

## EMPOWERING QUALITY QUESTIONS: GENERATING STUDENTS THINKING CAPABILITY

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**Abstract.** Addressing the agenda of education in the 21st century requires the commitment of educators to realise the potential of student's thinking to be synthesised towards mastering their thinking capability at a high level. Therefore, this article is aimed to evaluate the degree of University of Terengganu Malaysia lecturers' concern among in mastering skills in the formulation of questions, of different types and levels of difficulty, and to apply them in the context of student assessment that affects their thinking capability. Content analysis with a descriptive study together with a checklist instrument to investigate the difficulty level was applied to evaluate a total of 412 questions from 12 courses for the final examination of the program of study. The results showed that the majority of the questions (59%) were constructed using memory questions and only 1% were evaluation questions. Only 12% of the questions were high-level and the rest (88%) were low-level questions. This result reflected that the question makers had neglected the importance of applying the multiformity of types and difficulty of the questions. Ergo, academic leadership should seriously monitor this matter as it will affect the credibility of the graduates and also education holistically.

**Key words:** thinking skills, question type, difficulty level of the question, question maker, quality of questions.

**Introduction.** In the context of education, assessments and analysis are interconnected with each other. One of the ways of implementing these two aspects of teaching and learning is through the establishment of the elements of questions and questioning. Questions and questioning are important aspects that help educators to test students understanding and to stimulate their thinking. Questions are used effectively in order to bring about the mastery of student's thinking skills as well as being the medium to evaluate the level of effectiveness and their thinking capability towards more proactive and innovative learning. In conjunction with this, in [27] highlighted that good and effective questions exhibit wide-ranging levels of thinking and are moulded using different levels of thought and can direct students to effective and collaborative learning. It indirectly generates students' cognitive skills in terms of acquiring knowledge as well as the mental processes that drive their thinking capability.

The significance of questions and questioning feature strongly in the national education curriculum towards effectively mastering the thinking skills of students. Questions and questioning work to determine the level of student-thinking capability and to guide them to more productive learning, especially to face real life after leaving education. Therefore, educators especially lecturers need to have the skills to form multilevel questions and to use them productively to improve the effectiveness of teaching and learning in the classroom as well as generating students' thinking capabilities at different levels.

However, a problem persists, especially during the vetting process that relates to the competence of lecturers in creating quality questions. Among the arguments are: the majority of the questions that are generated are at low levels; there is a lack of diversity of questions and questioning phrases; as well as a failure to provide effective question assignments. These facts are in line with the findings of earlier studies that were carried out by University Malaysia Terengganu (UMT) in 2008 where the results showed that the majority of the lecturers used questions at a low level of knowledge and comprehension compared to questions at high levels.

In order to overcome these weaknesses, UMT devised a strategy to hold courses and workshops to strengthen the ability of lecturers to build questions and questioning for application in both teaching and to produce quality exam questions. As a result, three workshops were conducted by the Center for Academic Quality and Development (in Malay named as *Pusat Kualiti dan Pembangunan Akademik* (PKPA)) of UMT which is responsible for developing training for the improvement of professionalism among lecturers. For example, the PKPA conducted the Workshop on Generation and Empowering of Questions in 2009, Lecturers Professionalism Improvement Workshop: Series of Generation and Empowering Questions in 2010, and Question Item Development Workshop in 2011 which used external expertise in the field of analysis and evaluation. These efforts still continue to be implemented.

The result of this study is to evaluate the degree to which the ability of lecturers to master the skills of generating diverse types and difficulty levels of questions impact on the quality of questions and students' thinking capability. Questions and questioning aspects are a fraction of research that has a strong foundation to be investigated in order to scrutinise the extent to which concerns in the development of the questions are accentuated as it will affect students in generating intellectual and diversity of their thinking.

Specifically, this study aims to confer:

- 1) Lecturer's ability to use multiple types of questions in the final exam of the semester of study.
- 2) The ability of a lecturer to use a diversity in the difficulty of the questions in the final exam of the semester of study.
- 3) Aspects of the strengths and weaknesses as well as resolutions in strengthening and generating quality question and student thinking skills.

