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An Analysis of Questions of English Papers of FBISE for HSSC in the Light of Bloom's Classification of Cognitive Domain

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ABSTRACT

This study aims at analyzing questions of English examination papers of higher secondary school exams administered by Federal Board of Intermediate and Secondary Education (FBISE) via Blooms' taxonomy of cognitive domain. It further investigates whether the rhetoric of higher order cognitive skills in Pakistani National Policy on Education (2009), has decreased proportions of questions assessing lower order cognition or increased proportions of questions assessing higher order cognition in the examination. All the questions of English examination papers of the first annual examination of the first year and second year from 2015-2019, set according to new syllabus of Federal Board of Intermediate and Secondary Education were analyzed for this study. An analysis sheet was employed for the study which already has been used by many previous researcher studies. Percentages and frequencies were measured to analyze the data. The findings indicate that lower levels of thinking skills were given preference to higher levels of thinking skills in the questions of English papers from 2015-2019. Moreover, the comparison of the findings for part I and II show that the distribution of Bloom's cognitive levels is different in the questions of English examination papers of HSSC I and HSSC II examination from 2015 to 2019. The analysis reveals that FBISE has taken no significant steps after the recommendations of Pakistani National Policy on Education (2009).

Key Words: Questions, English Examination papers, Higher Secondary School Examination, Bloom's Taxonomy, Low Level of Cognition, High Level of Cognition.

Introduction

This study explores the type of thinking skills that are tested by the questions of English exam papers of HSSC I and II examination conducted by FBISE. Moreover, it investigates to what degree the discourse of higher thinking skills in Pakistani National Policy on Education (2009) is inculcated in the English Papers of Federal Board Higher Secondary School Certificate examination in terms of decline in the questions targeting lower thinking skills or an increase in the percent of questions focusing higher thinking skills as recommended in the policy. This study uses Bloom's thinking levels to find the

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types of thinking skills addressed by the English papers of Intermediate part I and part II examination conducted by Federal board from 2015 to 2019.

This study employs reliable instruments and procedures. The main objective of the study is to help improve the level of the questions included in the higher secondary school examinations by highlighting the types of thinking levels taken into account in higher secondary school level. Moreover, in accordance with the requirements of world's reshaping economy, this research is be significant for both, the Government of Pakistan's future educational planning and for the construction of test items and development of curriculum by FBISE. No independent research has been carried out earlier on the exam questions of FBISE. Thus, this is the first exploratory study of its kind in Pakistani context.

The discussion of the paper will revolve around these issues-questions.

- What are the levels of thinking skills tested by the questions of English exam papers of HSSC I and II examination conducted by FBISE?
- What is the trend of testing of higher thinking skills in Federal Board HSSC examination questions during 2015-2019?
- How have the recommendations of National Policy on Education (2009) decreased or increased the number of questions testing lower thinking skills?
- How does the discourse of 'higher thinking skills/ thinking' in Pakistani National Policy on Education (2009) manifest itself by implementation in the English examination papers of Federal Board Higher Secondary School Certificate examinations from 2015 to 2019?

Conceptual Framework

Benjamin Bloom during the 1950sintroduced the classification of the levels of logical thinking skills needed in classroom situations. These levels are termed as comprehension, knowledge, and application (tiers of lower thinking) and synthesis, analysis, and evaluation (tiers of higher thinking). The educators should consider all the tiers of thinking in the tests. The tests should not be designed only to measure lower levels of thinking as knowledge, comprehension, and application, but also to assess high order thinking as analysis, synthesis and evaluation and the teachers should also use them in the lesson plans.

Bloom's Division of Thinking Skills

Bloom's division describes six graded levels as shown in (Fig. 1) of thinking skills: knowledge, comprehension and application (the lower thinking skills) and analysis, synthesis and evaluation (the higher thinking skills). Each type reflects an increase in the level of thinking, which is often regarded as lower levels of thinking and learning, and

higher levels of thinking and learning. Every new component of this division is constructed when the previous levels are successfully achieved.

