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An Investigation of Critical Thinking Levels of Examination Questions for B.A. Compulsory English at the University of the Punjab

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Abstract

In a country like Pakistan, Written examination is a conventional tool to evaluate the student's performance in any subject area, where the required cognitive ability is defined through items such as learning outcomes. So in such a system, students' ability depends very much on the questions asked in the written examination question papers. A good and reasonable examination paper must, therefore, consist of various difficulty levels to accommodate the different capabilities of students.

In this work, the difficulty level of each question in the examination paper is determined from the criteria of keyword/s found in the question. The paper provides conclusions on the current relationship between examination questions, learning outcomes and student performance, as well as providing some indication of the relative changes required to move toward a more appropriate association and hence improve an assessment strategy.

Keywords: Critical thinking levels, B.A. compulsory english

1. Introduction and Background

Questioning is the most important component of the education system. Teachers use questioning strategies to review, check on learning, probe thought processes, pose problems, seek out alternative solutions and challenge students to think critically and reflect on issues or values (Ellis1993). Owing to these factors, questioning techniques have been a major concern for researchers.

In an attempt to overcome shortcomings associated with the assessment of learning, Bloom (1956) devised taxonomy for educational objectives in order to measure different levels of learning. This system was created to improve the testing precision. It was just an attempt to categorize the cognitive working into distinct levels, so that appropriate questions are developed to assess the desired level (Bloom, 1956; Pear, 2002).

Bloom (1956) outlines six hierarchical domains of educational progress ranging from the simple to the highly complex: namely knowledge, comprehension, application, analysis, synthesis, and evaluation. These levels can help the educators in forming appropriate objectives and standardized assessments.

Azizi (2005) is of the view that creativity in the students cannot be achieved only by providing knowledge. According to Kim (1996) Bloom's Taxonomy has been found effective in improving students' cognitive skills. He notes that a mixture of questions from various levels of the taxonomy may result in most effective learning at higher levels. For these reasons, curriculum designers and educators have extensively used the taxonomic model of learning to analyze the cognitive levels of questions.

In spite of all the efforts and claims that educational assessments are evaluating higher-level thinking and are a mean of developing critical thinking, the researches revealed it is still a fact that approximately 80-90 percent of the questions that are used in assessment aimed at lower level cognitive levels. Afzal (2005) writes that exams in Pakistan in all disciplines focus only on one activity that is to measure the rote memorization

This study is significant in that it is the first study to investigate the cognitive levels of examination questions with reference to Blooms's Taxonomy at Graduate level in Pakistan. Therefore the knowledge may serve as baseline data or documentation for future reference by educators, examiners, researchers as well as policy makers. Furthermore this study has a potential to contribute to the existing body of knowledge on the cognitive level of examination questions. This consequently may benefit the society overall by offering graduates with higher order think skills. Furthermore the findings may assist the educators in improving the curriculum.

1) Which levels of Bloom's taxonomy are present in English language learning and teaching strategies currently in use in Pakistani educational institutes at graduate level?

2) Which levels of critical thinking are more prevalent in our paper setting at Graduate level?

- Do the papers are set in terms of lower order thinking skills?
- Do the papers are set in terms of higher order thinking skills?

3) Which levels of Blooms Taxonomy are less prevalent in our paper setting at Graduate level?

2. Material and Methods

Ten years (2001-10) previous Eglish papers of Punjab University for Graduate students consisted of 541 questions were used as sample. Blooms Taxonomy as an examination assessment Tool was used as template for collecting data but it was modified by the researcher according to the template used by Masitsiweng Garekwe in his research on analysis of cognitive levels of examination questions in the bachelor of nursing programme. The template consisted of the following cognitive domains: knowledge, comprehension, application, analysis, synthesis and evaluation. The data collected through above-mentioned way was tabulated, analysed and discussed. The data was coded manually. After entering data in the provided templates guided by the coding process detailed above, data was then transferred to the Microsoft Excel for further analysis. This was done by using frequency distributions, percentages and where necessary graphs. The data was cleaned and double checked for any entry errors.

After the completion of the data coding, the frequencies of certain levels were checked and the conclusions were drawn.

