

Higher Order Thinking Skills in Teaching Malay Language through Questions and Questioning among the Teachers

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ABSTRACT: This study was conducted to investigate the issues related to the level of knowledge acquisition in Higher Level Thinking Skills (HOTS) among the Malay language teachers in national primary schools. This study applied quantitative approach by using Bloom's Taxonomy (1956, 2001) and Intellectual Enhancement and Upbringing Model (Philips, 1996). Total of 60 teachers from one district in the Negeri Sembilan were selected to answer the HOTS test. In addition, this study also explored whether there were significant differences between the level of knowledge acquisition in HOTS questioning with teachers' social background. Data was analyzed by using SPSS version 21.0. The findings showed that the level of knowledge acquisition of HOTS questioning in Malay language was at a moderate level. Mann-Whitney and Kruskal-Wallis test showed no significant differences between the level of knowledge acquisition in HOTS questioning based on teachers' specialization, attendance to relevant courses and teaching experiences. In other words, the social background of teachers did not determined the level of knowledge acquisition in HOTS questioning technique among the Malay language teachers in national primary schools. Therefore, Ministry of Education need to conduct effective HOTS courses in order to ensure that the implementation of HOTS questioning technique in all schools a success.

Keywords: Higher order thinking skills, Malay language, national primary schools, teacher.

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1 INTRODUCTION

Along with the development of Malaysia civilization and the effort of lifting up the name of the country to the world, education is the most important factor. The transformation in improving the quality of the education system has been designed in long-term by the Ministry of Education, namely the National Education Blueprint (2013-2025). One of transformational shift in the Malaysian Education Blueprint (NEB) is to 'provide equal chance of access to quality education of international standards, examinations and assessments prior to this will be revamped and devoted to the Higher Order Thinking Skills (HOTS).

2. STATEMENT OF PROBLEM

The Assessment and Teaching of 21st Century Skills Consortium (AT21CS) organized knowledge, skills and attitude into four categories: ways of thinking, ways of working, tools for working and living in the world (Schleicher, 2012). Similarly, one of the wishes of national education in Malaysia is to educate people to think. However, the educa-

tion system suffered a blow when Malaysia was ranked 55th in the assessment of reading skills for PISA test with 443 mean score (PISA 2015 Result in Focus, 2016). This directly shows the position of the best students in Malaysia is far behind compared to other countries.

This finding was further strengthened by the report submitted by Kestrel Education (UK) and 21st Century School (USA) in November 2011 stated that higher-order thinking among teachers and students in Malaysia is located at a very low level (Teachers Education Division, 2012) and bound by the examination-oriented method of teaching by teachers based on the report by UNESCO in 2011. Regarding this, Harmi and Mahamod (2013) of the opinion that the dependence of the examination have had been raising issues that hinder the initiative in shaping the generation envisaged by the National Education Philosophy.

Teaching students higher-order cognitive skills, including critical thinking, can help individuals improve their functioning in multiple circumstances (Tsui, 2002) and promote higher level of language proficiency (Chapple & Curtis, 2000; Tarone, 2005). Thus, learners need to think critically and

creatively when using the target language in order to achieve high proficiency.

Researchers and educators generally agree about the importance of teaching critical thinking skills. However, they debate if and how such skills could be promoted through instruction (Tsui, 2002). One controversial issue is whether critical thinking is discipline specific. Some experts argue that critical thinking instruction is only effective when it is integrated in teaching subject specific knowledge and skills. The lack of insight on this topic suggests that a review of recent empirical studies on the topic of instructional teaching method of critical thinking skills may yield important and timely findings.

Among the teaching method, HOTS questioning technique is highly appropriate in the teaching and learning of the Malay language. This is clear situation due to the thinking skills in the learning process will affects the development of a pupil from the aspect of learning, speed, and effectiveness of learning (Radovic-Markovic, M. & Markovic, D. 2012; Yee et.al, 2013).

