

# Impacting Students' Learning Through Incorporating Higher Order Thinking Skills in English Language Activities

Chandra Mohan Vasudeva Panicker, Melor Md Yunus

**Abstract:** *This study explored the impact of incorporating higher order thinking skills (HOTS) on students' learning in the ESL classroom. The teacher trainees used activities in their lessons to incorporate HOTS. The participants of this qualitative case study consisted of four teacher trainees who were in their final phase of their practicum. Data were collected through three main instruments; classroom observations, semi-structured interviews and document analysis. A thematic analysis was employed to analyze the data. Results of this study revealed that (a) HOTS activities carried out in the ESL classroom made students to be active learners and think outside the box and, (b) HOTS activities made students to be knowledge constructors who were able to create language materials.*

**Key words:** *higher order thinking skills, activities, active learners, knowledge construction*

## I. INTRODUCTION

Over the decades, the aim of developing and enhancing students' Higher order thinking (HOT) has been a major educational goal (Fisher, 1999; Marzano, 1993; Supon, n.d; Zohar & Schwarter, 2005 as cited in Tan and Siti Hajar Halili, 2015). In line with this, education system worldwide has developed framework on increasing emphasis on thinking skills as one of the 21<sup>st</sup> century skills. In Finland one of the new focus on "citizen skills" is thinking skills which includes problem solving and creative thinking meanwhile in United States, the Common Core Standards initiative includes the application of knowledge through higher order thinking skills. In fact, the teaching of higher order thinking skills is a hallmark of American education reform. In Malaysia, both the revised new primary school curriculum (KSSR) and the Malaysia Education Blueprint (2013-2025) have given great emphasis on fostering HOTS in the teaching and learning process. In the Malaysia Education Blueprint 2013-2025 (MEB), it is stated clearly "The emphasis is no longer just on the importance of knowledge, but also on developing higher order thinking skills" p.E6. Therefore, the aim of the study is to explore the impact of incorporating higher

order thinking skills (HOTS) on students' learning through the English language activities carried out in the ESL classroom.

## II. METHODOLOGY

This study employed a case study approach. A case study approach was the most appropriate method of inquiry for this study because it provided a holistic view of the teacher trainees incorporation of HOTS. Ary, Jacobs, & Razavieh, (1990) defined case study as the detailed examination of a single individual or a single discrete social unit. Thus, this study is an examination of four participants' (teacher trainees) incorporation of HOTS in the activities that they carried out in their English language lessons and its impact on their students learning. Participants for this qualitative case study was purposefully selected from among the final year teacher trainees who are pursuing a degree in Teaching English as a Second Language (TESL) and who had completed their third phase of teaching practice. The sites chosen for the study were two rural primary schools in Sarawak, Malaysia. The three instruments used for this study were observation field notes, semi structured interviews and document analysis. The data collected from the semi-structured interviews were first transcribed and typed before they were analyzed. Meanwhile the data collected from the classroom observations were also typed to ease the process of analyzing them. Data collected from the three instruments were analyzed using Creswell's thematic analysis method to answer the research question.

## III. RESULTS

Two themes emerged from the analysis of the data from observation, interview and document; Active Learners and Knowledge Construction.

One of the main impact of the incorporation of HOTS is the students became active learners in their classroom. They were not passive when HOTS activities were carried out in their classroom. They communicate actively during the activities, they showed evident of thinking out of the box and they were able to express ideas and views. The students communicated with their classmates and their teachers. This was clear especially when they did group activities.

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This is in line with the statement by Freeman (2014), active learning engages student in the process of learning through activities and/or discussion in class opposed to passively listening to an expert. It emphasizes higher order thinking and often involves group work. The communication that took place during the activities were also supported by the interview responses given by the participants.

Khairul said:

*"Students should be encourage to talk in class especially during activity time. This would help them to be confident and practice speaking in English. HOTS activities can get the students more involved and talk more in class."*

John (pseudonym) said;

*" Students need to talk in English during activity time. This would built their confident. Teacher must conduct activities that you encourage students to talk in the English language."*

Melissa (pseudonym) stressed;

*" When planning the teacher must make sure there is opportunity for students to communicate in the classroom especially during activity time."*

Leong (pseudonym) said:

*"It is important that the activities that we carry out in the classroom help students to communicate in the the English language. Activites especially HOTS activities can cause students to think and communicate more in class. However, the teacher must guide the students when they are talking."*

In the participants lesson objectives, there are also indication that the participants wanted their students to talk during activity time. The following lesson objectives support this intention;

*-able to talk about related topics with guidance*

*-able to ask simple WH questions*

*-interview their friends about their likes and dislikes*

*-discuss and give reasons why the 'Gingerbread man' stopped running*

*-able to discuss about making a model lap top*

*-able to discuss about making a model cat*

*-able to ask about a story they have read*

HOTS not only make students to think but it also encourages them to think outside the box. According to Hakak (2016), "Thinking outside the box" is more than just a business cliché. It is a metaphor that means to think differently, unconventionally or from a new perspective. This phrase often refers to creativity and creative thinking.

