to analyze information and experiences in an objective manner. It enables people to differentiate the varied types of information that they have received. In addition, this can help people to make logical decisions and judgments towards that information.
2. **Creative thinking** can be described as "creativity". It involves the creation of new ideas or concepts, or it entails the new connections between the existing ideas and concepts with the new ones. Guilford (1950) states that creative thinking is a mental ability incorporating divergent thinking or the flow of thoughts which composes of originality, fluency, flexibility, and elaboration. Creative thinking contributes to both decision making and

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problem solving. It enables people to explore the available choices and various consequences of their action and non-action. Besides, it helps people to respond adaptively and flexibly to problems and situations (WHO, 1994). Both critical thinking and creative thinking skills are classified as high-order thinking skills which teachers can help learners to develop through integrating these skills with other subjects (Huitt, 1998; Salpeter, 2003; Mulkham, 2006).

3. **Self-awareness** refers to one's own recognition of his character, strengths, weaknesses, desires, and dislikes. It involves noticing how one feels, thinks, behaves, and senses at any particular time. It is an ability to perceive, realize, and control his thought and emotion consciously. Developing self-awareness enables people to recognize their stress and tension. It is related to communication and interpersonal relations, along with, empathy for others.
4. **Empathy** refers to the ability to imagine and to share another person's feelings and experiences. It involves the perception and understanding of other person's needs, feelings, and behaviors. WHO (1994) addresses that empathy can improve social interaction. It can help to encourage nurturing behavior towards people in need of care, help, and support.
5. **Self-esteem** is the positive attitudes towards oneself. It involves having the optimistic perception of oneself such as self-respect, self-confidence, and self-indulgence. Bass (1960) explains that self-esteem does not include the physical appearance and the gender difference. It involves recognizing oneself as a cherished person who is confident, talented, skillful, and open to the constructive criticisms.
6. **Social responsibility** involves the sense of belonging to a society in which a person has lived. It refers to the commitment or duty on which an individual is required to do to form the organized and pleasant community; for example, being a nice, industrious, responsible, and moral person. Social responsibility is closely related to self-esteem and empathy which inspires people to behave well and desire to assist the others in the society.

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7. **Interpersonal relationship** involves social association between two or more people in order to exchange information or locate the good cooperating relationship with each other. It refers to an ability to interact with others in positive ways. It involves being open and friendly to those persons to create the hospitable relationship with them. Interpersonal relationship helps people realize the value of companionship and help them understand the others better.
8. **Communication skills** refer to an ability to converse or communicate with others through verbal, physical, and sign languages to form or maintain the good mutual understanding with each other. Communication skills enable people to express themselves in a proper manner depending on their cultures and situations.
9. **Decision making** is the process of identifying and selecting a proper course of action to solve a specific problem. It is an ability to understand the importance of choices in people's lives. It involves the ability to generate possible options, evaluate both advantages and disadvantages of each option, and choose the appropriate choice to solve the problem.
10. **Problem solving** is similar to decision making in that it is the sequence of events or activities that occur during a person collects and organizes the relevant information to specify, analyze, and overcome the problems. It is an ability to recognize, comprehend, scrutinize, synthesize, and assess a problem appropriately. This ability includes the ability to decide the suitable solution and option towards each problem.
11. **Coping with emotion** involves recognizing one's emotions and others'. It is an ability to be aware and distinguish each state of their emotions – positive or negative, recognize the effects of their different emotions, and manage those emotions suitably.
12. **Coping with stress** refers to an ability to adjust, control, lessen, and expunge the perceived threats or unpleasant situations. It involves recognizing and identifying the sources of stress, understanding the effects of stress, and managing each level of stress properly.

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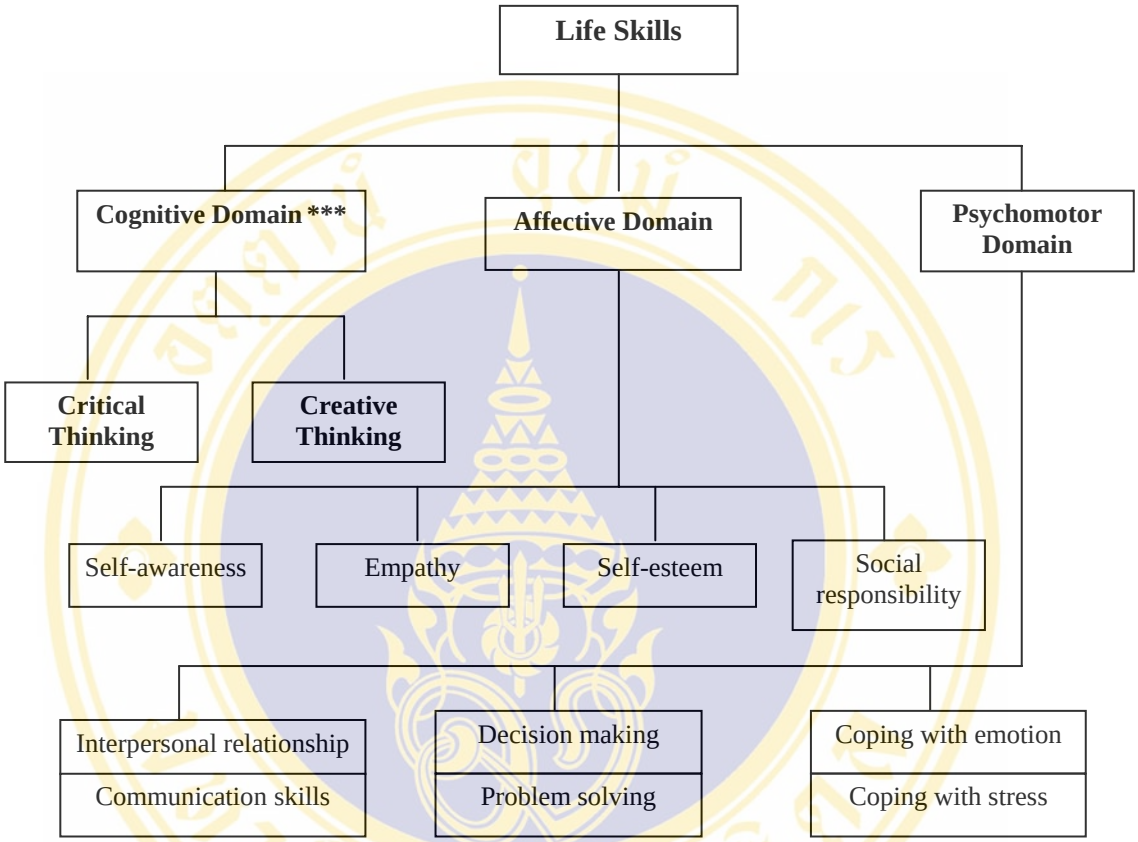
To better understand, the 12 components of life skills were illustrated in the diagram below.



*** highlighted on the cognitive domain which was the main focus of the study

Figure 3 Diagram of Life Skills and its twelve components

From these components, it is obvious that all skills are closely related to skills that people use in their daily lives. Life skills can lead people to positive health behaviors, mutual understandings between others, good perceptions about themselves, logical decision making, and good emotional control. Thus, teaching and training learners to apply life skills are benefited for them in all aspects of life (WHO, 1994). WHO (1994) and Department of Mental Health (2002) suggest that teachers should implement life skills into their classes. These skills encourage the active roles of

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learners and the participatory of all stakeholders such as teachers, learners, family, and schools whom learners can learn and develop the knowledge from. Besides, learners can develop life skills through interactive learning activities such as role plays, simulations, debates, and group discussions. Through these activities, learners can develop necessary knowledge and skills related to each particular learning, situation, and problem well.

2.6 Previous Studies of Life Skills

As initiated by WHO (1994), life skills researches have mainly conducted in the health prevention areas; for example, the prevention of HIV/AIDS, adolescent pregnancy, violence, suicide, the use of drugs, alcohol, and tobacco including the prevention of injuries and racism. Yet, when adopting life skills into the educational areas, WHO (1994) further explain that life skills can contribute to gender equality, democracy, good citizenship, quality of life, and the promotion of life long learning. Life skills researches addressed in this study were divided into three main study areas – factors related to life skills level of Thai people, the effectiveness of life skills training programs, and life skills in the educational area.

2.6.1 Factors related to life skills level of Thai people

According to Saimai (2003) and Supanratanarat (2003), factors affecting the level of life skills of Thai learners were gender, birth order, family, personality, academic achievement, and areas that learners chose to study. In Supanratanarat's (2003) study on factors related to life skills of the first year students of Srinakharinwirot Prasanmit University, he reported those factors affecting the use of students' life skills were gender, family, academic achievement, and fields of study or faculties. His findings indicated that the overall level of life skills of the participants were at a high level except problem solving and creative thinking skills which were at a moderate level. Furthermore, he revealed that the life skills level of the high academic achievement students was higher in critical thinking skills than that of the low academic achievement students. He also found that the science students and social science students were significantly different in decision making, critical thinking, interpersonal relationship, and coping with stress skills. Similarly to Saimai

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(2003), she examined the life skills level of grade nine students in Bangkok by emphasizing personal factors such as gender, birth order, personality, and family factors. Her finding found that forty seven percent of students had life skills at the moderate level, and the life skills level of female students was higher than that of males. In addition, she discovered that the students who received the authoritative parenting styles had better life skills than those with other parenting styles.

2.6.2 The Effectiveness of Life Skills Training Programs

Several studies (Botvin, Baker, Renick, Filazzola, & Botvin, 1984; Elias, 1991; Elias, Gara, Schulyer, Brandon-Muller, & Sayette, 1991; Botvin, Schinke, Epstein, & Diaz, 1994; Tolan & Guerra, 1994; Daugkao, 1996; Botvin, Epstein, Baker, Diaz, & Ifill-Williams, 1997; Chareonsuk, 1997; Sookamornrat, 1997; Nukuludompanich, Kumarn, Dilokwattana, 2000; Lapsirianankul, 2001; Sunsiri, 2002; Prommobol, 2003; Termsrirat, 2003; Punyapet, 2004; Klatthong, 2006) indicated that implementing life skills training programs in educational institutes has several advantages. They revealed that life skills training programs promote the healthy lifestyles and desirable behaviors such as socializing, improving communication, and fostering effective decision making and conflict resolution skills.

For example, Elias's (1991) study showed that the life skills training reduced the chances of young people engaging in delinquent behaviors, while Tolan and Guerra's (1994) findings indicated the program lessened the interpersonal violence. Moreover, these programs prevent learners from negative or high-risk behaviors such as the use of tobacco, alcohol and other drugs (Botvin, Baker, Renick, Filazzola, & Botvin, 1984; Botvin, Schinke, Epstein, & Diaz, 1994; Botvin, Epstein, Baker, Diaz, & Ifill-Williams, 1997; Sookkamornrat, 1997; Nukuludompanich, Kumarn, Dilokwattana, 2000; Lapsirianankul, 2001; Termsrirat, 2003). For example, Sookamornrat (1997) assessed the effectiveness of life skills development program for prevention of cigarette smoking among secondary students. She revealed that after integrating life skills through simulation, group discussion, role play, and a brief lecture, students developed decision making and refusal skills. Like Sookamornrat (1997), Prommobol (2003) studied the effectiveness of applying a health belief model and life skills development to stop smoking cigarettes among the 120 volunteers. She

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stated that after training the program for four weeks, the volunteers developed the knowledge about diseases related to smoking and increased the decision-making skills to stop smoking. In addition, Nukuludompanich, Kumarn, and Dilokwattana (2000), Lapsirianankul (2001) and Termsrirat (2003) studied the effectiveness of life skills development program in preventing amphetamine abuse among the primary and secondary school students. They reported that after training the program, students developed the higher decision making and refusal skills against drug uses. Besides, students gained more knowledge about amphetamines and increased self-awareness, self-esteem, problem solving and coping with stress skills.

Apart from those studies, life skills training was implemented in reducing high risk sexual activity especially in the prevention of HIV infection (Daugkao, 1996; Chareonsuk, 1997; Sunsiri, 2002). Sunsiri (2002) assessed the effectiveness of life skills program for the prevention of AIDS among junior high school students. She reported that life skills program can help students to develop basic skills for preventing AIDS especially self-awareness and refusal skills. Moreover, Punyapet (2004) conducted the effectiveness of life skills development program on heterosexual relationship among high school students in Bangkok. She indicated that life skills program influenced the development of critical thinking, decision making, interpersonal relationship, and self-esteem in gender role. Klatthong (2006) studied the life skills development program on prevention skills against sexual assault among students in Uttaradit province. She revealed that this program was an effective tool that could be used to promote the prevention of sexual assaults among students. Finally, Elias, Gara, Schulyer, Brandon-Muller, and Sayette (1991) concluded that life skills development program increased positive social adjustment, and improved the academic performance of students.

2.6.3 Life Skills in the Education Area

The following studies (Wurr, 1996; Suwannaprut, 2007) were conducted in the field of second language learning. To begin with Wurr's (1996) study, Wurr examined the effectiveness of outdoor education program to promote language learning and life skills at Kanda University, Japan. The program aimed at creating real life learning opportunities for learners through interacting with others in an English

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speaking environment and developing the participants' self-esteem, leadership, interpersonal and intrapersonal skills. His findings found that through outdoor activities, students could develop self-esteem, leadership, trust, and interpersonal skills by using English as a main medium of communication. Moreover, he found that negotiation of activities could nurture the learner-centered learning condition. Therefore, through this real life activity, learners can master their English ability and increase the healthy relationship with others. Life skills, from this finding, were applicable and helpful for language learners.

Similarly to Suwannaprut (2007), she investigated the relationship between language learning strategies and the affective domain of life skills among the first-year students at Mahidol University. Her finding revealed that language learning strategies were significantly related to the affective domain of life skills especially memory, cognitive, and metacognitive strategies. These strategies influenced self-awareness, self-esteem, empathy, and social responsibility skills of the students.

From these studies, it can conclude that life skills are essential and practical skills enabling people to develop their critical thinking, decision making, problem solving, self-awareness, self-esteem, coping with stress, and other communicative skills. Furthermore, two studies (Wurr, 1996; Suwannaprut, 2007) showed that learning a language involves the life skills usage, and implementing life skills into language classes can help the language learners developed their communicative abilities in English, along with, interpersonal and intrapersonal skills (Wurr, 1996). Consequently, life skills should be more promoted in education as Termsrirat (2003) stated that the collaboration from schools and families can foster the desirable behaviors of the students. In addition, it can help them to strengthen problem-solving ability which is important skills enabling learners to manage different problems in different situations sensibly and successfully.

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CHAPTER III
METHODOLOGY

The chapter presents the methodology and procedures used in this study. It was divided into four subsections. First, the characteristics of the population and participants were described. Second, two research instruments and their developments were mentioned. Third, the procedure was explained how data was collected. Last, statistical devices were discussed to analyze the data. Thus, this chapter can be outlined as follows:

3.1 Population and Sample
3.2 Research Instruments
3.2.1 The Development of Life Skills Test
3.2.2 The Development of Strategy Inventory of Language Learning
3.3 Data Collection Procedure
3.4 Data Analysis and Statistical Devices
3.4.1 Descriptive Statistics
3.4.2 Correlation Statistics

3.1 Population and Sample

3.1.1 Population

The population in this study was a total of 2,889 first-year students attending in 24 study programs during the second semester in the academic year of 2006 at Mahidol University. They were native Thai students both males and females whose ages ranged from 17 to 27 years of age, and they were required to study one English compulsory course in their first semester at this university.

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3.1.2 Sample

To determine the sample size, simple random sampling was used through Hendel's (1977) sampling table at 95 percent of the confidence level. Due to this method, it can assure that every member of the population has an equal chance of being selected for the study (McMillan & Schumacher, 1997). Consequently, the sample size of this study was at least 350 first-year students.

According to McMillan and Schumacher (1997), they suggest that the basic rule of determining the sample size is to use the largest sample as possible. Since the larger the samples, the more representatives can be directly generalized the population. From this respect, the researcher enlarged the sample size by adding 10% of the entire population (289 students) to 350 samples to increase the reliability of the study. As a result, the number of samples was 639 first-year students consisting of 584 science students and 55 non-science students. However, the major group of the samples obviously studied in the science area. To increase the reliability to each sample group equally, the researcher needed to add 50% of the minor group of the population or the non-science group (130 students). Thus, the total number of samples in this study was 769 first-year students consisting of 584 science students and 185 non science students

After determining the samples, 769 questionnaires were randomly distributed to the students. Then 570 questionnaires were returned to the researcher. Consequently, the participants in this study were 570 first-years students attending in 24 study programs at Mahidol University. They included 447 science students and 123 non-science students.

For better understanding, Table 2 describes the number of population, samples, and participants used in this study.

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Table 2 Summary of Population, Sample Size, and Participants

No.	Study Program	Population	Sample Size	Participants
1	Bangkok Metropolitan Medical College (BM)	80	18	16
2	Faculty of Dentistry (DT)	92	20	16
3	Faculty of Engineering (EG)	357	79	57
4	Faculty of Environment and Resource Studies (EN)	70	15	9
5	Nursing students of Ramathibodhi Hospital (NR)	185	41	35
6	Faculty of Medical Technology (MT)	104	23	16
7	Faculty of Nursing (NS)	254	56	44
8	Occupational Therapy (OT)	32	11	11
9	Faculty of Public Health (PH)	149	33	26
10	Faculty of Medicine Prboromarajchanok Institute (PI)	96	21	16
11	Prosthetics and Orthotics (PO)	12	2	2
12	Faculty of Physical Therapy and Applied Movement Science (PT)	76	16	15
13	Faculty of Pharmacy (PY)	147	32	22
14	Faculty of Medicine at Ramathibodi Hospital (RA)	132	29	21
15	Department of Radiological Technology (RT)	61	13	10
16	Faculty of Science (SC)	374	82	68
17	Faculty of Medicine Siriraj Hospital (SI)	232	51	31
18	Sports science students (SS)	85	19	14
19	Applied Thai Traditional Medicine Programme (TT)	48	13	13
20	Faculty of Veterinary Science (VS)	45	10	10
	Total of Science Students	**2,631**	**584**	**447**
21	Faculty of Arts (AREN)	66	47	45
22	Faculty of Arts (ARTH)	97	70	33
23	The College of Religious Studies (CRS)	62	44	22
24	Management Students at Nakornsawan (MG)	33	24	23
	Total of Non-Science Students	**258**	**185**	**123**
	Grand Total	**2,899**	**769**	**570**

Source: Registrar Division, Mahidol University (Updated on December, 2006)

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3.2 Research Instruments

The purpose of this study was to examine the overall relationship between language learning strategies and the cognitive domain of life skills among first-year students at Mahidol University. Consequently, a set of two rating scale questionnaires were used as the research instruments. It consisted of Life Skills Test developed by Department of Mental Health (2002) and the Strategy Inventory of Language Learning (SILL) version 7.0 developed by Oxford (1990). The questionnaires were divided in to three parts – background information, Life Skills Test, and the SILL (see Appendix A).

