

## Thai Students' L2 Reading Comprehension Level for Lower Order Thinking Skills and Higher Order Thinking Skills Questions

**Nuramah Hayikaleng\***

PhD Candidate, Universiti Utara, Malaysia

**Subadrah Madhawa Nair**

Associate Professor, Universiti Utara, Malaysia

**Hariharan N Krishnasamy**

Senior Lecturer, Universiti Utara, Malaysia

### Abstract

The purpose of this study is to investigate the Thai students' L2 reading comprehension level for lower order thinking skills (LOTS) and higher order thinking skills (HOTS) questions. This study seeks to compare the scores between LOTS questions, HOTS questions and overall questions. The participants of this study were 60 first year students from a college in Pattani province, south of Thailand. The instruments used in this study are six reading comprehension passages. Each passage consists of six multiple choice questions (four questions for LOTS and two questions for HOTS). The findings indicated that Thai students' mean scores for the overall achievement in comprehension are only at average level. The findings from paired sample t-test indicate that students mean scores for LOTS questions is significantly higher than HOTS questions. This study has crucial pedagogical implication to Ministry of Education and Teacher Training Division because serious planning and implementations are required to improve students' EFL comprehension for HOTS questions.

**Keywords:** L2 reading comprehension, LOTS questions, HOTS questions, overall questions, EFL

### INTRODUCTION

English is now regarded as a global language. We use English as a medium to communicate with other countries all over the world. People recognize that English is very important for our life. Being most widespread language, it is spoken by 700 million people round the world (Crystal, 2003), and it is also regarded as a prestigious language. Wilkins and Urbanovic (2014) stress that many families are interested to send

their children to study abroad where they can practice English because they believe that having good English can give them a better job. In Thailand, English has been taught as a foreign language (EFL) because Thai people do not use English as an official language. As we know that most of the Asian countries, especially Thailand learn English as a foreign language. It means Thai students use English only in the classroom, outside the class they do not have a chance to practice English and most of their English classes are taught by using Thai language. As a result students' command in English is not satisfactory. English is now regarded as a very important language for Thailand since Thailand becomes a member of ASEAN and ASEAN Charters stated that working language of ASEAN shall be English. In relation to this, the Thai government tries to support English language education at all levels, but Noom-ura (2013) reported that Thai students' level of English is still low compared to Malaysia, the Philippines and Singapore.

Thai students are weak in reading comprehension as highlighted by various researchers (Chomchaiya & Dunworth, 2008; Chomchaiya, 2014; Kasemsap & Lee, 2015; Sawangsamutchai & Rattanavich, 2016; Uraiman, 2011). The weaknesses of reading comprehension are caused by both teachers and students. This study focuses on students reading comprehension in Pattani, southern part of Thailand. The uniqueness of students in this province is language because the majority of them have to learn four languages; namely Malay, Thai, Arabic, and English. The students believe that among these four languages, English is less important to them because they do not use it in their daily life (Jehdo, 2009). They study English for the sake of passing the examination.

Reading is one of the four important language skills for academic success and professional development (Dorkchandra, 2010). Unfortunately, there are many factors affecting students' EFL reading comprehension in Thailand. Tamrackitkun (2010) stressed that, Thai English teachers are still using conventional teaching methods such as chalk and talk and over emphasize on the grammar which make students uninterested in learning English. Kongkert (2013) reported that the common technique used by teachers in teaching reading in Thailand is students are asked to read aloud, reading sentence by sentence, or section by section and then answering comprehension questions. This method of teaching does not promote thinking skills and make students bored. The researcher concluded that the quality of English language teaching and learning is unsatisfactory especially in the area of reading comprehension.

According to the latest result of the Program for International Student Assessment (PISA) which was conducted by Organization for Economic Co-operation and Development (OECD, 2012) showed that Thailand was ranked at 50<sup>th</sup> in English reading out of 65 countries. The PISA English reading comprehension questions stress more on HOTS questions. Thai students are familiar with LOTS questions but poor in answering HOTS questions. Therefore, the Thai English teachers should play an important role to encourage and help students in answering HOTS questions.