Figure 1: Design of Bloom's Division

Each tier of thinking skill in Bloom's division brings forth an accurate detail of the learning goals. Levels of thinking can help educators to simplify their desired learning goals, provide basis for educational planning, and set the ground for teaching and assessment both (Almerico & Baker, 2004).

Bloom himself and many other researchers provided comprehensive definitions of each tier of thinking skill. Some of the definitions are as under:

Knowledge

Knowledge was defined by Bloom (1956) as memorization of already known material. This skill demanded remembrance of a large variety of subject content i.e., not only remembering special facts but complete theories as well. Nevertheless, the appropriate and accurate information must be remembered. Knowledge reflects the lowest tier of learning goals in the thinking skills.

Sub-categories: Rote learning of –particulars (particular facts, terminologies); methods and techniques concerning these particulars (traditions, tendencies and orders, categories and taxonomies, methodology, criteria); generalizations and theories, principles and structures of a subject.

Comprehension

Bloom (1956) described comprehension, as the skill to realize the meaning of the contents. This skill can be displayed by rephrasing from one structure to other for examination from words to numbers, paraphrasing contents for examination summarizing or explaining, and estimating future trends (predicting consequences or effects). These learning outcomes move one step beyond the simple remembrance of materials, and represent the lowest level of understanding.

Sub-categories: Translation; Extrapolation; Interpretation

Application

Bloom (1956) described application, as the skill to apply already known content in fresh and solid usage of an abstraction. This capability encompasses the execution of methods, rules, principles, concepts, theories and laws. The teaching goals in this field look for a higher tier of perception than those regarding comprehension.

This tier involves application of rules, concepts, methods, principles, theories as well as laws.

Analysis

Bloom (1956) interpreted that analysis is the potential to divide contents into constituent parts in order to conceptualize its basic structure. This capability comprises the recognition of segments, comparison of the relations between segments, and identification of the basic principles taken into account. Demanding a comprehension of both the substance and the organizational form of the subject material, the teaching goals of analysis reflect a higher tier of intellect than those of application and comprehension.

Sub-categories: Breakdown of Elements; Organizational Principles; Relationships.

Synthesis

Bloom (1956) described synthesis as the capability to assemble segments together to develop a new concept. This capability considers the construction of a novel communication (speech or theme), functional educational plans (research proposals), or a group of conceptual relationships (pattern for arranging information). The teaching goals in this field assert innovative behaviors, with greater stress on the creation of new structures or patterns.

Sub-categories: Creation of a novel communication; Derivation of a set of theoretical relations; or suggested set of operations; Production of a concept.

Evaluation

Bloom (1956) described evaluation as the capability to determine the worth of subject materials (statement, poem, novel, and research report) for a certain purpose. The teaching goals in this field are the highest in the thinking tiers because they consist of the elements of all the above tiers, and intentional value judgments depend on well-defined criteria.

Sub-categories: Conclusions with respect to internal criteria; Judgments regarding external evidence.

Problems in the examination system of Pakistan have been recognized since 1947. For examination, in 1970, the policy on education emphasized that it was necessary to provide training to educators in educational evaluation and check unjust means. It was declared necessary to align the test material, curriculum goals and teaching process, by the task force nominated by Education ministry in 1985.

The policies on education during 1990s also suggested to improve the potential of examination staff, computerize the procedure of composing and announcing results, reconsider the design of question papers of examination and to add short answers, objective type, and essay type questions, and demotivate rote learning (Shah, Ahmad, & Khan, 2019).

The most recent policy on education (2009) and the resultant educational plans repeats many of these policy suggestions regarding examination. They consider memorizing as the main problem. They, also recommend that proper measures in examination can motivate much demanded critical thinking in our students. It emphasizes the necessity to promote standards of the examinations, to associate examinations with textbook development, curriculum, and professional development of teachers, to enhance the potential of examiners and paper setters, and to motivate the use of examinations to develop decision making.

Higher thinking skills, learning and thinking skills (as both thinking skills and learning are interlinked) are the terms consistently used throughout this research paper. Critical thinking is commonly described as a division of higher thinking in by many researchers. 'Critical thinking' is therefore sometimes used in place of 'higher thinking' in this study.