3. Findings and Comments

A mix of questions was used; Explanation questions, short note, comprehension, letter writing, correction, sentence making and long essay questions. The marks for "A" papers were divided equally in all the questions but in "B" paper, the 50% of marks were allotted to two questions of essay writing and comprehension paragraph.

For Academic year 2001, four (4) papers with 55 questions were analyzed. The paper for group one consisted of nineteen (19) questions for "A" paper and seven (7) questions for "B" paper. The analysis of "A" paper showed that majority of the questions were set at knowledge level which formed 53% of the paper, followed by comprehension at 21%. 16% focused on evaluation level while Application and analysis constituted only 5, 5%. Synthesis level was totally absent.

"A" paper for Group-2 was of twenty-two 22 question.45.5% questions was of knowledge level, 45.5% of comprehension level, 4.5% for synthesis and 4.5% for evaluation level. The level of application and analysis were totally missing.

As regards "B" paper for both the groups, both possessed 7,7 questions: three for comprehension level, three for evaluation and one for analysis level. The remaining three levels were missing. Though 43% of the paper focused on evaluation level that is considered to b a higher level thinking skills, the real spirit of the level was missing. The topics of the essays encourage memorization or cramming. Moreover the topics of the essays were

repeated time and again that diminished the true purpose of the evaluation level.

For academic year 2002 four (4) papers were analyzed. Seventeen questions for the paper of group one and 18 for group two. The analysis of the paper of group one revealed that 70% of the questions focused on comprehension level, 12% knowledge,12% on evaluation and only 6% on analysis. Application and synthesis level was totally missing.

In the paper of group two, knowledge level took 55%, knowledge 39% and analysis only 6%. The remaining three levels were given no place in the paper.

As regards "B" paper, the results were the same as found in the papers of 2001.

Figure 2 below summarizes the cognitive levels of examination questions in the papers of 2002. Here in figure 2 like figure 1, the comprehension level is given the major share, which is followed by knowledge level. The remaining four levels are given the least share. The levels of application and synthesis are completely missing.

In 2003, the papers focused on knowledge and comprehension level. The paper of group one had 50% of knowledge level questions, 44% of comprehension and only 6% of synthesis level while the paper of group two was divided the paper into knowledge and comprehension level equally.

"B" paper showed the same results.

For the year 2004,paper of G-1 focused 35% on comprehension level, 5% on application, 55% on synthesis and 5% on evaluation level. Knowledge level was totally emitted.

In G-2, comprehension level took the lead with 50%, which was followed by knowledge with 35%, synthesis 10% and 5% on analysis. Evaluation and application levels were given no prominence.

Both the papers for "B" followed the same pattern of comprehension 43%, Analysis 14% and evaluation 43% but without the true spirit of the level.

In the G-1 paper of 2005,the major focus was on the level of comprehension that formed the 86% of the paper. The other level employed was that of knowledge with 14%.

In the G-2, the focus remained again on the same two levels i.e. of knowledge and comprehension.77% questions were related to comprehension level while 23% on knowledge.

The results remain the same in terms of "B" paper.

In the examination of 2006, total 42 questions for "A" paper and 14 for "B" papers were reviewed. Twenty-one questions for G-1 were divided into knowledge, comprehension, synthesis and evaluation level.24% of the questions were related to knowledge level, 33% to comprehension, 38% and 5% to evaluation. Application and analysis were found missing.

The paper of G-2, 21 questions gave prominence to knowledge level with 42%. Comprehension followed with 38%, synthesis took 10% while analysis and evaluation 5%

each.

14 questions of "B" paper followed the same previous pattern.

In reviewing the examination questions for the year 2007, 4 question papers were reviewed. These four papers were composed of 56 questions. A papers had 21,21 questions each while "B" paper with 7 question each.

In the paper of G-1, 76% of the questions focused on knowledge level, 14% on comprehension level, synthesis and evaluation 5% each.

In G-2 paper, knowledge and evaluation took 28.5% of the questions each, Comprehension, analysis and synthesis 24%, 14% and 5% respectively.

The "B" papers were not an exception.

