Innovating with HOTS for the ESL Reading Class

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Abstract

The idea of integrating higher order thinking skills (HOTS) in language classrooms has been viewed negatively by language teachers. Students have been found to be passive and teachers have been found to lack creativity in innovating their lessons. The government's effort of introducing thinking skills in the Malaysian Education Blueprint (MEB) 2015-2025 is still at its initial stage and the idea of how and why thinking skills should be introduced is yet to be addressed. As such, this quasi-experimental study aims at investigating how HOTS can be integrated in the ESL reading classroom and to what extent students perceive this idea as applicable for them to develop critical thinking skills. A quasi-experimental approach has been applied involving 30 students selected from a convenient non-random sampling method. The students were exposed to two treatments: (1) online reading response task (2) offline reading response task. In both treatments, they were required to discuss a given issue in groups and then to read an article on the issue before posting their views. A selected number of 10 students were then subjected to a set of structured interview session. A descriptive analysis was done based on the interview responses. The results showed that the students favoured the given tasks and believed that it was innovative and out-of-the-box, with recommendations that the tasks should be continued and recommended to other ESL reading classrooms.

Keywords: HOTS, MEB 2015-2025, ESL reading classroom, quasi-experimental approach

1. Introduction

In recent years, a lot of emphasis has been given to the teaching of thinking skills in the ESL classroom. The Malaysia Education Development Plan (PPPM) 2013-2025 aims at producing knowledgeable students who can think creatively and critically to compete at the international level. Higher Order Thinking skills (HOTS) was introduced to schools for this purpose, to enable students to apply, analyse, evaluate and think creatively. Six criteria has been outlined in the Malaysian Education Blueprint (MEB) 2015-2025 in its aspiration for students which are, ethics and spirituality, leadership skills, national identity, language proficiency, thinking skills and knowledge. This shows that language proficiency and thinking skills are important in shaping students to fit the 21st century. There are four language proficiency skills in the teaching of English as a second language which are listening skills, speaking skills, reading skills and writing skills. This study intends to investigate reading skills and thinking skills.

HOTS is defined in terms of (1) transfer, (2) critical thinking and, (3) problem solving (Brookhart, 2010). In describing transfer, Brookhart (2010) states that students not only acquire knowledge and skills, but also the ability to apply the knowledge and skills to new situations. This applies to life outside of school where thinking is considered a series of transfer opportunities rather than a series of recalled assignments. Norris and Ennis (1989) described critical thinking as referring to reasonable, reflective thinking to decide on what to believe or do. Students can therefore apply wise judgement or produce a reasoned critique. Problem solving may be defined as a skill to find a solution to a problem that cannot be solved simply by memorizing (Collins, 2014). This includes the ability to remember information, learn with understanding, critically evaluate ideas, formulating creative alternatives, and communicating effectively.

The relationship between reading skills and critical thinking has been highlighted as a field in cognitive

psychology. Piaget (1952) presented three cognitive processes which are assimilation, accommodation, and equilibrium. Assimilation is explained as a continuous process that helps one to integrate new information with existing schemata. Accommodation is the process of developing or constructing new schemata because there is no prior schema to add on to or modify. Equilibrium is a balance between assimilation and accommodation. According to Rubin (1997), equilibrium process would enable a child to see similarities between the stimuli and assimilate them, and also determine when new schemata are needed for accommodation.

A number of researches support the idea that critical thinking and reading are interrelated (Beck, 1989; Ruggiero, 1984; Yu-hui et al., 2010). Critical thinking enables one to work out reading texts by generalizing and interpreting, analyzing according to prior or world knowledge and synthasising. However, the investigation of how teachers construct pedagogical content knowledge for teacing language skills by integrating HOTS in Malaysian ESL classrooms is scant (Malini & Sarjit, 2014).

2. Review of Literature

2.1 The Concept of HOTS

The Malaysian curriculum stresses on developing thinking skills. Although the concept of HOTS was introduced as far back as the 1980s, it has not been executed fully in the school system. Hillocks (1986) asserts that the success of HOTS implementation depends on the level of students autonomy and interaction. Teachers' lack of pedagogical knowledge in innovating their practices by integrating HOTS in their lessons has also been found to be problematic. Yee et al. (2012) argues that students should be taught to acquire HOTS so that they will be able to answer questions in the exam that requires thinking skills. A project involving several American schools on various approaches to synthesise theories related to HOTS revealed that HOTS had positive long term learning impact on students rather than the conventional rote learning. It was also found that teachers had to used the following teaching approaches to get the desired results: build background knowledge, classify things into categories, arrange items along some dimension, make hypotheses, draw inferences, analyse things into their components, solve problems and encourage students to think using thinking strategies (National Research Council, 1987).