Data and Methodology

The analytical card was employed for data analysis. It contains all the six tiers of Bloom's division of thinking skills, for English questions. The analytical card was adopted from the existing studies like Alzu'bi (2019) and Igbaria (2018) to analyze questions using Bloom's division of thinking skills because it was proved to be valid and was already used.

Questions of English papers of HSSC I and HSSC II from 2015 to 2019 are tabulated according to the tiers of higher thinking and lower thinking, in the forms of frequencies and percentages.

Analytical Card used for Questions of English papers included in higher secondary examination conducted by FBISE, in the light of following Bloom's Classification:

- Knowledge
- Comprehension

- Application
- Analysis
- Synthesis
- Evaluation

(Adopted from Alzu'bi (2019) and Igbaria (2018) to analyze questions using Bloom's division of thinking skills)

The data of this study, includes the questions of English papers of the Intermediate examination of part I and part II conducted by FBISE from 2015 to 2019. The sub-questions were calculated as separate questions while counting the total number of questions in English papers of Intermediate part I and part II examination conducted by Federal board from 2015 to 2019 for examination, Q. 2 (vi) of the 2015 paper of English for HSSC I inquired: "what is the significance of the title of the story "A mild attack of Locusts?" This question was followed by another: "what does the author like about Christmas?" referring to the chapter "The Angel and the Author and Others. I counted them as two separate questions which focused on two different tiers of thinking skills. (The first one targeted "evaluation" skill of the students and the other assessed "knowledge" skill of the students attempting English paper of federal board HSSC I examination in 2015.

First of all, the total number of questions of English papers of Intermediate part I and part II examination conducted by Federal board from 2015 to 2019 were counted and investigated the number of questions reflecting each tier of Bloom 's division of thinking skills. The questions of English papers HSSC I and II examination conducted by FBISE from 2015 to 2019 were systematically coded.

Findings

The findings of this research are presented in the form of three tables:

- The tabulation of the percentages and the frequencies of different levels of thinking skills for the questions of English papers of the Federal Board HSSC I, examination from 2015 to 2019 shows the following results.

Table 1: Frequencies and Percentages of each Level of Bloom's Thinking Skills of Federal Board HSSC I

Bloom's Thinking skills	Frequency	Percentages
Knowledge	58	37%
Comprehension	46	30%
Application	13	8%
Analysis	15	10%
Synthesis	10	6%
Evaluation	14	9%
Total	156	100%

It is demonstrated from the above table that the total number of questions that were analyzed, is 156. Out of which 58 questions i.e., 37% of total questions tested the knowledge skill, forty-six questions or 30% of total questions tested comprehension skill and thirteen questions or 8% of all the questions tested application skill.

Overall, 75% questions were based on lower thinking skills whereas only 25% questions addressed higher thinking skills. 10% of which or total fifteen questions tested analysis skills of the students, whereas ten questions or 6% of the total questions tested synthesis skills and fourteen questions or 9% of total questions tested evaluation skills of the students. It can be observed that lower levels of thinking skills were given preference over higher levels of thinking skills in the questions of English papers from 2015 to 2019.

The tabulation of the percentages and the frequencies of different levels of thinking skills for the questions of English papers of the Federal Board HSSC II examination from 2015-2019 shows following results.

Table 2: Frequencies and Percentages of each Level of Bloom's Thinking Skills of Federal Board HSSC II

Bloom's Thinking skills	Frequency	Percentages
Knowledge	65	54.2%
Comprehension	23	19.2%
Application	7	5.8%
Analysis	7	5.8%
Synthesis	6	5%
Evaluation	12	10%
Total	120	100%

The above given table shows that the total number of questions that were analyzed, is 120. Out of which sixty-five questions i.e., 54.2% of total questions tested the knowledge skill, twenty-three questions or 19.2% of total questions tested comprehension skill and seven questions or 5.8% of all the questions tested application skill.

