

# การพัฒนาการจัดฝึกอบรมการสอนภาษาอังกฤษสำหรับครูผู้สอนภาษาอังกฤษ ในระดับมัธยมศึกษาตอนต้นโดยใช้หลักการกิจกรรมทางสมอง เป็นฐานการเรียนรู้ในรูปแบบกิจกรรมค่าย

## The Development of Training Course for English Teachers of Lower Secondary Level Based on Brain Activities through English Camp

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### บทคัดย่อ

การวิจัยครั้งนี้เป็นงานวิจัยเชิงทดลองเพื่อพัฒนาการจัดฝึกอบรมการสอนภาษาอังกฤษสำหรับครูผู้สอนภาษาอังกฤษ โดยใช้หลักการกิจกรรมทางสมองเป็นฐานการเรียนรู้ในรูปแบบกิจกรรมค่าย โดยกลุ่มตัวอย่างที่ใช้คือ ครูผู้สอนกลุ่มสาระภาษาต่างประเทศ (ภาษาอังกฤษ) ในระดับมัธยมศึกษาตอนต้น โดยมีวัตถุประสงค์เพื่อ 1) ประเมินประสิทธิภาพของการฝึกอบรม 2) ประเมินความสามารถของผู้เข้ารับการฝึกอบรมด้านการสื่อสารภาษาอังกฤษ 3) ให้ความรู้แก่ผู้เข้ารับการฝึกอบรมทางด้านกิจกรรมทางสมอง 4) ส่งเสริมให้ผู้เข้ารับการอบรมประยุกต์ความรู้ไปใช้ในการสอนในชั้นเรียน ผู้เข้ารับการอบรมประกอบด้วย ครูสาขาวิชาภาษาอังกฤษ จำนวน 26 คน ใช้วิธีการดำเนินการวิจัยและพัฒนา เครื่องมือที่ใช้ในการวิจัยคือ รูปแบบการฝึกอบรม ครูสอนภาษาอังกฤษแบบค่ายกิจกรรมที่สร้างขึ้นโดยดำเนินการวิเคราะห์ปัญหาและความต้องการของครูผู้สอนกลุ่มสาระภาษาต่างประเทศ (ภาษาอังกฤษ) มัธยมศึกษาตอนต้น และกลุ่มผู้เชี่ยวชาญสาขาต่างๆ ที่เกี่ยวข้อง จากนั้นจึงทำการสังเคราะห์ข้อมูลที่รวบรวมได้ สร้างเป็นรูปแบบการฝึกอบรม และนำไปทำการวิจัยเชิงทดลอง

การวิเคราะห์ข้อมูล ประกอบด้วย 1) ในการศึกษาลักษณะการเรียนรู้ที่ใช้การสัมภาษณ์แบบปลายเปิด และมีรอบคำถาม และนำข้อมูลมาคำนวณหาความถี่และร้อยละ 2) การเปรียบเทียบความสามารถทางด้านสื่อสารภาษาอังกฤษก่อนและหลังการฝึกอบรม โดยการใช้ t-test ในการวิเคราะห์ข้อมูล 3) ในการประเมินความรู้ทางด้านกิจกรรมสมอง เปรียบเทียบได้จากคะแนนแบบทดสอบ ซึ่งนำมาคำนวณด้วย t-test 4) ในการศึกษาความสามารถในการประยุกต์ความรู้ของผู้เข้าร่วมอบรม ใช้วิธีวิเคราะห์เนื้อหา 5) ในการทดสอบประสิทธิภาพของการฝึกอบรม ใช้ E1/E2 ในการประเมิน

ผลจากการศึกษาแสดงให้เห็นว่า การฝึกอบรมการสอนภาษาอังกฤษ โดยใช้หลักการกิจกรรมทางสมอง มีประสิทธิภาพตามที่ได้ตั้งสมมุติฐานไว้ ผู้เข้าร่วมอบรมมีความสามารถในการสื่อสารภาษาอังกฤษดีขึ้น มีความเข้าใจความรู้เกี่ยวกับหลักการกิจกรรมทางสมองมากขึ้น สามารถนำความรู้ที่ได้รับจากการอบรม นำไปประยุกต์กับกิจกรรมในห้องเรียนได้ และมีความเข้าใจในการประยุกต์ใช้เทคนิคการเรียนรู้ที่เหมาะสม

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## Abstract

This research was an experimental study on the development of training course arranged in the form of English camp with brain-based activities for lower secondary teachers. The course contents were analyzed from the needs of adult language learners. The purposes of this research were 1) to evaluate the effectiveness of this training, 2) to find out their ability to communicate after the training camp, 3) to increase their brain-based knowledge, and 4) to encourage them to apply the knowledge gained from the camp to classrooms. The sample included 26 English teachers of lower secondary level in Lampang. They were native Thai teachers both male and female whose ages ranged from 25-35 years of age. For the development of the teachers with brain-based activities method, the data were collected by using the semi-structured interview, the English achievement test, the brain-based knowledge test, and the assigned tasks.

