

Higher Order Thinking Skills in a Primary School Setting: A Case Study of Teachers' Perception and Pedagogical Strategies

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Abstract: - Since the implementation of the new KSSR curriculum a greater emphasis was visible in the area of Higher Order Thinking Skills (HOTS). This includes the domain of English as a Second Language Learning (ESL) in the Malaysian Primary school. Therefore, teachers are required to possess a certain level of knowledge and practice that adheres to the objective of teaching HOTS in the Malaysian ESL classroom. This case study intends to explore English primary school teachers' perception and pedagogical practices in the Malaysian primary ESL classroom. Four English primary school teachers were purposefully selected from a Malaysian primary school in the state of Sabah. Interview sessions as well as observation sessions were conducted to provide robust information. The Conventional Content Analysis approach is the choice to analyse the data of this study. The resulting themes are discussed critically using relevant theories and studies in the HOTS teaching and learning area. This is to justify the relevant themes of this study. The aim of this study is to explore teachers' current perception and practice in teaching HOTS. As a result, a model of the current teaching approaches being used that fits the objective of promoting HOTS in the Malaysian primary ESL is obtained. This model is the validated result and outcome of this study.

Keywords: Higher Order Thinking Skills (HOTS), primary, ESL classroom, KSSR, teaching approaches

I. INTRODUCTION

Higher Order Thinking Skills or HOTS are a fundamental element in a learning process. It becomes a strong tool in learning, understanding and usage of knowledge. According to Brookhart (2011), HOTS are an essential tool to prepare students for the real world. These skills are meant to equip the students to face the challenges of real life. The Malaysian education has recently taken a shift towards a globalisation path. Through the implementation of the new curriculum syllabus; Kurikulum Standard Sekolah Rendah (KSSR) and Kurikulum Standard Sekolah Menengah (KSSM), as well as the updated cognition and HOTS based formative and summative assessment, the Ministry of Education is aiming at producing more HOTS savvy students to improve the level of Malaysian students in the at the international stage (MoE 2012).

Despite that, the recent 2016 UPSR examinations results showed a trivial amount of 1.11 percent of high

achievers only; whereby the English Subject was one of the most poorly performing subjects. (Anon 2016). Overall the ministry themselves deemed the statistic to show lacking of HOTS abilities among the students (Anon 2016). On the other hand, teachers also stated that they were staggered by the results and did not expect the new HOTS based assessment would turn out that way (Anon 2016). This was a national issue that concerns the teaching and learning of HOTS specifically in the English subject. Therefore comes, the need to investigate and explore this area as a means to understand the teaching of HOTS in the ESL classroom specifically in the Malaysian Primary School context. The purpose of this case study is to explore the current perspective and teaching approaches of four English primary school classroom teacher in the Malaysian primary school classroom.

Higher Order Thinking Skills (HOTS)

HOTS refer to the high-end ability of thinking in the Blooms Taxonomy pyramid (Yen and Halili 2015). The high-end levels involve application, analysis, synthesis, evaluation and creating skills in solving problems. This is also supported by Collins (2014) and Brookhart (2011) who refers to HOTS as the ability to solve problem, think critically and apply skills in real life. This explains that HOTS are part of the human thinking ability. It is defined as a complex high-end process that requires in-depth thinking related to the application of these skills in solving real life problems

HOTS in the Malaysian Primary ESL Education

HOTS have become the foundation of several criteria in the new KSSR curriculum. The English syllabus focuses on equipping students with the ability to solve real life problems, expressing ideas and communicating effectively in a variety of real-life situations (MoE 2015a). This is a basic concept of critical thinking and HOTS. As mentioned by Brookhart (2011), HOTS involve meaningful learning, critical thinking and problem-solving situations (Collins 2014). Besides that, the new formative School Based Assessment or PBS, and also the UPSR summative assessment also incorporates HOTS criteria generously. The UPSR examination assessment comprises of many HOTS based English questions (Anon 2016). Similar to that, the school-based assessment contains assessment on application, analysing, evaluating, and creating

skills of the English language (MOE 2015b). This demonstrates how strongly HOTs is attached to the Malaysian Primary education specifically in ESL classroom.

Personal Belief and Knowledge of a Teacher

The need to explore the teaching and learning of HOTs brings about the need to understand the personal belief and knowledge of a teacher regarding HOTs; which directly relates to the aspect of self-efficacy. Self-efficacy is the beliefs of one's ability to execute a plan require to produce results (Donohoo 2017). These beliefs will determine the choices a teacher makes in order to achieve a certain objective in their teaching and learning practices. The social cognitive theory explains how the choices a teacher makes are based and influenced by the collective beliefs of the particular teacher (Donohoo 2017). In other words, the personal belief and knowledge influences a teacher's choices and in the end results in the intended HOTs teaching practices. Therefore, it is important to understand the knowledge, personal beliefs, and perception of the teacher as it is a strong part of the whole teaching itself.

The Development of Teaching Hots in Malaysian Primary English Language Lesson Studies

In the pursuit of creating students with HOTs, Malaysian English primary school teachers are required to shift their teaching approaches to suit the promotion of HOTs. A study by Yunus and Suliman (2014) suggest the usage of information communication technology (ICT) to teacher English literature lesson in order to promote involvement and HOTs among Malaysian students. This is also supported by a study conducted by Ali (2012) whom clarifies that the usage of ICT in lessons would increase students' capability to develop HOTs. Yen and Halili (2014) relied on Blooms Taxonomy and promote the two approaches of teaching critical thinking in either a contextual lesson or as a separate subject by itself. This is also supported by Kamarulzaman and Kamarulzaman (2016) who state questioning based on Bloom's Taxonomy does promote and raise students' ability to think critically. On the other hand, Thuraisingam et. al. (2014) suggest the usage of problem based learning and open-ended questions in reading and writing lessons to promote active and critical thinking. Most of the studies conducted are also focused the effectiveness of teaching approach for the secondary and university students. A case study regarding the teacher's personal perspective and teaching approaches regarding HOTs in the primary school context is yet to emerge.