**Literature review.** The transformation of national education, as aspired to by the former Malaysia prime minister - Mohd Najib Abdul Razak, continues to emphasise on developing students' thinking potential so that future generations are able to overcome the various challenges of life. This means that students' thinking potential should be prioritised towards mastering a diversity of thinking that can be applied to a variety of real-life situations. Ergo, the scenario of teaching and learning in education should be a platform which allows the application of various levels of thinking skills and abilities to produce creative, critical, and innovative students able to deal with and solve problems.

In [15] described the aspects of the mind that exist in man as a tool, this moves one to think of an account in the Quran surah al-Imran verses 190-191, where the Quran encourages the human mind to observe and think of Allah SWT's creation about the universe such as the creation of heaven and earth, night and day cycle that can be used as material for thought for human beings and study. Hence, this statement provides lessons and implications regarding the importance of the human mind's potential to be developed, nurtured and guided towards a generation of human beings capable of thinking and carrying out the appropriate actions of life on earth. This means that the national education system is responsible and entrusted to shape and generate the potential capacity of students to think through the transformation of the education system by the ongoing planning, monitoring improvement and implementation of the curriculum.

The capacity of the mind to think is motivated by questions, in order to stimulate thinking, the use of questions should be used to dynamise the minds of students. This should provoke educators to encourage students towards thinking on a variety of cognitive levels. In this regard, educators are entrusted with a mandate and responsibility to play their role by creating quality questions that both lead to cognitive diversity and to form a sound and effective strategy of questioning for students. As a matter of fact, questions induced with various cognitive levels and employed with intensive planning during teaching and learning sessions will be able to create a diverse paradigm of thought among students as well as to produce more competent learning.

The importance of the difficulty level of questions and the relevance of the students' thinking skills have been demonstrated in many previous studies which continue to emphasise high-level thinking skills. Among them, in [33] described the cognitive level of questions affecting student responses in which the cognitive diversity of the student's answers was chiefly determined by the diversity of the questions given. In [2, 6, 30] found that questions at the level of recognising and memorising had low difficulty levels and generally obtained short answers in comparison to high-level questions that required students to give their opinions and inferences. Similarly, in [26] saw the relationship between cognitive processes with multiple-level questions which proved that questions at high cognitive levels such as inference and applications encouraged higher cognitive processes in comparison with experience and memory questions at low levels. Additionally, questions at a low level only required the memory and experience of the student for an answer. On the other hand, questions at high cognitive levels involved modifying text through analysis, synthesis, finding a cause and effect and creative thinking application skills. This demonstrated the importance of exposing students to high-level thinking and mastering the skills to address those questions.

Furthermore, the results of the study by [10,17] found that there was a relationship between questions and thinking skills, whereby questions and questioning constituted the underlying foundation of all forms of action to think effectively. In [5] proved that a teaching strategy that had a substantial effect in mobilising thinking was questioning by the educator. In fact, a students' level of thinking could contribute to a synchronisation with the level of questions used by them. In [9] emphasised in the findings of his study that the strategy of educator questioning and the diversity of questions presented played a role in sparking creativity and high-level thinking amongst students. The findings also showed that most teachers used questions to motivate students [8, 32]. However, seventy per cent of these questions led to fact-keeping questions [32], referred to by [29] as shrinking questions.

Further, a case study by [4] also presented the relevance of questions and tasks with thinking. The findings showed that educators used hundreds of questions each week, however, the types of questions needed to be focused on, as he found that the questions presented were diverse, some required short answers, and vice-versa, which required students to think at a more complex level. But in the context of moving the minds of the students, educators often question what has been learned, and neglect the question of attaining new knowledge. Thus, in [17] stressed that the skill of questioning was revealed from the beginning of the student's development so that a solid foundation is formed to enable students to move their minds strategically and to have the ability

to think productively. In fact, this situation was also emphasised in the study by [10] which concluded that educators used questions that stimulated student's thinking to enable them to develop effective thinking skills.