Part I: Background Information

This part was the background questionnaire that the participants were required to complete their name, age, gender, student identification number, and study program.

Part II: Life Skills Test

This part was the 120-item with three rating scales questionnaire developed by Department of Mental Health (2002). The participants were required to rank the use of skills in their daily lives in three domains of life skills: cognitive, affective, and psychomotor domains.

Part III: Strategy Inventory of Language Learning (SILL)

This part was the 50-item with five rating scales SILL version 7.0 Thai questionnaire translated by Kaotsombut (2003). For this questionnaire, the participants were required to rank their frequency of strategy use when they had learnt English language through six main strategy categories: memory, cognitive, compensation, metacognitive, affective, and social strategies.

3.2.1 The Development of Life Skills Test

Life Skills Test was originally developed by Department of Mental Health (2002) with the purpose of assessing life skills levels of Thai teenagers, and it aimed at evaluating the effectiveness of life skills training programs throughout the nation. The development of the test was constructed on the principle of both logical and empirical base which was developed within WHO's (1994) theoretical framework of life skills. Life skills proposed by WHO (1994) consisted of 10 skill components.

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These skills were paired into 5 groups; for example, (a) decision making and problem solving, (b) creative thinking and critical thinking, (c) communication and interpersonal relationships, (d) self-awareness and empathy, and (e) coping with emotions and stressors. However, Department of Mental Health (2002) included two skills, that is, self-esteem and social responsibility in order to suit Thai contexts. Thus, Life Skills Test employed in this study consisted of 12 skill components according to Department of Mental Health's (2002) classification. Besides, this test contained 120 items using a three Likert Scale to respond to each skill, that is, 1 = never true of me; 2 = some what true of me; and 3 = always true of me. The test was divided into 9 groups depending on the scoring norms; for example, items 1-10 (critical thinking); items 11-20 (creative thinking); 21-32 (self-awareness); items 33-46 (empathy); items 47-60 (self-esteem); 61-74 (social responsibility); items 75-91 (interpersonal relationship and communication skills); items 92-108 (decision making and problem solving); and 109-120 (coping with emotion and coping with stress skills).

3.2.1.1 Measurement of Life Skills Test

To assess the level of life skills amongst Thai teenagers, a total of scores was calculated by points that the participants had chosen in each scale, that is, never true of me = 1 point; some what true of me = 2 points; and always true of me = 3 points. Then the summation of all scores was analyzed through the scoring norms provided by Department of Mental Health (2002) which was divided into three levels of life skills: high, normal, and low. Specifically, the participants who obtained the scores more than 314 scores had the high level of life skills; whose scores between 269-314 scores had the moderate level of life skills; and whose scores less than 269 scores had the low level of life skills. Below is the table illustrated the scoring norms of Life Skills Test (Table 3).

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Table 3 Norms for Scoring the Level of Life Skills (Provided by Department of Mental Health, 2002)

Items	Components of Life Skills	Low	Moderate	High
	1. Cognitive Domain			
1-10	Critical thinking	<21	21-25	>25
11-20	Creative thinking	<16	16-20	>20
	2. Affective Domain			
21-32	Self-awareness	<25	25-30	>30
33-46	Empathy	<33	33-39	>39
47-60	Self-esteem	<30	30-35	>35
61-74	Social responsibility	<34	34-39	>39
	3. Psychomotor Domain			
75-91	Interpersonal relationship and communication skills	<34	34-41	>41
92-108	Decision making and problem solving	<35	35-42	>42
109-120	Coping with emotion and coping with stress	<22	22-28	>28
	Total	**<269**	**269-314**	**>314**

However, there were exceptional items which were scored contrarily – 3 points = never true of me; 2 points = some what true of me; and 1 point = always true of me. These exceptional items were items 5, 6, 10, 13, 15, 17 in a cognitive domain; items 25, 36, 41, 43, 46, 47, 49, 51, 59, 60, 64, 65, 73, 74 in an affective domain; and items 81, 82, 84, 86, 87, 89, 94, 95, 97, 99, 100, 104, 106, 114, 117, 120 in a psychomotor domain.

3.2.1.2 Reliability and Validity of Life Skills Test

Reliability refers to consistency or stability. If a test is reliable, it will produce the same or similar scores on every occasion (Johnson & Christensen, 2000). In Life Skills Test measured by Department of Mental Health (2002), its reliability was high at .92. Similarly to the present study, the reliability of Life Skills Test was high at .91.

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For validity, validity refers to a judgment of the appropriateness of a test or an assessment procedure that a researcher used in the study. If a test is valid, it must be measured what a researcher intends to measure properly and accurately (Johnson & Christensen, 2000). There are several bases for establishing validity; for example, content validity, criterion-related validity, and construct validity.

Firstly, content validity is the examination of the test content in order to determine whether the test items represent the particular traits that a researcher intends to measure (Johnson & Christensen, 2000). The content validity of Life Skills Test was between 0.6 – 1.00. Second, criterion-related validity refers to a judgment of the test scores that can be used to infer or predict the respondents' behaviors in some activities (Johnson & Christensen, 2000). On the other hand, criterion-related validity is "a form of validity in which a test is compared or correlated with an outside criterion measure (Richards, Platt, & Platt, 1992, p. 92)". For this test, the test developers disclosed that Life Skills Test was correlated with Emotion Quotient Test developed by Department of Mental Health at .72 with the 99% of significance level (r = .72, p < .01) Finally, construct validity refers to an appropriateness of a theoretical construct that is measured. The test developers used the confirmatory factor analysis to determine construct validity of the test, and they found goodness of fit index (GFI) was 0.97. Therefore, Life Skills Test was selected for this study because it had high reliability and validity.

3.2.2 The Development of Strategy Inventory of Language Learning

The Strategy Inventory of Language Learning or SILL is a self-rating questionnaire which was devised by Oxford in 1986 with the aim of assessing the frequency of use of language learning strategies by students at the Defense Language Institute in Monterey, California (Oxford & Burry-Stock, 1995). There were two revised versions of SILL: the 80-item version 5.1 questionnaire designed for foreign language learners who are native speakers of English; and the 50-item version 7.0 questionnaire designed for other learners who are non native speakers of English but study English as the second or foreign language. Therefore, the SILL version 7.0 comprised of 50 items, or simply known as ESL/EFL SILL was selected for this study because the participants were native Thais who studied English as a foreign language.

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Besides, the ESL/EFL SILL has been currently recognized as the most detailed comprehensive and widely used instrument for identifying the preferences of strategy use of all language learners throughout the world (Green & Oxford, 1995; Foong & Goh, 1997; Bremner, 1999), and it was translated into Thai and other languages such as Arabic, Chinese, Japanese, Korean, Russian, Spanish and Ukrainian (Oxford & Burry-Stock, 1995) to minimize the misunderstanding of the questionnaire.

In addition, the SILL version 7.0 used a choice of five Likert-scale responses to each strategy ranging from 1 to 5, that is, 1 = never or almost never true of me, 2 = generally not true of me, 3 = somewhat true of me, 4 = generally true of me, and 5 = always or almost always true of me. All 50 items were categorized into six categories according to Oxford's (1990) classification of language learning strategies as follows:

1. *Memory strategies* were used for storing and retrieving information. There were 9 items (item 1-9) such as grouping, imagery, rhyming, and structured reviewing.
2. *Cognitive strategies* were used for understanding and producing the target language. There were 14 items (item 10-23), and these group were considered as the largest group of items (Oxford & Burry-Stock, 1995) such as reasoning, analyzing, summarizing, and general practicing.
3. *Compensation strategies* were used for overcoming limitations in language learning. There were 6 items (item 24-29) such as guessing meanings from the context in reading and listening; and listening and using synonyms and gestures to convey meaning when the precise expression is not known.
4. *Metacognitive strategies* were used for planning and monitoring the learning process. There were 9 items (item 30-38) such as paying attention, consciously searching for practice opportunities, planning for language tasks, self-evaluating one's progress, and monitoring errors.
5. *Affective strategies* were used for controlling emotions and maintaining motivation. There were 6 items (item 39-44) such as anxiety reduction, self-encouragement, and self-reward.
6. *Social strategies* were used for communicating and cooperating with others while learning and producing a language. There were 6 items (item 45-50)

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such as asking questions, cooperating with native speakers of the language, and becoming culturally aware.

3.2.2.1 Measurement of Strategy Inventory of Language Learning

To assess the frequency of strategy use of language learners, the participants were asked to respond to each item based on an honest assessment of their language learning strategy use. Then all of the scores were calculated by the following points that they had chosen in each scale, that is, 1 = never or almost never true of me, 2 = generally not true of me, 3 = somewhat true of me, 4 = generally true of me, and 5 = always or almost always true of me. After that, the summation of all scores in each strategy group was analyzed through a reporting scale that were summarized which groups of strategies the participants used the most while learning English. For this scale, Oxford (1990) provided three levels of strategy usage: high (3.50–5.00), medium (2.50–3.49), and low (1.00–2.49) as shown below in Table 4:

Table 4 Criteria for Assessing the Frequency of Strategy Use (Adapted from Oxford, 1990 p. 300)

Level of Strategy Use	Frequency of Strategy Use	Average Mean Scores
High	Always or almost always used	4.50 to 5.00
	Usually used	3.50 to 4.49
Medium	Sometimes used	2.50 to 3.49
Low	Generally not used	1.50 to 2.49
	Never or almost never used	1.00 to 1.49

3.2.2.2 Reliability and Validity of Strategy Inventory of Language Learning

SILL is a reliable and valid questionnaire. It has been recognized as the most accepted and trusted language learning strategies questionnaire that has been checked for its reliability and validity in numerous ways (Green & Oxford, 1995; Foong & Goh, 1997; Bremner, 1999). Studies have reported the

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reliability coefficients for this instrument ranging from .85 to .98 (Oxford & Burry-Stock, 1995; Park, 1997; Bremner, 1999; Sheorey, 1999; Wharton, 2000; Kaotsombut, 2003; Satta-Udom, 2007). In this study, SILL Thai version translated by Kaotsombut (2003) was selected as an instrument to avoid the misunderstanding of the questionnaire. For Thai contexts, Thai researchers found the high reliability between .92 (Kaotsombut, 2003) and .94 (Satta-Udom, 2007). In this study, the reliability of the SILL was high at .94 the same as Satta-Udom (2007).

For validity, Oxford and Burry-Stock (1995) reported that this questionnaire had high validity. For instance, for content validity, strategy experts found that the SILL's items were related to the language learning strategy taxonomy at .99. For criterion-related validity, studies found that the use of learning strategy was correlated with language performance in various ways such as general language proficiency test, oral language proficiency tests, and grades in a language course. Thus, SILL version 7.0 translated in Thai by Kaotsombut (2003) was used in the present study as this instrument was highly valid and reliable.

3.3 Data Collection Procedure

A set of two self-rating questionnaires consisting of the 120-item Life Skills Test and the 50-item SILL version 7.0 translated in Thai were given to the participants both in regular English classes and outside English classes. Before completing the questionnaires, the participants were informed that they should answer all items, and there were no right or wrong answers in these questionnaires. Their responses did not affect their study and grading system. Moreover, they were informed that their participation was voluntary, and they could spend about 20 minutes to complete it. Then the returned questionnaires were collected and analyzed the results by using the program of Statistical Package for Social Science (SPSS) for window.

3.4 Data Analysis and Statistical Devices

After receiving the returned questionnaires, the researcher analyzed the results by using the program of Statistical Package for Social Science (SPSS) for window as follows:

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3.4.1 Descriptive Statistics

Descriptive statistics are useful for both readers and researchers to understand how the participants responded as a group to the inventories in the study (Heppner & Heppner, 2004). Arithmetic mean (*M*) and the standard deviation (*SD*) are the most frequently used to describe these statistics.

Arithmetic Mean (*M*)

The mean is symbolized by *M*. It is the arithmetic average of all scores which can be calculated by summing all the scores and then dividing the sum by the number of scores (McMillan & Schumacher, 1997). It was used for identifying the levels of life skills and language learning strategies of the participants.

Standard Deviation (*SD*)

The standard deviation is a numerical index that indicates the average distance of the scores from the means (McMillan & Schumacher, 1997). In other words, it is used for indicating the nature of the distribution of a set of scores. If a set of scores is close to the mean, the SD is small. On the other hand, if a set of scores is far from the mean, the SD is large. Thus, the SD is useful for comparing sets of scores that have the same mean but a different range.

3.4.2 Correlation Statistics

Since this study is a correlational research examining the relationship between language learning strategies and the cognitive domain of life skills, three correlation techniques were employed in this study as follows:

Pearson Product-Moment Correlation Coefficient (*r*)

Pearson Product-Moment Coefficient which is represented by *r* is considered as the most common correlation technique (McMillan & Schumacher, 1997). It was used for correlating two variables to find whether they were related. To indicate the correlation, the number can range from -1.00 to +1.00. Coefficients correlation are generally considered to be high if ± .70 or above, moderate if between ± .40 and ± .60, and low if below ± .20 (Charles & Mertler, 2002).

Spearman Rank Correlation Coefficient (Spearman *rho*)

Like Pearson Product-Moment Correlation Coefficient, Spearman Rank Correlation Coefficient was used for measuring the correlation between two variables

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in the ordinal scale. More importantly, it was used to confirm or verify the investigation of the relationship between language learning strategies and the cognitive domain of life skills after using the Pearson Product-Moment Correlation. Further, the questionnaires in this study, they were constructed by using the Likert scale, or ordinal order. Thus, Spearman rank correlation was selected to use.

Multiple Regression

Multiple regression is used for determining the degree of correlation between one or more independent variables or predictors and a single dependent variable or criterion (Charles & Mertler, 2002). It allows the researcher to discover which independent variable is the best predictor or influences the dependent variable of the study. An independent variable or predictor is a variable presumed to cause a change in another variable, whereas a dependent variable is the variable that the researcher intends to study to determine the influence of one or more independent variables. In other words, the dependent variable is the variable that is dependent on the independent variables (Charles & Mertler, 2002).

In this study, the independent variables or predictors were six main language learning strategies – memory, cognitive, compensation, metacognitive, affective, and social strategies. They were determined as the predictors because they are learning tools facilitating learners to succeed in language learning. They also enable learners to improve their language proficiency. The cognitive domain of life skills composed of critical thinking and creative thinking skills were determined as the dependent variables. The researcher aimed to study the influence of language learning strategies on the cognitive domain of life skills. The independent and dependent variables in this study were displayed below in Table 5.

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Table 5 A List of Dependent and Independent Variables

Independent Variables (Predictors)	**Dependent Variables (Criterions)**
Memory	Critical Thinking
Cognitive	Creative Thinking
Compensation	
Metacognitive	
Affective	
Social	

In the next section, the findings of this study were presented with the tabulate descriptions according to both descriptive and correlation statistics results.

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CHAPTER IV
RESULTS

This chapter presents the findings of the study. To establish the findings, the characteristics of the sample were firstly described. The total sample of this study consisted of 570 first year students attending in 24 study programs at Mahidol University. The sample included 447 science students and 123 non-science students. They were 406 females (71.2%) and 164 males (28.8%) whose ages ranged from 17-27 years of age (M = 18.83). Then three correlational statistic methods were selected to investigate the overall relationship between language learning strategies and the cognitive domain of life skills among those students; for instance, Pearson product-moment correlation coefficient, Spearman rank correlation coefficient, and Stepwise multiple regression. The findings were discussed according to the following research questions:

1. Is there any relationship between language learning strategies and the cognitive domain of life skills of the first-year students at Mahidol University?
2. Are there relationships between two strategy classes of language learning strategy (direct and indirect strategies) and the cognitive subdomain of life skills (critical thinking and creative thinking)?
3. Are there relationships between six strategy categories of language learning strategies (memory, cognitive, compensation, metacognitive, affective, and social strategies) and the cognitive subdomain of life skills (critical thinking and creative thinking)?

4.1 Finding One

Research Question One: Is there any relationship between language learning strategies and the cognitive domain of life skills of the first-year students at Mahidol University?

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After finding the linearity and the normal distribution of each variable by using the analysis of scatterplots, Pearson product-moment correlation coefficient (*r*) and Spearman rank correlation coefficient (Spearman *rho*) were used to examine the relationship between language learning strategies and the cognitive domain of life skills in general. Seeing that the coefficient correlations of both correlational techniques were not much different, Pearson product-moment correlation coefficient was chosen as the main discuss of the findings because it was considered as the most common correlation technique (McMillan & Schumacher, 1997). Spearman rank correlation coefficient was presented in Appendix F.

For the research question one, there was a significant relationship between language learning strategies and the cognitive domain of life skills ($r = .348$, $p < .01$) as shown in Table 6.