The purpose of this case study is to explore the current perspective and teaching approaches of an English primary school classroom teaching in the Malaysian primary school classroom. Therefore, this study investigates the perception, knowledge and practices of four Malaysian English primary school teacher related to HOTs in the Malaysian primary classroom. A model of the current teaching approaches is also provided as an outcome of this study. The

model is based on current teaching approaches that is valid based on HOTs based pedagogical theories and concepts. This study takes place based on three main research questions. These research questions are the drive and main focus of this study.

- RQ1:** What is the knowledge of four Malaysian English primary school teachers regarding the teachings of HOTs in a Malaysian English primary school classroom?
- RQ2:** How does four Malaysian English primary school teacher perceive the teaching of HOTs in Malaysian primary school classroom?
- RQ3:** How does four Malaysian English primary school teachers promote and equip students with HOTs in a Malaysian English primary school classroom?

II. RESEARCH DESIGN AND METHODOLOGY

This study uses the approaches of the qualitative paradigm design. Data was collected through a series of 41 classroom observations that accumulated to a total of 2160 minutes. The amount of observation session was determined by the completion of one unit or topic consisting of five modules; which are listening and speaking, reading, writing, language arts and grammar. Besides that, was a semi-structured interview session per participant. The questions of the interview were constructed based on the questionnaire created and validated by Le (2013); whom emphasized at evaluating teachers' self-efficacy in promoting HOTs

This study utilizes four purposeful participants from a Malaysian primary school in the district of Lahad Datu, Sabah. These Malaysian English primary school teachers are majoring in the English language; whom identify themselves as *Ron*, *Jay*, *Fris*, and *Hanna* as their pseudonyms. The purpose of having multiple samples in a single case study is to ensure the robust data and findings of the intended case (Yin 2013). Data was analysed in both the inductive and deductive method of the Conventional Content Analysis approach. During the inductive stage, themes were identified from the raw data collected as it was being triangulated. The themes were deduced using relevant theories, knowledge and studies to clarify the description of those themes. This process of analysis also involved a revisiting session with the participants to affirm the themes gathered as well as a reviewing session by an expert in the field; an SISC+ officer from the District Educational Department as a means to increase the validity and reliability of the description deduced.

III. OBSERVATIONAL FINDINGS

Observational data were categorized five main thematic categories; Learning activities, Types of Learning Products, Teaching Aids and Materials, Types of Questions Teachers Asks and Students Involvement in the classroom.

Table 2 Observation of Learning Activities to Promote HOTs

Learning Activities	Frequency of Occurrence			
	Ron	Jay	Fris	Hanna
(1) Discussion and Questions and Answer	✓✓✓✓✓	✓✓✓✓✓✓	✓✓✓✓✓	✓✓✓✓✓
(2) Producing Materials	✓✓	✓✓	✓✓	✓
(3) Producing Mind Maps or iThink Maps	✓✓	✓✓	✓✓	✓✓
(4) Presentation	✓✓✓	✓✓✓	✓✓✓	✓✓
(5) Answering Comprehension Questions	✓✓✓	✓✓✓✓	✓✓✓	✓✓✓
(6) 'Hot Seat'				✓✓✓
(7) Groupworks	✓✓✓✓	✓✓✓✓	✓✓✓✓✓	

Table 2 shows the frequency of occurrence in regards to activities conducted in the ESL classrooms intended to promote HOTs. The highest frequency of occurrence recorded is the (1) Discussion and Question and Answer activity. This activity was observed during all lesson by all of the participants. Coming in after is the (7) Groupworks and (5) Answering Comprehension Questions

activities. These two activities also register under high frequency occurrence during the observation. Hanna, did not utilize (7) Groupworks in the classroom but Hanna was the only one to utilize (6) 'Hot Seat' activity extensively. The other activities occurred moderately putting (2) Production of Material as the least occurred.

Table 3 Types of Products Students Produce in ESL Classrooms.

Students Products	Number of Occurrence	Lesson Module
(1) Essay/stories	3	Writing
(2) Poems	1	Language Arts
(3) Poster	1	Language Arts
(4) Recipe Book	1	Writing
(5) Postcard	1	Writing
(6) Brochure	1	Language Arts

Table 3 shows the different types of product students were required to produce in the ESL classroom observation as well as their respective cumulative number of occurrences for 21 observation sessions of four participants. Based on the table, it is clear that only one occurrence was seen to be repetitive when viewed across the participants; which is (1)

Essay and Stories. This was particularly observed during the writing module of the ESL classroom lessons. The other production occurred only once within the observations of a single lesson unit. It occurred during the either the Language Arts or Writing module.

Table 4 Observation of Teaching Aids and Materials

Teaching Materials	Number of Occurrence			
	Ron	Jay	Fris	Hanna
(1) Picture	✓✓✓	✓✓✓✓	✓✓	✓✓✓✓
(2) Mind Maps/iThink Maps	✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓
(3) Reading Material	✓✓	✓✓✓	✓✓	✓✓✓✓
(4) Exercise sheet or Questions	✓✓	✓✓	✓✓	✓✓
(5) Everyday Item		✓	✓	

Table 4 depicts the type of teaching materials being used by the participants of this study and their respective number of occurrences during the observation sessions. In terms of

occurrence frequency, (2) Mind Maps and iThink Maps, (1) Pictures and (3) Reading Materials recorded as the most frequently seen during the observation. The least number of

occurrences is (5) Everyday items which was also seen in two of the participants only.

Table 5 Observation Types of Questions Used.

Questioning Technique	Ron	Jay	Fris	Hanna
(1) 'Why' Based Questions	21	25	27	27
(2) Other Open-Ended Questions	3	7	5	9
(3) Close Ended Questions	13	16	13	15

Table 5 consist of information regarding the types of questions asked as well as the number of questions in both oral and written form by the participants. The highest frequency of questions is the (1) 'Why' based questions which totals up to 100 questions by all four participants. After that, is

the usage of (2) Close Ended Questions which was also frequently observed for a total of 57 questions. The final type is (2) Other Open-Ended Questions which occurred at the lowest frequency of occurrence. A total of 24 of these questions were recorded.

Table 6 Observation of Students Involvement in the ESL Classrooms

Types of Students	Students Involvement Behaviours
(1) Higher Proficiency Students	Students are involved and found to be taking part mostly Students answer questions and provide feedback actively
(2) Low Proficiency Students	They jot down friends' answers Students are passive and do not talk much or use the language. Students kept asking translation from friends. Some are inattentive and looks sleepy Do not demonstrate any thinking.