Overall, 79.2% questions were based on lower thinking skills whereas only 20.8% questions addressed higher thinking skills. 5.8% of which or total seven questions tested analysis skill of the students, whereas 6 questions or 5% of the total questions tested synthesis skill and twelve questions or 10% of total questions tested evaluation skill of the students. 75% of the questions were focusing lower skills of thinking skills i.e., knowledge comprehension and application and only 25% targeted higher levels of thinking skills i.e., analysis, synthesis and evaluation.

It was discovered again that lower levels of thinking skills were frequently used but higher levels of Bloom's thinking skills were given less importance in the questions of English papers of HSSC I and HSSC II conducted by FBISE from 2015-2019.

The following table illuminates the outcomes that emerged after the comparison of the data presented in table 1 and table 2. The tabulation of the percentages of different levels of thinking skills for the questions of English papers HSSC I and II examination conducted by FBISE from 2015-2019, representing comparison of the data above, shows following results.

Table 3: Percentages of HSSCI and HSSCII from 2015 to 2019

Year		Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
2015	HSSC I	42%	27%	8%	11%	8%	4%
	HSSC II	45%	25%	10%	5%	5%	10%
2016	HSSC I	53%	27%	8%	0%	8%	4%
	HSSC II	65%	10%	5%	5%	5%	10%
2017	HSSC I	27%	35%	8%	4%	11%	15%
	HSSC II	60%	15%	5%	5%	5%	10%
2018	HSSC I	46%	23%	8%	11%	4%	8%
	HSSC II	55%	10%	5%	15%	5%	10%
2019	HSSC I	27%	39%	11%	11%	4%	8%
	HSSC II	50%	25%	5%	5%	5%	10%

The comparison reveals that the percentages of frequencies of different levels of Blooms thinking skills are not the same during the six years for which the papers of HSSC I and HSSC II were analyzed. As a result, fluctuation of Bloom's thinking levels in questions of English papers of HSSC I examination was observed from year 2015 to year 2019.

For examination, in year 2015, 77% questions were focusing lower skills of thinking skills i.e., knowledge comprehension and application and only 23% targeted higher levels of thinking skills i.e., analysis, synthesis and evaluation. Whereas, in year 2016 only 12% questions focused higher levels of thinking skills synthesis and evaluation, not a single question addressed the level 'analyses', whereas 88% questions focused lower skills of thinking skills i.e., knowledge comprehension and application.

In year 2017, 70% questions targeted lower skills of thinking skills i.e., knowledge comprehension and application and 30% questions focused higher levels of thinking skills synthesis and evaluation.

In year 2018, 77% questions targeted lower skills of thinking skills i.e., knowledge comprehension and application and just 23% questions focused higher levels of thinking skills i.e., analysis, synthesis and evaluation.

In year 2019, again 77% questions were focusing lower skills of thinking skills i.e., knowledge comprehension and application and only 23% targeted higher levels of thinking skills i.e., analysis, synthesis and evaluation. The notable point is that there was decline in the questions addressing the lowest level of Bloom's thinking skills i.e.,

knowledge and 27% questions focused this level whereas percentage of questions targeting third level of thinking skills i.e., 'application' increased and 11% questions instead of 8% focused this level.

In year 2019, 38% questions focused higher levels of thinking skills out of which 19% encompassed the fourth level of thinking skills i.e., 'analysis', 4% covered thinking level 'synthesis' and 15% targeted the highest level of thinking skills i.e., evaluation. Again 27% questions focused the lowest level of Bloom's thinking skills i.e., knowledge. Overall, 62% questions targeted lower skills of thinking skills i.e., knowledge, comprehension, and application.

As it can be observed that there is a slight increase in questions focusing higher levels of thinking skills analysis, synthesis and evaluation in year 2019.

On the other hand, the questions of English papers of HSSC II mainly encompassed lower thinking skills i.e., knowledge, comprehension and application and hardly targeted higher levels of thinking skills i.e., analysis, synthesis and evaluation.