From the aspect of teachers, the language teachers do not use appropriate questioning in their teaching skills as routine. It is also found that in the study that teachers rely mainly on textbooks (Sarsar, 2008) and adopting the questions provided in the textbook only (Supramani, 2006). The problem of teachers' dependence on textbooks also led to the scope of student thinking do not develop to a higher level including aspects of analysis, evaluate, or even creative.

This situation was also stated by Rajendran (2001; 2010) that the fact that the teaching of Malay Language teachers nowadays are not blending elements of higher order thinking skills. This issue is fundamental to the non-application of thinking skills in teaching process in viewing the teacher's role as a model to lead students chase toward excellence.

Furthermore the more serious phenomenon occur now is it has become a habit to Malay Language teachers in teaching writing skills to students by memorizing techniques. The ability of students to memorize will be an indicator of the success or failure of the process of writing skills. It is not negated the principles of teaching writing skills and the importance of thinking skills in essay writing. This is clearly supported by Brookhart (2010) that higher-order thinking in problem solving that a problem is a goal that cannot be met with a memorized solution. To recall something, students have to identify it as a problem.

Based on the issues mentioned above, it is clearly demonstrated that HOTS should be a culture of

questioning techniques among the teachers during the teaching of Malay language to produce quality students who are really good and ranked world-class, as specified by Mansor (2009) who stated that questions and questioning play very important role in the national education curriculum to build the thinking skills more effectively to students.

Therefore, this study aimed at answering the following research questions:

- i. What is the level of Malay Language teachers' acquisition of knowledge in HOTS questioning?
- ii. Is there any significant differences between the level of knowledge acquisition HOTS questioning with social background among the Malay language teachers.

Social background here is defined as the profile that affect the HOTS questioning technique of the Malay language teachers. The scope included their specialization, teaching experiences and attendance in HOTS courses.

3. CONCEPTUAL FRAMEWORK

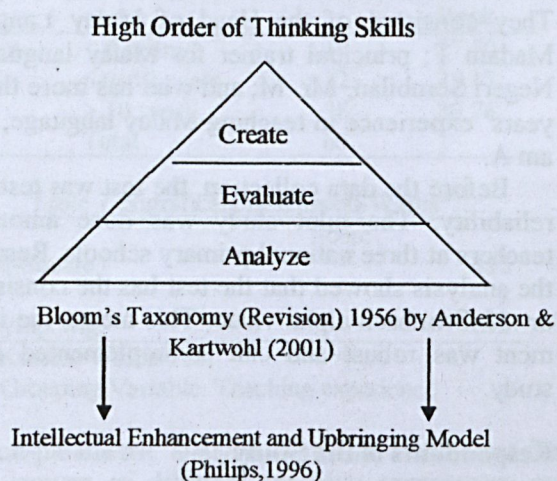


Figure 1 Conceptual Framework of Study

The figure above shows the conceptual framework for the teaching of higher order thinking skills in Malay language in national primary schools. This framework is based on the domain of cognitive thinking as revised by Anderson to Bloom's Taxonomy existing model. The idea of the model, then is divided into models of teaching thinking skills by Phillips (1996) on the rationale that the thinking skills is a process that can be taught, learned and can be implemented in a subject.

According to Phillips (1996), all subjects in school can be customized with thinking skills. He also noted that intellectual students will be formed through the teaching that leads to thinking and learning skills, but he also asked for support teachers through the confidence, skills, knowledge,

adaptability and willingness to disseminate skills to students, because he was sure that without support of teacher as a facilitator, it is certainly difficult for thinking skills to be applied.

Teaching model is featured next to focus questions and questioning that became a milestone in teaching and learning. The form of a question and the process of entry into force of this questioning was focused on the methods and characteristics of the questioning and the question of the high order of thinking skills' nature as the adopted cognitive domain model.