This statement supports the view of thinking creatively, freely and off the usual path. HOTS activities like group discussions, brainstorming, making models, sentence constructions, creating language materials encouraged students to think outside the box. In fact, these activities also helped students to express their ideas and explore their imagination. In an activity "coming up with a new ending to a story", the participant asked his students to discuss in their group and come up with a new ending to a story they have heard (*Rosemary and the Four Gnomes*). One way to foster students thinking and creativity and make them think outside the box is by making them look at things in a new way. This activity created a good opportunity for the students to look at a new possible ending to a story, which otherwise they would not have considered. By conducting this activity,

the participant managed to get his students to "put on their thinking caps" let their imagination take control. They came up with interesting endings;

*" Rosemary and the gnomes used a flying magic sword and killed all the monsters"*

*"The Gnomes and Rosemary flew in a magic carperthat can go up and down and killed the mosters using a bomb"*

*" Rosemary and the Four Gnomes chased the mosters into a deep black cave using a Robot"*

*"The Gnomes help Rosemary kill the monsters using Starwars' Laser sword"*

*" Rosemary and Four Gnomes use a big dinosaur and chased the monsters and the monsters fell into a river and died"*

In another observation one of the participant asked his students to brainstorm and come up with their own mini story. Brainstorming activity helped the students to open up their thinking and imagination and not stuck with what they had heard or read before. As stated by Gogus (2013), brainstorming is one of the techniques for fostering group creativity by which ideas and thoughts are shared among members spontaneously in order to reach solutions to practical problems. Thus, activities which involved brainstorming, helped the students to get out from their 'old' thinking pattern. It made them to think outside the box and express their ideas about a new story. The mini story is only about 4 pages long, with drawings and two or three sentences for each page. Before this activity, the students heard the story about the Hungry Caterpillar. This story was their guide to write their own. Below are the title and a short synopsis of the stories wrote by the students.

Group 1

*"Supercat"*

*This cat can play football, jump and catch the aeroplane, swim in the riverand catch many rats in a one minute.*

Group 2

*"Herocat"*

*This cat can jump to the moon, eat all the fish in the river and build a bridge.*

Group 3

*"Starcat"*

*This cat can go underwater, fly like an aeroplane, attack the bad people with a bomb.*

Group 4

*"Spidercat"*

*This cat can jump from tall building, jump to the sky, swim in sea and fight with monsters.*

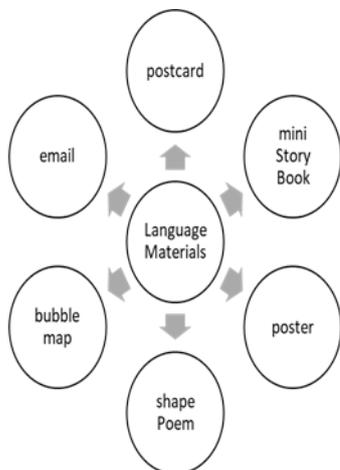
Group 5

*"Mightycat"*

*This cat can break the mountain, fly to the moon, fight with monsters and eat stones.*

In constructivism, knowledge construction is stated as an active process by which individuals incorporate new content into their existing cognitive frameworks, formulating new conclusions and pieces of evidence as a result. Therefore to construct knowledge it requires two important component; individuals and content that makes up the knowledge. The individuals are the constructors of knowledge.

One way they constructed knowledge is through creating language materials. This can be both interesting and challenging because, they involved creativity and imagination. Language materials are created through activities that are elaborate and challenge the pupils' thinking and their action. The materials are produced through brainstorming, reading and gathering information, constructing sentences, expressing ideas and drawing. At the end of the activity there is a language based product. The role of participants are vital in making these activities a reality. They planned individual and group activities that made pupils to think at a higher level, participate actively and produce language related materials. However not all activities in a lesson were challenging and produce language materials. Some activities required pupils to copy sentences from the board into their exercise book or filling in blanks in worksheet by choosing the right answers. Such activities are not challenging. Challenging activities are activities that increased pupils thinking and imagination. Figure 1 shows some language activities carried out in the ESL classroom for students that help in creating language materials.