In explaining pedagogical practices of HOTS, Fangenheim's model (2006), which is an adaptation of Bloom's Taxanomy, stresses the importance of teachers' application of creative and innovative strategies to engage their students to learning via their thinking abilities through various activities. In doing so, the classroom environment is impacted with positive learning and high motivation in pursing challenging tasks (Ames, 1992; Kaplan et al., 2002).

Bloom's Taxonomy has been widely used as a framework for teaching thinking skills. The idea was to promote higher order thinking in education such as analyzing and evaluating rather than rote learning and it should include cognitive, affective and psychomotor skills.

Table 1. Bloom's taxonomy cognitive domain (adapted from Collins, 2014)

Bloom's Taxonomy level	Description of level	Example
Knowledge	Recall data or information	Recite the facts that have been learnt; define a term.
Comprehension	Understand the meaning, translation, interpretation of instruction and problems	Explain in your own words the steps for performing a task; translate a formula to a written text.
Application	Use a concept in a new situation; apply what was learnt in the classroom into novel situations outside the classroom	Apply theories learnt to actual real life situations; applying new vocabulary learnt to conversations in daily life.
Analysis	Separate material or concepts into component parts so that its organizational structure may be understood; distinguish between facts and inferences	Recognise logical fallacies in reasoning; gather information and selecting relevant ones for the required task.
Synthesis	Put parts together to form a whole,	Writing a process manual; designing a

	with emphasis on creating a new meaning or structure	machine to perform a specific task; integrating training from several sources to solve a problem; revising and processing to improve an outcome.
Evaluate	Make judgement on the value of ideas or materials	Select the most effective solutions; explain and justify an application.

2.2 The Education System in Malaysia

The Education system in Malaysia is centralized with all public schools funded by the Federal Government. The Ministry of Education then administers its responsibilities together with the State Education Departments and the District Education Offices. The Ministry of Education is mainly responsible for policy making and implementation while the State Education Departments, Distric Education Offices and Schools are implementers of the Minitry's policy.

The Education system in Malaysia is largely influenced by the British Education system but reform efforts have been made to fit our country's needs. In 1956, The Razak Report laid the foundation for a new education system for a new independent and multiracial Malaysia. In 1979, a cabinet committee was formed to review the Education Policy which resulted in the introduction of the Integrated Primary School Curriculum in 1982 and the Integrated Curriculum for Secondary Schools in 1988. Reform efforts in the 1980s were basically based on the National Philosophy of Education (NPE) which aimed at producing individuals who are intellectually, spiritually, emotionally and physically balanced and harmonious. In the 1990s, the efforts were focused on the realization of Vision 2020 to be a fully developed nation. It is the outcome of these efforts that has led to a more serious and explicit attempt to teach thinking skills in schools. Thus, the Malaysia Education Development Plan (PPPM) 2013-2025 was introduced followed by the Malaysian Education Blueprint (MEB) 2015-2025 on April 7, 2015. The aims are to produce knowledgeable individuals who are capable to think creatively and critically equipped with skills and attributes of ethics and spirituality, leadership skills, national identity, language proficiency, thinking skills and knowledge so that they can meet the challenges of the 21st century.

2.3 HOTS in Language Classrooms

A number of studies has been conducted on HOTS in language classrooms (Malini & Sarjit, 2014; Rajendran, 2001; Abdulmohsen, 2011). Rajendran (2001), in a study of the teaching of higher order thinking skills in Malaysia, found that English language teachers were more confident of their knowledge and pedagogical skills than to the teaching of HOTS together with language using the infusion approach. 26 percent did not allocate any classroom time for HOTS while 78 percent allocated 10 percent or less of their class time to HOTS. The reason here seems to be that teachers are not adequately prepared to innovate in the classrooms. 60 percent of the teachers who received training to teach HOTS did not think that they are better prepared than those who had not received any training. The new reform therefore needs to consider the 'how' factor for teachers to teach HOTS in language classrooms and research in this area has to be addressed for HOTS to work for language teachers.