In [11] study regarding the reading and comprehension of texts provided a clear picture that most teachers had the tendency to present more low-level rather than high-level cognitive questions. The use of low-level thought questions is not wrong but these questions only encourage students to recall and understand what is contained in the reading passage. As a matter of fact, even these two types of questions are not wrong to use. Factual or low-level questions are used to remember or recall basic facts, while high-level questions are used to promote high-level thinking. They stressed that it was very difficult for students to learn to think unless they were given the opportunity to respond to high-level questions. The use of more challenging high-level thinking questions encouraged students to express their opinions, discuss decisions, find solutions to problems, or generate new ideas on matters relating to the reading content. In [31] argued that more focused higher-order thinking questions should be used by teachers to promote high-level thinking among students and that they should be guided and encouraged to make metacognition connection by reflecting on their thinking processes to help them to ace the thinking skills at a high standard.

This relates to the study by [24] which examined the extent to which the application of creative and critical thinking skills in the Malay language subject were understood. The study found that the majority of teachers (91%) had questions that were clearly and easily understood, however, the focus of most of the questions were only of the low cognitive level knowledge type (79%) and comprehension (81%). Teachers inadequately emphasised application type questions, analysis, synthesis and evaluation. The difficulty level of the questions also related to the level of student achievement. Data analysis on the success of each question pointed out that low level questions that only required remembering the details allowed 90% of the students to excel as opposed to only 10% who failed. While in questions which demanded assessment, high-level questions, only 15% of the students aced these question compared to 73.3% who failed. This finding showed that students still had not grasped the skills to answer high-level questions, especially assessment questions. Students were still unable to draw conclusions, rationalise, appreciate, and subsequently make judgments about the studied text. While, questions recognising the details were the easiest questions and could be answered well by students [1]. Meanwhile, a number of studies on the cognitive level of the question whether in teaching and learning applications, or in curriculum materials, especially textbooks and workbooks, were reviewed, the studies proved that on average the use of low level questions were focused on, rather than the use of high level questions [7, 12, 16, 20, 25]. The study of [19] also found that the percentage imbalance in the use of the question categories appeared to be due to the absence of a specific question indicator to be followed as a guideline in the generation of questions. This led to the use of questions which had no proper division among high and low-level questions.

Ergo, students who have not received the necessary cognitive exposure and stimuli to further enhance their thinking skills have led to the students having weaknesses in answering questions firmly, effectively and applying them in live situations. Similarly, in a study of the language curriculum [22] showed that some aspects of the use of the cognitive level diversity of questions had not yet reached the level of quality that could enhance a student's thinking skills according to the varying degrees of thinking, in fact, it was only limited to the scope of a stereotyped question. The input given was merely a disclosure to meet the requirements of comprehension exercises. The importance of fulfilling the actual aspects of the language education curriculum requirements for the purpose of meeting the needs and requirements of the syllabus, the objective of the examination and the realisation of the content of theoretical ideas in the aspects of assessment and evaluation towards encouraging the behavioral change of student thinking to effective learning still needed to be enhanced towards meeting the demands of a curriculum transformation that concentrated on thinking generation. Hence from this scenario, the

Ministry of Education Malaysia (is Malay named as Kementerian Pendidikan Malaysia (KPM)) has given serious emphasis to high-level thinking skills (in Malay named as *Kemahiran Berfikir Aras Tinggi (KBAT)*) as a 21st-century education element for the development and production of competitive human capital and high marketability. As a result, KBAT is now a priority in determining the success of education transformation as outlined in Malaysia Education Blueprint 2013 – 2025 (in Malay named as *Pelan Pembangunan Pendidikan Malaysia (PPPM ) 2013 – 2025*). The focus on high-level thinking is to empower students to master thinking skills that involve their ability to apply knowledge, skills and values in reasoning and reflection to solve problems, make decisions, innovate and create something [13]. Students are also able to use new or existing knowledge and to manipulate information until they find a reasonable answer to the new situation. This action actually challenges students to interpret, analyse, and manipulate information in dealing with specific situations and solve problems in life [14, 18, 23]. The result has been that there is a need for a continuing of educational emphasis on higher level education. The concerns and capabilities of educators in generating a diversity in the types and difficulty levels of questions that trigger the ability of students' thinking skills should be scrutinised and studied. The results will prove the extent to which this trust is in place and will need continuous monitoring.