**Figure 1: Language Materials**

The interview data supports that activities can help students to think and create interesting language materials.

Khairul said;

*“If activities are well planned, the students can think well and produce interesting materials like posters and mind maps or other creative material like shape poem”*

John mentioned that:

*“Teachers can encourage their students to think and create creative things like postcards, mini-story book and i-think maps.”*

Melissa stated that:

*“I ask students to use i-think map like bubble map to help them to think and write.”*

Leong said that:

*“HOTS activities can help students to think at a higher level produce language materials like scrapbook, shape poem and posters.”*

An analysis of the participants lesson plans also supports the above statements. Activities that are capable of creating language materials are shown in different parts of their lessons.

#### IV. DISCUSSION

As revealed in this study through classroom observation in the two rural primary schools, communication took place largely during group activities. Unlike during individual activities, group activities created opportunities for students to interact with their peers and their teachers. Group activities like creating a modal lap top, talking about likes and dislikes made them discuss the task and express their ideas. Similarly in a pair work, the students had to talk to their partner to obtain information. This activity made the students communicate and practice the target language. All these activities that were carried out in the classroom had elements of HOTS. These elements made the students to think extensively to ask and respond, to express their views, to construct sentences which made them to communicate with their friends and teachers. The elements of HOTS made the activities more student centered and the teacher to function as a facilitator. Thus, giving the students more opportunity to be actively involved.

Activity like creating a robotic cat and sentence completion activity made students think outside the box. The whole idea was to create opportunity for the students to think way out from the usual thinking. For a topic like “Pets”, if the participants asked their students to talk about pets and answer a few questions, that would not take the students thinking above and beyond. But in this study, the participant asked them to think about a robotic cat ( to activate their imagination) and then asked them what this imaginative cat can do? These set the platform for the students to use their imagination to think outside the box and come up their responses. Creating language materials as an activity can be challenging for the students but with the help of the teacher, it can enable the students to use their imagination to produce something creative. HOTS activities planned well and conducted in the ESL classroom can make students constructors of knowledge. Meaning through the language materials they produced, they were able to learn and build knowledge related to the target language. The process of producing these materials involved elements like brainstorming, reading, discussion, expressing ideas and sentence construction which contributes to knowledge construction. In the two rural primary schools, the participants conducted activities that made the students produce language materials. Posters made by students consisted of sentences and pictures related to planting a flowering plant.

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They produced very creative posters and to do this they had to think extensively and use their imagination. Similarly, other students also had to use their imagination and brainstorm to think of interesting stories to fulfill their mini story books task. In another activity, students created postcards. To produce this language materials, the students had to discuss among their group members and created postcards which had a short message on one side and a picture on the other. It was a challenging yet a fun activity for the students. The participants of this study conducted HOTS activities that help the students not only to be actively involved but also to construct knowledge through the task that they work on. Creating language materials is part of a good lesson where an activity can result in the production of a tangible material. In the process of producing these materials the students used the knowledge which they obtained through the lesson carried out by the teacher. Therefore, the elements of HOTS are vital in making the activities challenging and enabling the students to think at a higher level and outside the box to be active participants and to create knowledge.

### V. CONCLUSION

This study revealed two main impact of the incorporation of HOTS on the students' learning. The students became active learners and knowledge builders. Active learners as revealed by this study is by thinking outside the box and expressing ideas. HOTS activities not only enabled students to think at a higher level but also outside the box. Some HOTS activities can help students to stretch their imagination and extend their think ability. Teachers must plan challenging, creative and interesting HOTS activities. These activities made students active learners, creative thinkers, students who think beyond the usual level and students who used their imagination to think outside the box. By thinking outside the box, they were able to express ideas which were creative and contributed to the learning in the classroom. On the other hand, knowledge builders mean the students build knowledge by creating language materials. Creating language materials involved creativity and imagination. The process of producing language materials like postcards, mini-story books, posters, shape poems, bubble maps, and emails involved lots of thinking and discussion. Students involvement in these activities made that builders of knowledge because the process from understanding the task, discussing ways to go about it, expressing ideas and working on completing the task involved knowledge building. Knowledge is not built in an instance but through a process. Therefore, it is the process of creating these language materials that help the students to be knowledge builders. There is limitation to this study, the number of participants for this study was limited to four trainee teachers to make an in- depth study by collecting detailed information from the activities that they carry out in their English language lessons. It's also limited by the experience and knowledge of these four participants. The time frame of the study is also limited due to the permission granted to the researcher to

carry out this study. However, more could be investigated and discover if a longitudinal study can be conducted.

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