Numerous studies had been carried out to identify problems in EFL reading comprehension in Thailand (Chomthong, 2011; Hayikaleng, 2011; Jehdo, 2009;

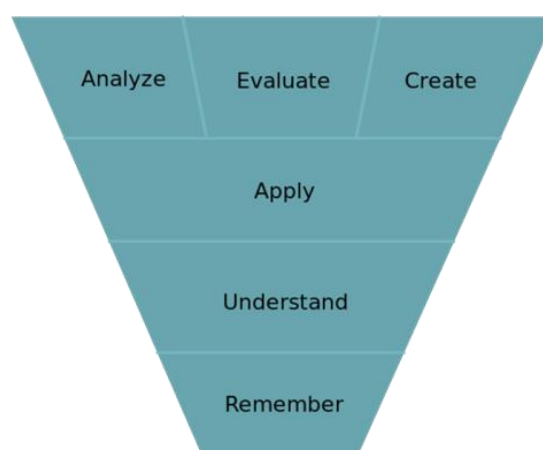
Kongkert, 2013; Tamrackitkun, 2010). The aims of their studies are to improve students' level of EFL reading comprehension as well as to find out ways in motivating and making students interested in learning English. Therefore, this study explored Thai students' level of reading comprehension for LOTS questions and HOTS questions.

## RESEARCH QUESTIONS

1. How do students perform in answering LOTS comprehension questions?
2. How do students perform in answering HOTS comprehension questions?
3. How do students perform in answering the overall comprehension questions (LOTS & HOTS)?
4. Is there a significant difference in the mean scores between the LOTS and the HOTS questions?

## LITERATURE REVIEW

Bloom's Taxonomy Domain (1956) is one of the most acceptable taxonomies in education field. Numerous researchers adopted this theory for their purposes of study because it starts from a basic model of thinking skills to the highest level. According to Bloom (1956), intellectual skills are developed through a sequence of stages, from the basic to the complex one. Learning often develops upward through the levels, but it might be cycle backward (Mardigian, 2011). Bloom's taxonomy emphasized on six levels of thinking that students' progress while learning or acquiring knowledge. These six levels are remembering, understanding, and applying which categorized under lower order thinking skill (LOTS) while analyzing, evaluating, and creating are under higher order thinking skills (HOTS). The following figure shows the six levels of Bloom's Taxonomy Domain.



**Figure 1.** The Revised Bloom's Taxonomy (Anderson & Krathwohl, 2001)

The teacher should encourage learners to use HOTS in order to create the habits of thinking. Higher order thinking is very important to prepare young generation to face challenges in the 21<sup>st</sup> Century workforce (Collins, 2014). HOTS helps students to

activate their schema when individuals facing unfamiliar problems, doubts, and questions. Successful applications of the skills show capability in explaining, decisions making, and comprehending. To be successful, students must master decision-making, and collaborative problem solving. Teaching students to answer such questions could activate the learners to express their ideas.

Reading comprehension is one of the important skills in teaching and learning process. Students cannot understand the lesson if they are not able to read and comprehend the text. Teachers must emphasize reading comprehension strategies and guide students to read critically. In order to provide a meaningful reading experience, students are required to indulge in deeper thinking processes (Freaahat & Smadi, 2014). Students should be encouraged to give ideas about what they read, and relate it to their own experiences. Bloom's Taxonomy Domain is helpful to guide students in the process mentioned. A preliminary study done by researchers indicates that most of the teachers in southern Thailand only used LOTS questions in their reading comprehension classes. Students are not exposing to HOTS questions. Teachers must equip students with meta cognitive strategies while reading. So that, they can active readers' schema and engage them with the text in order to find answers for the comprehension questions. Students should start with LOTS questions and followed by HOTS questions.

Khan and Inamullah (2011) conducted their study to examine LOTS and HOTS comprehension questions of EFL at a secondary school. The study focused on the ratio of LOTS and HOTS questions asked by the teachers in the classroom. The findings indicated that LOTS questions were more frequently asked by the teachers compared to the HOTS questions.