Table 6 Summary of Intercorrelations between Language Learning Strategies and the Cognitive Domain of Life Skills ($N = 570$)

	Cognitive Domain of Life Skills
Language Learning Strategies	.348**

**. Correlation is significant at the 0.01 level ($p < .01$)

To specifically explore, results from table 7 indicated that all six categories of language learning strategies consisting of memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies, and social strategies were significantly correlated with critical thinking and creative thinking in the cognitive domain of life skills. These relationships were low, but they were statistically significant at 99% of significance level as following:

a) Memory strategies were correlated with critical thinking at $r = .254$ and creative thinking at $r = .329$, $p < .01$.
b) Cognitive strategies were correlated with critical thinking at $r = .215$ and creative thinking at $r = .279$, $p < .01$.
c) Compensation strategies were correlated with critical thinking at $r = .141$ and creative thinking at $r = .223$, $p < .01$.

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d) Metacognitive strategies were correlated with critical thinking at $r = .150$ and creative thinking at $r = .284$, $p < .01$.

e) Affective strategies were correlated with critical thinking at $r = .187$ and creative thinking at $r = .216$, $p < .01$.

f) Social strategies were correlated with critical thinking at $r = .203$ and creative thinking at $r = .254$, $p < .01$.

Table 7 Summary of Intercorrelations among Six Language Learning Strategies and Two Cognitive subclasses of Life Skills ($N = 570$)

IV \ DV	Critical Thinking	Creative Thinking
Memory	.254**	.329**
Cognitive	.215**	.279**
Compensation	.141**	.223**
Metacognitive	.150**	.284**
Affective	.187**	.216**
Social	.203**	.254**

**. Correlation is significant at the 0.01 level ($p < .01$)

In addition, compared with the cognitive domain of life skills, creative thinking was more correlated with six language learning strategies than critical thinking. Strategies that most correlated with both critical thinking and creative thinking were memory strategies (critical thinking $r = .254$, $p < .01$ and creative thinking $r = .329$, $p < .01$). The least strategies correlated with critical thinking was compensation strategies ($r = .141$, $p < .01$), while affective strategies were least correlated with creative strategies ($r = .216$, $p < .01$).

In the research question one, there was a positive relationship between language learning strategies and the cognitive domain of life skills, but this

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relationship was considered as the positively low relationship r = .348 at 0.01 significant level.

4.2 Finding Two

Research Question Two: Are there relationships between two strategy classes of language learning strategy (direct and indirect strategies) and the cognitive subdomain of life skills (critical thinking and creative thinking)?

Since the relationship between language learning strategies and the cognitive domain of life skills was discovered in the research question one, the relationship between two strategy classes of language learning strategies and critical thinking and creative thinking of life skills was confirmed as shown in Table 8 below.

Table 8 Summary of Intercorrelations among Two Strategy Classes of Language Learning Strategies and Two Cognitive subclasses of Life Skills (N = 570)

IV \ DV	Critical Thinking	Creative Thinking
Direct Strategies	.238**	.325**
Indirect Strategies	.215**	.303**

**. Correlation is significant at the 0.01 level (p < .01)

The findings from this table were proved that there was a positive relationship between subclasses of language learning strategies and the cognitive domain of life skills. Direct strategies were significantly related with critical thinking at r = .238; and with creative thinking at r = .325, p < .01. Indirect strategies were significantly related with critical thinking at r = .215; and with creative thinking at r = .303, p < .01. Like the findings in the previous research question, creative thinking was more slightly correlated with direct (r = .325, p < .01) and indirect strategies (r = .303, p < .01) than critical thinking which was correlated at r = .238 and r = .215 at 0.01 significant level respectively.

Since the relationship between direct and indirect strategies of language learning strategies was low, a stepwise multiple regression was performed to

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determine which strategy classes – direct or indirect strategies were most strongly influenced and correlated with the use of critical thinking and creative thinking among the first-year students at Mahidol University. Direct and indirect strategies were specified as predictors or independent variables with critical and creative thinking as criterions or dependent variables.

The regression model in table 9 and 10 indicated that direct strategies accounted for a significant 5.5% of variance in critical thinking (R^2 = .55, F (1, 568) = 34.13, p = .00). Moreover, there was a significant correlation between direct strategies of language learning strategies and critical thinking of life skills (β = .23, t (568) = 5.84, p = .00). Consequently, direct strategies influenced the use of critical thinking of the first-year students at Mahidol University.

Table 9 R^2 and Other Values Concerning Relationship between Direct Strategies and Critical Thinking in Life Skills (N = 570)

Independent Variables	Dependent Variable	*Adjusted* R^2	*df*	*f*	*p*
Direct Strategies	Critical Thinking	.55	568	34.13	.00

Table 10 β and Other Values Concerning Relationship between Direct Strategies and Critical Thinking in Life Skills (N = 570)

Independent Variables	Dependent Variable	*β*	*t*	*p*
Direct Strategies	Critical Thinking	.23	5.84	.00

For creative thinking, the first predictors were direct strategies. Direct Strategies accounted for a significant 10% of variance in creative thinking (R^2 = .10, F (1, 568) = 67.11, p = .00). In addition, there was a significant correlation between direct strategies of language learning strategies and creative thinking of life skills (β = .32, t (568) = 8.19, p = .00) as shown in Table 11 and 12.

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Table 11 R^2 and Other Values Concerning Relationship between Direct Strategies of Language Learning Strategies and Creative Thinking of Life Skills ($N = 570$)

Independent Variables	Dependent Variable	*Adjusted* R^2	*df*	*f*	*p*
Direct Strategies	Creative Thinking	.10	568	67.11	.00

Table 12 β and Other Values Concerning Relationship between Direct Strategies of Language Learning Strategies and Creative Thinking of Life Skills ($N = 570$)

Independent Variables	Dependent Variable	*β*	*t*	*p*
Direct Strategies	Creative Thinking	.32	8.19	.00

The second predictors of creative thinking were both direct and indirect strategies of language learning strategies. Direct and indirect strategies accounted for a significant 11% of additional variance of creative thinking after controlling the variance explained by direct strategies ($R^2 = .11$, R^2 *change* = .008, F (1, 567) = 36.38, p = .00). There was also found the significant correlations between direct and indirect strategies of language learning strategies and creative thinking of life skills as following:

a) Direct strategies were correlated with creative thinking at $\beta = .22$, t (567) = 3.75, $p = .00$.
b) Indirect strategies were correlated with creative thinking at $\beta = .13$, t (567) = 2.27, $p = .023$.

Therefore, direct and indirect strategies were the best predictors for creative thinking. In other words, these strategies influenced the use of creative thinking of the participants as shown in Table 13 and 14.

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Table 13 R^2 and Other Values Concerning Relationship between Direct and Indirect Strategies of Language Learning Strategies and Creative Thinking of Life Skills ($N = 570$)

Independent Variables	Dependent Variable	*Adjusted* R^2	R^2 *change*	*df*	*f*	*p*
Direct and Indirect Strategies	Creative Thinking	.11	.008	567	36.38	.00

Table 14 β and Other Values Concerning Relationship between Direct and Indirect Strategies of Language Learning Strategies and Creative Thinking of Life Skills ($N = 570$)

Independent Variables	Dependent Variable	*β*	*t*	*p*
Direct Strategies	Creative Thinking	.22	3.75	.00
Indirect Strategies	Creative Thinking	.13	2.27	.02

For the second findings, they can be concluded that direct and indirect strategies had the significant relationships with critical thinking and creative thinking. The best predictors for critical thinking were direct strategies, whereas direct and indirect strategies were the best predictors for creative thinking.

4.3 Finding Three

Research Question Three: Are there relationships between six strategy categories of language learning strategies (memory, cognitive, compensation, metacognitive, affective, and social strategies) and the cognitive subdomain of life skills (critical thinking and creative thinking)?

There was an investigation of the relationship between six categories of language learning strategies and the cognitive domain of life skills in the previous questions. The findings revealed that all six categories – memory, cognitive,

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compensation, metacognitive, affective, and social strategies had a significantly positive relationship with critical and creative thinking of life skills (See Table 6). Memory strategies were most correlated with critical thinking (r = .254, p < .01) and creative thinking (r = .329, p < .01). Compensation strategies were least correlated with critical thinking (r = .141, p < .01). Affective strategies were least correlated with creative thinking (r = .216, p < .01). Thus, the following will address the best predictors for critical thinking and creative thinking.

Like the research question 2, the stepwise multiple regression was performed to determined which strategy group – memory, cognitive, compensation, metacognitive, affective, and social strategies were most strongly influenced and correlated with critical thinking and creative thinking of life skills. The predictors or independent variables were six categories of language learning strategies, and the criterions or dependent variables were critical thinking and creative thinking of life skills.

The regression model in Table 15 and 16 indicated that the first predictors for critical thinking were memory strategies. Memory strategies accounted for a significant 6.3% of variance in critical thinking of life skills (R^2 = .06, F (1, 568) = 39.20, p = .00). Besides, memory strategies and critical thinking were significantly correlated at β = .25, t (568) = 6.26, p = .00 as shown below.

Table 15 R^2 and Other Values Concerning Relationship between Memory Strategies of Language Learning Strategies and Critical Thinking of Life Skills (N = 570)

Independent Variables	Dependent Variable	*Adjusted* R^2	*df*	*f*	*p*
Memory Strategies	Critical Thinking	.06	568	39.20	.00

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Table 16 β and Other Values Concerning Relationship between Memory Strategies of Language Learning Strategies and Critical Thinking of Life Skills (N = 570)

Independent Variables	Dependent Variable	β	t	p
Memory Strategies	Critical Thinking	.25	6.26	.00

The second predictors of critical thinking were memory strategies and affective strategies. Memory and affective strategies accounted for a significant 6.9% of additional variance of critical thinking after controlling the variance explained by memory strategies (R^2 = .06, R^2 *change* = .008, F (1, 567) = 22.05, p = .00). In addition, statistically significant correlations emerged between:

a) Memory strategies and the use of critical thinking (β = .21, t (567) = 4.77, p = .00).
b) Affective strategies and the use of critical thinking (β = .09, t (567) = 2.15, p = .03).

From the findings, memory and affective strategies influenced and were related to the use of critical thinking of the participants in this study as shown in Table 17 and 18.

Table 17 R^2 and Other Values Concerning Relationship between Memory and Affective Strategies of Language Learning Strategies and Critical Thinking of Life Skills (N = 570)

Independent Variables	Dependent Variable	*Adjusted* R^2	R^2 *change*	*df*	*f*	*p*
Memory and Affective Strategies	Critical Thinking	.06	.008	567	22.05	.00

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Table 18 β and Other Values Concerning Relationship between Memory and Affective Strategies of Language Learning Strategies and Critical Thinking of Life Skills (N = 570)

Independent Variables	Dependent Variable	β	t	p
Memory Strategies	Critical Thinking	.21	4.77	.00
Affective Strategies	Critical Thinking	.09	2.15	.03

For creative thinking, the first predictors were memory strategies. Memory strategies accounted for a significant 10% of variance in creative thinking (R^2 = .10, F (1, 568) = 68.72, p = .00), and there was a significant relationship between memory strategies and creative thinking (β = .32, t (568) = 8.29, p = .00 as shown in Table 19 and 20.

Table 19 R^2 and Other Values Concerning Relationship between Memory Strategies of Language Learning Strategies and Creative Thinking of Life Skills (N = 570)

Independent Variables	Dependent Variable	*Adjusted* R^2	*df*	*f*	*p*
Memory Strategies	Creative Thinking	.10	568	68.72	.00

Table 20 β and Other Values Concerning Relationship between Memory Strategies of Language Learning Strategies and Creative Thinking of Life Skills (N = 570)

Independent Variables	Dependent Variable	β	t	p
Memory Strategies	Creative Thinking	.32	8.29	.00

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The second predictors of creative thinking were memory strategies and metacognitive strategies. Memory and metacognitive strategies accounted for a significant 12% of additional variance of creative thinking after controlling the variance explained by memory strategies (R^2 = .12, R^2 *cha*nge = .016, F (1, 567) = 40.04, p = .00). Furthermore, there was a significant relationship between memory and metacognitive strategies of language learning strategies and creative thinking of life skills as following:

a) Memory strategies and creative thinking were correlated at β = .24, t (567) = 5.22, p = .00.
b) Metacognitive strategies and creative thinking were correlated at β = .15, t (567) = 3.19, p = .001.

Thus, memory strategies and metacognitive strategies influenced and significantly related to the use of creative thinking among the first-year students at Mahidol University as shown in Table 21 and 22.

Table 21 R^2 and Other Values Concerning Relationship between Memory and Meatcognitive Strategies of Language Learning Strategies and Creative Thinking of Life Skills (N = 570)

Independent Variables	Dependent Variable	*Adjusted* R^2	R^2 *change*	*df*	*f*	*p*
Memory and Metacognitive Strategies	Creative Thinking	.12	.016	567	40.04	.00

Table 22 β and Other Values Concerning Relationship between Memory and Meatcognitive Strategies of Language Learning Strategies and Creative Thinking of Life Skills (N = 570)

Independent Variables	Dependent Variable	*β*	*t*	*p*
Memory Strategies	Creative Thinking	.24	5.29	.00
Metacognitive Strategies	Creative Thinking	.15	3.19	.001

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In research question three, the findings revealed that memory strategies, metacognitive strategies, and affective strategies had the significant relationships with critical thinking and creative thinking. Memory strategies and affective strategies were the best predictors for critical thinking. In other words, they influenced the use of critical thinking among the first-year students at Mahidol University. Memory strategies and metacognitive strategies were the best predictors for creative thinking, and they influenced the use of creative thinking of those students.

To better understand the findings, the diagram of relationship between six categories of language learning strategies and critical thinking and creative thinking of life skills was displayed below. Moreover, this diagram indicated that memory strategies and affective strategies influenced the use of critical thinking. Creative thinking was influenced by memory and metacognitive strategies.

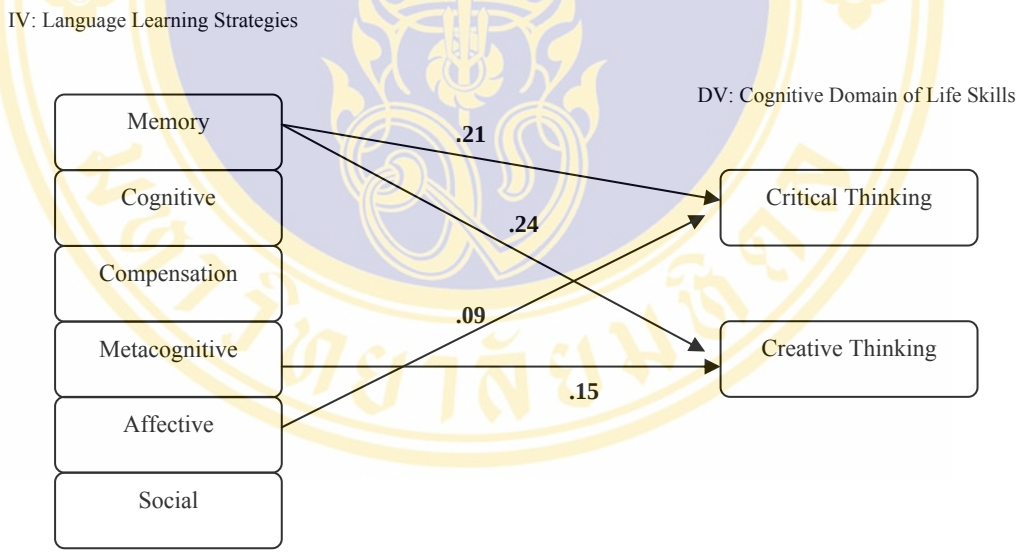

Figure 4 Diagram of the Significant Relationship between Six Categories of Language Learning Strategies and the Cognitive Domain of Life Skills

Note: Independent variables (IV) are the use of language learning strategies including memory, cognitive, compensation, metacognitive, affective, and social strategies. Dependent variables (DV) are critical thinking and creative thinking in the cognitive domain of life skills. Standard beta coefficient correlations (β) between IV and DV significantly emerging in the regression analysis were indicated with the arrows.

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4.4 Summary of the Findings

Since the purpose of the study was to examine the relationship between six categories of language learning strategies and the cognitive domain of life skills among 570 first-year students at Mahidol University, the analysis of the data was analyzed through the Statistical Package for Social Science (SPSS) namely Pearson product-moment correlation coefficient (r), Spearman rank correlation coefficient (Spearman *Rho*), and Stepwise multiple regression. After analyzing the data, the results were summarized as follows:

1. There was a significant positive relationship between language learning strategies and the cognitive domain of life skills at $r = .348$, $p < .01$ in general. All six categories of language learning strategies – memory, cognitive, compensation, metacognitive, affective, and social strategies were significantly correlated with critical thinking and creative thinking of life skills as following:

- Memory strategies were correlated with critical thinking at $r = .254$ and creative thinking at $r = .329$, $p < .01$.
- Cognitive strategies were correlated with critical thinking at $r = .215$ and creative thinking at $r = .279$, $p < .01$.
- Compensation strategies were correlated with critical thinking at $r = .141$ and creative thinking at $r = .223$, $p < .01$.
- Metacognitive strategies were correlated with critical thinking at $r = .150$ and creative thinking at $r = .284$, $p < .01$.
- Affective strategies were correlated with critical thinking at $r = .187$ and creative thinking at $r = .216$, $p < .01$.
- Social strategies were correlated with critical thinking at $r = .203$ and creative thinking at $r = .254$, $p < .01$.

2. Direct and indirect strategies of language learning strategies had a significant relationship with critical thinking and creative thinking of life skills. Direct strategies were correlated with critical thinking at $r = .238$, $p < .01$, and with creative thinking at $r = .325$, $p < .01$. Indirect strategies were correlated with critical thinking at $r = .215$, $p < .01$, and with creative thinking at $r = .303$, $p < .01$. In addition, direct strategies found to be the best predictors for critical thinking ($R^2 = .55$, F (1, 568) =

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34.13, p = .00). For creative thinking, the best predictors were both direct and indirect strategies (R^2 = .11, F (1, 567) = 36.38, p = .00).