Regarding data analysis, the data were analyzed by the following means: 1) to investigate the teachers' learning styles, the data obtained from the semi-structured interview were analyzed by frequency and percentage, 2) to compare if they could communicate better after the training camp, the scores from the English achievement test were analyzed by dependent t-test, 3) to evaluate if they could increase brain-based knowledge, the scores from the brain-based knowledge test were calculated by means of dependent t-test, 4) to investigate if they could apply the knowledge from the camp to the classrooms, the content analysis was conducted with the assigned tasks, and 5) to evaluate the effectiveness of this training, effectiveness index was implemented. The findings from this study showed that there were beneficial theoretically and practically as follows: (1) For theoretical use, the findings could expand knowledge in the knowledge field of language acquisition especially on brain-based theory and could be an evidence to support the importance of brain-based theory to language learning and teaching. (2) Regarding practical use, the study results could increase teachers' awareness on students' different learning styles and could increase teachers' awareness on applying brain-based activity to increase students' achievement.

**Keywords :** Brain-based activities, training course

## 1. Introduction and background of the study

Thailand has always been a country with one official language-Thai. This is owed to two main factors: firstly, that Thailand has never been colonized and secondly, the concept of national stability. Since we have entered into a globalized society, English has assumed an important role in every sector of Thailand, especially in terms of business, education, science, and technological progress. English is used as a means to communicate, negotiate and execute transactions with the native English speaking counterparts. Thus proficiency in English language is a necessity.

The Thai National Curriculum is the key determinant for English language policy in the country. Its necessity has resulted in a reform in the advance of technology and education. There have already been proposals to make Thailand a bilingual country (Crystal 2003, p. 109). However, we cannot deny the fact that the level of English proficiency continues to be significantly lower in comparison with other Asian countries (eg. Malaysia, Philippines and Singapore).

Teachers play an important role in the language achievement of the students. However, the lack of qualified and skillful teachers is a major problem that we have to concentrate on. The developed teachers can increase learning quality and will make students learn more efficiently. First of all, they should have an awareness on students' learning styles. One way to solve the problems is to provide teachers with training that employs a suitable teaching methodology. Gardner (1983) believes that before we use a learning style in a classroom, we should first understand it as an educator and as language learners.

Traditional learning includes memorizing information in order to be retrieved when necessary. Brain-based learning stresses the principles that the brain is a parallel processor; it performs many functions simultaneously (Caine & Caine, 1995). This

idea of the brain being a parallel processor reinforces the definitions of brain-based research, which stresses the fact that the brain is focused on multiple ideas and concepts at any given moment.

Brain-based theory provides a sharper and deeper concept of what learning is and of how it occurs in humans (Neve, Hart, Thomas, 1986). There are many applications to brain-based learning, many provided by top educational publishers, such as Kagan, Pearson, and MacMillan. These resources are available to teachers through Internet tools, programs, and books designed to help educators better understand a brain-based approach to education.

Dr. Howard Gardner, a psychologist and professor from Harvard University, developed the Multiple Intelligences Theory (MI) in 1983. His theory is an important contribution to educational practices and has reformed movements around the world. It challenges the traditional view of "IQ" and enables educators to take a renewed look at our views about learning and development. In the book *Frames of Mind*, Gardner questioned the validity of "IQ" score in deciding human intelligence because IQ tests only measure one's ability to handle academic subjects, and it predicts little of success in later life. He proposed that there are at least seven basic intelligences ((1) Visual/Spatial Intelligence, (2) Musical Intelligence, (3) Verbal/Linguistic Intelligence,(4) Logical/Mathematical Intelligence, (5) Interpersonal Intelligence, (6) Intrapersonal Intelligence, and (7) Bodily/Kinesthetic Intelligence). In 1996, Gardner added the eighth intelligence-- Naturalist Intelligence to his theory. Gardner pointed out that "it is not if you are smart, but how you are smart." (Gardner, 1983). The following criteria have been used in MIT to identify intelligence: it "entails the ability to solve problems, it involves a "biological proclivity," it has "an identifiable neurological core operation or set of operations" and it is susceptible to encoding in a symbol

system...which captures and conveys important forms of information” (Gardner 1999: 15-16). These different kinds of intelligences reflect learners’ myriad ways of interacting with the world. Although each person possesses all intelligences to some degree, some intelligences are more strongly exhibited than others. By various stimuli and education, MI can be nurtured and strengthened or ignored and weakened.

In traditional teaching method, teaching and learning process in English class is very “teacher centered” in a form of lecture with several drawbacks. First, students have no involvement no activities in the class. Second, students have no freedom no change to express their abilities.

