THE EFFECTS OF HIGHER ORDER THINKING SKILLS (HOTS) QUESTIONS IN IMPROVING ESL PUPILS’ WRITING PERFORMANCE

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ABSTRACT

The importance of Higher Order Thinking Skills (HOTS) in developing pupils’ writing ability cannot be ignored in view of enhancing students’ creative and critical thinking. Pupils in rural areas who have limited exposure to language and technology tend to write only what is portrayed in the stimulus and seldom develop their ideas and expand their imagination in their writing. Thus, there is an urgent need for teachers to train these pupils to think out of the box and be creative in their writing. In addressing this problem, this paper explored the impact of using HOTS questions in improving pupils’ writing performance. This study was carried out as a quasi-experimental research in a rural government primary school in Sarawak. A total of 30 Year Five pupils which are eleven years old from four classes participated in this study. Participants’ writing compositions in their pre and post-test were analysed through content analysis of HOTS elements based on Bloom’s Taxonomy cognitive level and the frequency of HOTS sentences were recorded. The findings had shown that most of the participants came out with longer composition and more critical and creative ideas after they had undergone seven weeks of treatment session. This study also elaborated on the influence of HOTS questions in providing guides to develop pupils’ cognitive ability in their writing. The novel effects of this study were also reported such as teachers’ readiness and abilities as well as inculcation of self-autonomous learning among the learners. Implications of this study towards the teachers and the students are also included.

Field of Research: Higher Order Thinking Skills, Writing Skills, ESL learners

1.0 INTRODUCTION

Higher order thinking skills (HOTS) has been a hot issue in Malaysia’s education system. Special attention has been put into the teaching of thinking skill whereby the government came out with Malaysia Education Development Plan (PPPM) 2013 – 2025 which ‘aims to produce knowledgeable students who are think creatively and critically to compete at the international level’ (Ministry of Education of Malaysia, 2012). Through this education plan, schools are introduced to HOTS for this purpose. HOTS is implemented even at early age, and this shows that the crucial aspects in producing younger generations that fit 21st century expectation is focusing on the language proficiency and thinking skills (Ahmad Zaki & Md. Yunus, 2014).

The importance of HOTS in developing pupils’ writing ability cannot be ignored in view of enhancing students’ creative and critical thinking. Pupils need to understand different cognitive levels so that they will not be only writing sentences which are referring to only one or two low cognitive levels, where they are basically describing information as displayed in the task, rather than expanding their ideas to higher cognitive level which require them to perform higher order thinking. In 2008, the Malaysian Ministry of Education (MOE) found out that learners are challenged to obtain
good marks in their writing task (Jalaludin, et.al, 2015). Pupils tend to write only what is portrayed and seldom develop their ideas and expand their imagination in their writing. Thus, there is an urgent need for teachers to train the pupils to think out of the box and be creative in their writing.

Due to these situations, there is a need to conduct more studies to help in filling the literature gap in this area of writing and HOTS. In fact, there are limited studies that have been carried out to investigate how HOTS questions triggers pupils’ higher order thinking skills in developing their writing skills. In addressing this gap in research, this paper attempts to explore the frequency of using HOTS sentences in pupils writing after applying HOTS questions in their process of writing.

Specifically, this study is designed to answer the following research question:
What is the frequency of Higher Order Thinking Skills elements in pupils’ sentences?

2.0 PAST STUDIES RELATED TO HOTS AND WRITING SKILL
2.1 WHAT IS HOTS?
HOTS is an artful thinking, where the pupils are expected to have the ability to have reasonable and reflective thinking towards what to believe (Norris & Enis, 1989). Bloom’s Taxonomy is a well-known framework that is closely linked to higher order thinking. It has been widely used as a framework for teaching thinking skills. Bloom’s Taxonomy was invented by Dr Benjamin Bloom and his team in the year of 1956. This framework aimed to introduce higher order thinking in education, which are analysing and evaluating educational activity through pupils’ cognitive, affective and psychomotor (Collin, 2014). Thus, the theoretical background of this study was taken from the revised version of Bloom’s Taxonomy (1956). Figure 1 below representing the taxonomy for intellectual behaviour that comprising of six level.

