# The Effects of Using Dual-Coding Theory in Teaching English Reading Comprehension among Vocational Students at Narathiwat Technical College

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**ABSTRACT :***The purpose of this study was to investigate the effects of using dual-coding theory in teaching English reading comprehension among vocational students at Narathiwat Technical College. The participants of this study were 40 second year vocational students majoring in accounting. This study related to the dual-coding theory. The instruments used in this study were six reading comprehension passages. Each passage consists of six multiple choice questions (four questions for Yes/No questions and two questions for question words), all together were 36 items. The researcher used paired-sample t-test to analyze data. The findings indicated that using dual-coding theory in teaching English can improve students' reading comprehension. This study has crucial perceptions to Ministry of Education, Teacher Training Division and English supervisors as well as English teachers to take consideration on teaching methodologies because serious planning and implementations were required to improve the vocational students' English ability in this province.*

**KEYWORDS:** *Dual-coding theory, Narathiwat Technical College, Paired-sample t-test, Reading comprehension*

## I. INTRODUCTION

English is one of the most important subjects that learnt in almost all schools in every country including Thailand. The reason why it is important because English has become an international language. It is spoken by 700 million people round the world (Crystal, 2003). We use English as a medium to communicate with other countries all over the world. English becomes increasingly vital for Thailand since Thailand becomes a member of the Association of Southeast Asian Nations (ASEAN) in 2015. Thailand has increased efforts to improve English language teaching (ELT) in order to prepare their citizens for the future union of the ASEAN Economic Community (AEC). Thais have their own mother tongue and they learn English as a foreign language. Learning English language affects Thais' career and future benefits. There are four important skills in English; listening, speaking, reading, and writing. The researcher chooses reading as a topic of study.

According to Dorkchandra (2010), reading is regarded as one of the important language skills for those learning English as a foreign or second language (EFL/ESL), for professional development and academic success. However, many Asian countries face problems in teaching reading comprehension, especially Thailand because the teachers prefer to use the conventional method and use Thai as a medium of instruction to teach English language. Although Thai government has made great efforts to improve English skills in vocational and technical education, it still remain as a serious problem because of a lack of interest and poor basic principles of English among Thai vocational and technical students (Choosri&Intharaksa, 2011). As a result, the students' command in English is not satisfactory. The teaching of English skills has been deemed by many to be rather ineffective. Therefore, the demand for good ELT methodologies is crucial.

The area of this study is particular at Narathiwat Technical College which located in Narathiwat province, southern part of Thailand. Narathiwat Technical College is the biggest college in Narathiwat and it promotes success in both areas of academics and career development. Besides, the students come from different backgrounds. The uniqueness of students in this province is language. Majority of the students have to learn four

languages; Thai, Malay, Arabic, and English. They believe that among these four languages, English is the least important to them because they do not use in their daily life (Jehdo, 2009). Students think they study English for the sake of passing the examination. With the reasons, Thai English teachers try to find various methods of teaching in order to attract students' participation. Therefore, this study tends to introduce a new technique which based on dual-coding theory, by integrating pictures in teaching reading comprehension among vocational students at Narathiwat Technical College.

**Problem Statement**

Narathiwat Technical College is one branches of Princess of Naradhiwas University. Majority of the students are Muslim.  The students who choose to study in this college are basically focus on area of career development. English is one of the most difficult subject for them. At the same time English is a compulsory subject that everybody must fulfil and pass examination. English is also a subject that majority of the students in this college fail in examination compared to other subjects. The Office of Vocational Education Commission (2008) reported that vocational and technical college students have limited abilities in listening, speaking, reading, writing or understanding the English language. Additionally, it has been found that Thai technical students' achievements are very poor in all four skills. They do not realize how important the English language is. This is because there is not any motivation for them in learning English (Boonrangsri, 2004).

There are serious problems concerning the standard of English language in Thailand. According to the result of the English Proficiency Index (EPI) 2018 ranked under Education First (EF), Thailand was ranked 64 out of 88 countries (see Table 1).

Table 1.
*English Proficiency Index 2018*

| Ranking | Country Names | Proficiency |
|---------|---------------|-------------|
| 3 | Singapore | Very High |
| 14 | Philippines | High |
| 22 | Malaysia | High |
| 41 | Vietnam | Moderate |
| 51 | Indonesia | Low |
| 64 | Thailand | Low |
| 82 | Myanmar | Very low |
| 85 | Cambodia | Very low |

Source:https://en.wikipedia.org/wiki/EF_English_Proficiency_Index

Table 1 shows the result of the English Proficiency Index 2018 among 88 participating countries. This result showed only eight ASEAN member countries which participated in English Proficiency Index 2018. Thailand was ranked 64 out of the 88 countries which was regarded as low compared to Singapore, Philippines, Malaysia, Vietnam, and Indonesia.

Due to the importance of English and the countless problems faced in learning and teaching English in Thailand as elaborate above, this study aims to investigate the effects of using dual-coding theory in teaching English reading comprehension among vocational students at Narathiwat Technical College.