Table 6 shows the description of students' behaviours and attitude. (1) Higher Proficiency Students depicted promoting and positive learning behaviours. They were actively involved and showed high participation level therefore demonstrating their critical thinking abilities. The (2) Low Proficiency Students portrayed a passive and uninvolved behaviour during the lesson, activity and tasks. In performing the task, the students seem to constantly ask for translation and relied on copying friends' answers which demonstrated lack of thinking.

IV. DISCUSSION

This paper explores the context of Malaysian Primary ESL classroom under three research questions. Therefore, this paper intends to answer the three questions by using relevant literature of the HOTS field and domain to define aspects of the findings in this study.

(RQ1) The knowledge of four Malaysian English Primary School Teachers regarding the teaching of HOTS,

(RQ2) The perception of four Malaysian English Primary School Teachers on the teachings of HOTS,

(RQ3) The pedagogical means of four Malaysian English Primary School

Teachers in order to promote and equip students with HOTS.

RQ 1: The Knowledge of Four Malaysian English Primary School Teachers Regarding the Teachings of Hots in A Malaysian English Primary School Classroom.

The participants provided several information that paints a picture of their knowledge of HOTS. The participants view HOTS as the ability to have complex thoughts and ideas which goes beyond the topic or context.

Ron: ...thinking skills that require pupils to think out of the box or ordinary thinking...

Jay: ...the skills for students to think out of the box without them relying on their basic mind because...

Fris: ...so that's how I evaluate them thinking outside the box.

Hanna: ...usually I want them to think higher think further than the things that given to them, outside the box yes

The exact term being used is thinking "out of the box" which was confirmed as coming up with open ended

ideas and thoughts that grow beyond the classroom and content. Referring this with the grounding theories of HOTS, a certain degree of similarities can be seen. One of the definitions of HOTS as outlined by Nardi (2017), is the ability to be open minded to various outcomes, alternatives, reasons, and results. It defines how students can take a single context and open their thinking to the endless possibilities of reasoning, adapting, solving and such. This is clearly depicted in this study as teacher specifically defines HOTS as the ability to come up with open ended responses, answers and solutions. Brookhart (2011) specifically defines this aspect as a sub-category of HOTS; which is critical thinking. This scenario is something teachers are required to provoke and seek in order to perform teaching and evaluation of HOTS in their classroom (Brookhart 2011). Therefore, this aspect of the findings is well justified as it translates well with the aspects of HOTS foundations.

Besides that, participants also referred to HOTS as the ability to solve problems. Learning English is simply not just about learning to use the language but also using the language to perform tasks or specifically as the participants mentioned, to solve problems.

Jay: *...you ask them how they would solve certain problems, you don't expect them to answer in the basic manner, you want them to answer in a very creative ways...*

Fris: *...the ability to analyse and evaluate given information and then to construct new ideas and how to solve problems*

This scenario and definition is closely related to the concepts of HOTS. Collins (2014) defines HOTS as the ability to solve problem and think critically as well as applying these skills in daily lives. Nardi (2017) and Brookhart (2011) states that one of the most vibrant HOTS based indicator is the ability to solve problems. It refers to how teachers should provoke and assess students using problem-based learning means. Brookhart (2014), refers to problem solving as the underlying concept of HOTS. Williams (2015) states that problem solving is one of the highest level of HOTS relating closely to creating and innovating new ideas. These statements taken specifically under the aspect of problem solving in HOTS framework relates with the participants' statements as well as the scenario observed in the classroom. In other words, the data collected paints a picture of the framework and theory being outlined by experts.

Hanna: *...higher order thinking skills or HOTS is reasoning skill...reasoning skills that the students show.... know how to answer.*

The third and final theme emerged during the analysis is HOTS as the ability to reason or reasoning ability. Both state and being deduced through the underlying statements from the participants, this theme makes its count as the third aspect that falls under the category of teachers' knowledge regarding HOTS. In terms of visual evidence, it was seen students were constantly being provoked and questioned on their reasoning ability; mostly through questioning. In defining these criteria, it was crucial to understand the status of reasoning skill in the HOTS framework. Brookhart (2014) states that in order to solve problems students need to apply reasoning skills. Since problem solving is a key aspect of HOTS framework, reasoning skills becomes part and parcel of it as well. Brookhart (2011) added that reasoning is crucial for the performance of analytical, evaluative and creation-based task. This puts a clear description of how reasoning is related strongly with HOTS as the three types of task mentioned are in fact the high-end levels of HOTS framework (Yen and Halili 2015). Thus, making reasoning a relevant and important aspects in the development, performance and teaching of HOTS in the classroom.

As such, the three-definition outlined from the findings of this study defines and paints a picture of the participants' knowledge regarding HOTS and its teaching and development. Considering the relationship of the themes emerged and the framework of HOTS, the knowledge of the participants can be justified to be relevant and valid. Their knowledge regarding HOTS is in line with the statements provided by experts in the field. Therefore, accomplishing valid information regarding the matter.

RQ 2: The Perception of Four Malaysian English Primary School Teacher on The Teaching of Hots in The Malaysian Primary School Classroom.

Based on the interview questions adapted from Le's (2013) set of questionnaires for identifying teacher's efficacy on using HOTS in the classroom, the teacher's perception on HOTS teaching are specified on two aspects; which are purposes and advantages and also challenges and its effects on the teacher, as well as other additional remarks.

Purpose and Advantages of HOTS

Based on the information gathered, several themes emerged under the context of teacher's perception on purpose and advantages of HOTS. The first theme is HOTS are meant to improve thinking and learning in order to create better learners.