![Figure 1: Six Levels of Bloom’s Taxonomy](image)

2.2 IMPLEMENTATION OF HOTS IN MALAYSIA
Even though HOTS has long exists in Malaysian education system, Ganapathy and Kaur (2014) mentioned that HOTS has not been fully implemented and executed holistically in teaching and learning practice. In order to resolve this gap, the Ministry of Education are starting to integrate HOTS in the questioning format for the national examinations and school-based assessments. The recent Upper Primary National Assessment (UPSR) comprises 40% HOTS questions as well as in the Malaysian Education Certificate (SPM), there are 50% higher order thinking questions (Ganapathy & Kaur, 2014). Through this integration in national examinations, the educators and the learners are left with no choice but to develop and practice their higher order thinking.
A number of studies have been conducted to investigate HOTS in language classrooms. Soo et al. (2015) mentioned that language teachers are disagree with the integration of HOTS in language classroom. Through their observation, pupils are found to be passive while teachers’ creativity in innovating their lessons is limited. Malini & Sarjit (2014) investigates on HOTS in writing classroom. The study realised that pupils ‘perceived their writing lesson with the infusion of HOTS to participate in active learning’. Furthermore, Malini & Sarjit (2014) mentioned that the learners feel appreciated via HOTS lesson as their opinions are accepted which then enable them to explore their learner autonomy, developed their writing as well as their personal skills.

2.3 THE IMPORTANCE OF HOTS QUESTIONS
Dillon (1988) as cited in Shen & Vodkmumue (2011) highlighted that the strongest method of effective teaching that can activate pupils’ learning and thinking, as well as support the teacher to recognise their pupils’ learning strategy is through question. Therefore, teachers plays a vital role in composing questions for the pupils in their daily practice, which fits to their level of understanding. Roberts and Zody (1989) claimed that pupils’ achievements can be improved through effective questions. Effective questions enable learner’s to focus their attention to make sense on the content of the lesson, increase their curiosity, activate their imagination, and motivate them to acquire new knowledge (Husin, 2006). Thus, the teacher needs to be aware on the difficulty level of the question and the pupils’ cognitive growth. Collins (2014) labelled that teachers are very good at thinking spontaneously, however without well preparation and objective in mind, they will likely asking questions that are not stimulate pupils’ higher order thinking. A good proportion of questions is ideal, where not every questions and discussion has to be pitched at higher order thinking. Collins (2014) added, the questions should be built to encourage pupils’ to reflect on their learning, which will allow them to acknowledge their thinking strength and weakness.

2.4 ESL PUPILS WRITING PERFORMANCE IN MALAYSIA
Writing is a specific ability that enables pupils to portray their ideas and thoughts into meaningful form of words (Wong, 2014; Harmer, 2007). It is an important language skills, even though most ESL learners claimed it is difficult to create a ‘coherent and extended piece of writing’ (Ansarimoghaddam & Tan, 2014).

Generally, past research has shown that many Malaysians is lacking in the ability to write in English even though English is considered as second language of the country (Shamsudin et.al, 2010 as cited in Maarof et.al, 2011). Many poor language learners are not capable of using the language accurately, specifically among those who are living in the rural areas (Maarof et al., 2003 as cited in Md Yunus & Che Mat, 2014). This is not only can be seen through their speaking skills, but it affected their writing skills too. Even after several years of learning English, the result is still has not meet the expectation (Jalaluddin et.al, 2008). Cahyono (1997) found out that among the four language skills, writing is believed as the most difficult skill. The Ministry of Education (2005) revealed that most of UPSR candidates are unable to master the writing skills in English This complex skill needs a huge effort from the teachers and researches to explore suitable approach that will aid pupils’ writing (Cahyono, 1997).

2.0 THEORETICAL FRAMEWORK
Based on the objective of this study that is to measure the frequency of HOTS sentences in pupils’ writing, the above theoretical framework was developed (Figure 2).
4.0 METHODOLOGY

4.1 Sample and Data Collection Method
This study uses a quasi-experimental research and the data was analysed through a quantitative method. The sample has been chosen through purposive sampling method as all of the participants were studying at the school where the researcher are working at. A total of 30 Year Five pupils which are eleven years old from four classes took part in the study. The school where the participants are studying is a government school which is classified as rural area schools and mostly consisted of Malay. They are using their local dialect which is their mother tongue as their first language while English had become their third language after Bahasa Melayu. The pupils has limited exposure to English language thus they can be categorized as a moderate users of English and this is decided based on their performance in their past examinations.

As the research attempts to explore the effects of using HOTS questions on pupils’ writing performance, the study utilised pre and post-test to compare pupils’ production of HOTS sentences before and after drillings on writing through the questions. Content analysis was used to analyse on the data taken from both pre and post-test in terms of HOTS elements based on Bloom’s Taxonomy cognitive level of the written test. The frequencies for all sentences, HOTS sentences and non-HOTS sentences was calculated and presented in percentage values. Comparison from pre and post-test data was done in order to measure the effects of the treatment session towards pupils’ HOTS sentence production. Pseudonyms was used to record the name of the participants.

4.2 Procedures and Instrumentations
The instrument used in this study was a picture stimulus which was taken from the actual English Section C note expansion question of Ujian Penilaian Sekolah Rendah (UPSR). A picture of houses on fire was tested in the pre-test and post-test.