Malini and Sarjit (2014) studied the integration of HOTS in the writing classroom. The study found that students perceived their writing classroom with the infusion of HOTS to be engaging in active learning. Students also agreed that they experienced learner autonomy and developed writng, researching and personal skills as well. The HOTS lessons made the students feel involved and that their ideas mattered in the classroom.

3. Method

The purpose of this paper is to investigate the use of HOTS in the ESL reading class. Thus, two research questions were devised:

(1) How can HOTs be taught in the ESL reading classroom?

(2) What are the perceptions of teaching HOTS in ESL reading classrooms?

To address the research questions, a quasi-experimental approach has been applied to the study. A class of thirty students taking the ESL reading course was selected using the convenient non-random sampling method. There were ten male and twenty female students in the class and they were all between twenty to twenty five years old. They were all Malay students whose first language is Malay. They were all undergraduates in their 3rd semester, enrolled as Islamic Banking majors.

The students were given two tasks. In the first task, they were assigned to read an article from the newspaper

pertaining to crimes and then to analyse, synthesis and evaluate the text. They were then required to comment critically in about 150 words online using the blended learning method via the university's i-learn portal. In the second task, they were assigned to read another article from the newspaper pertaining to the implementation of goods and services tax (GST). They were asked to analyse, synthesis and evaluate the text. Afterwhich, they were required to comment critically by using post-its and pasting their comments on the board. Prior to the tasks, a classroom group discussion was held where they were placed in different groups and given an opportunity to debate on the topic. The students were encouraged to voice their views and to use prior knowledge of the subject-matter as input. In both tasks, they were required to hand in a 200 words essay assignment of their discussion.

After the tasks were executed, an interview session was conducted on a selected number of 10 students. The structured interview consisted of 10 items pertaining to their knowledge of HOTS and their experience in doing the first and second tasks. A statistical analysis was then tabulated from the data collected.

4. Results and Discussion

4.1 Grade Score of Assignment

The grade score for the Task 1 and Task 2 essay assignment are tabulated with a maximum score of 10. Table 2 shows the descriptive statistics for both the tasks in terms of mean and standard deviation. For Task 1 (Online), the scores tabulated are Mean = 5.1667; SD = 1.14721. For Task 2 (Offline), the scores tabulated are Mean = 5.6000; SD = 1.03724. This indicates that the mean score for Task 2 is higher than Task 1.

Table 2. Descriptive statistics of task 1 and 2

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
TASK 1(Online)	30	3.00	8.00	155.00	5.1667	1.14721
TASK 2 (Offline)	30	4.00	8.00	168.00	5.6000	1.03724
Valid N	30					

4.2 Interview Session

After the treatments (Tasks 1 and 2) were applied, the students were interviewed based on a structured interview session. The results of the interview has been summarised in Table 3. It is discussed at length in section 4.2.1 to 4.2.10.

Table 3. Responses according to interview items in frequencies and percentages

Interview Items	Frequency	Percentage
1. Comprehension of HOTS		
• Understood about HOTS	18	60
• Partially understood about HOTS	9	18
• No idea about HOTS	3	10
2. Task 1 Remarks		
• Enjoyed the task	27	90
• Able to give viewpoint without reservations	24	80
• Find it innovative and interesting	24	80
• Stimulates creativity	18	60
• Stimulates thinking and sharing of ideas	24	80
• Encourages wide reading	15	50
3. Task 2 Remarks		
• Enjoyed the task	30	100

• Stimulating and enriching	30	100
• Helps provide more ideas for the written assignment	27	90
• Fun and creative	27	90
• Active classroom learning	21	70
• Builds confidence	24	80
• Encourages reading of current issues	30	100
4. Preferance of Tasks		
• Task 2 better than Task 1	6	20
(poor internet connectivity)		
5. Overall remarks		
• First time experience with the tasks	18	60
• Active learning and enjoyable	27	90
6. Benefits		
• Overcome shyness	21	70
• Overcome feelings of being inferior due to poor command of English	12	40
• Answers cannot be found in the book and is open ended	24	80
• Promotes Reading	27	90
• Promotes confidence in reading and thinking skills	24	80
7. Creating Thinking Individuals		
• Promotes creativity in doing the task	12	40
• Uses Prior knowledge	15	50
• Needs application of what is understood	18	60
• Needs analyzing and evaluating skills	21	70
8. Recommendations by Respondents		
• Highly recommended	30	100