**Methodology.** This descriptive case study used content analysis methods with a review code study instrument from Question Cognitive Level Models [20, 21]. This instrument was built based on the cognitive

domain theory framework by [3] with four question model references from [27, 2, 28] together with modifications and the enhancement of inputs in line with needs across curriculum questions. The study instrument was once again adjusted and synchronised using the taxonomic questions used by [13] that applied the Anderson Taxonomy as a result of the previous Bloom Taxonomy. The subjects of the study consisted of a target group of lecturers for a study program, identified by the School of Studies, who required guidance to improve their skills in the generation of examination questions. This was necessary because during the process the majority of the lecturers had been away, and had only recently resumed working, so they needed continuous guidance to strengthen their knowledge, skills and values in teaching and learning pedagogy especially on the aspects of course assessment. The implementation of the data collection process involved intervention measures for the reinforcement of the knowledge and skills of the lecturers on the generation of examination questions through a Question Generation Workshop. Schematic Answers and an analysis of the final examination questions were prepared post-workshop. Data analysis involved the Reviewing and Marking procedures; Data Transformation; and Data Analysis Concepts. The data collected from the research and the assessment of the diversity of the types and the levels of difficulty of the examination questions was reported in an easily understood manner by using percentages. The reporting met the need to answer the study questions.

**Results and analysis. Diversity of type of questions in the final exam of the study semester**

The results of the study exhibiting the ability of lecturers to use a diversity of questions in the final exam questions are shown in the table below.

Table. 1. Overall analysis of questions types

Question Types	Memory	Comprehension	Application	Analysis	Assessment	Creation	Total Questions
Amount (%)	242 (59 %)	121 (29 %)	25 (6 %)	19 (5 %)	5 (1 %)	0 (0 %)	412 (100 %)

Overall, 412 questions were evaluated from the twelve courses offered by the program for semester 1, 2015-2016. The findings of the study showed that from the five types of questions examined, only four types of questions were actually identified. The majority of the questions, 59% were memory questions, 29% comprehension questions, 6% application questions, 19% analysis questions and 1% were evaluation questions. No creation questions were developed for the entire program. The implication of this finding showed that generally the questions used simply involved the memorisation and understanding of facts and information from the text. Only 11% of the questions involved the use of knowledge and the identification of important ideas. As for the questions involving consideration and results, only five questions were found while no questions that were related to the creation of new ideas from the study information were tested on students. In order to meet the necessary quality level of questions and to provide students with diverse thinking capabilities, the questions need to be diversified to challenge their thinking. The questions used only trained students to recognise and remember the information learned. Hence, continuous quality monitoring needs to be carried out so that the assessment aspects of the program reach the level of course offerings for the program being implemented.

The details of each course related to the following question type are shown in the following table.

Table. 2. Diversity questions type (full course details)

Course	Diversity Questions Type						Total Questions
	Memory	Comprehension	Application	Analysis	Assessment	Creation	
1	20	18	4	5	0	0	47
2	41	12	0	1	0	0	54
3	9	16	0	0	0	0	25
4	17	11	1	0	0	0	29
5	22	16	0	0	0	0	38
6	18	3	0	1	0	0	22
7	7	1	10	1	2	0	21
8	39	7	0	2	0	0	48
9	5	9	3	0	0	0	17
10	36	10	0	5	1	0	52
11	19	9	7	2	0	0	37
12	9	9	0	2	2	0	22
Total Questions	242 (59%)	121 (29%)	25 (6%)	19 (5%)	5 (1%)	0 (0%)	412 (100%)

From this table, it can be seen from the details that all of the courses that were assessed used memory and comprehension questions. Nevertheless, there were two courses that only used memory and comprehension question types for all of their entire questions. Application questions were seen in five courses; analytical questions were used in eight courses while assessment questions were employed in three courses. Creation questions were not used in any of the courses. The details of this analysis show that the question makers were indifferent to adapt the diversity of questions to the taxonomy. The quality of the questions and their impact on student's thinking was not considered. As educators, the question makers should pay more attention to the philosophy behind the formulation of questions. The impact of the use of questions that have been enacted on the aspects of student thinking should be addressed. The questions should be created not only to test the students' understanding and comprehension but should also be aimed at the preservation of the quality of input generating questions and the production of excellent student minds.