Research Objective
1. To investigate the effects of using dual-coding theory in teaching English reading comprehension among vocational students at Narathiwat Technical College.

Research Questions
1. How do students perform in answering pre-test and post-test?
2. Is there a significant difference in the mean scores between the pre-test and  the post-test?

## II. LITERATURE REVIEW

According to Paivio (1971), dual-coding theory is a theory of cognition involves relations between verbal and non-verbal systems. This theory further explained that people learn more deeply from words and images than from words or images alone. Hence words and images should be used together in cognitive and educational tasks related to meaning. For example, a student has stored the stimulus concept "cat" as both the word 'cat' and as the image of a cat. When asked to recall the stimulus, the person can retrieve either the word or the image individually, or both simultaneously. If the word is recalled, the image of the cat is not lost and can still be retrieved at a later point in time. In other words, using visuals together with text materials give aseasoning effect which supports in the recalling of information. The following figure shows the sensory systems of Paivio.
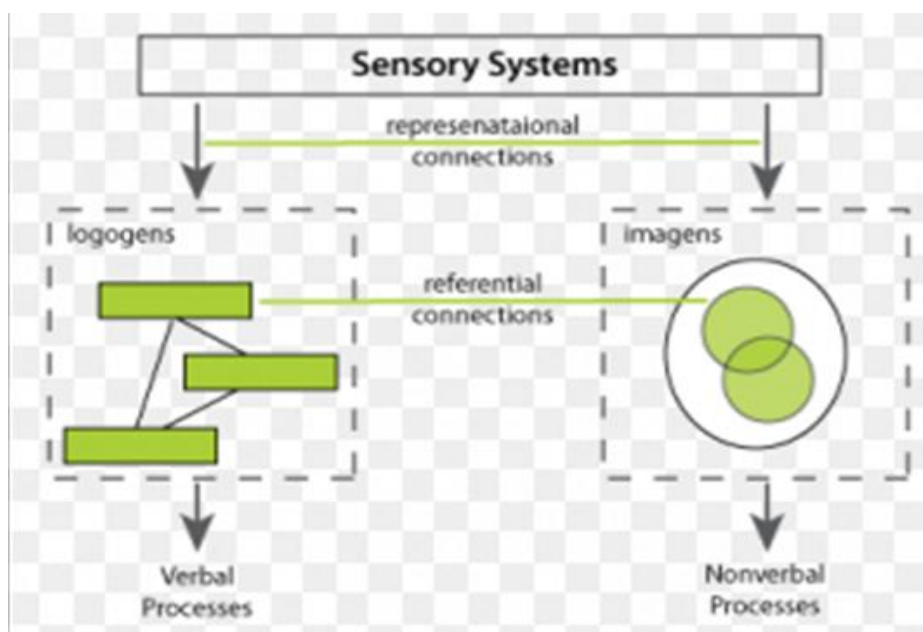


Figure 1. Sensory Systems (Paivio,1971)

Visual here refers to picture which will be used in the study. The researcher would apply this theory on teaching English reading comprehension among vocational students at Narathiwat Technical College.

Narathiwat Technical College is a college where the students generally choose to learn for workforce skill. It means they would focus on the subject that concern to their major. Other subjects are only to fulfil the curriculum and pass examination. English is one of the compulsory subject that majority students fail in the examination. They are not motivated to learn English as much as their major subject. In fact, students need to adapt to an increasingly international job market and working life (Marra, 2013 & Vogt &Kantelinen, 2012) which is English subject should be emphasize. In relation to this, the teacher should play an important role to help students in increasing the ability in learning English reading comprehension. Chun and Plass (1996) asserted that a commonplace principle of effective learning for human is visual memory. They believed that people recall words if they are accompanied with images. Foreign words which are related to actual items or imagery strategy are easier to learn than words lacking these associations.

Woolley (2010) conducted a study on developing reading comprehension: combining visual and verbal cognitive processes. The aim of this study was to investigate the use of pictures to develop reading comprehension. The findings showed that students' reading comprehension performance can be improved when the teacher taught reading comprehension involving pictures.

Nurhayati (2014) carried out a study on using picture series to inspire reading comprehension for the second semester students of English department of Iain Tulungagung. The purpose of the study was to determine the improvement of using pictures in reading comprehension. The results indicated that there was a significant improvement in the result of post-test after applying visuals. The study showed that using pictures can improve reading comprehension.

Novita and Kristiawan (2017) conducted their study on the effect of picture series on students' reading comprehension of analytical exposition text. The total sample of this research were 91 students. The purpose of the study was to examine the effect of picture series on students' reading comprehension. The results showed that teaching reading by using picture series was significant effect on students' reading comprehension.

Roslina (2017) presented an article on the effect of picture story books on students' reading comprehension. The purposes of this study were to investigate the effects of picture story books on the students' reading comprehension and to clarify students' perception on the utilization of picture story books in teaching reading with 30 students. The findings showed that picture story books were able to improve students' reading as well as the students' interest in reading.