In G-1 paper of 2008, almost all the levels were given prominence except application level. Knowledge covered 24% of the questions, comprehension 24%, analysis 5%, synthesis 33% and evaluation 5%.

In G-2, 28% of the questions focused on knowledge, 10% on comprehension, 28% on synthesis and 33% on evaluation.

The questions for "B" papers followed the same pattern that prevailed since the paper of 2001.

For the year 2009, two question papers were reviewed each containing 21 questions, making a total of 42 questions. In reviewing 21 questions of G-1, the data showed that knowledge and comprehension level accounted for 57% and 28% respectively, the analysis, and synthesis and evaluation level for 5% each.

In G-2, 61% focused on knowledge, 38% on comprehension. All other levels were missing.

As regards "B" paper, it showed the same pattern.

In 2010,G-1, 47% of the questions accounted for knowledge level, 33% on comprehension level, and 10% on analysis level and synthesis and evaluation level 5% each.

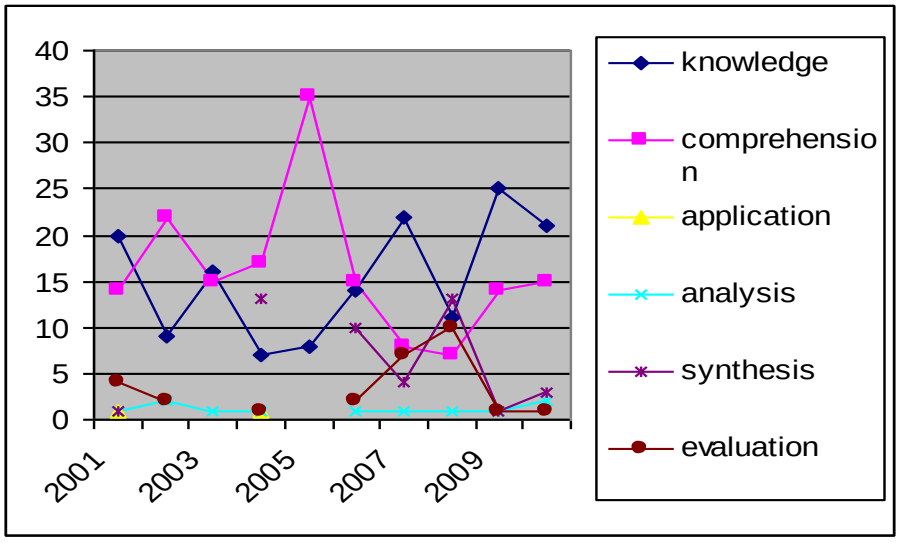
In G-2, more than half i.e. 52% of the questions focused on knowledge level, 38% on comprehension level and 10% on synthesis level. the other three levels were given no prominence.

The "B" papers for the year 2010 were not an exception. the same pattern of 43% for comprehension,43% for evaluation and 14% for analysis was followed.

Summation of Cognitive levels:

The graph below shows the division of the six levels in the previous papers of Punjab University. The figure shows that comprehension level is given the greatest prominence, which is followed by knowledge. Synthesis and evaluation levels are given lesser while application and analysis are least prominence. Application level is missing in many years that

indicate that teachers or paper setters are not trained in terms of paper setting. In some papers lower levels while in some others the highest are the main focus but over all the lower levels remain main focus in paper setting.



The figure above can show the difference clearly in the form of bar graph.

A variety of questions were used in the annual examination papers of the Bachelors programme of Punjab University. The questions include explanation with reference to the context, short and long essay questions.

MCQs can help in developing analytical thinking, enabling examiners to test integration of knowledge, problem solving skills and application of knowledge (Azer.2003). But in the examination papers set by Punjab University, this aspect of the development of critical thinking is totally neglected, as there is not any single question like MCQs.

Lucy C. Jacob (2004) writes that Essay items are an effective way to measure higher-level cognitive objectives. They are unique in measuring students' ability to select content, organize and integrate it, and present it in logical prose.