**Diversity level of questions in the final exam semester of study**

The findings of the analysis, together with the research findings, on the aspects of using varying degrees of difficulty of questions were obtained from the following data.

Table 3. Analysis of question difficulty levels

Course	Difficulty Levels						Total Questions
	Low		High				
	Memory	Comprehension	Application	Analysis	Assessment	Creation	
Number (%)	242 (59 %)	121 (29 %)	25 (6 %)	19 (5 %)	5 (1 %)	0 (0 %)	412 (100 %)
Total	363 (88%)		49 (12%)				

The findings showed that out of a total of 412 questions assessed 88% of the questions were created at a low difficulty level which included questions of memory and comprehension. Only 12% of the questions were created at a high-level covering application questions, analysis and evaluation. There were no questions that tested the creativity of the students. This meant that the quality of the questions used was low and did not test the students' thinking ability at high levels. This finding also indicated that the questions produced were not challenging and thus did not train students to think creatively by applying the knowledge that had been learned. The implication is that student's thoughts can be education and tested at a low level. Students' thinking skills were poorly tested and formed at high levels of thinking. High-level questions have been emphasised by the Education Ministry for the national education system with the aim of training students to move their minds and to think critically, creatively and innovatively to survive life after graduation. Hence monitoring and continuous improvement measures should be intensified and practised by educators to ensure the quality of thoughtful graduates is synthesised from the program of study being enrolled.

Furthermore, the following table presents the details of the data for each course that were obtained in relation to the varying degrees of difficulty of the questions that were applied in the formation of the questions.

Table 4. Analysis of diversified questions difficulty levels (full course details)

Course	Difficulty Levels						Total Questions
	Low		High				
	Memory	Comprehension	Application	Analysis	Assessment	Creation	
1	20 (42 %)	18 (38 %)	4 (9 %)	5 (11 %)	0 (0 %)	0 (0 %)	47 (100 %)
2	41 (76 %)	12 (22 %)	0 (0 %)	1 (2 %)	0 (0 %)	0 (0 %)	54 (100 %)
3	9 (36 %)	16 (64 %)	0 (0 %)	0 (0 %)	0 (0 %)	0 (0 %)	25 (100 %)
4	17 (59 %)	11 (38 %)	1 (3 %)	0 (0 %)	0 (0 %)	0 (0 %)	29 (100 %)
5	22 (58 %)	16 (42 %)	0 (0 %)	0 (0 %)	0 (0 %)	0 (0 %)	38 (100 %)
6	18 (82 %)	3 (14 %)	0 (0 %)	1 (4 %)	0 (0 %)	0 (0 %)	22 (100 %)
7	7 (33 %)	1 (5 %)	10 (48 %)	1 (5 %)	2 (9 %)	0 (0 %)	21 (100 %)
8	39 (81 %)	7 (15 %)	0 (0 %)	2 (4 %)	0 (0 %)	0 (0 %)	48 (100 %)

9	5 (29 %)	9 (53 %)	3 (18 %)	0 (0 %)	0 (0 %)	0 (0 %)	17 (100 %)
10	36 (69 %)	10 (19 %)	0 (0 %)	5 (10 %)	1 (2 %)	0 (0 %)	52 (100 %)
11	19 (52 %)	9 (24 %)	7 (19 %)	2 (5 %)	0 (0 %)	0 (0 %)	37 (100 %)
12	9 (41 %)	9 (41 %)	0 (0 %)	2 (9 %)	2 (9 %)	0 (0 %)	22 (100 %)
Total (%)	242 (59 %)	121 (29 %)	25 (6 %)	19 (5 %)	5 (1 %)	0 (0 %)	412 (100 %)

The findings of the study identified that all of the courses provided a time of two hours for the final examination. Questions raised included the question of Objective questions, Structured questions and Essays under Sections A, B and C or Parts I, II and III. Each section was allocated with a specific division of points. Various low and high-level questions were adopted in generating the questions. The format of the questions was bilingual, Malay and English, with specific instructions provided as well as specified fonts.