Research Instrument

The data pertinent to this study was collected by administering a set of testing questions to assess teachers' achievement in HOTS application. This instrument consists of six items that was drafted based on the Bloom's Taxonomy and Philip's model (1996). Content validity of the instruments was confirmed by getting agreement from a group of experts on the construction of each item in the test paper. They consisted of the Head of Malay Language, Madam T; principal trainer for Malay language in Negeri Sembilan, Mr. M; and who has more than 10 years' experience in teaching Malay language, Madam A.

Before the data collection, the test was tested for reliability. The pilot study was done among 30 teachers at three national primary schools. Results of the analysis showed that the test has the consistency or .85 Cronbach alpha value. This means the instrument was robust and can be implemented in the study.

Respondents of the Study

In this study, the sample size was 60 in three primary schools, namely National School, National-type Chinese School and National-type Tamil School. Purposive sampling method was employed in this study.

The results showed that the number of female teachers (50, 83.3%) is more than male teachers (10, 16.7%). This is inevitable in view of the number of female teachers who teach Malay language is more than male in the location of study. This study used the same number of respondents from the three types of schools (20, 33.3%) and total breakdown of respondents by ethnic, namely Malays, Chinese and Indians are the same for all three types of schools (20, 33.3%).

The number of teachers who have been teaching for more than 11 years was the most populous (38,

63.3%), followed by teachers who had been teaching between 6 to 10 years (12, 20.0%) and the lowest was novice teachers, ie the new teachers who teach below 5 years (10, 16.7%). Total non-graduate respondents were the most numerous (36, 60.0%) than graduated teachers (24, 40.0%).

Data also showed that respondents who are specialized in Malay language were minorities in this study (18, 30.0%) compared to non-specialized in Malay language teachers (42, 70.0%). In addition, the experience of attending HOTS courses were also taken into account in this study and found that the number of teachers who attended the related course (36, 60.0%) were higher than teachers who have not attended the course (24, 40.0%).

4. FINDINGS

Research Question 1: What is the level of Malay Language teachers' acquisition of knowledge in HOTS questioning?

To determine the level of Malay language teachers' acquisition of knowledge in HOTS questioning, frequency, percentage and grade was used as shown in Table 1. The range of score below is based on the rubric for national schools set by Examination Board of Malaysia.

Table 1: Test Scores and Teachers' Acquisition of HOTS Questioning

Range of Score	F	%	Grade
0 - 19	0	0	E
20 - 39	0	0	D
40 - 59	26	43.3	C
60 - 79	24	40.0	B
80 - 100	10	16.7	A

$M = 3.73, SD = .57$

Table 1 showed the results of testing the level of knowledge and abilities of teachers carry out the HOTS questioning techniques during the teaching process in Malay language class. The results showed that from the total of 60 respondents, 26 teachers (43.33%) achieved a grade C in the range of score from 40 to 59. This showed that majority of Malay language teachers were at a satisfactory level. Total of 24 teachers (40.0%) were at a good level that average score were in between 60 to 79.

The findings also showed the total numbers who scored A for the HOTS test were 10 teacher (16.7%) in the range of 80 to 100 marks. The conclusion of this table showed that the level of knowledge and abilities of Malay language teachers were at the stage of satisfactory, while the number of teachers who scored at outstanding level was low.

Research Question 2: Is there any significant dif-

ferences of the level of acquisition of HOTS and social background among the Malay language teachers?

To answer this question, Mann-Whitney test was performed using SPSS software in table 2 and 3.

Table 2 Mean Ranks and Sum of Ranks for Variables of Specialization and Marks in HOTS among the Teachers

	Specialization	N	Mean Rank	Sum of Ranks
Score In HOTS	Malay language	18	24.72	445.00
	Non Malay language	42	32.98	1385.00
	Total	60		

Table 3 Significant of the Mann-Whitney U^a

	Score
Mann-Whitney U	274.000
Wilcoxon W	445.000
Z	-1.682
Asymp. Sig. (2-tailed)	.093

a. Grouping Variable: Specialization

Analysis of Mann Whitney U-test was used to find the relationship between Malay language teachers' specialization with their score of HOTS. It was found that there was no significant difference between the teachers' score between the specialized Malay language teachers ($Md = 3, n = 18$) with non-specialized teachers ($Md = 3, n = 42$), $U = 274, Z = -1.68, p > .05, r = .21$. This showed that the specialization of Malay language teachers was not related to their score in HOTS. Z value was not significant at $p < .05$. Therefore the null hypothesis sound as "There is no significant differences between the level of acquisition HOTS questioning with teachers' specialization." was accepted. In other words, the teachers with or without specializing in Malay language did not differ in their score in HOTS.