Jay: *create students that's are...able to excel in many things*

Fris: *so, we are not only teaching the language but also on how to use it...so pupils need to analyse the information given to...apply it in their daily life*

This statement was collected and validated through revisiting the themes with the all participants. Brookhart (2011) mentions that upon teaching HOTs in the classroom, teachers would gradually see improvement of students' ability to think as well as their learning pace and performance from assessment. Williams (2015) on the other hand mentions that thinking and learning is not something that students can automatically develop as it need proper exposure, coaching and practice; where teaching HOTs provides that opportunity by exposing students to the various thinking and learning skills. Conklin (2012) also summarizes that HOTs teaching involves various pedagogical approach which all will benefit in making students better learners. These statements are in fact supportive of the theme being mentioned. In other words, in terms of HOTs purposes and advantages, the participants' perceptions are in line with the findings and statement of relevant literature and studies in the HOTs teaching and learning domain.

Jay: *...employers will ask you like a really difficult question and their expecting to have the answers that they want....so if you answer it in a really basic manner, they might not be interested to hire you*

Another theme that emerged is preparing students for the future demand of critical thinking staffs. After confrontation, observation and confirmation with the participants, it was apparent that this is a strong theme that is relatable with the other participants' statements as well. It is clear that equipping students with higher order thinking will allow students to perform complex tasks, generating creative ideas and solve problems at a more effective rate (Saifer 2018). Moreover, according to the 2016 QS Global Skills Gap Report, employers and companies around the world are demanding workforce who are critical thinking skills, communication skills and problem-solving skills savvy (QS Intelligent Unit 2017). It is ranked as one of the highest criteria in demand by employers and companies (QS Intelligent Unit 2017). Besides that, Asia Pacific's BTI Consultant Vice President Anthony Raja Devadoss, mentioned that employment demand has grown to individuals who are English savvy and demonstrate analytical, critical and complex problem-solving thinking abilities as well as communicative and collaborative attributes (New Strait Times 2016). These current trends are in fact meaningful indication of the statement provided by the participants in this study. It shows to signify HOTs as they mentioned a necessity element to secure future employment.

The overall finding for participants' view of the purpose and advantages of HOTs can be clearly summarized as aiming at creating better and more critical thinking individuals in the country. This notion goes hand in hand with the aspiration of Malaysian Ministry of Education, whom intends to produce individuals who are critical thinkers, problem solvers, and possess creative thinking and communication abilities (Ministry of Education 2012).

Therefore, this justifies the perception of the participants to be valid and in line with the principal of HOTs as well as the current educational trends and demands.

Challenges and its Effects

The second aspect in teachers' perception towards HOTs was gathered under the construct of challenges in teaching HOTs. Four main themes emerged whereby a unified agreement on the themes were established with the participants.

Hanna: *...Sometimes they do not understand complicated word...weak students especially.*

The first challenge is the aspect of students' low proficiency level making teaching HOTs a challenge. The findings of this study suggest that, students not having good proficiency of the English language makes them incapable to partake in the learning process; which are understanding content, answering questions, do and perform tasks and more. This is a very strong themed challenge as it was gathered and confirmed by all participants. Upon comparing this finding with other studies, a similar case was found. Shafeei et al. (2017) discover that low proficiency students have difficulty in adapting to change, understanding questions and content, as well as responding. Shafeei et al. (2017) added that two major scenarios were discovered; the first being students who answered short answers or did not involve themselves much, and the second students who did not understand anything and remained passive. This is a depiction that students who possess low proficiency level of the language tend to be either less involved or total uninvolved. This also depicts the fact that students are not able to comprehend the language and therefore also unable to response or produce the language. Similar scenario was observed in this study; whereby low proficiency students did not understand much and made less involvement and responses with the lesson. Singh et al. (2018) and Aziz@Ahmad et al. (2017) also discover that students' proficiency level will result in the challenge of adapting materials to suit the students' understanding ability and capabilities. Singh et al. (2018) also added that high end HOTs based lesson will also not suit low proficiency students' ability to perform it. It demonstrates the fact that when teachers are facing low proficiency students, the teaching of HOTs based ESL lessons will result in several challenge as teachers will have to build the level from bottom; in this case language knowledge and proficiency. As observed the challenge is imminent when the class contains students with various language proficiency level. Thus, teaching becomes a challenge as mentioned in those studies as well as this.

Besides that, there is also the challenge of students not getting a grasp of how thinking higher orderly works. The participants view this as a huge challenge as HOTs can be very novel to some students.

Fris: ...they're not exposed to higher order thinking skills because they are children

Upon being introduced to HOTS, the concepts of HOTS can be very difficult to be absorbed. Row, Subramaniam and Sathasivam (2018) make a strong statement to the fact that teachers are required to introduce HOTS and how it works to the students either explicitly or implicitly as it is a novel thing to many students. This case can be seen especially in the primary school level. Saifer (2018) mentions that shifting from lower order to higher order of thinking is an intricate process that requires specific introductory approaches that will ensure students can comprehend the intended level of thinking they are required to achieve. This shows to prove complexity of introducing, empowering, equipping, and teaching HOTS to students. It also clarifies the novelty of HOTS to some students. HOTS is indeed not an immediate thing. It is something that need to be provoked systematically through a series of process that varies according to the students' needs and abilities (Williams 2015, Brookhart 2011, Conklin 2012 and Saifer 2018). Therefore, this justifies the perception of the participants who perceive this as a huge challenge as this is one of the crucial aspects in teaching HOTS altogether.

Furthermore, a tertiary theme also emerged under the same context of students as a factor. The third theme is the lack of students' motivation and urge to think and reach HOTS. The participants perceived that some students are not motivated or keen to think to the intended level of thinking.

Ron: Students "malas" (lazy) to think you know

This concept emerges as teachers view themselves as the person who creates the opportunity to develop and gain HOTS but the actual thinking is something innate and needs to be conducted by the students themselves. As a result, the students will not be able to perform the tasks, lesson objectives are not being fulfilled and students will not have developed the intended HOTS skill. A similar concept was discovered by Yen and Halili (2015) whereby various studies have proven the fact that students' attitude, motivation, and urge to think in order to reach the intended level will be a determining factor for the learning and teaching of HOTS. This means, students who chooses to not think will not be able to learn HOTS thus this scenario becomes a challenge for the teacher to achieve the lesson objective. Considering the fact that the content might not be meaningful or comprehensible for the students, the intrinsic urge to think in a specific manner is somewhat forced into the students and therefore making them becoming unmotivated to perform (Deci and Ryan 2014). This as described by the participants, causes deterioration of HOTS thinking performance. Thus, becoming a challenge for teachers to teach HOTS in the classroom.