A study by Seif (2012) evaluated the availability of higher order thinking skills (HOTS) used by teachers in the English reading exercises for grade 8 students. The findings showed that the majority of questions asked by the teachers were LOTS questions. The results also indicated that there was a shortage of the HOTS questions in the reading exercises and they were not well-treated. In order to improve students' level of English, the EFL teachers should emphasize more on HOTS questions.

Alfaki (2014) carried out his study on Sudan English language syllabus for secondary school. The researcher evaluates the reading comprehension questions in the textbooks using Bloom's Taxonomy. The study showed that most of the questions (89.5%) in the English textbooks were LOTS questions. The study also suggested that the comprehension questions and activities in English textbooks should aim to develop both LOTS and HOTS questions.

HOTS questions help to train students to express their ideas. Previous studies concluded that applying HOTS questions can improve the process of learning. As Fahim and Sa'eepour (2011) carried out a study to examine the effect of teaching HOTS on reading comprehension of Iranian EFL Learners. The study revealed that there was a positive relationship between students' language proficiency and their abilities in

answering HOTS. The findings also indicated that teaching HOTS in EFL class can improve students' reading comprehension.

Studies by Hosseini, Khodaei, Sarfallah and Dolatabadi (2012) investigated the relationship between HOTS questions and reading comprehension among Iranian university students. The findings indicated that there was a significant positive relationship between critical thinking and reading comprehension. The results also revealed that critical thinking act as the best predictors of their achievements in reading comprehension.

Remark and Ewing (2015) analyzed the use of HOTS questions to improve students' achievement in reading comprehension. The study seeks to determine the effect of asking students HOTS questions during guided reading instruction to enhance reading comprehension and students' engagement. The findings indicated that week by week students can improve their reading comprehension and they were able to comprehend what they had read. In line with this study, the researchers encourage teachers to apply HOTS questions to guide students while teaching reading comprehension.

In classrooms, asking questions is one of the most common techniques employed by teachers to improve their reading comprehension. Questioning is considered by teachers as an important tool used for helping students construct understanding and encourage students to think about the material that they have learnt. However, teachers should not over emphasize on LOTS because LOTS questions only build students' confidence. Therefore, teachers need to develop their guideline questions and activities to move from LOTS questions to HOTS questions in order to activate students' schema and enhances their comprehension beyond the text.

## **METHODOLOGY**

### **Participants**

This is a quantitative study using descriptive research design. The participants of the study consist of 60 first year students from a Collage in Pattani district, 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 LOTS and two questions for HOTS), all together are 36 items.

### **Procedure**

The students took 90 minutes to answer all the questions. Prior to that, the two English teachers from a college in Pattani 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 two English teachers distributed

the questions and did the correction based on scale given. The total marks for LOTS, HOTS, and the overall comprehension questions were converted into percentages. Paired samples t-test was used to analyze the data obtained from the comprehension test.

## RESULTS AND DISCUSSION

This part reports the finding from data collection based on research questions.

### 1. How do students perform in answering LOTS comprehension questions?

**Table 1.** Statistics

	LOTS	HOTS	Overall Comprehension
N Valid	60	60	60
Missing	0	0	0
Mean	76.9444	51.5278	64.2361
Std. Deviation	4.88007	7.11284	4.54119

The results show students mean score for LOTS questions is 76.94 (SD 4.88) which is at a high level. Two students (3.3%) scored 67% for the LOTS questions, 46 students (76%) scored 70-79% and 12 students (20%) scored 80-89% (Table 4.1). The findings indicate that students are able to answer LOTS questions well because the answers for the LOTS questions are directly stated in the passages. Besides that, teachers usually ask LOTS questions to students and students are more familiar with LOTS questions which are much easier than HOTS questions. These findings are in line with Khan and Inamullah (2011); Seif (2012) and Alfaki (2014) who stressed that teachers expose students to LOTS questions more often than HOTS questions.

### 2. How do students perform in answering HOTS comprehension questions?

The results show that students mean score for HOTS questions is 51.53 (SD 7.11) which is at a low level. 15 students (25%) scored 42% for the HOTS questions, 43 students (72%) scored 50-58%, and only two students (3.3%) scored 67% (Table 4.1). The findings indicate that students are poor in answering HOTS questions because students are not well trained to think critically. The teachers should apply more HOTS questions in the classroom to increase students' achievement in reading comprehension. This finding is similar to the finding of Fahim and Sa'eepour (2011) and Remark and Ewing (2015) who revealed that teachers should apply more HOTS questions while teaching reading comprehension in order to train students to think critically.