Research suggests that the nature of English camp has implications for adolescent development because in a camp setting many of the socio-economic and cultural barriers that identify teenagers at home or in the community may not be as prevalent (Garst, Scheider & Baker, 2001). Moreover, rich and stimulating environments can enhance their memory and cognitive functions (Society for Neuroscience; Brain Facts, 2008) and research suggests that camp participation impacts youth in multiple ways by enhancing affective (self-esteem and self-concept), cognitive (knowledge, skills, abilities, and attitudes), behavioral (self-reported behaviors and behavioral intentions), physical, social, and spiritual growth (Shepard & Speelman 1986; Gillett et al. 1991; Hopkins & Putnam 1993; Chenery 1994; Brannan & Fullerton 1999; Henderson 2001).

### 1.1 The Purposes of the Study

This research aims at developing English teacher training course with brain-based activities by using seven multiple intelligences. This study was conducted to fulfill the following objectives:

1. To develop a training with brain-based activities for English teachers of lower secondary level through English camp

2. To provide the necessary skills for setting up an English camp

3. To provide teaching techniques to English teachers of lower secondary level based on brain-based activities

4. To validate the effectiveness of the developed training course

5. To arouse an awareness of brain-based activities

Using the most appropriate way of learning will assist language learners to learn faster. Brain activities in a rich-environment will help to grasp the innate intelligences; and consequently, develop English communication competency. Language logical thinking environment in an English camp is pretty much: a setting in which people are surrounded by talking and have plenty of opportunities to communicate with others. The ideal outcome of an English camp setting would be to create an environment of full language immersion. In addition, most people learn language through absorbing words and their meaning from loving familial interactions (Barrett, 2004).

### 1.2 Research Questions

The research study aimed to investigate information for the following questions:

1. What is the effectiveness of this training course?

2. Can the learners improve their communication proficiency after the camp?

3. Do the English camp activities help increase the teachers’ knowledge of brain-based learning?

4. Are they able to apply the knowledge learnt from the camp to the classroom?

5. How does the training course help the learners achieve their own learning styles?

### 1.3 Scope and Limitation of the Study

The general aim of the study is to develop a training course by analyzing the needs of teachers in order to figure out which brain-based activities

are applicable. The course contains the seven multiple intelligences (Spatial, Verbal-Linguistic, Logic-Mathematical, Bodily-Kinesthetic, Musical, Interpersonal, and Intrapersonal).

#### 1.4 Significance of the Study

The results of the study can be used as follows:

##### 1. Theoretical Use

1.1 Expand the knowledge in the field of language acquisition, especially in cognitive theory with a focus on brain-based learning.

1.2 The findings of this research may be used to support the importance of cognitive theory to language learning and teaching.

##### 2. Practical Use

2.1 Increase the teachers' knowledge of the students' different learning styles

2.2 Increase the teachers' knowledge for applying brain-based activities in order to increase the students' achievement

2.3 Gain brain-based English training course through English camp

## 2. Research Methodology

### 2.1 Research Instruments

#### Need Analysis

To elicit teachers' needs towards English, the questionnaires were manipulated to ask the teachers about their problems and needs in English. The needs analysis was administered with teachers. The data gained from the needs analysis were employed to develop the content of teacher training course.

### 2.2 Brain-Based Knowledge Test

An English Brain-Based Test was developed by the researcher step by step. There were sixteen questions that covered seven multiple intelligences. It was checked by three specialists using Item Objective Congruence (IOC) to find out the validity and reliability.

### 2.3 English Achievement Test

An English Achievement Test was developed by the researcher step by step. It was tried out before the implementation phase to find out the levels of difficulty, the levels of discrimination, and the reliability. The results of the trial reveal that the levels of difficulty ( $p$ ) were ranged from 0.2-0.80, the levels of discrimination ( $r$ ) were ranged from 0.2 and the reliability ( $KR 20$ ) was 0.70.

### 2.4 Teacher training camp

The teacher training camp for teachers of lower secondary school was set at Mattayomsart School for 2 days. The course contents contained the seven multiple intelligences (Spatial, Verbal-Linguistic, Logic-Mathematical, Bodily-Kinesthetic, Musical, Interpersonal, and Intrapersonal).

## 3. Results

The findings can be summarized according to the research questions as follows:

### 3.1 What is the effectiveness of this training course?

From the calculation of  $E1/E2$ , the results showed that the percentage of the progress tests was 84.44 and the percentage of the achievement scores was 70.79. The findings (84.44/70.79) indicated that the obtained effectiveness index passed the set  $E1/E2$  (70/70).

### 3.2 Can the learners improve their communication proficiency after the camp?

Twenty six teachers who participated in the training course took the English communication test before and after the training. The mean score obtained from the pre and post-tests showed that the learners could communicate better after the camp.