Hanna: they cannot...they cannot think deeper on 'why is this thing happen' and 'what is the reason for this thing to happen' they

cannot apply that skill in their mind

The final theme that emerged under the context of perceived challenges in the students' inability or not having the competency to develop HOTS. In other words, the participants perceived that not all students are able to develop HOTS abilities. This is a notion that was agreed on by all participants. As a result, it was determined by the participants that some students will never achieve HOTS abilities. On the contrary Williams (2015) mentions that HOTS is an innate ability in all students; so teachers are required to activate these skills. Saifer (2018) also points of that HOTS is something that teachers can introduce to all students; it only requires careful planning to see which approach suits best for the students. Brookhart (2011) points out how the assessment of HOTS may vary according to students and needs but all students are capable of achieving HOTS abilities. Based on these statements, a trend of contradiction is visible. Yet, it is not novel in this field of study. Aziz@Ahmad (2017) discovered teachers determining some students in ability to develop HOTS skill due to low performance and proficiency of the English language. Row, Subramaniam and Sathasivam (2018) concluded that teacher perceived HOTS is only for higher achieving students rather than everyone. Row, Subramaniam and Sathasivam (2018) also continues to conclude the lack of knowledge teachers possesses regarding how HOTS is an ability that all students can develop. In fact, Yen and Halili (2015) also discovered various studies pertaining to this issue; where teachers not getting a good grasp of HOTS concept and perceive it is only for selected students. This deviation proves to deny the justification of this challenge and brings about another aspect of misconception among the participants.

Participants were also inquired on how these perceived challenges affects them as a teacher. Two main themes were deduced. The first which is most prominently mentioned among all the participants is the inability to reach the objective of the lesson.

Hanna: my objective cannot be achieved...so when my objective didn't achieve...then the lesson is not fulfilled yes.

The thought of this is emerged as teachers mentioned that shift of curriculum from the old curriculum meant the lesson objectives are infused with HOTS based objectives. This is in fact true. The DSKP document; used to guide the teaching and learning objectives in the classroom, specifically mentioned how HOTS element are infused greatly in the curriculum (KPM 2015b). The objectives are mostly made up of applicative, analytical, evaluative and creating objectives (KPM 2015a). This is in fact the listed high up in the Blooms Taxonomy scale as the top end of thinking or higher order skills of thinking (Yen and Halili 2015). All of these is a means of answering to the demands of the ministry of wanting

to create more HOTs savvy students by infusing HOTs element greatly in the curriculum (MoE 2012). This explains the scenario in description by the participants. As HOTs becomes a major part of the ESL teaching and learning in the classroom so does the objective and outcome of the lesson. Therefore, in ability of some students to develop HOTs skills in the classroom is in fact in ability to achieve the objective of the lesson.

Jay: It affects me on how to be more creative like for example you need to approach students differently

On the other hand, participants also perceived the challenges in a positive manner. These challenges affect the participants to be more creative in their teaching and therefore develop their professional self as a teacher. This was made clear by three participants whom clarified on using multiple approaches to suit the students' needs and learning objectives. One of the participants mentioned how in order to make students come to the intended level of thinking, the participant needed to look up new approaches and make researches on how to make teaching and learning HOTs better suited for the students. This is in fact an approach supported by many experts in the field. Deci and Ryan (2014) mention on utilizing approaches which will intrigue students' intrinsic motivation to think and participate in the lesson. Saifer (2018) lists out a variety of HOTs based teaching approaches that will suit various situations, students and objectives. Conklin (2012) uses relevant HOTs and psychological theories and concepts to create pedagogical models for teachers to utilize in the classroom to promote critical and problem-solving based HOTs abilities. Brookhart (2014) explain the variety of questions teachers can use to provoke and assess students HOTs abilities in a variety of context and suitability. All of these demonstrates the extent of self-pedagogical expansion of development teachers can go through if they intend to overcome the challenges and meet the objective of the HOTs based lessons. Considering the similarities between the participants' perspective and theories and experts' opinions, it is safe to say as long as they maintain this particular perception, the teachers are in fact on the right track of teaching HOTs in their ESL classroom.

From and overall point of view, the participants perceptions are in fact mostly in line with the corresponding theories and experts' findings and statements. Expect for a single set back on HOTs being meant for some students and not all; especially the high achievers. This is again a recurring scenario as mentioned by various studies and needs to be addresses by stakeholders and teachers as well. As Aziz@Ahmad et al. (2017) describes that misconception of teachers' knowledge and ideas will result in the inability to teach HOTs and promote its development among their students. Therefore, this issue makes it mark as another important issue in this study

RQ 3: The Pedagogical Means of Four Malaysian English Primary School Teachers in order to Promote and Equip Students with Hots in A Malaysian English Primary School Classroom

The final aspect of this study is to understand how teacher promote and equip students with HOTs abilities. In other words, it intends to explore the pedagogical approach behind the teaching and learning of HOTs in the Malaysian primary ESL classroom. This aspect was studied in several criteria; Teaching approaches, evaluation, classroom participation and involvement, as well as HOTs learning techniques or tips. This was again studied based on the adaptation of criteria set and validated by Le (2013).

Teaching approaches

The first criteria of teaching approaches investigated is the materials and teaching aid choose and practiced in the classroom. Three were particular stressed and observed to be frequently used during lesson; Picture, Mind Maps or iThinkMaps, Reading Material or Stories and also Everyday Items. These materials were deemed to be provocative, expandable, engaging, and aiding in the development of HOTs in their respective lessons.

Participants deemed pictures and everyday items to be provocative and expandable for students thinking. This perspective is similar to Conklin (2012) who defines this material as visual literacy that contains various information that students can analyse, deduce and then translate that information to others by thinking critically about the materials. Mind maps or iThink maps on the other hand are viewed as an aid that engages students to start and aid critical and systematic thinking process. Brookhart (2011) defines this approach as using graphic organizers, clarifies that the usage of this approach is one of the many approaches that aids in engaging students to the lesson and thinking activity as it reduces attention loss and keeps students focused to the thinking tasks. Finally, participants also stated reading materials or stories to be an ideal contextual medium that allows students to take part in HOTs based tasks. Similar to the notion by Conklin (2012), stories are one of the many materials that can be utilize to involve multiple level of thinking-based interaction, tasks, and evaluation. It explains how teachers can flexibly use this material to promote or evaluate all of the HOTs abilities ranging from the lowest level of thinking to the highest or complex level of thinking. These statements are clear in validating and supporting the choice and practice of utilizing these teaching aids Thus, justifying the participants' pedagogical perception and practice in this aspect.