### 3. How do students perform in answering the overall (LOTS and HOTS) comprehension questions?

The results show students mean score for the overall comprehension questions is 64.23 (SD 4.54) which is at an average level. Six students (10.0%) scored 56-58% for overall questions, 44 students (73.4%) scored 60-69%, only 10 students (16.7%) scored 71-75% (Table 4.1). The findings indicate that students' scores for the LOTS questions is

satisfactory but need to be improved on HOTS questions. On the other hand, both textbook activities and exercises provided by teachers should begin with LOTS questions and develop to HOTS questions as much as possible. Seif (2012) and Alfaki (2014) in their studies recommend that the English teachers should carry out various class activities to develop students' skills in answering LOTS and HOTS questions. Teachers also should activate students' schemata in order to improve their reading comprehension.

4. Is there a significant difference in the mean scores between the LOTS and the HOTS questions?

**Table 2.** Paired sample t-test comparing LOTS and HOTS questions

Questions	N	Mean	SD	Mean Difference	t-value	df	p-value
LOTS	60	76.94	4.88	25.41	24.17	59	.000
HOTS		51.52	7.11				

Level of significance is at  $p < 0.05$

The findings in table 4.2 show that there is a significant difference in the mean score between LOTS and HOTS questions ( $t=24.17$ , mean difference= 25.41,  $df=59$ ,  $p=.000$ ). The results also reveal that the students' mean score for LOTS questions is significantly higher than HOTS questions. This study supports previous studies by Khan and Inamullah, 2011; Seif (2012) and Alfaki (2014) who stressed that students perform better for LOTS questions because questions in textbooks and questions from teachers always deal with LOTS. Therefore, textbooks and examination papers as well as class activities should increase the use of HOTS questions because HOTS questions promote critical thinking skills. The findings also support the findings of Fahim and Sa'eepour (2011); Hosseini, Khodaei, Sarfallah and Dolatabadi (2012) and Remark and Ewing (2015) who found that developing students' skills in answering HOTS questions can improve their reading comprehension.

## CONCLUSION

This study has implications on the teaching of reading comprehension in the English language (EFL) classroom. Current study has revealed that the teachers should use both LOTS and HOTS questions to enhance students' reading comprehension. However, teachers should have pedagogical in order to train the students in answering HOTS questions. Reading comprehension requires experience, vocabulary and background knowledge, as such, teachers should take all these into account while teaching reading comprehension. The findings of this study also serve as a guide to the Ministry of Education, in particular to the Teacher Training Division to use LOTS and HOTS questions as an important input for the teaching of English language in educational institutions.

In this study, the researcher used only a small sample of 60 students. Future research should engage larger samples which include colleges from different provinces in Thailand to obtain more conclusive findings which can resemble a larger population.