Nonetheless, from the details of the analysis, several issues were identified which require monitoring and action from the university to maintain the quality of UMT's evaluation. The following aspects need monitoring:

#### **Period of examination with the number of questions allocated**

The entire course of the study program had set a period of two hours to answer. It was coordinated with various types of questions and specific divisions namely Part A for objective questions; Part B for the structural questions; and Section C, for the essay question. There were courses using Parts I, II and III. There were even courses that only gave two sections of objective and structural questions. The issue is that the total number of questions given as well as the instructions to answer the number of questions, in particular, within two hours was inconsistent, depending on the question maker and that no basic guidelines were followed.

Based on the national education examination standards the following points should be followed:

- i. The total number of questions should be suitable for the examination period of either two
- ii. hours or three hours depending on the course. Two hours examinations are for a course of three credit hours while for a course worth four credit hours the examination period is three hours.
- iii. Objective question either multiple choice, correct or false, or filling in the empty space, should be allocated 1.5 minutes per question.
- iv. Structured questions with short answers should be allocated between 10 - 15 minutes per question and depending on the course.
- v. Essay questions with long answers should allocated between 20 - 30 minutes per question depending on the course.

Hence, a general improvement together with the quality monitoring of questions and an overall assessment needs to be done so that the validity and reliability of the examination inputs for each course conform to the national education assessment standards.

#### **Allocation of marks and total of marks**

The findings of the study showed concern regarding score allocation and the total scores for certain courses. The data in the table showed that some objective questions allocated 20 marks for 10 multiple choice objective questions and 30 marks for the same number of 15 non objective questions. This explains the irregularity in the context of assessment scoring. In addition, the data also showed that the full range of scores given from 70 to 100 per cent. It is generally known that the UMT evaluation standard allocates 60% of marks for assignments as a carry mark and 40% for the final examination. This diversity has created doubts in terms of validity in the context of scoring rather than the number of questions and the times set. Synchronisation and accuracy in terms of scoring together with the needs of the number of questions answered along with the timing of the responses should be in accordance with the proper guidelines and standards that will lead to total and accurate scores. Hence, continuous monitoring is necessary for quality assurance by UMT evaluation management.

#### **Technical exam format**

The technical aspects of formal writing in examination papers requires monitoring and improvement to ensure that a basic and consistent standard is obeyed. This will involve proper technical input as it also affects readability and avoiding any confusion regarding comprehension or perception by the students. Among the aspects that need monitoring are uniformity and the synchronisation of bilingual writing, simple, precise and clear instructions, and any technical aspects of language in terms of grammatical formation and correct spelling, both in Malay and English. Serious coordination and monitoring of these aspects will ensure the sustainability of UMT's evaluation quality.

**Discussion and suggestions.** The findings demonstrated that the correct data was applied regarding the focus of the study. Diverse types of questions in a range of difficulty were applied in formulating the final examination questions of the program. The diversity of the questions was related to the difficulty level of the question and the impact affected the students' thinking behaviour in dealing with the issue. Questions at the low difficulty level only provided students with the experience of recognising and remembering information from the text without incurring any effort to think with reason and mind. Questions at the high difficulty level greatly affected the student's ability to think because this was the exact point whereby the learned knowledge was applied to different situations. Students' ideas and thinking should be trained to think creatively, critically, innovatively and beyond the box to solve problems in real life. This recommendation has been emphasised by the education ministry for a number of years and is still seriously focused on the aspects of the high level of thinking that have transformed the nuances of the national examination and education system. Ergo, the national institutions of higher learning should also extend the continuation of the philosophy that is proposed for student's thinking skills so that the educated generation can really apply their thinking accordingly in real life. As a result of the findings, some suggestions have been made to affirm on the use of different types and levels of questions in the preparation of examination questions in order to stimulate students' capacity of thinking.