The next criteria are the classroom and language production activities in the classroom, a number of activities were mentioned and seen in the classroom; Discussion sessions, produce and presenting materials, making mind maps or iThink maps, 'Hot Seat' activity, comprehension question exercises, and groupwork activity.

Classroom discussion is one of the most prominent themes emerged. This due to the fact of the high frequency of it being mentioned and as well as being used in the classroom. Participants mentioned that this is to promote participants of low proficiency student as they will feel more comfortable working with their peers. This is a notion similar with Costa and Lowery (2016), whom perceives discussion is meant for students to put forth their strengths and weaknesses on the table in a safe environment with their friends. It is also meaning students are able to share confidently and comfortably. Costa and Lowery (2016) also added that discussions are a means to promote critical thinking, creativity, self-growth and enhancement. Fogarty, Kerns and Pete (2017) explain one of the roles of the teacher in unlocking the potential of students thinking and abilities by encouraging students to think through discussions and dialogues. Hakim, Sariyatun and Sudiyanto (2018) also describes discussion in the aspects of contextual teaching and learning to be beneficial as students are constantly growing their thinking abilities as they are being challenged in respective groups yet in a safe and comfortable environment. These points made proves to show this practice is in fact in line with the teaching and learning of HOTs.

Another activity that falls under this theme is produce and present. Students are to produce something that is English language based and present them to the class. According to the curriculum document provided by the Ministry of Education; DSKP, producing something or creating something is the highest level of HOTs teachers are required to promote their students to achieve (KPM 2015b). The reason for this is also due to the fact that in terms of HOTs, creating or producing something is the highest level of thinking skill in the HOTs scale (Alias and Ibrahim 2015). Hakim, Sariyatun and Sudiyanto (2018) also explain how creating and producing something as a solution in a particular lesson context, is actually inviting students to use their real-world academic knowledge for meaningful purposes that as a result will develop their HOTs abilities. This shows to prove that this activity is in fact hugely suggested by experts as it is a definite HOTs promoting learning activity.

The next activity that makes it mark is the utilization or creation of mind maps or iThink maps. In this study the utilization of mind maps or iThink maps range from simple gathering of information to more complex tasks such as generating ideas or aiding in performing other tasks such as writing and essay. Conklin (2012) defines the usage of this approach as the means to help train students to organize their thinking. Similar to the concepts introduced by the ministry, mind maps or iThink maps are in fact means of training the thoughts of students to reach higher critical or HOTs level (KPM 2013). This suggest the validity of this approach suggested by the participants to be categorizes as HOTs based teaching and learning activity. Singh et al (2018) also discovered this approach to be aiding in the development

HOTs in the classroom. This suggest the validity of this approach in the context of HOTS teaching.

Next is '*Hot Seats*'. This theme emerged from one of the participants who mentioned to be very fond of this approach in the classroom. The activity utilizes a story as a medium and students will play the role of the characters and be questioned by others. As described by the participant, the activity will take students to think on behalf of the character and provide responses that should fit their characteristics. Thompson and Evans (2013) clarifies that this approach will in fact aid in promoting various thinking skills as students try to generate ideas in adapting to a particular context. Similar findings were obtained by Jackson and Back (2011) who discovered how '*Hot Seats*' activity promoted thinking and communication skills. Fowler (2012) also discovered how this approach aided in stimulating interest and thinking in biology subject. These statements demonstrate how this approach is another measure that relates closely to thinking or HOTs in particular. Aiming at that, this approach is verified and justified to be in the same context as HOTs teaching and learning.

Other than that, it is the comprehension exercises. These exercises are in fact based on the exam formats questions as set by the ministry of education. This is also due to the fact that the ministry had begun to implement HOTs based learning objectives and questions in the curriculum as well as examination as a means to promote the HOTs and thinking ability of Malaysian students (Ministry of Education 2012). Questioning and comprehension exercises is not a novel approach in HOTs based lesson. Yen and Halili (2015) highly recommends this approach as long as the questions as based on HOTs level. Thuraisinggam et al (2014) also promotes the same approach just more emphasis on the higher end of HOTs scale. Kamarulzaman and Kamarulzaman (2016) proved that this approach is indeed promoting and aiding in the development of HOTs. Besides that, as these are in fact in line with the examinations and curriculum, it also works as a good indicator of success criteria and assessment for HOTs based lesson. As a whole there is no doubt about the relevance of this approach in the domain of HOTs teaching and learning.

The final activity that makes it mark as an important theme in this study is the approach of using groupworks as a means to promote HOTs. This was also visible and gathered in a high frequency. Yet only three out of four preferred group works. Yuhani et al. (2018) discovered that groupwork based activities promotes three aspects of learning; which are students will be engaged in the classroom and lesson, students will also be collaborative with their peers in a learning context, and finally students will perform critical thinking or HOTs based activities. This is not a surprise since groupworks are in fact known to be one of the measures to promote student's involvement and constant self-learning using a peer-based activity that aims at developing their level of self-thinking and learning (Williams 2015). This demonstrates

how relevant this approach is for the students in order to work and develop HOTS abilities.