**REFERENCES**

- Alfaki, M. I. (2014). Sudan English Language Syllabus: Evaluating Reading Comprehension Questions Using Bloom's Taxonomy. *International Journal of English Language Teaching*, 2(3), 53-74.
- Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives (Complete edition)*. New York: Longman.
- Bloom, B.S. (Ed.), Engelhart, M.D., Furst, E.J., Hill, W.H., & Krathwohl, D.R. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook 1: Cognitive domain*. New York: David McKay.
- Chomchaiya, C. (2014). *An investigation into the development of English language reading comprehension among Thai undergraduate students using an online blended learning approach*. This thesis is presented for the degree of Doctor of Philosophy.
- Chomchaiya, C. & Dunworth, K. (2008). *Identification of Learning Barriers Affecting English Reading Comprehension Instruction, as Perceived by ESL Undergraduates in Thailand*. Edith Cowan University. Research Online, EDU-COM International Conference.
- Choomthong, D. (2014). Preparing Thai students' English for the ASEAN economic community: some pedagogical implications and trends. *Language Education and Acquisition Research Network (LEARN) Journal*, 7(1), 45-57.
- Collins, K. M. T., Onwuegbuzie, A. J. & Jiao, Q. G. (2007). A mixed methods investigation of mixed methods sampling designs in social and health science research. *Journal of Mixed Methods Research*, 1, 267-294.
- Crystal, D. (2003). *English as a global language. (2nd Ed.)*. Cambridge: Cambridge University Press.
- Dorkchandra, D. (2010). *Enhancing English reading comprehension through a text Structure reading strategy CALL program*. Doctoral thesis in English language studies, Suranaree University of Technology, Thailand.
- Fahim, M. & Sa'eepour, M. (2011). The impact of teaching critical thinking skills on reading comprehension of Iranian EFL learners. *Journal of Language Teaching and Research*, 2 (4), 867-874.
- Freahat, M. & Smadi, M. (2014). Lower-order and Higher-order Reading Questions in Secondary and University Level EFL Textbooks in Jordan. *Theory and Practice in Language Studies*, 4 (9), 1804-1813.
- Hayikaleng, N. (2011). *Comparisons of problems in teaching English at upper secondary level between public schools and Islamic private schools in Narathiwat*. Thesis submitted in fulfillment of the requirements for the degree of Master of Art (unpublished).
- Hosseini, E., Khodaei, F. B., Sarfallah, S., & Dolatabadi, H.R., (2012). Exploring the Relationship Between Critical Thinking, Reading Comprehension and Reading Strategies of English University Students. *World Applied Sciences Journal* 17 (10), 1356-1364.



- Jehdo, K. (2009). *The relationship between English ability, attitudes, and motivation of the first year PSU students from Islamic religious schools*. Thesis submitted in fulfillment of the requirements for the degree of Master of Art (unpublished).
- Kasemsap, B. & Lee, H. Y. (2015). The Reading Matrix. *An International Online Journal*, 15(2), 101-117.
- Khan, B. W. & Inamullah, H. M. (2011). A Study of Lower-order and Higher-order Questions at Secondary Level. *Asian Social Science*, 7 (9), 149-157.
- Kongkerd, W. (2013). *Teaching English in the era of English used as a lingua franca in Thailand*. Retrieved September 12, 2015, from [http://www.bu.ac.th/knowledgecenter/executive\\_journal/oct\\_dec\\_13/pdf/aw01.pdf](http://www.bu.ac.th/knowledgecenter/executive_journal/oct_dec_13/pdf/aw01.pdf)
- Noom-ura, S. (2013). English-Teaching Problems in Thailand and Thai Teachers' Professional Development Needs. *English Language Teaching*, 6 (11), 139-147
- Remark, A. & Ewing, M. (2015). *Use of High-Level Questioning to Increase Student Achievement in Reading*. Masters of Arts in Education Action Research Papers. Paper 127. St. Catherine University.
- Sawangsamutchai, Y. & Rattanavich, S. (2016). A Comparison of Seventh Grade Thai Students' Reading Comprehension and Motivation to Read English through Applied Instruction Based on the Genre-Based Approach and the Teacher's Manual. Online Published: March 1, 2016 doi: 10.5539/elt.v9n4p54 URL: <http://dx.doi.org/10.5539/elt.v9n4p54>
- Seif, A. (2012). *Evaluating the Higher Order Thinking Skills in Reading Exercises of English for Palestine Grade 8*. A Thesis Submitted to the Faculty of Education in Partial Fulfillment of the Requirements for the Master Degree of Education.
- Tamrackitkun, K. (2010). *Extensive Reading: An Empirical Study of Its Effects on EFL Thai Students' Reading Comprehension, Reading Fluency and Attitudes*. Thesis Submitted in Partial Fulfillment of the Requirements of the Degree of Doctor of Philosophy.
- Uraiman, Y. (2011). *Developing secondary school students' reading ability and motivation using an extensive reading program*. Presented in partial fulfillment of requirements for the master of art degree.
- Urbanovič, J., & Wilkins, S. (2013). Internationalisation as a strategy to improve the quality of higher education in small states: Stakeholder perspectives in Lithuania. *Higher Education Policy*, 26, 373-396.