SCHOOL BASED ASSESSMENT: TEACHERS AND STUDENTS' VIEWS ON THE APPLICATION OF PROMOTING HIGHER ORDER THINKING SKILL

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Abstract. The aim of this study was to review the students' and teachers' views related to application of Higher Order Thinking Skills (HOTS) in School Based Assessment (SBA). A questionnaire has been adapted and modified in line with the objectives of the study. A total of 206 teachers who are pursuing a master degree have been randomly selected for this study. The study finding shows that there is similarity between students' and teachers' views on the application of HOTS in SBA. Both groups welcomed the government's intention to acculturate HOTS through SBA. However, some improvements need to be done. Among the views from the teachers were improvement in the curriculum and funds allocation, continuous training, more resources on HOTS assessment items; and more resources and materials for authentic learning activities. Most of the teachers interviewed claimed that HOTS application is the best way to produce students who can think wisely in line with the 21st century education aspirations. According to the students, teachers have not yet achieved the high level in the implementation of HOTS. In summary, change in curriculum in terms of the application of HOTS in SBA is very crucial because it can help increase the level of academic achievement and performance in Malaysia. This in the long run will help produce quality and outstanding human capital for the future.

Keywords: School Based Assessment, Higher Order Thinking Skills, 21st century skills.

Introduction. Education is the main contributor for the nation's social and economic resources development. Education is the creative and innovative catalysts which will complete the younger generation with knowledge and skills to compete in the job market and economic development (Curriculum Development Division, 2013). The Malaysian Education Blueprint (PPPM) 2013-2015 is the nation education transformation plan towards the 21st Century education. To compete with the developed countries such as America, England and Japan, Malaysia needs to produce world class students who are armed with critical skills such as HOTS. Thus, among the PPPM agenda is to review the education curriculum by emphasizing on the 21st Century skills namely encouraging the integration of mental agility beside holistic and balanced development of students' personality (Curriculum Development Division, 2013). The Ministry of Education (2012) has to implement some innovations in the curriculum when they introduced SBA as an effort to encourage HOTS. The implementation of SBA aims to improve the national examination system for students of ages between 12 and 15.

Curriculum and School Based Assessment. Curriculum is defined as the principle and procedure for planning, implementation, assessment and management in an education program (Fisher & Robert, 2011). Ornstein & Hunkins (2013), on the other hand, defines curriculum as a plan for learning. Thus, curriculum planning is an important step in the world of education because it is the foundation towards achieving the long term goals in the education program (Black & Wiliam, 2008). The Malaysian context of education is to focus on the schooling system because it is an important element for a nation in the effort to develop the society in terms of economy, politics and social. Assessment is a process of collecting and interpreting scientifically a comprehensive information based on intervention result and when applicable a placement decision is proposed (O'Conner, 2002). Meanwhile, the Malaysian Examination Syndicate (2012) defines assessment in education as a learning process which involves activities such as describing, collecting, recording, scoring and interpreting information about students' learning for a certain objectives. The Examination Syndicate (2012) explained that SBA is managed by the school. Assessment is done continuously in the teaching and learning process by teachers in the primary and secondary levels using the Performance Standard Document and the Primary School Standard Curriculum.

Problem statement. The Ministry of Education (2012) systematically has increased the percentage for HOTS items through SBA and the public examination. Items based on Bloom's Taxonomy test skills such as analysis, evaluation and creating. In 2016, the percentage for HOTS will be increased to 80% in the national examination for students aged 12 and 15, and 50% for students aged 17. Hence, this study was conducted to obtain the perspectives of teachers and students about the application of HOTS in SBA in the classroom. In fact, this study also aimed to bring forward students' evaluation of SBA with the aspects of HOTS and teachers' perspectives on issues and challenges in implementing HOTS in SBA.

Research Questions

1. What are the students' evaluation of their teachers' HOTS application in SBA?
2. What are the students' perceptions of their teachers' practice in enhancing students' HOTS?
3. What are the teachers' perceptions of their practice in enhancing their students' HOTS?

Methodology. This study employs the quantitative and qualitative approaches using case study design. 206 teachers teachers who are pursuing a master degree at University Utara Malaysia were selected using random sampling as subjects. This case study was conducted using multi-case-multisite which involved various cases (teachers teaching

several subjects and involved in SBA) where multi-site refers to more than one study context (several schools types e.g High Prestige Schools, Boarding Schools, Normal Daily Schools, Selected Normal Daily Schools, Religious Schools and so on). The questionnaire was created by the researchers with the reliability value of alpha .80. 41 students responded on the teachers' HOTS application in SBA and 10 students were selected randomly for the interview session. Both data were used to make comparative measurements (Field, 2009). For the interview, all the data were recorded, transcribed verbatim and translated for the analysis. The interview data was analysed using thematic analysis.