4.2.1 Comprehension of HOTS

In analyzing students' comprehension of HOTS, they were asked to explain what they understood about HOTS, Approximately 60 percent of the students admitted that they understood what HOTS was and the reason for this was because they were aware that they were the first batch that experienced the HOTS implementation in schools. 30 percent of the students admitted that they had little knowledge of what HOTS was all about and although they had heard or read something about it, they were not fully aware what it is or how it was implemented and to what extend. The other 10 percent said that they did not have any idea what HOTS meant.

4.2.2 Task 1 Treatment

Task 1 was a treatment of reading and then responding to the question, "As a young Malaysian, what is your opinion on crime and how do you suggest crime can be prevented?" online. The students were instructed to post their views via the university's i-learn portal. In analyzing students' perception of the treatment, they were asked to describe their experience in doing Task 1. 90 percent of the students admitted that they enjoyed the classroom discussion and the online discussion. 80 percent admitted that they were able to give their viewpoints without reservations. 80 percent believed that this method of reading response was innovative and interesting. 20 percent felt that the internet connection was slow and they had poor internet access which dampened their enthusiasm to fulfill the task.

4.2.3 Remarks on Task 1

In order to find out the general remarks on Task 1, the students were asked what they enjoyed most in doing Task 1. 60 percent commented that the task was innovative and creative. 80 percent said that it stimulated them to think and share their thoughts with others. 50 percent felt that they were more widely read or became more

interested in reading.

4.2.4 Task 2 Treatment

Task 2 was a treatment of reading and then responding to the question, "As a university student, what do you think GST is and how has it affected you?" offline (handwritten on a piece of paper and pasted on a board). In analyzing the students' perception of the treatment, they were asked to describe their experience in doing Task 2. 100 percent of the students agreed that the task was fun and they enjoyed doing it. They also agreed that the classroom discussion was really stimulating and enriching. 90 percent felt that the discussion provided them with more ideas to write their response and to look at things at a different perspective. They did not feel that the task was taxing.

4.2.5 Remarks on Task 2

To get feedback from the students on Task 2, they were asked what they enjoyed most in doing Task 2. 90 percent of the students admitted that the task was fun and creative as it allowed them to share their ideas, refute others as well as defend their response. 70 percent agreed that it provided for active classroom learning. 80 percent also felt that the activity of posting their views on the board for everyone to see gave them more conviction and confidence in voicing their opinions. All the students agreed that the activity encouraged them to read current issues, and to analyse, synthesis and evaluate the issues before presenting their views.

4.2.6 Comparison of Tasks 1 and 2

For the purpose of analysis, the students were asked whether they preferred Task 1 or Task 2 better. There were mixed response to this as the students as a whole generally agreed that both tasks were interesting. 20 percent of the students however admitted that they preferred the offline Task 2 activity better than Task 1 as they had poor internet access from their house and the university's i-learn portal was slow to upload.

4.2.7 Reasons for Remarks on Assigned Tasks

The students were asked to give reasons on why they enjoyed the assigned tasks. 60 percent commented that this was the first time they had a reading task outside the classroom. All the other reading assignments before this were reading of passages and answering of reading comprehension questions. 90 percent agreed that the task was active learning. All the students enjoyed the classroom and online discussions and said that it helped them to open up, think creatively, give their views and share their ideas.

4.2.8 Benefits from the Experience

The students were also asked to respond on how they have benefited from the experience of the treatments of Task 1 and 2. 70 percent of the students commented that before the treatments, they were shy or embarrassed to share their opinions and views. 40 percent also commented that they felt inferior as they had poor command of the English language. 80 percent said that they were not used to opening up and thinking of solutions or giving recommendations as they were used to finding the answers from the books that they have read. 90 percent agreed that the activities also promoted reading more current issues. 80 percent said that they have found new reading and thinking skills and the confidence to use them.