Palmer, et al (2007) claimed that essay questions also promote higher order function and test different facets of understanding. The essay type questions are included in both paper "A" and "B". But the real spirit of putting such level questions is totally missing as essay type questions are repeated time and again and students have a clear cut idea about the type of the questions that can be asked that turns it into a memorization or knowledge level activity..

According to the findings of this study, all the six categories of cognitive function in Bloom's taxonomy were evident in the examination questions (Knowledge:28%, comprehension: 41%, Application: 36%, Analysis:5.7%, Synthesis: 8.3% and Evaluation: 10.7%). But this fact is evident that application level is touched least. These results are in line with the findings from the studies by Kim (1996); Darwazeh (1996, 2001).

A mixture of questions at various levels of the taxonomy might result in the greatest learning at higher levels. Darwazeh (2004) suggests that a paper must be a good combination of low

level thinking skills and high level thinking skills as all the students will be able to handle it in an appropriate way: the low ability students will perform well on questions focusing low level thinking skills while the students with high ability will perform well on higher level questions.

The findings in this particular study reflected a major difference between higher order (79%) and lower order questions (21%). Azer, (2003) revealed that roughly 80 to 90 percent of teachers ask questions aimed at the lower cognitive levels. Examinations in a Graduate programme should use complex questions, which are demanding intellectually, not just the ability to recall information. The examination questions of Bachelor programme, used in this study, were less intellectually demanding.

From the results of this study, it also emerged that learners were repeatedly tested on same questions that they were previously examined on, especially in "B" paper and question no 3 and 5 of "A" paper that take questions from Book 1 and Old Man and the Sea. Afzal (2005) also noticed this fact in the examination system of Pakistan. He wrote: There has been increased repetition of questions and only selected contents are tested again and again. No body seemed to take any serious view of this phenomenon which leads towards selective study".

Repetition of similar examination questions with an over-reliance on a single textbook, guide Books and guess papers totally spoil the effect of asking higher level questions. According to some researchers this might have a negative effect on education and the quality of graduates produced.

The findings in this study further revealed that examiners commonly used short scenarios and pertinent problems to base questions used. This was observed with questions form novel "Old Man and the Sea" where only 12-13 questions can cover the every aspect of the novel that is repeated asked in the examination questions.

Examiners are in dire need to get training to set question papers. Moreover it is also required to adopt a particular taxonomy for this purpose that may help our system of testing and evaluation capable of judging what it is supposed to judge and making the papers well structured.

The examination system should be in accordance with the objectives set by the curriculum.

The findings in this study reflect that in bachelor programme of Punjab University the main focus is on lower level cognitive skills. Furthermore, the questions used in this programme between 2001-2010 covered all six cognitive levels, with questions at lower levels significantly higher than those at higher cognitive levels. A considerable change in the numbers of question was observed from 2004 onward but the real change that was required i.e. focus on the HOCS is missing still. The regular pattern of paper "B" with repeated questions make the paper just an activity with no positive effect except memorization.

The findings in this study led to the following recommendations:

There is a need to review the assessment of learning. Special attention should be given to

how to construct the question papers in accordance with the objectives of curriculum. Moreover the concept of lower and higher levels representation in the assessment should also be made explicit to the paper setters.

University teachers should be re-trained to adopt new and improved techniques of paper setting. Workshops and seminars should be made available for in-service teachers. The teachers, to improve the system should introduce new methodology for the setting of papers.

Over reliance on one textbook should be avoided. Such measures should be taken by the paper setting committee as may discourage the repetition of the questions and heavy reliance on helping books and guess papers.

The papers should be prepared in such a way as my help the students in developing their personal and creative thinking skills.

Well structures objective type questions with high validity should also be introduced in ESL papers. Moreover there is a need to review the syllabus time and again and make changes in that as par the requirement of the time.

This study focused only on ESL papers of Punjab University, it would be interesting to have a study that focuses on the examination questions of more than one universities. A study like this can help in identifying a better system of assessment.

The research that can explore the alignment of curriculum and assessment is also recommended.

Moreover, a study that can compare the different levels required in the objectives of a curriculum with the existing levels in the students of science and arts can bring out the true effect of the other subjects on the teaching and learning of ESL.

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