3. All six categories of language learning strategies – memory, cognitive, compensation, metacognitive, affective, and social strategies had a significantly low relationship with critical thinking and creative thinking of life skills at the minimum r values .141 to the maximum r values .329 at the significance level .01. Memory strategies were correlated with critical thinking and creative thinking with the highest coefficient value at r = .254, p < .01 and r = .329, p < .01 respectively. Compensation strategies were least correlated with critical thinking at r = .141, p < .01. Affective strategies were least correlated with creative thinking at r = .216, p < .01. Moreover, memory strategies and affective strategies found to be the best predictors for critical thinking (R^2 = .06, F (1, 567) = 22.05, p = .00). Memory strategies and metacognitive strategies were the best predictors for creative thinking at R^2 = .12, F (1, 567) = 40.04, p = .00.

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CHAPTER V
DISCUSSION

This chapter discusses the findings presented in the previous chapter. It is divided into three discussions according to three research questions. Then the implications of the study are presented. Thus, the chapter includes four discussion areas following:

5.1 Discussion of the finding one: Relationship between language learning strategies and the cognitive domain of life skills among the first-year students at Mahidol University

5.2 Discussion of the finding two: Relationship between direct and indirect strategies of language learning strategies and critical thinking and creative thinking of life skills

5.3 Discussion of the finding three: Relationship between six categories of language learning strategies and critical thinking and creative thinking of life skills.

5.4 Implications of the study

5.1 Discussion of the Finding One

Relationship between language learning strategies and the cognitive domain of life skills among the first-year students at Mahidol University

To discover the relationship between those variables, the findings were derived from two measurements – the frequency of strategy use measured by the SILL version 7.0 translated in Thai by Kaotsombut (2003) and the level of life skills measured by Department of Mental Health (2002)'s Life Skills Test.

First of all, the frequency of strategy use was mentioned. The results from the data analysis revealed that the first-year students at Mahidol University were medium strategy users (M = 3.02). This finding is consistent with the results obtained in other Asian contexts including Noguchi (1991) in Japan, Oh (1992), Park (1997) and Ok (2003) in Korea, Wharton (2000) in Singapore, Peacock and Ho (2003) in Hong

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Kong, Shmais (2003) in Palestine, and Raizi and Rahimi (2005) in Iran which found that the participants used language learning strategies at a medium level. Moreover, among six language learning categories, compensation strategies were reported as the most frequent used by the first-year students (*M* = 3.27). This corresponds with Kaotsombut (2003) in Thailand, Ok (2003) in Korea, and Peacock and Ho (2003) in Hong Kong in that compensation strategies were used most frequently among the learners. They used compensation strategies when they lacked appropriate vocabulary and grammatical knowledge while producing a target language. With these strategies, they overcame that limitation and continued using the language.

Oxford (1990) supports that beginners are not the only one group of learners who employ compensation strategies when confronting the communication difficulties, advanced learners also use those strategies when they have the problems. Nevertheless, according to Ellis (1994), he mentions that the strategies that learners use in each situation can reflect their general stage of second language learning. Less proficient language learners need to use compensation strategies more than the more proficient language learners because they have a knowledge gap more often than the more proficient language learners (Gregersen, Martinez, Rojas & Alvarado, 2001). Like the participants in this study, they reported that most of their problems when using English were from their lack of vocabulary. To conquer the problems, they preferred using strategies of guessing unfamiliar words and tended to create new words and gestures to communicate instead. Consequently, their English ability was comparable to less proficient language users. In other words, their English ability could not be accepted as the high proficient language users.

Apart from compensation strategies, the first-year students at Mahidol University reported the use of metacognitive at *M* = 3.26, cognitive strategies at *M* = 2.95, affective strategies at *M* = 2.92, memory strategies at *M* = 2.91, and social strategies at *M* = 2.84 respectively. When considering each item of the SILL version 7.0 questionnaire, item 38 “I think about my progress in learning English.”, belonging to a metacognitive strategy group, was found as the highest ranked item by the learners (M = 3.88); whereas item 43 “I write down my feelings in a language learning diary.”, being in an affective strategy group, was ranked as the lowest item at *M* = 2.01 (See Appendix D).

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In the item 38, “I think about my progress in learning English.” showed that the participants were conscious about their language learning and attempted to improve their language skills. A number of studies (Wharton, 2000; Vidal, 2002; Takeuchi, 2003; Shmais, 2003; Raizi & Rahimi, 2005; Nisbet, Tindall & Arroyo, 2005; Xuan, 2005; Hong-Nam & Leavell, 2006; Magogwe & Oliver, 2007) found that the proficient language learners used metacognitive strategies most frequently to manage their learning process. In addition, O’Malley and Chamot (1990) state that metacognitive strategies are vital for successful language learning. For that reason, to develop learners to be more proficient language users, metacognitive strategies enabling learners to regulate their learning and evaluate their learning progress should be paid more attention in language classes because the frequency and patterns of strategy use can be contributed to the proficiency of language learners (Oxford & Burry-Stock, 1995). Furthermore, metacognitive strategies enable learners to be the autonomous learners who are able to focus, plan, and manage their learning process without the help of their teachers (Ehrman, 1998).

Another measurement, Life Skills Test, the results revealed that the first-year students had a moderate level of life skills (M = 283.62). This finding is consistent with Saimai (2003), Termsrirat (2003), and Luksamijarulkul, Thongvichien, and Triamchaisri (2007) which reported that Thai teenagers and adults had the moderate level of life skills. Among three life skills domains, creative thinking in the cognitive domain was ranked at the highest level, whereas critical thinking and other components such as self-awareness, empathy, and social responsibility was ranked at the moderate level. These findings are different from Supanratanarat (2003)’s findings. He discovered that the first-year students at Srinakharinwirot Prasanmit University had a high level of life skills in all aspects except problem solving and creative thinking skills which were at the moderate level. However, the results of this study correspond with Office of National Education Commission’s (2005) report. They revealed that Thai students could not achieve the satisfactory level of thinking skills. The students had low level of thinking skills in critical thinking, creative thinking, and analytical thinking skills. Thus, the participants’ thinking skills was considered substandard as they had the moderate level of critical thinking, decision making, and problem solving skills. For this reason, the students need to be trained

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and improved thinking skills especially critical thinking and problem solving skills in their classes.

Then the relationship between language learning strategies and the cognitive domain of life skills was examined through Pearson product-moment correlation coefficient and Spearman rank correlation coefficient (See Appendix F). The finding discovered that there was a positively low relationship between language learning strategies and the cognitive domain of life skills (r = .348, p < .01). Moreover, all six language learning strategies – memory, cognitive, compensation, metacognitive, affective, and social strategies were significantly correlated with critical thinking and creative thinking skills at the minimum r values .141 to the maximum r values .329 at the significance level .01. These results proved that when language teachers train the students to use six categories of language learning strategies, they should also train them to strengthen their abilities in thinking critically and creatively simultaneously. Moreover, this relationship can be explained as follows:

First of all, language learning strategies, critical thinking skills, and creative thinking skills are considered as learning skills which students employ to learn a wide range of subjects (Oxford, 1990), and they are grounded on the same learning theory. In the cognitive learning theory, learners are views as the active processors of information who are required to think and analyze the variety of information in order to realize and understand its essence. Language learning, likewise, is seen as the active and developmental process which learners need to think and use their cognitive capacities and their existing knowledge to make the new information understandable (Hutchinson & Waters, 1987). Furthermore, language learning strategies involve closely with thinking process which are helpful for learners to encode, store, retain, retrieve, and apply the new information appropriately to each situation (Rigney, 1978; Weinstein & Mayer, 1986). Therefore, language learning strategies and the cognitive domain of life skills was significantly correlated. They are skills that learners use to comprehend knowledge and information when they study a new language.

In addition, learning demands thinking. Ellis (1991) supports that succeeding in language learning, students need to possess sufficient analytical skills so as to perceive, categorize, and store the linguistics features of the target language, and also to monitor and improve their language mistakes. From this view, to help learners to be

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successful language learners, teachers should train them both language learning strategies and thinking skills especially critical thinking and creative thinking. They are important elements facilitating learners to learn a language effectively. Besides, they are important means leading learners to be life-long learners or autonomous learners who are willing to regulate their own learning, differentiate the variety types of information, and search for the unknown knowledge without the help from their teachers (ONEC, 2001). As stated by ONEC (2005), they state that teachers need to educate students to be more capable of thinking ability especially critical thinking and creative thinking skills so that they can apply the knowledge, skills, and other learnt information properly to each situation.

Furthermore, the findings found that memory strategies were correlated most with critical thinking at $r = .254$, $p < .01$ and creative thinking at $r = .329$, $p < .01$. Memory strategies are seen as the powerful mental strategies involving storing and retrieving the existing information (Oxford, 1990). Even though they are simple, they are fundamental strategies or basic key helping learners to understand a language meaningfully and improve themselves as better language learners. Critical thinking and creative thinking are classified as high-order thinking skills (Salpeter, 2003; Mulkham, 2006). In developing high-order thinking skills, learners need to possess the basic thinking skills first such as perceiving, observing, memorizing, remembering, retaining, recognizing, and recalling (Bloom, 1956; Mulkham, 2006). Then they can become critical and creative thinkers. With this respect, memory strategies were significantly related with critical thinking and creative thinking. They are basic steps influencing learners to become more capable thinkers who are able to think critically and creatively. Therefore, to develop learner to have high-order thinking skills, teachers need to pay special attention to memory strategies because they are important basic strategies helping learners to learn a language better. Moreover, the students reported that they sometimes used these strategies ($M = 2.91$). This finding indicated that students were unaware of how often they actually used these strategies even though memory strategies are the great contributors to language learning (Oxford, 1990).

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5.2 Discussion of the Finding Two

Relationship between direct and indirect strategies of language learning strategies and critical thinking and creative thinking of life skills

Since the relationship between language learning strategies and the cognitive domain of life skills was confirmed, direct and indirect strategies were significantly correlated with critical thinking and creative thinking of life skills. Direct strategies were related to critical thinking at $r = .238$, $p < .01$, and with creative thinking at $r = .325$, $p < .01$. Indirect strategies were related to critical thinking at $r = .215$, $p < .01$, and with creative thinking at $r = .303$, $p < .01$. In addition, the research question two aimed at examining which strategies – direct or indirect strategies were the best predictors for critical thinking and creative thinking. The results showed that direct strategies influenced the use of critical thinking among the students ($R^2 = .55$, F (1, 568) = 34.13, $p = .00$), whereas both direct and indirect strategies influenced the use of creative thinking ($R^2 = .11$, F (1, 567) = 36.38, $p = .00$). Therefore, direct and indirect strategies affected the use of critical thinking and creative thinking among the first-year students at Mahidol University.

Direct and indirect strategies are equally important and support each other when students learn a target language (Oxford, 1990). Language teachers should teach students to use these strategies and to develop their thinking skills simultaneously as language learning strategies were related with thinking critically and creatively. Learning demands thinking in which learners can adopt to manage their own learning and solve various kinds of problems in various situations. Moreover, when students produce a language, they use creativity to form a meaningful communication (Nunan, 1989). Language usage is a creative act that learners use to transform thoughts into suitable inventive language (Fehér, 2007). For that reason, language teachers should integrate thinking skills, particularly critical thinking and creative thinking skills into language classes. Both language learning strategies and high-order thinking skills are effective skills helping learners to learn a language effectively. They also enable learners to foster and develop themselves as the more self-directed learners who are responsible for their learning.

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5.3 Discussion of the Finding Three

Relationship between six categories of language learning strategies and critical thinking and creative thinking of life skills

This relationship was discovered and confirmed in the previous findings. Thus, the research question three aimed at determining which strategy groups: memory, cognitive, compensation, metacognitive, affective, and social strategies were the best predictors for critical thinking and creative thinking skills. The findings indicated that memory strategies, metacognitive strategies, and affective strategies affected the learners' ability in thinking critically and creatively. Memory and affective strategies influenced the use of critical thinking among the first-year students at Mahidol University (R^2 = .06, F (1, 567) = 22.05, p = .00), while memory and metacognitive strategies influenced the use of creative thinking among the students (R^2 = .12, F (1, 567) = 40.04, p = .00.).

From the findings, memory strategies play an important role in adopting students' critical and creative thinking skills. Memory strategies are seen as basis strategies facilitating students to develop learning skills in language learning. Furthermore, these strategies are necessary skills leading learners to develop themselves as the competent critical and creative thinkers. Oxford (1990) explains that memory strategies are more effective strategies when learners simultaneously use matacognitive strategies such as paying attention and affective strategies such as lowering the anxiety while they are learning or exposing a target language.

Language learning strategies are not restricted to cognitive functions that help learners to deal and process the new language successfully. They also include metacognitive functions such as planning, evaluating, and managing ones' own learning; and affective functions aiding learners to handle the states of their emotions. Thus, to develop learners to possess high-order thinking skills, language teachers should pay special attention to these strategies: memory, metacognitive, and affective strategies as they are powerful tools helping learners to master critical thinking and creative thinking skills. Students cannot develop these strategies independently. They need the help from their teachers in providing some training related to these strategies.

Learning will occur when students actively think about what they are learning; however, learning particularly the learning of language can be also viewed as the

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emotional or affective experience (Hutchinson & Waters, 1987). Learners with high motivation and self-confidence and with low anxiety are able to learn better and succeed in language learning more than those with low motivation, little self-confidence and high anxiety (Ellis, 1991). Therefore, learners' emotions are crucial in language learning since the feelings that students have during learning will affect their success or failure of their learning (Hutchinson & Waters, 1987). Before students can think actively, they must have the strong desire to think about it. Consequently, teachers should manage the positive learning atmosphere so that students can increase their motivation to learn and maximize their learning abilities especially in thinking critically and creatively and language learning skills.

The findings showed that memory, metacognitive, and affective strategies influenced students' critical thinking and creative thinking skills. Teachers still need to train students adopting cognitive, compensation, and social strategies. Oxford (1990) states that all six strategy groups of language learning strategies are equally important, and they reinforce each other when students are experiencing the new language. Teachers need to train them these strategies because they can help students to develop their communicative competence and help them to become better language learners who are able to think critically, use language creatively and recognize their power in adjusting their own learning to suit their styles of learning.

5.4 Implications of the Study

The results of this study indicated that there was a significantly positive relationship between language learning strategies and the cognitive domain of life skills. Thus, the findings will offer fundamental information for further studies on language learning strategies relating to life skills in the area of teaching and learning English as a foreign language (EFL) in different contexts. Further, the implications of the study may be applied to other EFL contexts that share the similar students' background and language proficiency. Yet, the suggestions presented in this study may be the guidance to develop English teaching and learning for the first-year students at Mahidol University in particular. The suggestions are addressed as follows:

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5.4.1 Implication for Strategy Training in Language Classroom

Since language learning strategies are effective tools facilitating learners to succeed in language learning, language teachers need to know which strategies that most learners prefer using and which ones are suitable and helpful for them when they learn a target language. To discover those, teachers should employ several methods such as interviews, diaries, think-aloud protocols, or questionnaires to identify the learners' strategy use (Oxford, 1990). Then teachers will use this information to design and organize teaching methodology, materials, and learning tasks suiting the learners' learning styles.

However, identifying the strategies that learners used is not only benefited language teachers, it is also useful for learners that once they know their strategy use, they will be more conscious about their learning process which can stimulate them to improve their language abilities. Therefore, teachers should give the clear objectives why they need to train learners these strategies and how these strategies can help them learn a target language so that they can understand and have the positive motivation to learn and practice using the strategies. Moreover, teachers should integrate language learning strategies into the lessons and learning tasks relating to learners' communicative needs and the real world language use so that learners will intend to study and improve their language skills enthusiastically.

5.4.2 Implication for Integrating High-Order Thinking Skills into Language Classroom

The findings indicated that there was the positive relationship between language learning strategies and the cognitive domain of life skills. Moreover, all six language learning strategies: memory, cognitive, compensation, metacognitive, affective and social strategies were significantly correlated with critical thinking and creative thinking of life skills. For that reason, instead of training learners to master their English skills through language learning strategies, language teachers should integrate life skills, particularly critical thinking and creative thinking into their classes.

Critical thinking and creative thinking are important elements leading students to life success (Sternberg, 1997). Students acquiring critical thinking and creative

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thinking skills are able to establish their learning purposes, know when and why to ask questions, make logical decisions, generate and evaluate a number of alternatives related to lives, and discover the proper ways to solve various kinds of problems (WHO, 1994; Department of Mental Health, 2002; Salpeter, 2003). Huitt (1998) states that the most effective way to train thinking skills to all learners is to combine them with other specific contents such as reading, literature, or social science. He explains that by this way students can develop their thinking skills better than teach them as a separate set of skills. Therefore, teachers should apply thinking skills into their classes by managing their classes as the anxiety-free learning environment where students have a positive attitude and motivation to learn a language and improve other skills with happiness and enjoyment.

Moreover, creating the classes to be more thoughtful learning environment is important. Teachers may use different types of questions inviting students to make thoughtful analyses. Questions that teachers use to encourage students to think should be included both low-order or fact questions and high-order questions. Low-order or fact questions are questions involving the recall of facts and specific information that students previously learnt, whereas high-order questions refer to questions which require students to synthesis, analysis, and think logically through the given materials and tasks. Students need to understand and have some knowledge about the teaching contents first, and then they can develop high-order thinking skills by using that knowledge.

From this viewpoint, teachers may apply the hierarchy of thinking level proposed by Bloom and his colleagues (1956) into the questions that they will use in classes so as to stimulate students to think sensibly and purposefully and to understand the teaching contents well. According to Bloom and his colleagues (1956), there are six levels of thinking skills – recall, comprehension, application, analysis, synthesis, and evaluation as described below:

a) Recall involves remembering or recalling appropriate and previously learned information to find the factual answers such as “What does “A” mean?”

b) Comprehension involves understanding the meaning of informational materials. This level encourages students to translate and interpret the received information; for example, “Can you say this in another way?”