However, in 2017 and 2018, 30% of total questions analyzed higher levels of thinking skills i.e., analysis, synthesis and evaluation and rest of the questions targeted lower tiers of thinking skills i.e., memorizing, comprehension and application, but in 2015 and 2019 only 20% questions analyzed higher tiers of thinking skills i.e., analysis, synthesis and evaluation and 80% of the questions targeted lower skills of thinking skills i.e., knowledge comprehension and application.

In 2015 and 2017 less than 20% questions focused higher levels of thinking skills i.e., analysis, synthesis and evaluation. In year 2016 only 12% of the total questions analyzed higher levels of thinking skills i.e., analysis, synthesis and evaluation and 88% of the questions targeted lower skills of thinking skills i.e., knowledge comprehension and application.

However, in year 2019, 15% of the total questions analyzed higher levels of thinking skills i.e., analysis, synthesis and evaluation and 85% of the questions targeted lower skills of thinking i.e., remembering, comprehension and application. It is obvious that there is slight decrease in questions focusing higher levels of thinking skills analysis, synthesis and evaluation in year 2019.

Moreover, the comparison of the findings for Part I and II show that the distribution of Bloom's thinking levels is different in the questions of English papers of HSSC I and HSSC II examination from 2015-2019.

For instance, an increase is observed in HSSC I examination questions testing higher thinking in 2019, where 38% questions tested higher thinking (19% of which addressed analysis skill, 15% assessed evaluation skill and only 4% focused synthesis skill). In

2017, 30% of total questions tested higher thinking skills in English examination papers of HSSC I examination but there was decline in HSSC I examination questions testing higher thinking in 2016 when only 12% of total questions tested higher thinking skills of the students.

However, the percent of questions testing higher thinking skills remained the same i.e., 23% in 2015, 2018 and 2019. The percentage of questions in English papers of HSSC I examination testing analysis skill remained 11% in 2015, 2018 and 2019, however it decreased in 2017 to 4% and increased in 2019 to 19%. In 2016not a single question tested analysis level of thinking skills.

The overall percentage of questions assessing synthesis and evaluation (the highest levels of thinking skills) remained 12% except in 2017 and 2019. In 2017, 26% of total questions while in 2015, 19% questions targeted these highest levels of thinking skills. Overall, 25% of total questions tested higher level of thinking skills in English papers of HSSC I examination from 2015-2019.

The percentage of questions testing higher levels of thinking skill in HSSC II examination remained almost consistent from 2015 to 2019. In 2015, 2016, 2018 and 2019, 20% of total questions focused higher levels of thinking skills, out of which 5% of questions assessed analysis skills, 5% of questions targeted synthesis skill and 10% of questions focused evaluation level of thinking skills.

However, in year 2018 there was a slight increase in the percent of questions addressing higher thinking skills when 30% of total questions assessed highest three levels of thinking skills i.e., analysis, synthesis and evaluation. The difference in percent of questions testing higher thinking skill was due to rise in percent of questions testing analysis skill of the students so 15% of questions tested analysis skill instead of 5% in the previous years.

In 2019 only 15% of total questions tested higher thinking skills in English papers of HSSC II examination, not a single question focused analysis skill of the students. Nevertheless, the overall percentage of questions assessing synthesis and evaluation (the highest levels of thinking skills) remained same throughout these years. 15% of total questions focused these two highest levels of thinking skills, 5% of which addressed synthesis and 10% assessed evaluation skill of the students. Generally, 20% of questions targeted higher level of thinking skills from 2015 to 2019 in English papers of HSSC II examination.

Discussion

This section presents a detailed discussion on the analysis and results. I will discuss the implications of the results and findings with reference to the research questions.

Discussion Question no.1

It was found that all six levels of thinking skills were chosen to assess student's achievements in HSSC I and HSSC II examination. This was a healthy trend but the lower levels of Bloom's thinking skills were preferred over higher levels of Bloom's thinking skills from 2015-2019. Furthermore, the distribution of percentages of all the thinking levels was not same throughout these years. Both in the English papers of HSSC I and HSSC II knowledge-based questions were most frequent. It is the lowest level of Bloom's thinking skills.