Findings. Students' evaluation of their teachers' HOTS application in SBA

Based on descriptive analysis shown that 56.1% students (n=23) gave a high score for their teachers in the item 'think about myself using intellectual discipline in the teaching and learning process'. The second highest score is 53.7% (n=22) for item 'find related information to answer questions in content subject'. Result findings also showed 51.2% (n=21) is the third highest score for item 'explain why certain subjects have to be learned for instance reasons for assignments, activities, chapters, tests and so on'. In the moderate level category, students gave a score of 53.7% (n=22) for item 'learn how to ask questions in certain subject' followed by 51.2% (n=21) for item 'must think in order to understand the contents of the subject'. In the low level category, study findings showed that 53.7% (n=22) agreed to the item 'able to obtain a good grade by just memorizing without really understand the contents of the subject'.

STUDY FINDINGS FROM STUDENTS' INTERVIEW SESSIONS.

Application of HOTS in SBA is good but students are overburdened with assignments and loads of exercises. 10 students (100%) interviewed claimed that assessment activities conducted encourage the application of HOTS in SBA. Majority of the students opined that HOTS application in SBS is very commendable but they are overburdened with too many assignments and exercises as illustrated below. Question 1: What is your personal view of SBA?

R1*"In my opinion, SBA is good because the items are really challenging my mind and so I have to think deeply and in detail…"*

R2*"In my opinion, SBA good, but it is not fun and makes my learning boring because the questions are very difficult and subjective. It is all so challenging".*

R6*"In my opinion, SBA challenges my level of thinking and learning. Moreover, I feel pressured by the assignments and exercises".*

R8"*To me, SBA is a good activity because it helps me increase my thinking skill level and very challenging".*

R10"*For me, SBA is very good because it helps me to increase my HOTS but… I also have many assignments to finish".*

HOTS application is more outstanding after SBA was conducted

10 students (100%) claimed that HOTS application in the learning activities was more exceptional after SBA was conducted as illustrated below.

Question 2: Which learning activities emphasized more on HOTS, before or after SBA?

R2*"If comparison is made between before and after SBA, HOTS is more emphasized after SBA was conducted.*

R5"*In my view it is after SBA because my teacher always gives us exercises to finish".*

R7*"In my opinion, it is after SBA. It focuses a lot on HOTS and it requires me to think at a high level".*

SBA implementation exposes students to problem-based activities

Subsequently are the responses on teachers' planning of problem-based learning activities. According to students' views, after the implementation of SBA, majority of the subjects such as in Living Skills, Science, Mathematics and History, students were given more opportunities to experience problem-based learning activities as illustrated below.

Question 3: Did your teachers prepare problem-based learning activities?

R1 *"Yes, in Living Skills. Teacher wanted us to invent an electronic music box using our own creativity".*

R3*"Yes, especially in the science subject because teacher prepared several experiment activities which require us to complete the activities in order to get logical answers".*

R4*"Yes, in mathematics and in the Multiplication and Division topic".*

Teachers help students to think through discussion, group work activities, games, mind maps and identify important details.

From the interview, it is found that students agreed that their teachers help students to think during learning activities are conducted. Among the activities conducted were discussion, identify important details, games, mind map and group work activities as illustrated below. Question 4: How did the teacher help you in your thinking during learning sessions?

R2*"Yes, Teacher helped me by giving keywords and important details in every topic that I learn".*

R3*"Teacher always does discussion and learning in groups".*

R6"*My teacher helped me through the use of mind map and discussion".*

R7*"Teacher helped me by giving me questions in game-based activities. The activities were fun and made me comfortable and not bored".*

Students are exposed to the thinking level of creating

Students claimed that SBA formulates learning activities which require students to think at the level of creating by inventing certain products to solve certain problems as illustrated below. Question 5: During SBA, were you exposed to thinking activities which need you to create something?

R2*"Living Skills subject exposes me to the thinking level of creating something, for example, invent a product*

by using recycled materials".