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c) Application involves applying previously learned information or knowledge to new and unfamiliar situations. Teachers may ask students, “Now you know how to write a well-organized paragraph. Then you need to write a paragraph concerning the topic of global warming.”

d) Analysis involves understanding and examining each element of the received information. Teachers may ask students, “What are the similarities and differences between “A” and “B”?”

e) Synthesis involves applying prior knowledge and skills to combine all elements into a new structure. In other words, it involves predicting and drawing conclusions by using the existing knowledge. For example, teachers may ask, “What would you have done in this situation?”

f) Evaluation involves judging or deciding according to some set of criteria and the received evidence and information. Teachers may ask, “Which of these would you choose and why?”

Based on this thinking hierarchy, teachers need to be aware of questions that they employ in classes. Different types of questions serve different purposes in promoting thinking abilities among students. Moreover, when teachers pose questions, they need to be aware of the students’ background knowledge or their cognitive levels. Lower-level questions can be used with less proficient learners, whereas the higher-level questions may be more beneficial to more advanced students.

5.4.3 Implication for Instructional Design and Material Development

Prabhu (1987) states that the effective learning occurs when students are fully engaged in a language task. Designing language lessons and related tasks, teachers need to be aware of task continuity or sequence of tasks. Well-designed task sequence can lead learners to improve their thinking and communicative ability, and it helps learners to recognize their limitations when using a target language (Salaberry, 2001). Besides, good materials can encourage learners to learn (Hutchinson & Waters, 1987). Teachers should find or provide the materials containing appropriate language use, interesting texts, and enjoyable activities engaging learners to use their thinking

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and existing knowledge and skills in order to motivate their learners to learn and think in a logical, analytical, and creative manner in classes (Hutchinson & Waters, 1987). More importantly, teachers should design the different tasks incorporating learners to think more deeply and have the opportunities to practice language skills and communicate with others at the same time; for instance, role-play, simulation, group discussion, or problem solving. Teachers may create problem solving activities through social interaction with others such as bargaining, or making arrangements; or discussing topics of interest through the exchange of information, ideas, opinions, and attitudes with their peers. In addition, the tasks should be related to learners' real life application and everyday problems that they encounter so that the tasks can stimulate learners to pay more attention in language learning and be willing to develop thinking and learning skills.

5.4.4 Implication for Implementing Life Skills into Language Curriculum

Apart from questions types and learning tasks, teachers know that memory strategies, metacognitive strategies, and affective strategies of language learning strategies affect the use of critical thinking and creative thinking skills among the students. Thus, the program planners should implement life skills into language curriculum. Life skills are necessary skills enabling learners to increase the development of knowledge, attitudes, values, and other skills related to their lives. Learners who possess these skills are more likely to adopt and sustain a healthy lifestyle during their school years and throughout the rest of their lives.

Implementing life skills into language curriculum, program planners need to set objectives and select the appropriate content on the basis of what is most relevant to influence the development of students' language proficiency and skills related to their real world use. More importantly, the curriculum should be underlied the student-centered participatory teaching and learning methods which encourage students to fully practice and develop what they have learned in the classroom, at home, and in their communities. With this respect, the active participation and involvement of teachers, students, families, and other community members are important part in promoting life skills which program planners should cooperate with when revising the curriculum. Language teachers should cooperate with teachers from

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other subjects in providing the effective and proper learning contents and tasks for students to completely learn and develop relevant knowledge and skills.

After establishing the curriculum, program planners should evaluate the effectiveness of implementing life skills into language curriculum. The evaluation process may include formative evaluation about teaching and training materials, relevant learning activities, and sessions. In addition, the evaluation can be made by teachers, parents, students, and other community members through self-assessment such as rank questions, multiple choice questions, or open-ended questions; and multi-faceted assessment such as essays, journals, observations, interviews, projects, and portfolios. These suggested assessments can provide insight for improving the implementation of life skills into language program and its outcomes.

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CHAPTER VI
CONCLUSION AND RECOMMENDATIONS

This chapter is the last section of the study. It provides a brief conclusion and recommendations for further studies. It aims to summarize the important issues in the previous chapters and to suggest the following researchers who are interested in this topic in more specific details.

6.1 Conclusion

At present, the educational institutions throughout the world have recognized that the mastery of content knowledge alone is not sufficient. To prepare students to meet the changes of globalization and the demands of the knowledge economy, it is important for teachers to train students numerous skills, particularly English and thinking skills.

Since English is now accepted as a global language and 1.5 billion people are English users, English teachers need to assist students in increasing their English abilities. The option that language teachers choose to improve their students' language proficiency is to train them language learning strategies. Language learning strategies are effective tools helping learners to learn a language more effectively, transferably, independently, and enjoyably through a variety type of tasks.

Apart from language learning strategies, language teachers need to train their students to develop other learning skills in order that they can manage different problems in different situations well. With this respect, language teachers need to apply life skills especially critical thinking and creative thinking skills into their classes. By using these skills, students enable to establish their learning purposes, know when and why to ask questions, make logical decisions, generate and evaluate a number of alternatives related to their life. Teachers can encourage students to think critically and creatively through a variety types of tasks while they are studying a new language. Consequently, the relationship between language learning strategies and the cognitive domain of life skills consisted of critical thinking and creative thinking skills was examined.

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The purpose of this study was to examine the relationship between six strategy groups of language learning strategies and the cognitive domain of life skills which is consisted of critical thinking and creative thinking skills. The participants were 570 first-year students at Mahidol University attending in 24 study programs in the academic year 2006. The sample included 447 science students and 123 non-science students. They were 406 females (71.2%) and 164 males (28.8%) whose ages ranged from 17-27 years of age (M = 18.83).

The study employed two research instruments to gather the data from the participants – the Strategy Inventory of Language Learning (SILL) version 7.0 translated in Thai by Kaotsombut (2003), and the Life Skills Test developed by Department of Mental Health (2002). Both of them are self-rating questionnaires with five responses and three responses respectively. The SILL consisted of 50 items, and it was used for examining the frequency of strategy use among learners. Life Skills Test consisted of 120 items. It was used for assessing the life skills level of Thai learners. Then three correlational statistic methods were selected to investigate the overall relationship between six strategy groups of language learning strategies and the cognitive domain of life skills; for example, Pearson Product-Moment Correlation Coefficient (r), Spearman Rank Correlation Coefficient (Spearman *rho*), and Stepwise Multiple Regression.

The findings revealed that there was a statistically significant relationship between language learning strategies and the cognitive domain of life skills at r = .348, p < .01. All six categories of language learning strategies – memory, cognitive, compensation, metacognitive, affective, and social strategies were significantly correlated with critical thinking and creative thinking of life skills at the minimum r values .141 to the maximum r values .329 at the significance level .01. Memory strategies were correlated with critical thinking and creative thinking with the highest coefficient value at r = .254, p < .01 and r = .329, p < .01 respectively. Compensation strategies were least correlated with critical thinking at r = .141, p < .01. Affective strategies were least correlated with creative thinking at r = .216, p < .01. In addition, the findings found that memory strategies, matacognitive strategies, and affective strategies influenced the use of critical thinking and creative thinking skills among the participants. Memory strategies and affective strategies influenced students' critical

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thinking skills (p = .00). Creative thinking skills were affected by the use of memory strategies and metacognitive strategies (p = .00.). Therefore, when language teachers teach and train their students to use language learning strategies, they should teach and train them to use and improve their critical thinking and creative thinking skills simultaneously. Furthermore, language teachers can help their students to develop their English abilities and thinking skills at the same time by using different types of questions ranged from low-order to high-order questions. Moreover, they can combine these two skills into different learning activities and tasks such as role-play, simulation, group discussion, and problem solving related to their real-life use so that the students will develop these skills effectively. Besides, using interesting, challenging, and enjoyable materials can encourage the students to engage fully in their learning process and to increase their English and thinking skills intentionally.

6.2 Recommendations for Further Studies

The purpose of this study was to examine the relationship between language learning strategies and the cognitive domain of life skills among the first-year students at Mahidol University. According to the purpose, one single type of research instrument, the questionnaire was employed to gather the data from the participants. Consequently, the following studies should combine other research methods to examine the relationship of these variables such as interview and observation. In addition, the following researchers should study the different groups of the sample; for example, secondary school students, high school students, and undergraduate students. Moreover, the present study conducted on one single domain of life skills, that is, the cognitive domain. To better understand the relations of the variables, the following studies should investigate the relationship between language learning strategies and the psychomotor domain of life skills. More importantly, the relationship between language learning strategies and all three domains of life skills: cognitive, affective, and psychomotor domains should be studied to provide the comprehensive information to the area of language learning. As suggested above, a number of studies related to this research topic are still awaited for the next researchers to discover the findings and provide new information to improve English teaching and learning that benefit students and their personal development best.

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APPENDIX

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APPENDIX A

Questionnaires: Life Skills Test and the Strategy Inventory for Language Learning (SILL Thai version)

แบบสอบถาม

เรื่อง ความสัมพันธ์ระหว่างกลยุทธ์การเรียนภาษาอังกฤษและทักษะชีวิตด้านพุทธิพิสัยของนักศึกษาชั้นปีที่ 1 มหาวิทยาลัยมหิดล

โปรดทำเครื่องหมายกากบาท (x) ลงบนข้อความที่ตรงกับสภาพความเป็นจริงของท่านในปัจจุบัน

ส่วนที่ 1 ข้อมูลส่วนบุคคล

ชื่อ_____ สาขาวิชา/คณะ_____

อายุ_____ปี เพศ_____ E-mail _____

ส่วนที่ 2 ทักษะชีวิต

ระดับความคิดเห็น: ① = ไม่จริง ② = ค่อนข้างจริง ③ = จริง

Life Skills	ระดับความคิดเห็น
1. ฉันมักจะมองอะไรหลาย ๆ แง่มุม	① ② ③
2. ฉันบอกได้ว่าการกระทำของฉันดีหรือไม่ดี	① ② ③
3. เมื่อพบปัญหาฉันจะพยายามคิดหาสาเหตุ	① ② ③
4. ฉันเป็นคนไม่เชื่ออะไรง่าย ๆ	① ② ③
5. ถ้าเพื่อนบอกว่าดี ฉันก็เชื่อว่าดี	① ② ③
6. ฉันเบื่อที่จะทำอะไรแล้วต้องมานั่งคิดวางแผน	① ② ③
7. ฉันชอบคิดคาดการณ์สิ่งต่าง ๆ ล่วงหน้า	① ② ③
8. ฉันคิดเลือกสิ่งที่เป็นประโยชน์มากกว่าสิ่งที่ชอบ	① ② ③
9. ฉันคิดโดยใช้เหตุผลมากกว่าความเคยชิน	① ② ③

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Life Skills	ระดับความคิดเห็น
10. ฉันมักจะสรุปสิ่งหนึ่งสิ่งใด โดยใช้เหตุผลส่วนตัว	① ② ③
11. ฉันชอบเรียนรู้สิ่งใหม่	① ② ③
12. ฉันชอบเสนอความคิดใหม่	① ② ③
13. ฉันชอบทำตามสิ่งที่มีผู้ทำมาก่อน	① ② ③
14. ฉันไม่กลัวการเปลี่ยนแปลง	① ② ③
15. ฉันชอบสภาพแวดล้อมที่มีระเบียบแบบแผน	① ② ③
16. ฉันสามารถขยายความคิดได้มากมาย	① ② ③
17. ฉันไม่ชอบคิดต่อจากสิ่งที่คนอื่นคิดไว้	① ② ③
18. ฉันชอบคิดค้นหาวิธีการใหม่ ๆ	① ② ③
19. ฉันชอบคิดแตกต่างจากคนอื่น	① ② ③
20. ฉันคิดอย่างรอบคอบก่อนทำ	① ② ③
21. ฉันบอกความรู้สึกที่แท้จริงได้ว่าชอบหรือไม่ชอบอะไร	① ② ③
22. ฉันรู้ตัวเสมอว่ากำลังมีอารมณ์อย่างไร	① ② ③
23. ฉันรู้สาเหตุที่ทำให้ฉันผิดหวังหรือเสียใจ	① ② ③
24. ฉันปรับอารมณ์ให้เป็นปกติได้เร็ว	① ② ③
25. หากมีคนโต้แย้งฉันมักแสดงออกอาการไม่พอใจ	① ② ③
26. ฉันมีจุดเด่นในตัวเอง	① ② ③
27. ฉันมีจุดที่ต้องปรับปรุงในตัวเอง	① ② ③
28. ฉันใส่ใจในการหาจุดบกพร่องและปรับปรุงตนเองเสมอ	① ② ③
29. ฉันรู้ความสามารถของตนเอง	① ② ③
30. ฉันมักทำในสิ่งที่ตรงกับความสามารถ	① ② ③
31. ฉันบอกได้ว่าสิ่งที่ฉันทำ ฉันทำได้ดีหรือไม่ดี	① ② ③
32. ฉันยินดีที่จะรับฟังคำวิจารณ์จากคนอื่น	① ② ③
33. ฉันยอมรับว่าคนเรามีความแตกต่าง	① ② ③
34. ฉันยอมรับผู้อื่นที่มีความแตกต่างจากฉัน	① ② ③
35. ฉันสามารถสังเกตอารมณ์ผู้อื่นจากสีหน้าและแววตา	① ② ③
36. ฉันไม่ใส่ใจกับความต้องการของผู้อื่น	① ② ③
37. ฉันยินดีรับฟังความทุกข์ร้อนของเพื่อน	① ② ③
38. ฉันรู้สึกไม่สบายใจเมื่อเพื่อนประสบปัญหา	① ② ③
39. ฉันรู้สึกเห็นใจผู้ที่กำลังเดือดร้อน	① ② ③
40. ฉันชอบช่วยเหลือคนอื่นเมื่อมีโอกาส	① ② ③
41. ฉันรู้สึกเป็นภาระเมื่อต้องรับผิดชอบงานของคนอื่น	① ② ③
42. ฉันชื่นชมกับความสำเร็จของเพื่อน	① ② ③
43. ฉันไม่สนใจกับความรู้สึกของคนรอบข้าง	① ② ③
44. ฉันเป็นที่พึ่งของเพื่อน ๆ ได้	① ② ③
45. ฉันอยากเห็นผู้อื่นมีความสุข	① ② ③
46. ฉันไม่อยากยุ่งกับเรื่องของคนอื่น	① ② ③

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47. เมื่อฉันทำผิดพลาดฉันจะขาดความมั่นใจ	① ② ③
48. ฉันชื่นชมกับความสำเร็จของตัวเอง	① ② ③
49. ฉันรู้สึกว่าตัวเองไร้ค่า	① ② ③
50. ฉันพอใจในสิ่งที่ฉันมีอยู่	① ② ③
51. ฉันรู้สึกไม่เป็นตัวของตัวเอง	① ② ③
52. ฉันมีความรู้สึกที่ดีต่อตัวเอง	① ② ③
53. ฉันรู้ว่าตัวเองมีคุณค่าไม่น้อยไปกว่าคนอื่น	① ② ③
54. การได้รับคำวิจารณ์จากผู้อื่นเป็นโอกาสที่จะพัฒนาตัวเอง	① ② ③
55. ฉันเชื่อว่าตัวเองมีความสามารถ	① ② ③
56. ฉันรับผิดชอบต่อผลที่เกิดขึ้นจากการตัดสินใจของฉัน	① ② ③
57. ฉันสามารถเอาชนะอุปสรรคในชีวิตได้	① ② ③
58. ฉันกล้าแสดงความคิดเห็นในเรื่องต่าง ๆ	① ② ③
59. ฉันมักจะคล้อยตามความคิดเห็นของคนอื่น	① ② ③
60. ฉันจะทำสิ่งใดก็ต่อเมื่อคนอื่นยอมรับ	① ② ③
61. ฉันเป็นคนมีวินัยในตนเอง	① ② ③
62. ฉันเป็นคนตรงต่อเวลา	① ② ③
63. ฉันรู้สึกผิดถ้าทิ้งขยะไม่เป็นที่เป็นทาง	① ② ③
64. กฎระเบียบเป็นสิ่งที่ฝ่าฝืนได้	① ② ③
65. การปฏิบัติตามกฎระเบียบเป็นสิ่งที่เสียเวลา	① ② ③
66. ฉันยินดีเสียสละหากทำให้สังคมดีขึ้น	① ② ③
67. ฉันยินดีให้ความร่วมมือกับส่วนรวม	① ② ③
68. ฉันเต็มใจให้ความร่วมมือกับกลุ่มเพื่อให้งานสำเร็จ	① ② ③
69. ฉันรู้สึกผิดเมื่อแสดงความเห็นแก่ตัว	① ② ③
70. ฉันรู้สึกผิดเมื่องานส่วนรวมไม่สำเร็จ	① ② ③
71. ฉันยินดีรับผิดชอบหากการกระทำของฉันมีผลกระทบต่อส่วนรวม	① ② ③
72. ฉันรู้สึกไม่สบายใจหากคนอื่นเดือดร้อนจากการกระทำของฉัน	① ② ③
73. ฉันคิดว่าการรับผิดชอบต่อสังคมเป็นเรื่องไกลตัว	① ② ③
74. ฉันคิดว่าการรับผิดชอบต่อสังคมไม่ใช่เรื่องของเด็ก	① ② ③
75. คนอื่นมักเห็นคล้อยตามในสิ่งที่ฉันพูด	① ② ③
76. เวลาที่ต้องติดต่อกับผู้อื่น เพื่อน ๆ มักให้ฉันเป็นผู้นำ	① ② ③
77. คนอื่นมักบอกว่าฉันพูดเข้าใจง่าย ชัดเจน	① ② ③
78. ฉันสามารถฟังและจับใจความได้ดี	① ② ③
79. ฉันชอบทำงานร่วมกับผู้อื่น	① ② ③
80. หากทำงานร่วมกับผู้อื่นฉันมักทำได้ดี	① ② ③
81. ฉันไม่ค่อยอยากรู้จักกับคนอื่นมากนัก	① ② ③
82. คนอื่นมักบอกว่าฉันเป็นคนหยิ่ง	① ② ③
83. ฉันมีความเป็นกันเองกับทุกคน	① ② ③