### 3.3 Do the English camp activities help increase the teachers' knowledge of brain-based learning?

Twenty six teachers who participated in the training took the brain-based knowledge test before

and after the training. This finding indicates that the mean score of the post-test is higher than that of the pre-test at the 0.05 level ( $p < .05$ ,  $t = 6.896$ ). As the mean score increased, it can be concluded that the English camp training provided helped increase the learner's' brain-based knowledge.

### **3.4 Are they able to apply the knowledge learnt from the camp to their classroom?**

The concepts of multiple intelligences the teachers could apply in all lessons were Intrapersonal, Musical, Bodily-Kinesthetic, Verbal-Linguistic and Interpersonal Intelligences. The multiple intelligences that the learners applied the least were Logical-Mathematical and Spatial Intelligence, respectively.

### **3.5 How does the training course help the learners achieve their learning styles?**

The findings showed that the types of multiple intelligences the teachers could apply in all tasks were Intrapersonal, Musical, Bodily-Kinesthetic, Verbal-Linguistic and Interpersonal Intelligences. The multiple intelligences that the learners applied the least were Logical-Mathematical and Spatial Intelligence respectively.

## **4. Discussion**

The most effective brain-based learning environment provides space in which students can move around and socialize, making the traditional classroom design of rows of desks highly ineffective in a learning environment. Instead of creating rows, researchers considered a circular classroom, in which students could see and engage with each other. A circular setup also leaves central space for movement and activity. According to the Florida Education Association, physical activity has been shown to lower student stress and produce new neurons, which enhances the learning experience. So, the more empty space teachers leave in a classroom and the more students get on their feet, the better. This can also be further explained in the following aspects.

### **4.1 Applying the knowledge from the camp to their classroom**

The trainees were required to do a final task to create an English camp that would give their own students a higher probability of success in learning. The trainees created activities that covered all multiple intelligences and applied what they learned to their own camp. The results showed that they were able to create camp activities in English to suit their classroom setting. (Caine, & Caine, n.d., n.p.)

### **4.2 The training course helped the trainees realize their learning styles**

Gardner points out that each intelligence is actually a "fiction;" that is, no intelligence exists by itself in life (except perhaps in very rare instances in savant and brain-injured individuals). In this camp, the researcher provided seven multiple intelligences. Each activity was taught on fractions in seven different ways. The learners were taught specific cues and were provided a different cue for each type of transition.

The integration of learning styles and multiple intelligence theory may minimize the learners' respective limitations and enhance their strengths. The camp provided some practical suggestions as to how the teachers can successfully integrate and apply learning styles and the multiple intelligence theory in the classroom.

However, having an understanding of different teaching approaches and a toolbox with a variety of ways to present content to students is valuable for increasing the accessibility of learning experiences for all students. Providing different contexts for students and engaging a variety of their senses -- for example, learning about fractions through musical notes, flower petals, and a poetry meter -- is supported by research. Specifically:

1. Providing students with multiple ways to access content improves their learning (Hattie, 2011).

2. Providing students with multiple ways to demonstrate knowledge and skills increases engagement and learning. It also provides teachers with more accurate understanding of students' knowledge and skills (Darling-Hammond, 2010).

### 4.3 The effectiveness of this training

Promwong (1978: 136) suggests that the acceptable quality of the effectiveness index (E1/E2) should be at 85/85 if the learning content is identified as learning by memorizing. If the learning content is considered to be a process of developing or changing the learners' behavior and attitudes, the acceptable quality of E1/E2 should be set at 75/75 or 70/70. The learning content of the developed module was not considered to be learning by memorizing. Thus, the acceptable quality of E1/E2 for this training course should be set at 70/70.

From the calculation of E1/E2, the results showed that the percentage of the progress tests was 84.44 and the percentage of the achievement scores was 70.79. The findings indicated that the obtained effectiveness index passed the set E1/E2 (70/70). (See the calculation of E1/E2 in Appendix) These can be explained explicitly by the brain-based activities. The trainees were assigned to do tasks, employing some multiple intelligence. After each task they were asked to complete the exercise on the assigned task promptly. So, they were achieving to do through exercise resulting in high scores of their program test. As mentioned by Wiggins, G., & McTighe, J. (1998) both learning styles and multiple intelligence can work together to form a powerful and integrated model of human intelligence.

### 5. Recommendations

The following recommendations were made for future research.

1. For the preparation of students' learning experience, teachers should include a variety of multiple intelligences in classroom activities i.e. body sculptures, mood setting music, feeling toned

moments, peer sharing, brainstorming, color coding, and quantifications and calculations.

2. Caution of application: the application of brain-based activities should be suitable to the learners' learning styles, age and subjects. So, there should be a study on the type of multiple intelligence that encourages linguistics proficiency, including the member of learners.

3. There should be a study on the retention of language proficiency after learning with this method.

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