In year 2017, 2019 and 2019, 27% questions in the English papers of HSSC I examination targeted knowledge skill of the students. In year 2015, 42% questions and in year 2018, 46% questions tested 'knowledge' skill in the English papers of HSSC I examination.

In 2016, 53% questions in the English paper of HSSC I examination were focusing 'knowledge' skill of the students. It means that more than half questions assessed the 'knowledge' or 'memorizing' skill of the students.

The situation was even worse when I analyzed the questions of English papers of HSSC II examination. All these years the percentage of knowledge-based questions was quite high. The students only had to recall the lines from the text to answer most of the questions.

In 2015, 45% questions, in 2016 as much as 65% questions, in 2017, 60% questions, in 2018, 53% of total questions and in 2018 and 2019, 50% questions addressed 'knowledge' skill. 'Comprehension' skill occurred less frequently than knowledge skill but still its percentage was higher than other skills. In 2015, 2016 and 2019, 27% questions tested the 'comprehension' skill of students in English papers of HSSC I examination. In 2017, 35%questions, in 2018, 23% questions while in 2019, 33% questions were 'comprehension' based in English papers of HSSC I examination.

In HSSC II examination the situation was much the same. In 2015 and 2018, 25% questions, in 2016 and 2018, 10% questions, in 2017, 15% questions and in 2019, 30% questions tested comprehension' skill in English papers of HSSC II examination. 1n 2019, 80% questions addressed knowledge and comprehension skills of the students in English paper of HSSC II examination.

Application, the third level in Bloom's division is involved in problem-solving (Bruner, 1971). Only 8% questions in English papers of HSSC I examination focused application skill of the students in year 2015, 2016, 2017, 2018 and 2019 while in year 2019, 11% questions targeted application skill of the students. In 2015, 10% questions but from 2015

to 2019 only 5% questions in English papers of HSSC II examination assessed application skill of the students.

In 2016, no question assessed analysis skill of the students and in year 2017, only 4% questions focused analysis skill in English papers of HSSC I examination. In year 2015, 2018 and 2019, 11% questions and in year 2015, 19% questions focused analysis skill of the students. In year 2018, 15% questions while in rest of the years only 5% questions assessed analysis skill of the students in English papers of HSSC II examination.

In 2015 and 2016 only 8% questions, in 2017, 11% questions and in year 2018, 2019 and 2015 only 4% questions focused synthesis skill of the students in English papers of HSSC I examination. From 2015 to 2019 only 5% questions assessed synthesis skill of the students in English papers of HSSC II examination.

In 2015 and 2016, 4% questions, in 2018 and 2019, 8% questions while in 2017 and 2015, 15% questions targeted the highest level of thinking skills in English papers of HSSC I examination. In English papers of HSSC II examination only 10% questions focused evaluation skill throughout these years. It is obvious that percentages of synthesis and evaluation skills are same in HSSC II examination throughout these years.

An answer to second question of my study will be better justified if I first address the two subsidiary questions. The first one is given below:

Discussion Question no.2

Clymer (1968) suggested that questions should focus the literal-comprehension skills (similar to Bloom's lowest levels of knowledge i.e., literal and comprehension) prior to addressing higher thinking levels. However, more than 60% of the total questions in English papers of HSSC I and II examination fell into these lowest levels of critical thinking.

Though the findings revealed that distribution of percentages of all six levels were not same throughout these years. Especially there were random ups and downs in the percentages of the lower thinking levels and higher thinking levels in the questions of English papers of HSSC I examination.

An increase is observed in HSSC I examination questions testing higher thinking in 2015, where 38% questions tested higher thinking (19% of which addressed analysis skill, 15% assessed evaluation skill and only 4% focused synthesis skill). In 2017, 30% of total questions tested higher thinking skills in English examination papers of HSSC I examination but there was decline in HSSC I examination questions testing higher thinking in 2016 when only 12% of total questions tested higher thinking skills of the students.

However, the percent of questions testing higher thinking skills remained same i.e., 23% in 2015, 2018 and 2019. The percentage of questions in English papers of HSSC I examination testing analysis skill remained 11% in 2015, 2018 and 2019, however it decreased in 2017 to 4% and increased in 2015 to 19%. In 2016not a single question tested analysis level of thinking skills.