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84. ฉันรู้สึกลำบากใจเมื่อต้องคุยกับคนไม่รู้จัก	① ② ③
85. ฉันปฏิเสธคนอื่นไม่ค่อยเป็น	① ② ③
86. เมื่อมีความขัดแย้งฉันมักหลบไปห่าง ๆ	① ② ③
87. ฉันมักกังวลเมื่อต้องไปพบปะกับคนที่ไม่รู้จัก	① ② ③
88. ฉันรู้สึกว่าเป็นที่ไว้วางใจของเพื่อน ๆ	① ② ③
89. ฉันชอบมองโลกในแง่ร้ายไว้ก่อน	① ② ③
90. ฉันเป็นคนจริงใจกับคนอื่น	① ② ③
91. เพื่อนส่วนมากชอบฉัน	① ② ③
92. ก่อนตัดสินใจฉันมักจะคิดอย่างรอบคอบ	① ② ③
93. ฉันชอบมองอะไรหลาย ๆ มุม	① ② ③
94. ฉันชอบการตัดสินใจที่ฉับไวหากมีปัญหาค่อยแก้เอาข้างหน้า	① ② ③
95. ฉันชอบตัดสินใจตามเพื่อน ๆ หรือตามคนส่วนใหญ่	① ② ③
96. ฉันสามารถแก้ปัญหาเฉพาะหน้าได้ดี	① ② ③
97. ฉันชอบตัดสินใจเสี่ยง ๆ เพื่อให้เกิดความตื่นเต้น	① ② ③
98. เมื่อต้องทำสิ่งใด ฉันอยากรู้ที่มาที่ไปของสิ่งนั้นก่อน	① ② ③
99. ฉันชอบทำงานตามคำสั่งมากกว่าให้ตัดสินใจเอง	① ② ③
100. เมื่อทำสิ่งใดแล้วเกิดปัญหา ฉันจะเลิกทำสิ่งนั้น	① ② ③
101. เมื่อทำสิ่งใดแล้วเกิดปัญหา ฉันจะค้นหาสาเหตุให้พบ	① ② ③
102. เมื่อต้องแก้ไขปัญหา ฉันมักค้นหาทางเลือกหลาย ๆ ทาง	① ② ③
103. ฉันเชื่อว่าทุกปัญหามีทางออกเสมอ	① ② ③
104. ฉันชอบแก้ปัญหาด้วยตนเอง โดยไม่ต้องปรึกษาใคร	① ② ③
105. หากไม่มั่นใจ ฉันมักปรึกษาคนอื่นก่อนตัดสินใจ	① ② ③
106. เมื่อฉันตัดสินใจแล้ว ผลจะเกิดอย่างไรฉันไม่สนใจ	① ② ③
107. ฉันชอบคาดการณ์ล่วงหน้าในสิ่งที่จะลงมือทำ	① ② ③
108. ฉันยอมรับผลที่จะเกิดจากการตัดสินใจของฉัน	① ② ③
109. ฉันเป็นคนใจเย็น ไม่ค่อยโกรธใครง่าย ๆ	① ② ③
110. ฉันแสดงออกอย่างเหมาะสมเมื่อมีอารมณ์โกรธ	① ② ③
111. คนอื่นมักบอกว่าฉันเป็นคนเก็บอารมณ์ได้ดี	① ② ③
112. ฉันเป็นคนไม่กลัวความผิดหวัง	① ② ③
113. ฉันเป็นคนที่ไม่จมอยู่กับอดีต	① ② ③
114. ฉันไม่กล้าเผชิญหน้ากับความผิดหวังหรือความเสียใจ	① ② ③
115. เมื่ออยู่ในภาวะที่ตึงเครียดฉันมักหาทางออกได้	① ② ③
116. เมื่อรู้สึกเครียดฉันมักหากิจกรรมอย่างอื่นทำ	① ② ③
117. เมื่อมีเรื่องไม่สบายใจฉันมักอยู่คนเดียว	① ② ③
118. ฉันเป็นคนอารมณ์มั่นคง ไม่เปลี่ยนแปลงง่าย	① ② ③
119. คนอื่นมักบอกว่าฉันเป็นคนร่าเริง อารมณ์ดี	① ② ③
120. ฉันเป็นคนเคร่งเครียดและจริงจังกับทุกเรื่อง	① ② ③

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ส่วนที่ 3 กลวิธีการเรียนภาษาอังกฤษ

ระดับความคิดเห็น: ① = ใช้น้อยที่สุดถึงไม่เคยใช้เลย ② = ใช้น้อย ③ = ใช้ปานกลาง

④ = ใช้มาก ⑤ = ใช้มากที่สุด

Language Learning Strategies	**ระดับความคิดเห็น**
1. ท่านคิดเชื่อมโยงความสัมพันธ์ระหว่างสิ่งที่เรียนรู้มาแล้วกับสิ่งที่เรียนรู้ใหม่	①②③④⑤
2. ท่านนำเอาคำใหม่ ๆ ในภาษาอังกฤษใช้ในประโยค เพื่อให้จำได้ดียิ่งขึ้น	①②③④⑤
3. ท่านเชื่อมโยงเสียงของคำใหม่ในภาษาอังกฤษกับภาพ (image or picture) ของคำนั้น เพื่อช่วยให้จำได้	①②③④⑤
4. ท่านจดจำคำใหม่ โดยการคิดถึงภาพของเหตุการณ์ซึ่งคำเหล่านั้นอาจจะถูกใช้	①②③④⑤
5. ท่านใช้คำพ้องเสียงเพื่อช่วยในการจำคำใหม่ในภาษาอังกฤษ	①②③④⑤
6. ท่านใช้บัตรคำซึ่งด้านหนึ่งของบัตรเป็นคำศัพท์ส่วนอีกด้านหนึ่งเป็นคำแปล (flashcard) เพื่อช่วยในการจำคำใหม่ในภาษาอังกฤษ	①②③④⑤
7. ท่านแสดงท่าทางประกอบ เพื่อช่วยในการจำคำใหม่ในภาษาอังกฤษ เช่น drink = ดื่ม ท่านจึงทำท่าทางดื่มน้ำไปด้วย	①②③④⑤
8. ท่านทบทวนบทเรียนภาษาอังกฤษบ่อย ๆ	①②③④⑤
9. ท่านจดจำคำหรือวลีใหม่ ๆ ในภาษาอังกฤษ โดยการจำว่าคำเหล่านั้นอยู่หน้าใดของหนังสือ, ส่วนใดของกระดาน หรือ ตามป้ายต่าง ๆ บนท้องถนน	①②③④⑤
10. ท่านพูดหรือเขียนคำใหม่ ๆ ในภาษาอังกฤษซ้ำแล้วซ้ำอีกหลาย ๆ ครั้ง	①②③④⑤
11. ท่านพยายามพูดให้มีสำเนียงใกล้เคียงกับเจ้าของภาษา	①②③④⑤
12. ท่านฝึกฝนการออกเสียงภาษาอังกฤษ	①②③④⑤
13. ท่านใช้คำศัพท์ในภาษาอังกฤษที่ท่านรู้ในสถานการณ์ที่แตกต่างกันออกไป เช่น ใช้ในการพูด หรือ ใช้ในการเขียน	①②③④⑤
14. ท่านเริ่มต้นบทสนทนากับผู้อื่นโดยใช้ภาษาอังกฤษ	①②③④⑤
15. ท่านดูรายการโทรทัศน์หรือภาพยนตร์ภาคภาษาอังกฤษ	①②③④⑤
16. ท่านอ่านสิ่งพิมพ์ภาษาอังกฤษต่าง ๆ ที่ทำให้ท่านเพลิดเพลิน	①②③④⑤
17. ท่านใช้ภาษาอังกฤษในการจดโน้ต, ข้อความ, จดหมาย หรือ รายงาน	①②③④⑤
18. ท่านอ่านบทความต่าง ๆ ที่เป็นภาษาอังกฤษ โดยอ่านแบบผ่าน ๆ ในครั้งแรกเพื่อหาใจความสำคัญ และกลับมาอ่านทบทวนอีกครั้งอย่างละเอียด	①②③④⑤
19. ท่านค้นหาคำในภาษาไทยที่มีความหมายใกล้เคียงกับคำศัพท์ใหม่ในภาษาอังกฤษ	①②③④⑤
20. ท่านศึกษารูปแบบการเรียงประโยคในภาษาอังกฤษเพื่อนำไปใช้ได้อย่างถูกต้อง	①②③④⑤
21. ท่านหาความหมายของคำในภาษาอังกฤษโดยการแบ่งคำนั้น ๆ ออกเป็นส่วน ๆ เพื่อให้เกิดความเข้าใจ เช่น แบ่งตามรากศัพท์	①②③④⑤
22. ท่านหลีกเลี่ยงการแปลภาษาอังกฤษแบบคำต่อคำ	①②③④⑤
23. ท่านทำสรุปข้อมูลต่าง ๆ ที่ท่านได้ฟังหรืออ่านเป็นภาษาอังกฤษ	①②③④⑤
24. ท่านใช้วิธีการเดา เพื่อให้เข้าใจคำในภาษาอังกฤษที่ไม่คุ้นเคย	①②③④⑤

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Language Learning Strategies	ระดับความคิดเห็น
25. ท่านใช้ท่าทางประกอบระหว่างการสนทนาภาษาอังกฤษเมื่อท่านนึกคำภาษาอังกฤษไม่ออก	①②③④⑤
26. ท่านใช้คำอื่นแทน เมื่อท่านไม่รู้คำที่ถูกต้องในภาษาอังกฤษ	①②③④⑤
27. ท่านอ่านภาษาอังกฤษ โดยไม่ต้องค้นหาคำใหม่ทุกคำ	①②③④⑤
28. ท่านพยายามเดาหรือคาดการณ์เป็นภาษาอังกฤษว่าผู้สนทนาชาวต่างชาติจะพูดอะไรต่อไป	①②③④⑤
29. ถ้าท่านไม่สามารถคิดถึงคำในภาษาอังกฤษได้ ท่านจะใช้คำหรือวลีที่มีความหมายเหมือนหรือใกล้เคียงกับคำที่ท่านต้องการ	①②③④⑤
30. ท่านพยายามหาวิธีการต่าง ๆ เท่าที่ท่านจะทำได้เพื่อได้ใช้ภาษาอังกฤษ	①②③④⑤
31. ท่านสังเกตข้อผิดพลาดต่าง ๆ ในการใช้ภาษาอังกฤษ และใช้ข้อผิดพลาดเหล่านั้นเป็นบทเรียนเพื่อช่วยให้ท่านเรียนได้ดีขึ้น	①②③④⑤
32. ท่านให้ความสนใจ เมื่อมีใครก็ตามพูดภาษาอังกฤษ	①②③④⑤
33. ท่านพยายามที่จะหาวิธีการที่จะทำให้ท่านเรียนภาษาอังกฤษได้ดีขึ้น	①②③④⑤
34. ท่านจัดตารางเวลา เพื่อให้มีเวลาเพียงพอที่จะศึกษาภาษาอังกฤษ	①②③④⑤
35. ท่านมองหาคนที่ท่านสามารถพูดภาษาอังกฤษกับเขาได้	①②③④⑤
36. ท่านหาโอกาสที่จะอ่านภาษาอังกฤษให้ได้มากที่สุดเท่าที่จะทำได้	①②③④⑤
37. ท่านมีเป้าหมายชัดเจนในการปรับปรุงทักษะภาษาอังกฤษของท่าน	①②③④⑤
38. ท่านคาดหวังในความก้าวหน้า/การพัฒนาในการเรียนภาษาอังกฤษของท่าน	①②③④⑤
39. ท่านพยายามผ่อนคลาย เมื่อรู้สึกกลัวที่จะต้องใช้ภาษาอังกฤษ	①②③④⑤
40. ท่านให้กำลังใจตนเอง เมื่อต้องพูดภาษาอังกฤษ แม้ว่าในใจจะกลัวความผิดพลาด	①②③④⑤
41. ท่านให้รางวัลกับตนเองเมื่อใช้ภาษาอังกฤษได้ดี	①②③④⑤
42. ท่านพบว่าตัวเองเป็นกังวลหรือเครียดในขณะที่กำลังเรียนหรือใช้ภาษาอังกฤษ	①②③④⑤
43. ท่านเขียนบรรยายความรู้สึกของท่านเป็นภาษาอังกฤษในสมุดบันทึกประจำวัน	①②③④⑤
44. ท่านพูดคุยกับผู้อื่นถึงความรู้สึกของท่านในการเรียนภาษาอังกฤษ	①②③④⑤
45. ท่านขอร้องให้ผู้พูด พูดช้าลงหรือพูดซ้ำ ถ้าท่านไม่เข้าใจภาษาอังกฤษที่เขาพูดอยู่ในขณะนั้น	①②③④⑤
46. ท่านขอให้ผู้ที่ใช้ภาษาอังกฤษช่วยแก้ไขภาษาอังกฤษของท่าน เมื่อท่านพูดผิด	①②③④⑤
47. ท่านฝึกฝนภาษาอังกฤษกับเพื่อนนักศึกษาคนอื่น ๆ	①②③④⑤
48. ท่านขอความช่วยเหลือจากอาจารย์/เพื่อนนักศึกษาต่างชาติ ในการใช้ภาษาอังกฤษ	①②③④⑤
49. ท่านมักจะถามคำถามเป็นภาษาอังกฤษกับผู้ที่อยู่ในแวดวงเดียวกับท่าน	①②③④⑤
50. ท่านพยายามศึกษาวัฒนธรรมของคนที่ใช้ภาษาอังกฤษเป็นภาษาประจำชาติ	①②③④⑤

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APPENDIX B

The Strategy Inventory for Language Learning for Non-Native Speakers of English (ESL/EFL SILL)

The Strategy Inventory for Language Learning (SILL) is designed to gather information about how you, as a student of English as foreign language, go about learning English language.

There are 50 statements in this questionnaire, please read each statement and choose that response (5, 4, 3, 2, or 1) that tells how true the statement is in term of what you actually do when you are learning English. The criteria for the response are as follows:

1 = Never or almost never true of me
2 = Usually not true of me
3 = Somewhat true of me
4 = Usually true of me
5 = Always or almost always true of me

Never or almost never true of me means that the statement is very rarely true of you.
Usually not true of me means that the statement is true less than half the time.
Somewhat true of me means that the statement is true of you about half the time.
Usually true of me means that the statement is true more than half the time.
Always or almost always true of me means that the statement is true of you always.

(Adapted from SILL -- Version 7.0 [EFL/ESL] - R. L. Oxford, 1990)

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Language Learning Strategies	Always or almost always true of me	Usually true of me	Somewhat true of me	Usually not true of me	Never or almost never true of me
1. I think of relationships between what I already know and new things I learn in English.	5	4	3	2	1
2. I use new English words in a sentence so I can remember them.	5	4	3	2	1
3. I connect the sound of a new English word and an image or picture of the word to help me remember the word.	5	4	3	2	1
4. I remember a new English word by making a mental picture of a situation in which the word might be used.	5	4	3	2	1
5. I use rhymes to remember new English words.	5	4	3	2	1
6. I use flashcards to remember new English words.	5	4	3	2	1
7. I physically act out new English words.	5	4	3	2	1
8. I review English lessons often.	5	4	3	2	1
9. I remember new English words or phrases by remembering their location on the page, on the board, or on a street sign.	5	4	3	2	1
10. I say or write new English words several times.	5	4	3	2	1
11. I try to talk like native English speakers.	5	4	3	2	1
12. I practice the sounds of English.	5	4	3	2	1
13. I use the English words I know in different ways.	5	4	3	2	1
14. I start conversations in English.	5	4	3	2	1
15. I watch English language TV shows spoken in English or go to movies spoken in English.	5	4	3	2	1
16. I read for pleasure in English.	5	4	3	2	1
17. I write notes, messages, letters, or reports in English.	5	4	3	2	1
18. I first skim an English passage (read over the passage quickly) then go back and read carefully.	5	4	3	2	1
19. I look for words in my own language that are similar to new words in English.	5	4	3	2	1
20. I try to find patterns in English.	5	4	3	2	1
21. I find the meaning of an English word by dividing it into parts that I understand.	5	4	3	2	1
22. I try not to translate word-for-word.	5	4	3	2	1

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Language Learning Strategies	Always or almost always true of me	Usually true of me	Somewhat true of me	Usually not true of me	Never or almost never true of me
23. I make summaries of information that I hear or read in English.	5	4	3	2	1
24. To understand unfamiliar English words, I make guesses.	5	4	3	2	1
25. When I cannot think of a word during a conversation in English, I use gestures.	5	4	3	2	1
26. I make up new words if I do not know the right ones in English.	5	4	3	2	1
27. I read English without looking up new words.	5	4	3	2	1
28. I try to guess what the other person will say next in English.	5	4	3	2	1
29. If I cannot think of an English word, I use a word or phrase that means the same thing.	5	4	3	2	1
30. I try to find as many ways as I can to use my English.	5	4	3	2	1
31. I notice my English mistakes and use that information to help me do better.	5	4	3	2	1
32. I pay attention when someone is speaking English.	5	4	3	2	1
33. I try to find out how to be a better learner of English.	5	4	3	2	1
34. I plan my schedule so I will have enough time to study English.	5	4	3	2	1
35. I look for people I can talk to in English.	5	4	3	2	1
36. I look for opportunities to read as much as possible in English.	5	4	3	2	1
37. I have clear goals for improving my English skills.	5	4	3	2	1
38. I think about my progress in learning English.	5	4	3	2	1
39. I try to relax whenever I feel afraid of using English.	5	4	3	2	1
40. I encourage myself to speak English even when I am afraid of making a mistake.	5	4	3	2	1
41. I give myself a reward or treat when I do well in English.	5	4	3	2	1
42. I notice if I am tense or nervous when I am studying or using English.	5	4	3	2	1
43. I write down my feelings in a language learning diary.	5	4	3	2	1

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Language Learning Strategies	Always or almost always true of me	Usually true of me	Somewhat true of me	Usually not true of me	Never or almost never true of me
44. I talk to someone else about how I feel when I am learning English.	5	4	3	2	1
45. If I do not understand something in English, I ask the other person to slow down or say it again.	5	4	3	2	1
46. I ask English with other students.	5	4	3	2	1
47. I practice English with other students.	5	4	3	2	1
48. I ask for help from English speakers.	5	4	3	2	1
49. I ask questions in English.	5	4	3	2	1
50. I try to learn about the culture of English speakers.	5	4	3	2	1

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APPENDIX C

Permission Letters

The SILL ESL/EFL Version

---Original Message---

From: Amarawadee Tappoon <joy_amarawadee@hotmail.com>
To: rebecca_oxford@yahoo.com
Subject: Letter of Consent for SILL (ESL/EFL version)
Date: Sat, 27 Oct 2007 15:03:12 +0700

Dear Professor,

I am a master's student in the Applied Linguistics Program, Faculty of Arts, Mahidol University, Thailand. I am conducting a study on the topic of "RELATIONSHIP BETWEEN LANGUAGE LEARNING STRATEGIES AND THE COGNITIVE DOMAIN OF LIFE SKILLS AMONG FIRST-YEAR STUDENTS AT MAHIDOL UNIVERSITY". The purpose of the study is to investigate the relationship between six categories of language learning strategies and the cognitive domain of life skills consisting of critical thinking and creative thinking skills used by the students. Therefore, to explore the frequency of language strategy use among the students, I will use the SILL version 7.0, which you developed in 1989 as the research instrument.