During the pre-test session, pupils were asked to write an essay based on the picture stimulus. No discussion or guidance was given throughout the session. Seven weeks of treatment session took place right after the pre-test where the HOTS questions were utilized and this was done in the afternoon so that the study will not disturb their actual English lesson. Scrivener (as cited in Harmer, 2012) mentioned that drill is one of the best activities that can be most productively demanding on accuracy. Thus, within that one hour time frame, pupils were drilled with various writing activities and familiarised with HOTS questions until they manage to develop their cognitive ability and improve their writing performance through their HOTS sentences. Post-test took place on the final week of the study. Pupils were tested using the same stimulus in their pre-test. Pupils’ writing in both pre and post-test were analysed based on the frequency of HOTS sentences and the level of the HOTS elements based on Bloom’s Taxonomy. Pupils’ performances in their post-test were used to determine the effects of the approach in developing their writing performance.
5.0 Finding and Discussions
5.1 Longer writing produced

The most apparent and noticeable effect of this study is the participants wrote longer compositions in their post-test as compared to their writing in the pre-test. The improvement of the number of sentences in the participant’s writing is displayed in the graph (Figure 3).

From the graph (Figure 3), we can see that the participants were able to produce more sentences and longer essay after they went through the treatment session. The participants wrote a total of 223 sentences in their pre-test. Positively, they produced longer essay in their post-test where they wrote a total of 327 sentences altogether. Additionally, according to the graph, 100% of the participants were able to write longer composition in their post-test, and 4 participants had more than 50% improvement in the length of their composition.

One of the reason why the participants managed to write longer composition in their post-test is they had done the question in their post-test. Nation (2009) stated that it is easier to write when we have heard or read about the topic, as well as if there many questions. The participants has gone through various practices in writing through HOTS questions before they sit for their post-test. According to Nation (2009), learners should utilise their personal experience and knowledge to their writing in order to be able to write successfully as they are well prepared with their ideas for their writing. It is a general knowledge that one of the biggest challenges in writing is lacking in ideas. Thus, techniques such as brainstorming, questioning and organising ideas will help the learners to overcome their obstacle, as well as providing good effects on all other aspects of their composition (Nation, 2009).
5.2 Increased frequency of HOTS elements
The increment of the sentences productions lead to the first research question, do the participants write more HOTS sentences after they participated in the study? To answer the first research question, the charts below illustrated the sentences with HOTS element produced by the participants.

![Figure 4: Frequency of HOTS Elements](image)

The charts (Figure 4) showed a drastic improvement in the production of HOTS sentences. From the finding, 25 out of 30 participants were able to contribute at least 50% or more of HOTS sentences in their post-test as compared to their pre-test writing. According to Mas Rosli et.al (2016), the participants have obtained more experience in learning as the treatment session has been done consistently throughout the study period. 97% of the participants has shown an improvement in their sentences production.

5.3 Analysis of HOTS elements based on Bloom’s Taxonomy
The participants came out with a total of 69 HOTS sentences in their Pre-test whilst in their post-test, the participants had shown a positive improvement as they were able to write 207 HOTS sentences altogether. These sentences has been analyzed and categorized based on Bloom’s Taxonomy Level of Higher Order Thinking Skills, and they are represented by the following bar graphs (Figure 5)and will be discussed further.

![Figure 5: Analysis of HOTS Elements](image)

5.3.1 Applying
This is the lowest level has the highest number of sentences because the participants only need to relate the situation to their basic knowledge. For example, one of the sentence made by the participant was ‘Adam quickly dialed 994 to call the fireman’s hotline and report about the fire’. Based on this sentence, the participant has applied his general knowledge to answer the application question which was ‘What should you do when the houses are on fire?’
5.3.2 Analyzing
The second level of HOTS is analyzing level. In his level, the participants do have the ability to interpret, discover, compare, or to explain the consequences of a situation. For example, one of the participant was able to explain the consequence of an action, where he wrote ‘The naughty boys should not be playing firecrackers inside their house because there are a lot of flammable items in the house. One boy accidentally threw the firecracker to a curtain which caused the fire.’

5.3.3 Evaluating
The third level has less number of sentences compared to the other two lower levels because the participants are expected to be able to judge or evaluate a situation. Most of the participants were able to express their ideas orally but when it comes to writing, they were challenged due to limited vocabulary. However, among those 27 sentences categorized in this level, one participant has laid his idea beautifully by stating and justifying on his disagreement about the situation. He wrote down ‘The naughty boys should not be playing firecrackers inside their house because there are a lot of flammable items in the house’. According to the sentence, it is clearly shown that the participant has stated his disapproval on the act that caused the fire.

5.3.4 HOTS level - Creating
In this level, the participants are required to develop or build a new idea in their essay. For example, the picture stimulus displayed only the fireman putting down the fire using water. However, one of the participant managed to portray the situation happened before the arrival of the fireman, and listing down the alternative to put down the fire in his sentence. ‘The villagers were busy putting down the fire by using a sack of sand and buckets of water.’