The overall percentage of questions assessing synthesis and evaluation (the highest levels of thinking skills) remained 12% except in 2017 and 2019. In 2017, 26% of total questions while in 2015, 19% questions targeted these highest levels of thinking skills. Overall, 25% of total questions tested higher level of thinking skills in English papers of HSSC I examination from 2015-2019.

The percentage of questions testing higher levels of thinking skill in HSSC II examination remained almost consistent from 2015 to 2019. In 2015, 2016, 2017 and 2019, 20% of total questions focused higher levels of thinking skills, out of which 5% of questions assessed analysis skills, 5% of questions targeted synthesis skill and 10% of questions focused evaluation level of thinking skills.

However, in year 2018 there was a slight increase in the percent of questions addressing higher thinking skills when 30% of total questions assessed highest three levels of thinking skills i.e., analysis, synthesis and evaluation. The difference in percent of questions testing higher thinking skill was due to rise in percent of questions testing analysis skill of the students. 15% of questions tested analysis skill instead of 5%.

In 2015 only 15% of total questions tested higher thinking skills in English papers of HSSC II examination, not a single question focused analysis skill of the students. Nevertheless, the overall percentage of questions assessing synthesis and evaluation (the highest levels of thinking skills) remained same throughout these years. 15% of total questions focused these two highest levels of thinking skills, 5% of which addressed synthesis and 10% assessed evaluation skill of the students. Generally, 20% of questions targeted higher level of thinking skills from 2015 to 2019 in English papers of HSSC II examination.

So, the answer to my first subsidiary question is that there was no substantial increase observed in the questions focusing higher thinking skills in English papers of HSSC I and II examination rather their number and percent remained same with occasional ups and downs throughout these years. Despite irregular ups and downs, the percentage of questions addressing higher thinking skill remained extremely low.

Overall, 25% of questions presented higher thinking in HSSC I examination from 2015 to 2019 with an occasional rise in 2017 and 2015 (30% of questions assessed higher thinking in 2017 and 38% of total questions targeted higher thinking skill in 2015).

20.8% questions in all targeted higher thinking in English papers of HSSC II examination from 2015 to 2019.

A slight change occurred in 2018 and 2019. 30% of questions targeted higher thinking skill in 2018; however, only 15% questions targeted higher thinking in 2015. So, no significant increase has been observed in Federal Board HSSC examination questions testing higher thinking during 2015- 2019.

Discussion Question no.3

The percentage of questions that focused lower order thinking, was never less than 62% in the English papers of HSSC I examination. Overall, 75% of total questions targeted lower thinking skills from 2015- 2019. In 2015, 2018 and 2019, 77% of total questions targeted lower thinking skills in the English examination papers of HSSC I examination.

Decline in the number of questions focusing lower thinking skills was observed in year 2017 when 70% of questions targeted lower thinking skills. Again in 2015 only 62% of questions focused lower thinking skills. However, an increase in the number of questions focusing lower thinking skills was observed in year 2016 when 88% of questions assessed lower thinking in the English papers of HSSC I examination.

The percent of questions that assessed lower thinking was never less than 70% in the English papers of HSSC II examination. In 2015, 2016, 2017 and 2019, 80% of total questions targeted lower thinking skills in the English papers of HSSC II examination.

Decline in the number of questions that focused lower thinking skills was observed in year 2018 when 70% of questions targeted lower thinking skills. However, an increase in the number of questions that focused lower thinking skills was observed in year 2015 when 85% of questions assessed lower thinking in the English papers of HSSC II examination.

It seems as if these ups and downs are not educational planned but happen by chance. To determine/ discover the importance of these fluctuations is beyond the range of this study and remains a scope for future researches. However, the point to be noted is that there was no considerable increase in the questions targeting higher thinking skills.