Table 4 Mean Ranks and Sum of Ranks for Variables of Attending HOTS' Courses and Marks in HOTS among the Teachers

	Attending Courses	N	Mean Rank	Sum of Ranks
Score In HOTS	Yes	36	29.83	1074.00
	No	24	31.50	756.00
	Total	60		

Table 5 Significant of the Mann-Whitney U^a

	Score
Mann-Whitney U	408.000
Wilcoxon W	1074.000
Z	-.363
Asymp. Sig. (2-tailed)	.717

a. Grouping Variable: Attending HOTS courses

Analysis of Mann Whitney U-test was used to find the relationship between attending HOTS courses among the Malay language teachers with their score of HOTS. It was found that there was no significant difference between the teachers' score between the Malay language teachers who attended HOTS courses ($Md = 3, n = 36$) with those did not attend ($Md = 3, n = 24$), $U = 408, Z = -.36, p > .05, r = .05$. This showed that attending HOTS course of Malay language teachers was not related to their score of HOTS. Z value was not significant at $p < .05$ indicated that the null hypothesis that stated that "There is no significant differences between the level of acquisition HOTS questioning with teachers' attendance at the HOTS courses." was accepted. Therefore, the teachers who attended or did not attend HOTS course did not differ in their score in HOTS.

Table 6 Mean Ranks for Variables of Teaching experiences and Score of HOTS among the Teachers

	Teaching experience	N	Mean Rank
Score in HOTS	< 5 years	10	27.50
	6 to 10 years	12	32.17
	> 10 years	38	30.76
	Total	60	

Table 7 Significant of Kruskal-Wallis^{ab}

	Score
Chi-Square	.415
Df	2
Asymp. Sig.	.813

a. Kruskal Wallis Test

b. Grouping Variable: Teaching experience

Non-parametric analysis, Kruskal-Wallis test for three groups of different teaching experiences on their HOTS score at $X^2 (2, N=60) = .415, p < .05, r^2 = .006$. This showed that the Malay language teachers did not differ significantly in terms of their teaching experiences. This findings indicated that all teachers gain the similar HOTS score although they have different teaching experiences.

5. DISCUSSION & INTERPRETATION

This study found that the level of knowledge acquisition in HOTS among the Malay language teachers was moderate, with the mean score of 3.73 and a standard deviation of .57. Findings clearly shown that Malay language teachers already known and understood the concept of HOTS. It is important to be reviewed to ensure that the teachers are on a route or track of the latest, in line with the Ministry of Education to develop quality teachers and education in

the 21st century (Teacher Education Division, 2015).

The findings also showed that teachers were prepared to be evaluated and tested in terms of the implementation of the current HOTS questions in teaching Malay language in the classroom. When teachers ask HOTS questions and encourage explanations, they help their students to develop important critical thinking skills directly. By modeling good questioning and encouraging students to ask questions of themselves, teachers can help students learn independently and improve their learning (Corley & Rauscher, 2013).

Mann-Whitney test showed no significant difference between teachers with specialization in Malay language as compared to the non-option teachers. Therefore, the null hypothesis which stated that "there is no significant differences between the level of acquisition HOTS questioning with teachers' specialization" is accepted.