Moving on from activities, the next theme emerged is the aspect of modelling or giving examples. This is was accepted and practiced by three out of four participants. The participants who practiced this approach meant it in a manner to demonstrate the level of thinking students are required to achieve as a means for the students to get an idea the intended objective of their learning and development. It also aims at helping student to develop thinking through examples. This is similar to the notion mentioned by Williams (2015) and Saifer (2018) who mentions that examples giving is a means of guiding and giving a picture for students to be introduced to a novel aspect of thinking. This will greatly help students in the development of teaching and learning of HOTS. On the other hand, one participant admits to not preferring this approach as to promote genuine ideas and products rather than adaptation of the modelling and example given. This is indeed contradictory to the statement before yet still similar to other aspects of the HOTS pedagogical domain. Conklin (2012) mentions that teachers are required to promote genuine ideas from students to promote HOTS development. Costa and Lowery (2016) also mention that teachers are not to teach in a recitation manner whereby students are simply following instructions and examples given without proper thinking and generating ideas. Overall this notion also adheres with the concepts of HOTS as well. Regardless of contradicting views, both approaches are in fact in line with the concepts of HOTS. As mentioned by Saifer (2018) teaching HOTS is an intricate process that consists of a variety of approaches suitable with a variety of context and situation. Therefore, it depends on the teacher to make the right decision of what approach to choose for the best. In this context, both approaches are validated with experts' statements in the HOTS teaching and learning domain.

The final aspect in the teaching approach section is the questioning theme. Under this context, high frequency of 'Why' based questions were mentioned and seen, high frequency of close ended questions and low frequency of open-ended questions. Shafeei et al. (2017) also discovered a same phenomenon of high frequency comprehension 'why' based question as well as close ended questions rather than open ended. Shafeei et al. (2017) define this as the teachers having lack of knowledge regarding this matter. Compared to more HOTS promoting studies this is a huge contradiction. Yen and Halili (2015) suggest using provocative based questions that may sound argumentative in order for students to self-discover and develop their innate HOTS abilities. Thuraisinggam et al. (2014) discovered and suggest open ended questions as a means to promote critical thinking and HOTS abilities. Compared to these studies, the findings of this study are in fact not as similar as it should be in regards of the HOTS based questioning approaches. This is in fact an impeding issue in the pursuit of students HOTS development. As mentioned by Brookhart (2014) teachers need to plan their

questioning techniques to be more critical, problem based and idea generating means as possible in order to promote HOTS development. As such this is a contradicting factor to the objective of HOTS altogether.

Furthermore, in terms of responses the participants seek, three out of four mentioned on particular specific responses while the one did not have any specific type of response. This is based on the reason that the sole participant intends to have students simply using the language as a means to develop the English language. This is referred as recitation by Costa and Lowery (2016) which means HOTS is not being achieved yet only lower order of the thinking ability is being tapped on. Therefore, putting this away from HOTS learning context. The other three participants mentioned on specific understanding, reasoning, problem solving as well as extended thinking-based responses. All in mentioned are in fact in line and highly suggested in order to promote and assess students HOTS abilities (Brookhart 2014). In fact, in terms of practice teachers would play an argumentative role or to put it simply play '*the fool*' in order to argue and provoke students to come up with HOTS based responses. This is in fact another suggested approach that is in line with the HOTS based pedagogy. As mentioned by Williams (2015) teachers are to consider all responses and continue to argue in order to understand and promote student chain of thoughts. Yet, in terms of practice, this approach was less seen rather than the close ended based questions. This was also addressed by the participants as they felt this should be more prioritized. Aziz@Ahmad et al. (2017) defines this as teachers not possessing proper knowledge to understand what should be prioritized and conducted in the classroom as a HOTS based questioning technique. Therefore, due to the similar scenario in this study, the participants are in fact not practicing the proper questioning techniques and in fact still lacking important knowledge in terms of utilizing questioning techniques to promote students' development of HOTS abilities.

As a whole, in terms of teaching approaches, the participants are demonstrating proper HOTS savvy choice of teaching activity and approaches. Yet in terms of questioning techniques they still need more exposure and realization regarding what is important what should be done in the classroom to promote the development of students HOTS abilities.

Evaluation

The second section of teachers' means to promote and equip students in terms of HOTS abilities is the means of evaluation and assessment. It is important for teachers to understand students' development and progress in order to know what they have accomplished and need to do in order to progress in the pursuit of HOTS development. Three main measures were mentioned and observed; which they are using questions either orally or written, students creating products as well as the participation in the classroom.

Hanna: *Mostly questioning that's when I know if they have achieved HOTs*

Fris: *Yes, scrapbook I once ask them to create poems from there I can see their thinking ability*

These means of evaluation are supported by the experts in the field. Brookhart (2014) have listed a framework of questioning techniques to assess and evaluate students HOTs abilities. Brookhart (2011) also mentioned on assessing students by using production or creating based activities; whereby the products are to be assessed in terms of creativity and student ability to analyse, apply, evaluate and generate ideas. Williams (2015) and Saifer (2018) promotes the means of providing problems in the lesson to see the solution and products students produce to be assessed and evaluate of their HOTs abilities and development. Conklin (2012) also stresses on teachers observing students' participation in the classroom as it provides meaning to the success criteria of the HOTs based lesson. Moreover, the DSKP curriculum document consist of objectives whereby teachers are to evaluate and assess by questioning, asking students to solve problems, create and produce as well observe and analyse students' participation in the lesson and classroom (KPM 2015b). These statements justify these approaches of evaluation to be HOTs aligned. It shows to prove that in terms of evaluative practices the participants are in fact doing the right action.

Classroom Participation and Involvement

The next aspect and theme under this context is the participation and involvement of students in the classroom. The situation being described and observed is in fact not novel. Higher proficiency students show high involvement while the low proficiency students are in fact not as involved or shows less involvement. A similar situation was encountered in the study conducted by Shafeei et al. (2017) as well as Aziz@Ahmad et al. (2017); whereby low proficiency students are not being much involved in the lesson as the higher proficiency students. Yen and Halili (2015) also discovered various cases where this issue becomes a challenge among teachers; which is to promote involvement among low proficiency or performing students. Thus, it defines this scenario as a recurring event in the HOTs learning and development domain; especially in the ESL classrooms.

Regardless of this scenario, the participants are seen to be taking less measures regarding this issue. They are actually aware and mentioned about how challenging this issue is. Yet in terms of effort was not clearly seen. A question was raised on how severe this issue is. Singh et al. (2018) manage to create a module to provoke weak and low proficiency student to be more involved in the HOTs based learning. Yunus and Suliman (2014) are able to promote students' involvement and HOTs development by applying a variety of ICT means approaches. Mansor et al. (2015) on the other hand specifically mention on using a safe and secure environment in the classroom to engage students in HOTs activities. Williams (2015) and Saifer (2018) promote the use

of explicitly guided discussions and groupworks to let student aid each other in a safe environment. These studies suggest that there are proper measures that teacher could take in order to achieve the aim of teaching HOTs in the classroom. Teachers are expected to utilize specific intended approach at addressing these types of issues to tackle the challenges. Therefore, considering the less amount of measures taken, it can be said that this issue is not being entirely addressed or prioritized and more exposure as well as measure in terms of knowledge and approach in HOTs based teaching is required.