5.4 Better structured ideas
The participants are trained to practice the writing process. By having HOTS questions along with the ideas, the participants were able to organize their thoughts and ideas better before they start writing their essay. The answer to the questions provides the main ideas of the story as the learners are free to insert extra ideas and details in their writing (Nation, 2009). One of the downside of the process of writing is the steps might consume longer time (Harmer, 2001) and it is not suitable to be done during examinations due to the time constraint. However, for a life-long learning, the learners will be able to get used to the various skills that should be employed when writing when they pay attention and spend time on pre-writing phases, editing, redrafting and finally publishing their work (Harmer, 2001).

Furthermore, the findings also showed that the participants were able to expand their imagination and reasoning skills. Gaffield-Vile (1998) as cited in Harmer (2001) defined creative writing as a ‘journey of self-discovery’, and it promotes effective learning for the learners. For example, most participants wrote their essay from the witness of the accident’s point of view. Leicester (2010) stated that through critical thinking, our conscious tend to understand our experience to make meaning. Thus, after developing their thinking to think differently and out of the box, some participants managed to write their essay from different perspectives. Two interesting point of views that has been done by the participants in their post-test were from the experience of the fireman and the experience of the boy who caused the fire. Thus, within that short period of time, the participants were able to be more creative in their writing. Teachers and pupils can enhance their reasoning, provided with practices at the appropriate level (Leicester, 2010). If this activity takes place consistently in their writing class, they will be able to expand their skills and thinking wider.
6.0 Implications
It is undeniable that this study has provided plenty advantages to the benefit of the teacher and the pupils. In this modern world where everyone is urge to improve and widen the thinking ability, this study proved its importance and positive implications towards Malaysia’s education system generally. Based on the findings, the implications that could be derived from the study will be elaborated.

6.1 Teacher readiness and abilities
This has been discussed thoroughly in the previous sections as past researches found out that teachers are still lacking in applying HOTS in their classroom. Thus, in order to apply HOTS questions in improving pupil’s ability to produce creative piece of writing, teachers have to prepare themselves with enough knowledge and motivation in practicing this approach in their writing class. Asadullah (2016) has stated that in order for the students to successfully acquiring a set of particular skill, the crucial role is held by the teachers’ ability and readiness to apply the skill in the classroom.

Even though this study is putting its weight on the writing skill, however, all skills are incorporated before the final piece of writing could be produced. Nation (2009) stated that writing is an activity that comprises by all other skills. Teachers and students can make full use of the presence of others in making writing as a cooperative activity that will provide great benefit to everyone involved (Harmer, 2001). This is considered as a bonus mark for the teachers as they are indirectly teaching the pupils to practice their listening, speaking, reading and using the technology skills while doing the activities.

Harmer (2001) mentioned that in order to work on creative composition, teacher and students need to work on the writing slowly starting from phrases and sentences before producing the entire composition. Hence, the teacher needs to be ready to assist and monitor the students in doing their own research in such a way of interviewing various teachers or parents about the topic provided for the week, exploring the internet and read up on the topic from books that are available in the school library. Harmer (2001) suggested the usage of computers can be a useful tool in order to encourage creative writing among the learners, be it individually or cooperatively as there are tonnes of different approaches in or outside of the classroom that can be used into the practice of writing skills. By doing so, the participants have to practice their speaking and listening skills, as well as reading skill before they could write their final piece of writing on the last day of the week.

6.2 Inculcation of self-autonomous learning
Independent and autonomous learning is generally about the pupils to be able to work on their own, with less or no help from the teacher. During the treatment period, the participants are frequently working in smaller groups. Harmer (2001) stated that writing in group as ‘a part of a long processor’ where the communicative activity will be a great motivation for the learners, not only through writing, but while working on their research, discussion and peer evaluation. During the discussion and working in group, tremendous support and cooperation between group members was one of the positive sign portrayed by the participants throughout this study.

The learners may be classified as equally proficient in the language. However, according to Saragi et.al. (1978) as cited in Nation (2009), the learner might face a difficulty in accessing to a particular language items, as everyone is learning at a different pace and preferences. Thus, it is possible to have a group that different strength, and this provides them the opportunity to learn and help each other.
7.0 Conclusion and Future Recommendations
This study prepares a non-threatening platform for the pupils to learn the language inside and outside the classroom. HOTS questions acts as a guide for the pupils to expand their ideas on what to write. Thus when pupils are occupied with extra informations, they will be able extend the length of their writing as well as their perspectives and knowledge. Better findings would be found if longer treatment session provided. Thus, more research needs to be conducted in this area, preferably under different context and situation.

REFERENCES