4.2.9 Creating Thinking Individuals

Feedback on whether the students thought that the tasks have made them thinking persons where asked. All the students felt that they had to use thinking skills in their attempt to answer the questions. 40 percent felt that they had to be creative in their answers so that it was not the same as their peers. 50 percent of the students felt that they had to recall what they have read previously or used prior knowledge to attempt the question. Another 60 percent felt that they had to apply what they understood about the issue and explained them in their own words. 70 percent felt that having to debate about the pros and cons of the issues and give suggestions and recommendations required analyzing and evaluating skills. For example, on the issue of how crime can be prevented in Malaysia, there were constructive criticisms on the suggestions of punishment by mandatory death penalty and preventive measures of educating children from young against criminal acts.There were 100 percent positive views on implementation of hudud law as a measure of prevention against crime.

4.2.10 Recommendation for the ESL Reading Classroom

Since the students had first hand experience of online and offline activities to the teaching of HOTS in the ESL reading classroom, they were asked whether it was feasible to recommend these to be used or continued to be used for the course. All the students highly recommended the tasks as it was found to be innovative and not confined to the classroom. They felt that if classrooms were taught using this method, students would be excited to learn as they were given a chance to be involved in the activity and that their viewpoints and opinions

mattered. The activities also promoted critical thinking skills and attributes of tolerance of other peoples' opinion, sharing and cooperating with your group's opinion and abiding by the last say of the lecturer as the referee for the discussion. All the students also felt that the lecturer's role of not taking sides or providing a yes/no answer but prompting and guiding for further thinking to be done and researched upon was also viewed as important for the activities or tasks to be successful. The reward of being named best group opinion was also encouraging and motivating to the students.

5. Conclusion and Recommendations

The findings from the interview session indicated that the students favoured the given tasks for the ESL reading course. They felt that the method used in doing the tasks were innovative and creative. They were not only confined to expressing themselves online but were also encouraged to post their ideas on the board. They felt that prior to this, they have seen people posting their comments and feelings for the family of MH370 victims on the walls in public areas. However, to post their opinions after reading materials on them and sharing their views with their friends in class and online, helped them to give a more rounded and insightful opinion simply because they were not graded for the tasks and were given the freedom of expression. They also felt that how the lesson was carried out with positive encouragement and motivation for the lecturer was important. It meant that the lecturer had planned the lesson well in order for the execution to be successful.

The findings also indicated that the perceptions of the students toward the teaching of HOTS in the ESL reading classroom were positive. The students were actively involved in lively discussions and felt that both their involvement and opinions mattered to the discussions. They were also helped by their peers to defend their views and this helped instill cooperation among group members. They felt that the activity should be recommended as it has helped them to developed thinking skills like understanding the topic, researching the matters, analyzing and synthesizing on the issues and evaluating the opinions of others instead of just accepting everything that they have read blindly without any personal opinion on the issue.

Although the research was in a small scale as a preliminary to a bigger project, it provided favourable insight to the feasibility of HOTS in the ESL reading classroom. Rajendran (2001) argued that teachers were confident in teaching content but were still not ready to include HOTS in their classroom based on short term courses on HOTS by the ministry. Thus, little or no activities have been introduced to language classrooms for HOTS. Malini and Sarjit (2014) implied that the gap between pedagogical content knowledge and the application of HOTS in the language classroom was due to the reluntance and inability of teachers to innovate their activities to integrate HOTS in their lessons. Thus it can be concluded that for the successful implementation of HOTS in ESL reading classrooms, preparation and planning are vital. The positive attitude of the teacher as well as the creativity in innovating the lesson will also contribute to the success.

In line with the government's long term goal of becoming a developed nation and developing thinking individuals as human capitals for the 21st century, the education system in Malaysia has gone through a paradigm of change with reforms to fit these needs. The recommendation for future studies therefore is to focus on how and why teachers should apply HOTS in their classrooms and not what teachers should know about HOTS to apply to classrooms.

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Appendix 1

Structured Interview Questions

1. What do you understand about HOTS?

2. Did you enjoy doing Task 1?

3. What were the things that you enjoyed inTask 1?

4. Did you enjoy doing Task 2?

5. What were the things that you enjoyed in Task 2?

6. Did you enjoy Task 1 or Task 2 better?

7. Why did you enjoy the Tasks?

8. How have you benefited from the experience?

9. Do you think that these activities have made you a thinking person?

10. Would you like to recommend these activities to be continued in the reading classroom?

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