Learning Techniques or Tips

The final aspect of this section in the learning techniques or tip provided by the participants in order to aid the development of students HOTs abilities. Three main tips were shared with the students. The first being the application and utilization of 'WH' questions to help generate ideas. This was particularly meant for writing essays, performing tasks, or creating products. The utilization of 'WH' questions is in fact a very common approach in ESL classrooms. Brookhart (2014), Williams (2015) and Thuraisinggam et al (2014) mentioned on utilizing questions to aid in the chain of thoughts and ability to solve problems and generate ideas. The second tip or technique is the practice of reading to increase command of language through memorization and understanding. Yen and Halili (2015) defines it, this approach or practice is intended for knowledge and understanding based thinking. It means, this activity is not HOTs based yet it is more intended for lower thinking ability of thinking. This is admitted by the participant as it was described as the means to improve students' proficiency. The third and final technique is the utilization of mind maps or iThink maps to take and organize notes. As described by the ministry of education, this approach is entirely intended to promote students' ability to organize their thinking of information (KPM 2013). It is in fact proven to be promoting students' ability to make decisions on what is important and not, reason, understand and think critically of information (Singh et al 2018). Considering the minimal number of techniques being shared and the fact that one is not entirely HOTs based, it can be deduced that more enhancement can be made in this area as well. The participants are required to explore more techniques and tips to expose their students to in order to enhance the development of HOTs in their classroom. Various approach,

Further Remarks

Other than the themes in mentioned, there are several other remarks being mentioned that is worth taken into account as well. The first being the notion that there is a need for a separate module to teach HOTs by itself. This perspective comes from the perspective that there is too much to teach in English syllabus that less time is provided for HOTs, Yen and Halili (2015) explains how HOTs can be taught either explicitly as subject by itself or implicitly by infusing it in the context of lesson. As being described by Yen

and Halili (2015), both approaches will serve the students well in terms of HOTs development. Yet the ministry specifically intends to produce students who are capable of not just thinking HOTs but also apply them in a variety of English based situation (KPM 2015b). To put it simply, by adding a module student will have more and addition lessons specifically on HOTs as well. Yet considering the aims of the ministry of education, it is suggested that the suggestion being taken into consideration as an additional effort rather than a substitute effort. This as a result will ensure student mastery of thinking skills as well as ability to think and apply HOTs in their ESL classroom.

Another additional remark being made was to build a strong rapport to ensure students are in fact involved and willing to take part in the HOTs learning process. The rapport will ensure student feel more comfortable and safer to take part in HOTs based activities. (Mansor et al. 2015). This is a crucial aspect as ESL is a lesson that uses a second language that might be very foreign to the students. As a result, HOTs

learning activities will also be affected to this aspect. Hence building rapport will aid in setting the suitable scenario and comfort for student to share and put their weakness on the table for HOTs self-learning and development (Williams 2015). Beside that the motivation will ensure students will want to think and develop HOTs. As mentioned by Yen and Halili (2015) students' motivation and urge will affect their desire to think so by motivating them, teachers can ensure students will take part in the lesson and perform the mental activity in their mind intrinsically. This justifies how this remark will aid in the development and teaching of HOTs.

V. CONCLUSION

The findings of this study were critically discussed and analysed to justify themes which are relevant in the HOTs learning and teaching domain. The final product of this study produces a set of models and framework that were gathered and justified in this study to be adhering to the HOTs based teaching practices.

Table 7: Teaching Approaches Model

Teaching Approaches Model	
Classroom and Language Production Activities in the classroom	<ol style="list-style-type: none"> 1. Discussion sessions, 2. Produce and presenting materials 3. Making mind maps or iThink maps 4. 'Hot Seat' activity 5. Comprehension question exercises <p>Group work activity</p>
Modelling or Giving Examples	<ul style="list-style-type: none"> • Practiced this approach as means to demonstrate the level of thinking students are required to achieve as a means for the students to get an idea the intended objective of their learning and development. • Not practicing this approach to promote genuine ideas and products rather than adaptation of the modelling and example given.
Questioning technique.	<ul style="list-style-type: none"> • Types of questions. <ul style="list-style-type: none"> ◦ A lot of 'Why' based and Open-ended questions. • Play an argumentative role • Types of Students Responses to seek <ul style="list-style-type: none"> ◦ Understanding ◦ Reasoning ◦ Problem solving ◦ Extended thinking.
Evaluation	<ul style="list-style-type: none"> • Use questions either orally or written • Students creating products • Participation in the classroom.
Learning Tips to Develop HOTs	<ul style="list-style-type: none"> • Application and utilization of 'WH' questions to help generate ideas; for writing essays, performing tasks, or creating products. • Utilization of mind maps or iThink maps to take and organize notes; intended to promote students' ability to organize their thinking of information.
Addition Remark	<ul style="list-style-type: none"> • Have an additional separate module to teach HOTs • Build rapport to promote involvement in HOTs lesson.

This study intended to understand the knowledge, perception beliefs and teaching practices of Malaysian English Primary school teachers in teaching HOTs among Malaysian primary school students. The findings of this study depict the participants in of this case study are in fact practicing proper HOTs based pedagogical approaches. The knowledge and perceptions are also in line with the foundation and beliefs of HOTs based experts. Undeniably, there are some drawbacks

in terms of lack of addressing certain issues and misconceptions of HOTs knowledge. Instead of viewing this as a negative aspect of the participants, stakeholders should address these issues as points to be taken action of. Teachers should address their self to self-improve their understanding and practice of the matter. The ministry is to take action in terms of providing the means to improve teacher's perception and practices in school by providing means to overcome

challenges and improve the pace of learning and development. Thus, this study will have its relevance if measures are taken and issues are addressed.

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