In general, 25% of questions presented higher thinking in English papers of HSSC I examination from 2015 to 2019, and only 20.8% questions in all targeted higher thinking in English papers of HSSC II examination from 2015 to 2019. So, a “shift from rote-learning to higher thinking/ thinking levels” neither implicated nor a decline in the number of questions focusing lower thinking skill, after the recommendations of Pakistani National Policy on Education (2009), has been observed.

Of course, it was not purposeful; yet, the answer to subsidiary question (B) and the core/ essence of my argument is that there was no significant increase in Federal board HSSC examination questions testing higher thinking during 2015- 2019. So, by implication there was no "shift from rote-learning to higher thinking/thinking levels after the recommendations of Pakistani National Policy on Education (2009).

The discussion in the answer of subsidiary questions can be used to support the argument of my next main question.

Discussion Question no.4

The most reasonable practical change in support of assessing higher thinking skills would have been an increase in questions that focused higher thinking skills i.e., analysis, synthesis and evaluation, or at least, a notable decrease in questions that required lower thinking skills i.e., knowledge, comprehension and application in the English Papers of Federal Board Higher Secondary School Certificate examinations after the recommendations of national policy on education (2009).

The findings revealed that no such change occurred. The discourse of 'higher thinking skills/ thinking' in Pakistani National Policy on Education (2009) did not manifest itself by implication in the English Papers of Federal Board Higher Secondary School Certificate examinations.

Definitely policies and educational plans cannot impact immediately. It takes time to implement them. However, the policies and educational plans should take effect gradually once they are announced in public. There should have been a step by step/ systematic decrease in questions that demanded rote-learning but no such change is observed by the researcher.

Though in 2015, only 62% of questions and in 2017, 70% of total questions assessed lower thinking levels but in year 2016, 88% of questions assessed lower thinking in the English papers of HSSC I examination. Howeverin2015, 2018 and 2019, 77% of total questions targeted lower thinking skills in the English examination papers of HSSC I examination.

In year 2018, 70% of questions targeted lower thinking skills but in 2015 when 85% of questions assessed lower thinking in the English papers of HSSC II examination. However, in 2015, 2016, 2017 and 2019, 80% of total questions targeted lower thinking skills in the English papers of HSSC II examination.

The findings of the study indicated that FBISE had taken no serious measures after the recommendations of Pakistani National Policy on Education (2009). There had been neither a consistent increase in the questions measuring higher thinking nor a consistent decrease in questions assessing lower thinking.

The findings also suggest that the paper setters of FBISE focused on the lower levels of thinking skills and do not target the higher levels of thinking skills after the recommendations of Pakistani National Policy on Education (2009). The measured percentages are not acceptable as there is no balance in the distribution of thinking levels in the questions of English papers of HSSC I and II.

Conclusion

The features of higher thinking have long been encouraged and confirmed in research literature and in real practices concerning curriculum and assessment. This exploratory research is a step on the way to constructive curricular changes in the direction of higher thinking in Pakistan. The fusion of higher thinking in the teaching learning process, curriculum, and assessment can be a positive, necessary and ultimately rewarding step for the quality of education in Pakistan. This study highlights the main issue that the students are encouraged to memorize by ignoring the higher levels of Bloom's thinking skills and focusing the lower levels of Bloom's thinking skills. Similar findings can be observed in previous studies (Alzu'bi, 2019; Sweden, 2009; Igbaria, 2018). They also observed that most of the questions in examination focus lower order thinking skills in their fields of study and in their regions.

This study opens the way for further researches to be carried out along suggested directions. Further research on higher thinking in Pakistan is needed as is a more powerful connection between policy towards higher thinking and its efficient implementation. This study can be reproduced by the application of Bloom's division of tiers of thinking in questions of English exam papers of higher secondary school examinations conducted by any other board and then to draw comparison between the findings of the two. A study could be carried out for the subjects other than English and for boards other than FBISE. Examination standards of federal and provincial boards working in government sector which are more efficient executers of government policies and educational plans can help indicate whether privatization of education at secondary level is suitable for the Pakistan. Future research studies could be carried out on the content analyses of FBISE curricula (prescribed textbooks) to analyze the real content being learnt.

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