R7*"Yes, especially in History because I have to produce a portfolio based on my own ideas and creativity".*

R9*"Yes, Mathematics exposes me to the thinking level of creating, for example, the reinvention of a new formula".*

FINDINGS FROM TEACHERS' INTERVIEW

Teachers use learning materials such as multimedia, mind maps, flow charts, video and multi colored flash cards to increase students' HOTS

16 teachers who were interviewed agreed that the preparation of learning materials such as mind maps, flow charts, video and multi colored flash cards attracted students' interest and attention. Besides, graphics and visuals found in multimedia applied also help increase students' HOTS. The assessment items were based on students' level of mastery of certain topics while the problem solving items are prepared to encourage students to think and teachers analyze the items so as to get the expected HOTS by the students as illustrated below.

Question 1:To what extent do the learning materials that you prepare for classroom instructions can help increase students' HOTS?

R8:*"During teaching and learning sessions, I use learning materials such as pictures, video clips and graphs. Charts are also used to gain students' interest and attention. Besides, using learning materials help increase students' mental development and students' intellectual level because it involves HOTS".*

R11:*"Using multi-colored flash cards. Example of subject: Arabic Language about things at home. Teacher showed flash cards of things at home. Teacher showed clear pictures of things at home. Teacher says they words and students repeat".*

R16:*"Students are exposed to the strategy of taking notes based on HOTS application. Notes are done in the form of mind map, flow chart and flip chart. This is just the beginning".*

R20:*"Students watch video during lesson, example, they watch how a submarine stay afloat in the water whereas a metal spoon would sink. Here, students are able to relate the concept of physics in their daily lives".*

Teachers apply group work problem-based learning methods

12 teachers (42.8%) responded on the problem-solving learning methods in their classrooms. Majority of the teachers practice student-centered learning by inculcating cooperative learning, group discussion and experiments to solve problems as illustrated below.

Question 2:Do you apply the problem solving method in your classroom?

R1*"Yes, the teaching and learning in class is student-centered and usually in group form. The problem solving methods are applied in terms of group work. Students complete their assignments or tasks in groups based on the instructions given".*

R9*"Yes. Among the problem solving methods in class that I use is informal cooperative learning approach. This informal group work approach can be used to ensure that active cognitive process takes place during teaching and learning. For example, Think-Pair-Share activity where teacher can stop his/her lesson by asking simple questions, test items or issues to be thought about or discussed briefly".*

R16*"Students are given tasks in an experiment. They are required to collect information, record them and then discuss them with the teacher to come to a conclusion on how to solve the problem together".*

Teachers suggest authentic learning activities, more HOTS questions in learning session, lessen the syllabus in the text books, improve the curriculum and allot suitable allocations for teachers and schools to prepare suitable learning materials.

14 teachers (50%) responded on this matter. Teachers suggest authentic learning activities, more HOTS questions in learning session, lessen the syllabus in the text books, improve the curriculum and allot suitable allocations for teachers and schools to prepare suitable learning materials as illustrated below.

Question 4: What are the improvements needed to improve HOTS application in SBA?

R15*(i)Students should be given authentic learning activities especially those related to their daily lives".*

R17(*i)"Lessen the syllabus in the text books."*

(ii).Allot fund allocation to prepare materials."

R18 (*i) "Teachers have to train students to answer HOTS application in every subject".*

(ii)"Teachers have to be always active and apply HOTS questions during learning and teaching session".

R20(*i) "Review the curriculum so that HOTS can be integrated and generated".*

Discussion & Conclusion. According to Hall and Hord (2011), change in curriculum is related to the process of an individual who gradually move to understand more and become more skilled and afford to use the new curriculum. The concept of change in curriculum is not similar to innovation. Innovation means idea modification to fulfill the needs and functions in certain fields without changing or risking the present system but instead, giving an added value towards increasing the performance. The study findings have proven that implementing SBA in the Malaysian system of education has given teachers and students opportunities to apply HOTS in their learning activities. Students and teachers welcome the MOE's effort of acclimatizing HOTS in SBA. However, several issues have to be considered so that the implementation of SBA and HOTS is in tandem with the objectives of the nation's education development plan. Continuous training to enhance HOTS application lessons is important because teachers are the main medium of knowledge dissemination to the students. Teacher is the main key player in bringing forth changes in the education system. Many of the problems arise during implementation. Thus, it is fair that policy makers and stake

holders identify the existing problems and solve them in the effort to materialize transformation in education in line with the planned curriculum.

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