The findings demonstrated that the correct data regarding the focus of the study on the use of the diversity of types and the difficulty of the questions that have been applied in formulating the final examination questions of the program. The diversity of questions is related to the difficulty level of the question whose impact affects students' thinking behaviour in dealing with something. The questions at the low difficulty level will only provide students with the experience of recognizing and remembering information from the text without incurring their efforts to think with reason and mind. The questions at the high difficulty level greatly affect the ability to think of students because this is the exact point whereby the learned knowledge is applied to different situations. Students' ideas and thinking should be trained to think creatively, critically, innovatively and beyond the box to solve problems in real life. This recommendation has been emphasised by the education ministry for years and is still seriously focused on the aspects of the high level of thinking that have transformed the nuance of national examination and education system. Ergo, the national institutions of higher learning should also extend the continuation of philosophy that is proposed for student's thinking skills so educated generation can really apply their thinking accordingly in real life. As a result of the findings, some suggestions are made to affirm on the use of different types and levels of questions in the preparation of examination questions in order to stimulate students' capacity of thinking.

Such recommendations include:

- a. Question preparation guidelines need to be established. This action can address the problem of questions being prepared that are inconsistent as well as to overcome the phenomenon that exists as a result of the study.
- b. Quality control over the creation of questions is strongly encouraged. Each question paper must be reviewed and specific attention should be directed to the suitability of items and the difficulty of the items to be matched to the question format. This should consider the division of marks, time frames and correct grammar usage. It should involve the embodiment of an edited panel of academic professionals to ensure the best and most effective question creation, hence, leading to the development of student's intellectual skills.
- c. Courses, workshops, seminars and the various forms of knowledge related to the input of teaching and learning should be continued. In particular, the various aspects of assessment and evaluation which highlight the impact on student thinking, should be encouraged and expanded among academicians for the enhancement and continuous improvement of quality.

**Conclusion.** As the educators, mastering and appreciating knowledge in terms of the theoretical and philosophical angles should always be practiced. This responsibility should be carried out with dedication to enable the educated people to achieve the goals and aspirations of the nation's educational philosophy. The ability of educators to adhere to the guidelines on preparing questions with full accountability can ensure the quality of the questions being produced and it also ensures the quality of teaching and learning, especially where the aspects of the assessment are successfully carried out. As a result, UMT students will develop their intelligence towards excellence in both knowledge and wisdom.

Hopefully, the results of this research can be utilised by academia for the improvement and strengthening of knowledge so that the effort expended achieves God's blessing.

#### References

1. Abd., R., & Maria, C. (2001). Hubungan di antara kecerdasan dengan kefahaman membaca di kalangan pelajar Tingkatan Dua. In *Prosiding Konferensi Kebangsaan Kajian Pasca Siswazah*.
2. Barret, T. C. (1972). *Taxonomy of reading comprehension*. Ginn and Company: Massachusetts.
3. Bloom, B. S. (1956). *Taxonomy of educational objectives: Cognitive domain*. Mc Kay: New York.
4. Brown, G., & Wragg, E. C. (1993). *Questioning*. Routledge: London.