According to this, I would like to ask for your permission to use the ESL/EFL SILL version 7.0 in my study.

Looking forward to your reply and thank you very much for your consideration of my request and your kindness.

Yours faithfully,

Amarawadee Tappoon

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RE: Letter of Consent for SILL (ESL/EFL version)
From:Rebecca Oxford <rebecca_oxford@yahoo.com>
Sent: Monday, October 29, 2007 5:25:18 AM
To: Amarawadee Tappoon <joy_amarawadee@hotmail.com>

Dear Amarawadee Tappoon,

I am happy to provide my permission for you to use the SILL in your study. Best wishes on your study.

Sincerely,
Rebecca Oxford

Rebecca L. Oxford
University of Maryland Distinguished Scholar-Teacher, 2006-2007
Program in Second Language Education and Culture
2311 Benjamin Building
College of Education
University of Maryland
College Park, MD 20742 USA

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The SILL Thai Version

---Original Message---

From: Amarawadee Tappoon <joy_amarawadee@hotmail.com>
To: joynaruemol_k@hotmail.com
Subject: Letter of Consent for SILL (Thai version)
Date: Sat, 27 Oct 2007 15:20:07 +0700

Dear Khun Naruemol Kaotsombut,

I am a master's student in the Applied Linguistics Program, Faculty of Arts, Mahidol University, Thailand. I am conducting a study on the topic of "RELATIONSHIP BETWEEN LANGUAGE LEARNING STRATEGIES AND THE COGNITIVE DOMAIN OF LIFE SKILLS AMONG FIRST-YEAR STUDENTS AT MAHIDOL UNIVERSITY". The purpose of the study is to investigate the relationship between six categories of language learning strategies and the cognitive domain of life skills consisting of critical thinking and creative thinking skills used by the students. Therefore, to explore the frequency of language strategy use among the students, I will use the SILL version 7.0, which you translated in Thai on your research study in 2003 as the research instrument.

According to this, I would like to ask for your permission to use the SILL Thai version in my study.

Looking forward to your reply and thank you very much for your consideration of my request and your kindness.

Yours faithfully,

Amarawadee Tappoon

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RE: Letter of Consent for SILL (Thai version)
From:Joy Naruemol <joynaruemol_k@hotmail.com>
Sent: Thursday, November 1, 2007 5:25:18 AM
To: Amarawadee Tappoon <joy_amarawadee@hotmail.com>

Dear Amarawadee Tappoon,

You have my permission to use the SILL that I've translated and used for my Master thesis.

Good luck.

Best Wishes,
...JOY...

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สาขาภาษาศาสตร์ประยุกต์
คณะศิลปศาสตร์ มหาวิทยาลัยมหิดล
ถนนพุทธมณฑลสาย4 ตำบลศาลายา
อำเภอพุทธมณฑล นครปฐม 73170
โทร. 02-441-4401- 4

25 ตุลาคม 2550

เรื่อง ขอนุญาตใช้แบบประเมินทักษะชีวิตเพื่อวิทยานิพนธ์
เรียน อธิบดีกรมสุขภาพจิต

ดิฉัน นางสาวอมราวดี ทัพพุน นักศึกษาปริญญาโท สาขาภาษาศาสตร์ประยุกต์ คณะศิลปศาสตร์ และบัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล ได้รับอนุมัติให้ทำการวิจัยเพื่อวิทยานิพนธ์ในหัวข้อเรื่อง “การศึกษาความสัมพันธ์ระหว่างกลยุทธ์การเรียนภาษาอังกฤษและทักษะชีวิตด้านพุทธิพิสัยของนักศึกษาชั้นปีที่ 1 มหาวิทยาลัยมหิดล (RELATIONSHIP BETWEEN LANGUAGE LEARNING STRATEGIES AND THE COGNITIVE DOMAIN OF LIFE SKILLS AMONG FIRST-YEAR STUDENTS AT MAHIDOL UNIVERSITY) โดยมี ร.ศ.ดร. ทรงศรี สรณสถาพร เป็นอาจารย์ที่ปรึกษาและควบคุมวิทยานิพนธ์ มีความประสงค์จะขออนุญาตใช้แบบประเมินทักษะชีวิตของกรมสุขภาพจิต ซึ่งเผยแพร่ในรายงานการวิจัยในปี 2545 เรื่อง การสร้างแบบประเมินทักษะชีวิต ผลการส่งเสริมทักษะชีวิตโดยใช้โรงเรียนเป็นฐาน โดยประวิต เอราวรรณ์ และ นุชวนา เหลืองอังกูร เพื่อนำไปใช้ในการเก็บข้อมูลประกอบการทำวิจัยในเรื่องดังกล่าวข้างต้น

ดิฉันจึงเรียนมาเพื่อขออนุญาตใช้แบบประเมินทักษะชีวิตเพื่อวิทยานิพนธ์ ซึ่งดิฉันหวังเป็นอย่างยิ่งว่าจะได้รับการอนุญาตให้ใช้แบบประเมินในครั้งนี้จากท่าน และขอขอบคุณเป็นอย่างสูงมา ณ โอกาสนี้

ขอแสดงความนับถืออย่างสูง

นางสาว อมราวดี ทัพพุน
ผู้วิจัย

ติดต่อ
Email: joy_amarawadee@hotmail.com

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APPENDIX D

Descriptive Statistic Results on the Frequency of Strategy Use among 570 First-Year Students

The Overall Strategy Use of Six Strategy Group (*N* = 570)

Rank Order	Six Categories of Language Learning Strategies	*M*	*SD*	Frequency of Use	Level of Use
1	Compensation strategies	3.27	.68	Sometimes	medium
2	Metacognitive strategies	3.26	.71	Sometimes	medium
3	Cognitive strategies	2.95	.64	Sometimes	medium
4	Affective strategies	2.92	.59	Sometimes	medium
5	Memory strategies	2.91	.59	Sometimes	medium
6	Social strategies	2.84	.73	Sometimes	medium
	Overall Strategy Use on Average	3.02	.52	Sometimes	medium

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The Frequency of Strategy Use Reported on Each Items (*N* = 570)

Language Learning Strategies	*M*	*SD*	Alpha if Item Deleted
Direct Strategies			
I. Memory Strategies			
1. I think of relationships between what I already know and new things I learn in English.	3.40	.810	.9417
2. I use new English words in a sentence so I can remember them.	3.15	.905	.9411
3. I connect the sound of a new English word and an image or picture of the word to help me remember the word.	3.07	1.000	.9413
4. I remember a new English word by making a mental picture of a situation in which the word might be used.	3.37	.953	.9414
5. I use rhymes to remember new English words.	2.84	1.025	.9417
6. I use flashcards to remember new English words.	2.18	1.044	.9425
7. I physically act out new English words.	2.47	1.160	.9423
8. I review English lessons often.	2.82	.930	.9412
9. I remember new English words or phrases by remembering their location on the page, on the board, or on a street sign.	2.98	1.149	.9421
II. Cognitive Strategies			
10. I say or write new English words several times.	2.94	1.054	.9412
11. I try to talk like native English speakers.	3.38	1.072	.9408
12. I practice the sounds of English.	3.25	1.056	.9406
13. I use the English words I know in different ways.	3.21	.976	.9406
14. I start conversations in English.	2.32	1.009	.9413
15. I watch English language TV shows spoken in English or go to movies spoken in English.	3.17	1.060	.9418
16. I read for pleasure in English.	2.66	1.042	.9408
17. I write notes, messages, letters, or reports in English.	2.80	1.037	.9411
18. I first skim an English passage (read over the passage quickly) then go back and read carefully.	3.07	1.065	.9410

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Language Learning Strategies	*M*	*SD*	Alpha if Item Deleted
Direct Strategies			
II. Cognitive Strategies			
19. I try to find patterns in English.	3.09	.991	.9408
20. I find the meaning of an English word by dividing it into parts that I understand.	2.92	1.071	.9412
21. I try not to translate word-for-word.	3.06	1.103	.9416
22. I make summaries of information that I hear or read in English.	2.46	1.060	.9411
III. Compensation Strategies			
23. To understand unfamiliar English words, I make guesses.	3.58	.988	.9417
24. When I cannot think of a word during a conversation in English, I use gestures.	3.38	1.095	.9421
25. I make up new words if I do not know the right ones in English.	3.52	.969	.9418
26. I read English without looking up new words.	2.86	1.057	.9416
27. I try to guess what the other person will say next in English.	2.99	1.096	.9410
28. If I cannot think of an English word, I use a word or phrase that means the same thing.	3.33	.974	.9412
Indirect Strategies			
IV. Metacognitive Strategies			
29. I try to find as many ways as I can to use my English.	3.12	.994	.9404
30. I notice my English mistakes and use that information to help me do better.	3.24	.968	.9407
31. I pay attention when someone is speaking English.	3.42	1.000	.9409
32. I try to find out how to be a better learner of English.	3.62	1.013	.9412
33. I plan my schedule so I will have enough time to study English.	2.81	.953	.9409
34. I look for people I can talk to in English.	2.89	1.090	.9404
35. I look for opportunities to read as much as possible in English.	3.01	1.055	.9404

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Language Learning Strategies	*M*	*SD*	Alpha if Item Deleted
Direct Strategies			
36. I think about my progress in learning English.	3.88	.975	.9415
V. Affective Strategies			
37. I try to relax whenever I feel afraid of using English.	3.34	.914	.9416
38. I encourage myself to speak English even when I am afraid of making a mistake.	3.50	.884	.9415
39. I give myself a reward or treat when I do well in English.	2.83	1.057	.9421
40. I notice if I am tense or nervous when I am studying or using English.	2.91	1.160	.9443
41. I write down my feelings in a language learning diary.	2.01	1.102	.9422
42. I talk to someone else about how I feel when I am learning English.	2.95	1.146	.9425
VI. Social Strategies			
43. If I do not understand something in English, I ask the other person to slow down or say it again.	3.42	1.010	.9421
44. I ask English with other students.	3.17	1.060	.9411
45. I practice English with other students.	2.69	1.084	.9407
46. I ask for help from English speakers.	2.69	1.093	.9410
47. I ask questions in English.	2.44	1.090	.9410
48. I try to learn about the culture of English speakers.	2.67	1.145	.9412

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APPENDIX E

Result on the Level of Life Skills of 570 First-Year Students

Domain	Life Skills Components	Minimum Scores	Maximum Score	*M*	*SD*	Life Skills Level
Cognitive	Critical thinking	14.00	30.00	23.16	2.65	moderate
	Creative thinking	12.00	30.00	21.52	2.90	high
Affective	Self-awareness	18.00	36.00	29.07	3.37	moderate
	Empathy	23.00	42.00	36.34	3.54	moderate
	Self-esteem	23.00	42.00	33.44	3.67	moderate
	Social responsibility	20.00	42.00	35.59	3.70	moderate
Psychomotor	Interpersonal relationship and communication skills	25.00	50.00	38.23	4.46	moderate
	Decision making and problem solving	27.00	50.00	40.35	4.15	moderate
	Coping with emotion and coping with stress	14.00	36.00	25.92	3.76	moderate
	Total Score	226.00	344.00	283.62	21.50	moderate

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Descriptive Statistic Results on the Level of Life Skills among 570 First-Year Students Reported on Each Item

Life Skills	*M*	*SD*	Alpha if Item Deleted
I. ด้านพุทธิพิสัย (Cognitive Domain)			
การคิดวิเคราะห์ (Critical Thinking)			
1. ฉันมักจะมองอะไรหลาย ๆ แง่มุม	2.46	.552	.9118
2. ฉันบอกได้ว่าการกระทำของฉันดีหรือไม่ดี	2.64	.510	.9122
3. เมื่อพบปัญหาฉันจะพยายามคิดหาสาเหตุ	2.49	.550	.9118
4. ฉันเป็นคนไม่เชื่ออะไรง่าย ๆ	2.18	.614	.9125
5. ถ้าเพื่อนบอกว่าดี ฉันก็เชื่อว่าดี	2.23	.617	.9129
6. ฉันเบื่อที่จะทำอะไรแล้วต้องมานั่งคิดวางแผน	2.39	.704	.9116
7. ฉันชอบคิดคาดการณ์สิ่งต่าง ๆ ล่วงหน้า	2.52	.578	.9128
8. ฉันคิดเลือกสิ่งที่เป็นประโยชน์มากกว่าสิ่งที่ชอบ	1.98	.644	.9127
9. ฉันคิดโดยใช้เหตุผลมากกว่าความเคยชิน	2.14	.570	.9117
10. ฉันมักจะสรุปสิ่งหนึ่งสิ่งใด โดยใช้เหตุผลส่วนตัว	2.14	.642	.9127
ความคิดสร้างสรรค์ (Creative Thinking)			
11. ฉันชอบเรียนรู้สิ่งใหม่	2.51	.569	.9115
12. ฉันชอบเสนอความคิดใหม่	2.15	.618	.9118
13. ฉันชอบทำตามสิ่งที่มีผู้ทำมาก่อน	2.17	.609	.9123
14. ฉันไม่กลัวการเปลี่ยนแปลง	2.09	.758	.9120
15. ฉันชอบสภาพแวดล้อมที่มีระเบียบแบบแผน	1.82	.733	.9155
16. ฉันสามารถขยายความคิดได้มากมาย	2.11	.583	.9115
17. ฉันไม่ชอบคิดต่อจากสิ่งที่คนอื่นคิดไว้	2.19	.667	.9134
18. ฉันชอบคิดค้นหาวิธีการใหม่ ๆ	2.17	.631	.9117
19. ฉันชอบคิดแตกต่างจากคนอื่น	2.19	.649	.9125
20. ฉันคิดอย่างรอบคอบก่อนทำ	2.13	.610	.9116
II. ด้านจิตพิสัย (Affective Domain)			
การตระหนักรู้ในตน (Self-Awareness)			
21. ฉันบอกความรู้สึกที่แท้จริงได้ว่าชอบหรือไม่ชอบอะไร	2.41	.642	.9119
22. ฉันรู้ตัวเสมอว่ากำลังมีอารมณ์อย่างไร	2.60	.545	.9113
23. ฉันรู้สาเหตุที่ทำให้ฉันผิดหวังหรือเสียใจ	2.59	.553	.9118
24. ฉันปรับอารมณ์ให้เป็นปกติได้เร็ว	2.24	.673	.9121
25. หากมีคนโต้แย้งฉันมักแสดงออกอาการไม่พอใจ	2.38	.678	.9126
26. ฉันมีจุดเด่นในตัวเอง	2.13	.668	.9117
27. ฉันมีจุดที่ต้องปรับปรุงในตัวเอง	2.67	.502	.9128