Sari (2017) conducted the study on using text-related picture to increase students' reading comprehension of descriptive text. This research was conducted at SMAN 2 Bengkalis, Riau Province. The findings indicated that pictures had a significant effect on subjects' comprehension scores.

Rae (2018) carried out a study on picture cues and reading comprehension: The impact of picture cues on the reading comprehension of first grade students with autism spectrum disorder. The purpose of the study was to improve the reading comprehension of first grade students with autism spectrum disorder. There were 573 students who participate in this study. The findings showed that picture cues can improve reading comprehension.

Based on previous studies can be said that using dual-coding theory by integrating pictures in teaching English reading comprehension is regarded as one of teaching methodologies which encourage the English teachers to use while teaching reading comprehension in order to help students in comprehending the reading text easily. Besides, pictures also attract students to pay more attention on the lesson.

## III.    METHODOLOGY

This section provides details on participants, instruments, procedures employed in current research to answer the research question.

### Participants

This is a quantitative study using descriptive research design. The participants of the study consist of 40 of second year vocational students from Narathiwat Technical College in Narathiwat province, Southern Thailand.

### Instruments

The instruments used in this study were six reading comprehension passages. Each passage consists of six multiple choice questions (four questions for Yes/No questions and two questions for question words), all together are 36 items.

### Procedure

The students took 100 minutes to answer all the questions. Prior to that, the two English teachers from Narathiwat Technical College who have more than five years of experience in teaching English were asked to verify and make sure that the questions and the passages are suitable for the students. The researchers asked permission from the principle of the college to conduct the research. The researcher distributed thequestions and did the correction based on scale given.The total marks for Yes/No questions and question words questions were

converted into percentages. Paired samples t-test was used to analyze the data obtained from the comprehension test.

# IV. RESULTS AND DISCUSSION

This part reports the finding from data collection based on research questions.
Research question 1. How do students perform in answering pre-test and post-test?

Table 2.
Statistics

|  | Pre-test | Post-test |
|---|---|---|
| N Valid | 40 | 40 |
| Missing | 0 | 0 |
| Mean | 23.9000 | 31.1000 |
| Std. Deviation | 0.95542 | 1.31656 |

The results show students' mean score for pre-test is 23.9000 (SD 0.95542) which is at a lower level compared to post-test. While students' mean score for post-test is 31.1000 (SD 1.31656). The findings indicate that students are able to answer pre-test but at lower level compared to the post-test as given in Table 2. It happened because after pre-test the teacher integrated pictures to attract the students in order to pay more attention on the lesson. By looking at the pictures given by the teacher help students to understand the reading text better. As a result, it can improve students' ability in answering comprehension questions.

Research question 2. Is there a significant difference in the mean scores between the pre-test and the post-test?

Table 3. Paired sample t-test comparing pre-test and post-test

| Questions | N | Mean | SD | Mean Different | t-value | df | p-value |
|---|---|---|---|---|---|---|---|
| Pre-test | | 23.9000 | .95542 | | | | |
| | 40 | | | -7.6969 | -33.893 | 39 | .000 |
| Post-test | | 31.1000 | 1.31656 | | | | |

Level of significance is at p<0.0

The findings in Table 3 showed that there is a significant difference in the mean score between pre-test and post-test (t =-33.893, mean difference = -7.6969, df = 39, p =.000). The results also revealed that the students' mean score for post-test is significantly higher than pre-test. To be good in comprehending the reading text the students need to use pictures in order to understand the reading text and later on able to comprehend the text easily. These findings are in line with Woolley (2010), Nurhayati (2014), Novita and Kristiawan (2017), Roslina (2017), Sari (2017), and Rae (2018) who stressed that the use of dual-coding theory help students to understand the texts easily. As a result, the students are able to answer the English reading comprehension questions well.

# V. CONCLUSION

The study which was carried out at Narathiwat Technical College by the researcher to investigate the effects of using dual-coding theory in teaching English reading comprehension among vocational students at Narathiwat Technical College. The results clearly showed that by integrating pictures in teaching English can help students to improve reading comprehension. This study has implications on the teaching and learning English. Using pictures in teaching English reading comprehension should be considered as one of the teaching methodologies in teaching English.Picture is a visual material which offers an attractive and stimulating framework for reading practice and has great potential as an encouragement to develop reading skills. Teaching using picture is very suitable to be applied to the vocational students as a media in teaching reading and also is very helpful for the students in generating and organizing their ideas in reading through picture. So that integrating picture can be very effective way of teaching and learning the English language especially reading skill. The findings of this study also serve as a guide to the Ministry of Education, in particular to the Teacher

Training Division and English supervisors as well as English teachers to use different ways of teaching methods as an important pedagogies for the teaching of English language in educational institutions.

**Suggestion**

In this study, the researcher used only a small sample of 40 students. Future research should engage larger samples which include technical college from different provinces in Thailand to obtain more conclusive findings which can resemble a larger population. In relation to this, the researcher might use both qualitative and quantitative methods in order to get more information regarding teaching and learning English subject among vocational students.

## VI. Acknowledgements

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