However, the data showed the mean rank of teachers who are not specialized in Malay language (MR32.98) are higher than the teachers who are specialized (MR24.72). This occurs because the teachers who tend to teach exam-oriented and focus solely on the content of the lesson. As a result of these circumstances, the specialized educators started to underestimate the value added in the teaching of Malay language that emphasize the implementation of HOTS questions and questioning compared to the non-options teachers who are more open to receive numerous reprimands and guidance from seniors teachers in polishing their skills. However, this finding was contrary to the study done by Ahmad and Mahamod (2014). They found that the mean scores of teachers among the Malay language option teachers was higher than the teachers who were not an option, result of t-test carried out in their study.

Similarly, the findings showed no significant differences between teachers who attended or never attended any HOTS courses. Therefore the null hypothesis which states that "there is no significant differences between the level of acquisition HOTS questioning with teachers' attendance at the HOTS courses" is accepted.

However, the data showed the mean rank of teachers who did not attend the HOTS courses (MR31.50) was higher than the teachers who attended (MR29.83). The findings was parallel with the data obtained by Zamri Hasan & Mahamod (2015), which showed the level of understanding of teachers who attended the courses and its impact on HOTS application was at a low level (M 1.96, SD .21).

In other words, the implementation of the HOTS courses that have been organized at various

levels by the District Education Office or the State Education Department was ineffective. It showed the affects that such courses do not get the appropriate input or do not expose the teachers to the theory and application of HOTS questions and questioning application in teaching process.

National Research Council (2013) suggested that to add knowledge, skills, quality of work, performance and quality of one's education, various form of training and exercises are required for teachers' continuous learning. The researchers believe that teachers should be given courses on a regular basis to strengthen their knowledge and skills to apply HOTS questions and questioning in classroom. This is supported by Robert (2016) who stated that effective intervention programs is needed to help teachers to blend HOTS in their teaching process skillfully.

These findings provided clues to the Division of Teacher Education in the MoE in order to organize courses or program on professional development of teachers more effectively. This is because the study showed no significant differences among the educators who attended the courses with those who did not attend it. Post-service training are found very important and Teacher Education Division play an important role in this matter for the joining, injecting, and spreading instructional methods that contain the HOT questioning technique elements to educators. Teachers Education Division also need to find more effective methods of dissemination to the educators as HOTS is a demanding skills nowadays.

Kruskall-Wallis test showed the aspect of teaching experiences has no significant differences to the score in HOTS among the teachers. It showed the experiences is not the measure for teachers to practice HOTS questioning in classrooms. Therefore, the null hypothesis which stated that "There is no significant differences between the level of acquisition HOTS questioning with teachers' teaching experiences" is accepted.

Experiences do not affect teachers' teaching HOTS because HOTS is a new element to be highlighted by MOE nowadays. All teachers are equally face problems while practicing HOTS questioning in teaching Malay language in schools. These findings can be seen to accept the findings presented by David & Ambotang (2014) who found that no influence of the implementation of HOTS among the novice teachers in the Sabah state. As a new skills, HOTS can be mastered by any educators who study it. This statement is also contradicted by Low et.al (2014) who explained that culture of implementing HOTS among novice teachers always applied in teaching process that their data showed the moderate level of

knowledge and understanding of HOTS among the teachers (M 3.26 SD .63).

Overall, the Malay language test in this study was drafted based on HOTS items at the analyzing, evaluating and creating levels. It is also noted that intellectual students will be formed through the effective teaching methods of the teachers and lead to thinking and learning skills of the students (Philips, 1996). The findings supported that good teachers can be trained through the confidence, skills, knowledge, adaptability and willingness to disseminate thinking skills to students. Therefore, similar study can be extended to other countries due to the importance of question and questioning in teaching HOTS to students. The history of teaching by question and questioning can be traced since Socrates that proved the effectiveness of the teaching method.

6. CONCLUSION

In a sum, the study indicated that most of the Malay language teachers' acquisition knowledge in HOTS questioning are at the average level. No differences were found between the levels of knowledge acquisition HOTS questioning with social background among the Malay language teachers. As a result, Ministry of Education need to conduct effective HOTS courses in order to ensure that the implementation of HOTS questioning technique in all schools a success due to its effectiveness to instill students' HOTS.

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