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Life Skills	*M*	*SD*	Alpha if Item Deleted
III. ด้านจิตพิสัย (Affective Domain) (ต่อ)			
28. ฉันใส่ใจในการหาจุดบกพร่องและปรับปรุงตนเองเสมอ	2.34	.571	.9117
29. ฉันรู้ความสามารถของตนเอง	2.41	.611	.9116
30. ฉันมักทำในสิ่งที่ตรงกับความสามารถ	2.15	.672	.9122
31. ฉันบอกได้ว่าสิ่งที่ฉันทำ ฉันทำได้ดีหรือไม่ดี	2.49	.541	.9118
32. ฉันยินดีที่จะรับฟังคำวิจารณ์จากคนอื่น	2.65	.509	.9118
ความเห็นใจผู้อื่น (Empathy)			
33. ฉันยอมรับว่าคนเรามีความแตกต่าง	2.84	.387	.9119
34. ฉันยอมรับผู้อื่นที่มีความแตกต่างจากฉัน	2.78	.421	.9120
35. ฉันสามารถสังเกตอารมณ์ผู้อื่นจากสีหน้าและแววตา	2.62	.531	.9124
36. ฉันไม่ใส่ใจกับความต้องการของผู้อื่น	2.72	.571	.9122
37. ฉันยินดีรับฟังความทุกข์ร้อนของเพื่อน	2.76	.468	.9118
38. ฉันรู้สึกไม่สบายใจเมื่อเพื่อนประสบปัญหา	2.60	.525	.9122
39. ฉันรู้สึกเห็นใจผู้ที่กำลังเดือดร้อน	2.69	.486	.9116
40. ฉันชอบช่วยเหลือคนอื่นเมื่อมีโอกาส	2.58	.518	.9116
41. ฉันรู้สึกเป็นภาระเมื่อต้องรับผิดชอบงานของคนอื่น	2.20	.666	.9122
42. ฉันชื่นชมกับความสำเร็จของเพื่อน	2.72	.484	.9115
43. ฉันไม่สนใจกับความรู้สึกของคนรอบข้าง	2.76	.518	.9121
44. ฉันเป็นที่พึ่งของเพื่อน ๆ ได้	2.24	.529	.9113
45. ฉันอยากเห็นผู้อื่นมีความสุข	2.78	.433	.9119
46. ฉันไม่อยากยุ่งกับเรื่องของคนอื่น	2.04	.666	.9126
ความภูมิใจในตนเอง (Self-Esteem)			
47. เมื่อฉันทำผิดพลาดฉันจะขาดความมั่นใจ	1.62	.621	.9127
48. ฉันชื่นชมกับความสำเร็จของตัวเอง	2.64	.544	.9120
49. ฉันรู้สึกว่าตัวเองไร้ค่า	2.68	.566	.9117
50. ฉันพอใจในสิ่งที่ฉันมีอยู่	2.44	.611	.9116
51. ฉันรู้สึกไม่เป็นตัวของตัวเอง	2.50	.636	.9119
52. ฉันมีความรู้สึกที่ดีต่อตัวเอง	2.56	.535	.9114
53. ฉันรู้ว่าตัวเองมีคุณค่าไม่น้อยไปกว่าคนอื่น	2.52	.578	.9116
54. การได้รับคำวิจารณ์จากผู้อื่นเป็นโอกาสที่จะพัฒนาตัวเอง	2.69	.482	.9117
55. ฉันเชื่อว่าตัวเองมีความสามารถ	2.51	.547	.9112
56. ฉันรับผิดชอบต่อผลที่เกิดขึ้นจากการตัดสินใจของฉัน	2.69	.472	.9114
57. ฉันสามารถเอาชนะอุปสรรคในชีวิตได้	2.33	.531	.9115
58. ฉันกล้าแสดงความคิดเห็นในเรื่องต่าง ๆ	2.24	.582	.9115
59. ฉันมักจะคล้อยตามความคิดเห็นของคนอื่น	2.09	.590	.9123
60. ฉันจะทำสิ่งใดก็ต่อเมื่อคนอื่นยอมรับ	1.93	.636	.9135

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Life Skills	*M*	*SD*	Alpha if Item Deleted
ความรับผิดชอบต่อสังคม (Social Responsibility)			
61. ฉันเป็นคนมีวินัยในตนเอง	2.18	.650	.9121
62. ฉันเป็นคนตรงต่อเวลา	2.21	.638	.9124
63. ฉันรู้สึกผิดถ้าทิ้งขยะไม่เป็นที่เป็นทาง	2.56	.587	.9121
64. กฎระเบียบเป็นสิ่งที่ฝ่าฝืนได้	2.22	.680	.9125
65. การปฏิบัติตามกฎระเบียบเป็นสิ่งที่เสียเวลา	2.68	.591	.9119
66. ฉันยินดีเสียสละหากทำให้สังคมดีขึ้น	2.47	.546	.9118
67. ฉันยินดีให้ความร่วมมือกับส่วนรวม	2.58	.508	.9112
68. ฉันเต็มใจให้ความร่วมมือกับกลุ่มเพื่อให้งานสำเร็จ	2.76	.437	.9114
69. ฉันรู้สึกผิดเมื่อแสดงความเห็นแก่ตัว	2.75	.479	.9121
70. ฉันรู้สึกผิดเมื่องานส่วนรวมไม่สำเร็จ	2.62	.542	.9123
71. ฉันยินดีรับผิดชอบหากการกระทำของฉันมีผลกระทบต่อส่วนรวม	2.73	.473	.9120
72. ฉันรู้สึกไม่สบายใจหากคนอื่นเดือดร้อนจากการกระทำของฉัน	2.84	.394	.9121
73. ฉันคิดว่าการรับผิดชอบต่อสังคมเป็นเรื่องไกลตัว	2.65	.587	.9119
74. ฉันคิดว่าการรับผิดชอบต่อสังคมไม่ใช่เรื่องของเด็ก	2.34	.789	.9131
IV. ด้านทักษะพิสัย (Psychomotor Domain)			
การสร้างสัมพันธภาพและการสื่อสาร (Interpersonal Relationship and Communication)			
75. คนอื่นมักเห็นคล้อยตามในสิ่งที่ฉันพูด	2.01	.522	.9121
76. เวลาที่ต้องติดต่อกับผู้อื่น เพื่อน ๆ มักให้ฉันเป็นผู้นำ	1.85	.677	.9124
77. คนอื่นมักบอกว่าฉันพูดเข้าใจง่าย ชัดเจน	1.86	.648	.9125
78. ฉันสามารถฟังและจับใจความได้ดี	2.12	.625	.9116
79. ฉันชอบทำงานร่วมกับผู้อื่น	2.24	.636	.9116
80. หากทำงานร่วมกับผู้อื่นฉันมักทำได้ดี	2.14	.585	.9118
81. ฉันไม่ค่อยอยากรู้จักกับคนอื่นมากนัก	2.57	.627	.9119
82. คนอื่นมักบอกว่าฉันเป็นคนหยิ่ง	2.59	.646	.9121
83. ฉันมีความเป็นกันเองกับทุกคน	2.59	.575	.9118
84. ฉันรู้สึกลำบากใจเมื่อต้องคุยกับคนไม่รู้จัก	2.21	.727	.9123
85. ฉันปฏิเสธคนอื่นไม่ค่อยเป็น	2.16	.710	.9148
86. เมื่อมีความขัดแย้งฉันมักหลบไปห่าง ๆ	2.09	.705	.9127
87. ฉันมักกังวลเมื่อต้องไปพบปะกับคนที่ไม่รู้จัก	2.08	.719	.9119
88. ฉันรู้สึกว่าเป็นที่ไว้วางใจของเพื่อน ๆ	2.28	.569	.9117
89. ฉันชอบมองโลกในแง่ร้ายไว้ก่อน	2.43	.698	.9116
90. ฉันเป็นคนจริงใจกับคนอื่น	2.71	.483	.9115
91. เพื่อนส่วนมากชอบฉัน	2.32	.510	.9115

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Life Skills	*M*	*SD*	Alpha if Item Deleted
การตัดสินใจและการแก้ปัญหา (Decision Making and Problem Solving)			
92. ก่อนตัดสินใจฉันมักจะคิดอย่างรอบคอบ	2.31	.602	.9113
93. ฉันชอบมองอะไรหลาย ๆ มุม	2.51	.572	.911
94. ฉันชอบการตัดสินใจที่ฉับไวหากมีปัญหาค่อยแก้เอาข้างหน้า	2.24	.727	.9129
95. ฉันชอบตัดสินใจตามเพื่อน ๆ หรือตามคนส่วนใหญ่	2.13	.637	.9117
96. ฉันสามารถแก้ปัญหาเฉพาะหน้าได้ดี	2.11	.565	.9119
97. ฉันชอบตัดสินใจเสี่ยง ๆ เพื่อให้เกิดความตื่นเต้น	2.33	.702	.9134
98. เมื่อต้องทำสิ่งใด ฉันอยากรู้ที่มาที่ไปของสิ่งนั้นก่อน	2.49	.566	.9121
99. ฉันชอบทำงานตามคำสั่งมากกว่าให้ตัดสินใจเอง	2.33	.683	.9117
100. เมื่อทำสิ่งใดแล้วเกิดปัญหา ฉันจะเลิกทำสิ่งนั้น	2.43	.644	.9122
101. เมื่อทำสิ่งใดแล้วเกิดปัญหา ฉันจะค้นหาสาเหตุให้พบ	2.28	.567	.9115
102. เมื่อต้องแก้ไขปัญหา ฉันมักค้นหาทางเลือกหลาย ๆ ทาง	2.40	.571	.9114
103. ฉันเชื่อว่าทุกปัญหามีทางออกเสมอ	2.72	.485	.9115
104. ฉันชอบแก้ปัญหาด้วยตนเอง โดยไม่ต้องปรึกษาใคร	2.20	.732	.9135
105. หากไม่มั่นใจ ฉันมักปรึกษาคนอื่นก่อนตัดสินใจ	2.46	.598	.9129
106. เมื่อฉันตัดสินใจแล้ว ผลจะเกิดอย่างไรฉันไม่สนใจ	2.29	.744	.9131
107. ฉันชอบคาดการณ์ล่วงหน้าในสิ่งที่จะลงมือทำ	2.49	.569	.9123
108. ฉันยอมรับผลที่จะเกิดจากการตัดสินใจของฉัน	2.63	.519	.9117
การจัดการกับอารมณ์และความเครียด (Coping with Emotion and Stress)			
109. ฉันเป็นคนใจเย็น ไม่ค่อยโกรธใครง่าย ๆ	2.13	.761	.9126
110. ฉันแสดงออกอย่างเหมาะสมเมื่อมีอารมณ์โกรธ	2.27	.636	.9120
111. คนอื่นมักบอกว่าฉันเป็นคนเก็บอารมณ์ได้ดี	2.10	.708	.9123
112. ฉันเป็นคนไม่กลัวความผิดหวัง	1.72	.755	.9126
113. ฉันเป็นคนที่ไม่จมอยู่กับอดีต	1.99	.682	.9123
114. ฉันไม่กล้าเผชิญหน้ากับความผิดหวังหรือความเสียใจ	2.36	.679	.9114
115. เมื่ออยู่ในภาวะที่ตึงเครียดฉันมักหาทางออกได้	2.22	.570	.9118
116. เมื่อรู้สึกเครียดฉันมักหากิจกรรมอย่างอื่นทำ	2.55	.583	.9119
117. เมื่อมีเรื่องไม่สบายใจฉันมักอยู่คนเดียว	2.00	.759	.9128
118. ฉันเป็นคนอารมณ์มั่นคง ไม่เปลี่ยนแปลงง่าย	1.87	.672	.9126
119. คนอื่นมักบอกว่าฉันเป็นคนร่าเริง อารมณ์ดี	2.46	.593	.9119
120. ฉันเป็นคนเคร่งเครียดและจริงจังกับทุกเรื่อง	2.24	.703	.9131

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APPENDIX F

Results of Pearson's and Spearman Rank Correlation Coefficient

Correlation Coefficient between Language Learning Strategies and the Cognitive Domain of Life Skills

		Language Learning Strategies	Cognitive Domain
Language Learning Strategies	Pearson Correlation	1	.348(**)
	Sig. (2-tailed)		.000
	N		570
Cognitive Domain	Pearson Correlation		1
	Sig. (2-tailed)		
	N		

** Correlation is significant at the 0.01 level (2-tailed).

			Language Learning Strategies	Cognitive Domain
Spearman's rho	Language Learning Strategies	Correlation Coefficient	1.000	.338(**)
		Sig. (2-tailed)		.000
		N		570
	Cognitive Domain	Correlation Coefficient		1.000
		Sig. (2-tailed)		
		N		

** Correlation is significant at the 0.01 level (2-tailed)

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Correlation Coefficient between Direct and Indirect Strategies of Language Learning Strategies and Critical Thinking and Creative Thinking of Life Skills

		Direct Strategies	Indierct Strategies	Critical Thinking	Creative Thinking
Direct Strategies	Pearson Correlation	1	.748(**)	.238(**)	.325(**)
	Sig. (2-tailed)		.000	.000	.000
	N		570	570	570
Indirect Strategies	Pearson Correlation		1	.215(**)	.303(**)
	Sig. (2-tailed)			.000	.000
	N			570	570
Critical Thinking	Pearson Correlation			1	.424(**)
	Sig. (2-tailed)				.000
	N				570
Creative Thinking	Pearson Correlation				1
	Sig. (2-tailed)				
	N				

** Correlation is significant at the 0.01 level (2-tailed)

			Direct Strategies	Indirect Strategies	Critical Thinking	Creative Thinking
Spearman's rho	Direct Strategies	Correlation Coefficient	1.000	.711(**)	.238(**)	.313(**)
		Sig. (2-tailed)		.000	.000	.000
		N		570	570	570
	Indirect Strategies	Correlation Coefficient		1.000	.213(**)	.296(**)
		Sig. (2-tailed)			.000	.000
		N			570	570
	Critical Thinking	Correlation Coefficient			1.000	.400(**)
		Sig. (2-tailed)				.000
		N				570
	Creative Thinking	Correlation Coefficient				1.000
		Sig. (2-tailed)				
		N				

** Correlation is significant at the 0.01 level (2-tailed)

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Key for Correlation Coefficient between Six Categories of Language Learning Strategies and Critical Thinking and Creative Thinking of Life Skills

Memory Strategies	MEM
Cognitive Strategies	COG
Compensation Strategies	COM
Metacognitive Strategies	META
Affective Strategies	AFFEC
Social Strategies	SOCI
Critical Thinking	CRI
Creative Thinking	CRE

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Correlation Coefficient between Six Categories of Language Learning Strategies and Critical Thinking and Creative Thinking of Life Skills

		MEM	COG	COM	META	AFFEC	SOCI	CRI	CRE
MEM	Pearson Correlation	1	.630(**)	.434(**)	.541(**)	.423(**)	.549(**)	.254(**)	.329(**)
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000
	N		570	570	570	570	570	570	570
COG	Pearson Correlation		1	.641(**)	.708(**)	.451(**)	.630(**)	.215(**)	.279(**)
	Sig. (2-tailed)			.000	.000	.000	.000	.000	.000
	N			570	570	570	570	570	570
COM	Pearson Correlation			1	.554(**)	.377(**)	.471(**)	.141(**)	.223(**)
	Sig. (2-tailed)				.000	.000	.000	.001	.000
	N				570	570	570	570	570
META	Pearson Correlation				1	.455(**)	.633(**)	.150(**)	.284(**)
	Sig. (2-tailed)					.000	.000	.000	.000
	N					570	570	570	570
AFFEC	Pearson Correlation					1	.534(**)	.187(**)	.216(**)
	Sig. (2-tailed)						.000	.000	.000
	N						570	570	570
SOCI	Pearson Correlation						1	.203(**)	.254(**)
	Sig. (2-tailed)							.000	.000
	N							570	570
CRI	Pearson Correlation							1	.424(**)
	Sig. (2-tailed)								.000
	N								570
CRE	Pearson Correlation								1
	Sig. (2-tailed)								
	N								

** Correlation is significant at the 0.01 level (2-tailed)

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Correlation Coefficient between Six Categories of Language Learning Strategies and Critical Thinking and Creative Thinking of Life Skills (cont.)

			MEM	COG	COM	META	AFFEC	SOCI	CRI	CRE
Spearman's rho	MEM	Correlation Coefficient	1.000	.601(**)	.404(**)	.486(**)	.390(**)	.497(**)	.253(**)	.307(**)
		Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000
		N		570	570	570	570	570	570	570
	COG	Correlation Coefficient		1.000	.601(**)	.667(**)	.418(**)	.590(**)	.215(**)	.281(**)
		Sig. (2-tailed)			.000	.000	.000	.000	.000	.000
		N			570	570	570	570	570	570
	COM	Correlation Coefficient			1.000	.531(**)	.339(**)	.430(**)	.150(**)	.216(**)
		Sig. (2-tailed)				.000	.000	.000	.000	.000
		N				570	570	570	570	570
	META	Correlation Coefficient				1.000	.406(**)	.573(**)	.145(**)	.276(**)
		Sig. (2-tailed)					.000	.000	.001	.000
		N					570	570	570	570
	AFFEC	Correlation Coefficient					1.000	.498(**)	.189(**)	.222(**)
		Sig. (2-tailed)						.000	.000	.000
		N						570	570	570
	SOCI	Correlation Coefficient						1.000	.185(**)	.231(**)
		Sig. (2-tailed)							.000	.000
		N							570	570
	CRI	Correlation Coefficient							1.000	.400(**)
		Sig. (2-tailed)								.000
		N								570
	CRE	Correlation Coefficient								1.000
		Sig. (2-tailed)								
		N								

** Correlation is significant at the 0.01 level (2-tailed)

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APPENDIX G

Results of Stepwise Regression Analyses

Direct strategies influenced the use of critical thinking skills of 570 first-year students

Independent Variable	Dependent Variable	*F*	*p*	*β*	*t*	*p*
Direct Strategies	Critical Thinking	34.138	.000	.238	5.843	.000

Direct and indirect strategies influenced the use of creative thinking skills of 570 first-year students

Independent Variable	Dependent Variable	*F*	*p*	*β*	*t*	*p*
Direct Strategies	Creative Thinking	67.110	.000	.325	8.192	.000

Independent Variable	Dependent Variable	*F*	*p*	*β*	*t*	*p*
Direct Strategies	Creative Thinking	36.389	.000	.224	3.757	.000
Indirect Strategies		36.389	.000	.135	2.275	.023

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Memory strategies and affective strategies of language learning strategies influenced the use of critical thinking skills among 570 first-year students

Independent Variable	Dependent Variable	*F*	*p*	*β*	*t*	*p*
Memory Strategies	Critical Thinking	39.208	.000	.254	6.262	.000

Independent Variable	Dependent Variable	*F*	*p*	*β*	*t*	*p*
Memory Strategies	Critical Thinking	22.057	.000	.213	4.779	.000
Affective Strategies		22.057	.000	.096	2.158	.031

Memory strategies and metacognitive strategies of language learning strategies influenced the use of creative thinking skills among 570 first-year students

Independent Variable	Dependent Variable	*F*	*p*	*β*	*t*	*p*
Memory Strategies	Creative Thinking	68.728	.000	3.29	8.290	.000

Independent Variable	Dependent Variable	*F*	*p*	*β*	*t*	*p*
Memory Strategies	Creative Thinking	40.041	.000	.248	5.296	.000
Metacognitive Strategies		40.041	.000	.150	3.199	.001

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BIOGRAPHY

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