5. Clasen, D. R., & Bonk, C. (1990). Teachers tackle thinking. Madison Education Extension Program: Wisconsin.
6. Cole, R. A., & Williams, D. M. (1973). Pupil responses to teacher's question: Cognitive level, length and syntax. *Educational Leadership*, 31, 142-145.
7. De La Cruz, L. D. (1971). An analysis of Philippe social studies textbooks. *Dissertation Abstracts International*, 32(1), 665-A.
8. Dillon, J. T. (1981). Duration of response to teacher's questions and statements. *Contemporary Educational Psychology*, 6, 1-11.
9. Duster, S. (1998). Classroom questioning: How teachers use it to promote creativity and higher level thinking. *Dissertation Abstract International*, 36(1), 19.
10. Elder, L., & Paul, R. W. (1998). The role of socratic questioning in thinking, teaching and learning. *The Clearing House*, 71(5), 297-301.
11. Gall, M. (1984). Synthesis of research on teachers' questioning. *Educational Leadership*, 42, 40-47.
12. Guszak, F. J. (1967). Teacher questioning and reading. *The Reading Teacher*, 21, 227-234.
13. Kementerian Pendidikan Malaysia (KPM). (2014). Kemahiran berfikir aras tinggi aplikasi di sekolah. Cepad Cetak Sdn. Bhd: Selangor.
14. Lewis, A., & Smith, D. (1993). Defining Higher Order Thinking. *Theory into Practice*, 32, 131-137.
15. Mahyuddin, A. (2001). Strategi pendekatan penyayang dalam pendidikan. *Jurnal Pendidikan Islam*, 9(3), 1-7.
16. Marohaini, Y. (1989). Strategi pengajaran bacaan dan kefahaman. Karya Bistari Sdn. Bhd: Kuala Lumpur.
17. McKenzie, J. (1997). A questioning toolkit. *Educational Technology Journal*, 7(3), 1-6.
18. Newmann, F. (1990). Higher order thinking in teaching social studies: A rationale for the assessment of classroom thoughtfulness. *Journal of Curriculum Studies*, 22(1), 41-56.
19. Noor, R. M. (2005). Kompleksiti soalan dalam bahan implimentasi kurikulum pengajaran dan pembelajaran bahasa: Meninjau kemantapan kualiti soalan dalam proses pengajaran-pembelajaran bahasa ke arah peningkatan profesionalisme guru. In *Seminar Penyelidikan Pendidikan MPBL*, pp. 1-18.
20. Noor, R. M. (1996). Analisis soalan kefahaman dalam buku kerja Bahasa Melayu peringkat menengah atas. Master thesis, Universiti Malaya.
21. Noor, R. M. (2004). Kompleksiti soalan dalam bahan implimentasi kurikulum pengajaran dan pembelajaran bahasa: meninjau kemantapan kualiti soalan dalam proses pengajaran-pembelajaran bahasa ke arah peningkatan profesionalisme guru. <http://www.ipbl.edu.my/portal/penyelidikan/seminarpapers/2005/noorKUSTEM.pdf>.
22. Noor, R. M. (2013). Tahap berfikir dalam bahan kurikulum bahasa. UMT Press: Terengganu.
23. Onosko, J. J., & Newmann, F. M. (1994). Creating more thoughtful learning environment. In J. Mangieri, & C. C. Blocks (Eds.), *Creating Powerful Thinking in Teachers and Students: Diverse Perspectives*. Harcourt Brace College Publishers: Texas, pp. 27-49.
24. Rafiei, M. (1998). Kajian tentang kemahiran berfikir secara kritis dan kreatif (KBKK) dalam pengajaran dan pembelajaran Bahasa Melayu sekolah menengah. <http://members.tripod.com/~Devadason/seminar/Rafiei.html>.
25. Rawadieh, S. M. (1998). An analysis of the cognitive levels of questions in Jordanian secondary Social Studies textbooks according to Bloom's taxonomy. *Dissertations Abstracts International*, 59 (4), 1060-A.
26. Ruddell, R. B. (1974). *Reading-language instruction: Innovative practices*. Prentice-Hall: California.
27. Sanders, N. M. (1966). *Classroom question: What kinds?* Harper and Row: New York.
28. Forgan, H. W., & Mangrum, C. T. (1981). *Teaching content area reading skills: A modular preservice and inservice program*. Merrill Publishing Company: Ohio.
29. Schiever, S. W. (1991). *A comprehension approach to teaching thinking*. Allyn and Bacon: Massachusetts.
30. Smith, C. T. (1978). Evaluating answers to comprehension questions. *The Reading Teacher*, 31, 896-900.
31. Swarts, R. J., & Perkins, D. N. (1990). *Teaching thinking issues and approaches*. Midwest Publications: California.
32. U.S. Department of Education (USDOE). (1980). *What works: Research about teaching and learning*. USDOE: Washington.
33. Wilson, I. A. (1973). Changes in mean levels of thinking in grades 1-8 through use of an interaction system based on Bloom's taxonomy. *Journal of Educational Research*, 66, 13-50.