

Comparative Study of English Textbook I of Federal and Khyber Pakhtunkhwa Boards at SSC Level: Application of Bloom's Taxonomy

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Abstract

Textbooks are one of the formal means of education across the globe. If written/compiled as per the genuine needs of learners, textbooks turn out to be very effective in imparting education. On the other hand, they may prove unproductive and ineffective if prepared in a sloppy and haphazard manner without following any proper guidelines. All educational boards in Pakistan recommend specific textbooks according to varying levels of learners across the country. These textbooks are prepared very carefully keeping in mind the needs of the learners. To measure the reliability and usefulness of such books, there are different established models which the researchers and educationists have been using/applying since long. The current study reports the degree to which the Cognitive Domain of Bloom's Taxonomy of Educational Objectives has been applied to the exercises of Book I (English) of Federal Textbook Board and KPK Textbook Board at SSC Level. The research is an in-depth study which makes it a qualitative study. The research is quantitative as well as it deals with textual analysis numerically. The study further aims to find the existing/missing sub levels/domains, the order of the sub levels of the Cognitive Domain in the exercises and the congruency of the exercises with the content taught. The research claims a link of English textbooks with ESL teaching and thus suggests a continuous evaluation of the textbooks at regular intervals.

Keywords: Bloom's Taxonomy, Cognitive Domain, English Textbook, Federal and KPK Boards

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1. Introduction

The importance of education can be measured from the fact that it is a very effective means of uplifting the individual and collective ethics of a society. Education has been idealized and termed as the fundamental pillar of a balanced society by the greatest geniuses like Plato and Aristotle. But what exactly is education? It may not be wrong to claim that it is an abstract concept and its materialized form is curriculum. Education primarily depends on the guideline: the curriculum. Kelly (2004, p. 2) is of the opinion that curriculum comprises diverse forms of programs for a teaching-learning process.

Curriculum is not a unidirectional set of instructions; rather it is a meaningful process involving the sender and the receiver through a number of mediums. One such and verily the most important medium is the textbook. The importance of textbooks can be realized from the fact that they hold the central position in education, especially in the underdeveloped countries. According to Richards (2005), in a situation where English is taught as a foreign language, the textbook may become the only source of input for students. As a matter of fact, textbooks are the first and an important medium to which the students have access all over the world and Pakistan is not an exception to it. According to Hamza, "The main teaching, learning, and reference tool for language teaching in Pakistan is the textbook" (2004, p. 3).

Designing of textbooks must entail a rigorous, meticulous and continuous process of evaluation and assessment; the reason being their basic role in devising and developing the ideologies, values, attitudes and behavior of the young learners. For a nation to gain prosperity, their intellectual, moral and scholarly need should be fulfilled and this can be achieved best by quality textbooks. The cognitive faculties of young learners are very sharp in imbibing the concepts fast which in turn demands great care in designing textbooks for them. To make young learners well-groomed human beings, a worldview balanced in nature is needed which can be provided by textbooks.

There is no denying the fact that textbooks play the predominant role in the cognitive development of learners, but mere realization and appreciation of this fact will not suffice until a continuous procedure of assessment, evaluation and revision is followed. "The abilities of students should be viewed as malleable. They are not fixed and unchanging.

Different abilities can be tapped in different courses and by different curricula” (Lattuca & Stark, 2009, p. 141).

Textbooks primarily carry the content where learners are provided various genre and types of material in the form of concepts to augment and boost their understanding about multidimensional strata of society and, by extension, the world in general. But content alone does not fulfill the purpose due to its complex nature. Therefore, exercises are placed at the end of each lesson in order to enable learners to grasp the content fully in all its aspects by and by. A carefully designed textbook is the one wherein the exercises challenge learners intellectually so as to inculcate a true and acute sense of appreciation of different themes and propositions.

Learning is a complex mental process which requires careful treatment of cognitive, affective and psychomotor needs and skills of learners. To achieve the goal of quality teaching-learning process through textbooks, a continuous evaluation is required. If the mentioned processes are implemented honestly, learning along with cognitive development can be met. According to Tyler (1969), comprehending these needs and taking measures for their solution will not only enhance learning but also add to the self-respect of the young learners due to their enhanced cognition. The study at hand was carried out to find out to what extent these measures are deemed important in case of Pakistani textbooks. For that matter, Bloom’s Taxonomy of Educational Objectives, one of the most dependable and well-grounded as well as widely used internationally, has been applied to two textbooks of the same level being taught in two different provinces of Pakistan as mentioned above.

1.2 Statement of the Problem

Throughout the world and in Pakistan specifically, education in general and EFL/ESL in particular relies on textbooks which necessitate regular and consistent evaluation and assessment of the textbooks. In the recent years, no significant research has been carried out to assess textbooks of KPK and Federal board with the help of some reliable framework/model. The purpose of the present study is to find out to what extent Bloom’s Taxonomy of Educational Objectives has been applied to Federal and KPK Textbooks of English I at SSC level. The research is comparative in nature as it analyzes the data of both the books and afterwards, puts forward a comparative critique of the data.

1.3 Research Questions

1. To what extent do the exercises of English textbooks I of Federal and KPK Boards at SSC level follow Bloom's Taxonomy of Educational Objectives?
2. How many sub levels of textbooks are present/missing according to the Cognitive Domain of Bloom's Taxonomy?
3. What is the order followed by the sub-levels of Cognitive Domain in the selected exercises of the textbooks?
4. How far are the contents of the lessons in line with the question items in the exercises of English textbooks?

2 Literature Review

The pre-eminence of English in Pakistan can be weighed from the fact that it is the official language of the country as well the medium of instruction in educational institutions, especially the private ones. From pre-schooling up to the higher levels, English is used in one way or the other in Pakistan, which in turn makes it important not only for general communication purposes but also for upward social as well as professional mobility. According to Ali, et al.,(2014), "English language has been the common language of the world for decades." One of the major tools of teaching English in Pakistan is English textbooks and textbooks are the practical outcome of the way curricula are designed.

Curriculum is a vast concept which encompasses formal and informal factors required to understand and utilize set of instructions for the cognitive development of learners. These factors are vital in enhancing the process of learning by learners.

Textbooks are an effective tool for teachers as they are time saving; they channelize the lessons and classroom discussions, and make teaching purposeful and effective. Scott & Schau (198A) state that 90% of learners' time is utilized in schools hence availing a high level proximity with textbooks. Cunningsworth (1995) believes that textbooks are helpful in achieving goals set for successful learning. Hutchinson (1987) comments that quality textbooks are helpful in ensuring positive changes within learners by catering for their various needs. Similarly, Ur (1996) believes that textbooks provide direction and let learners know what is coming ahead. They assist in implementing what is set out in the curriculum.

The English language enjoys a high status in Pakistan where it is the medium of education and communication. . There are several modes exploited for English language teaching in Pakistan but yet again, the foremost are the textbooks. According to Shah (2007, p.37), textbooks are important as the examinations are set from within these textbooks. Hamza (2004) is of the view that “The main teaching, learning, and reference tool for (English) language teaching in Pakistan is the textbook”. Keeping in view the pivotal role played by textbooks, their evaluation is very important in order to retain as well as enhance the quality teaching-learning.

Evaluation entails judging the efficacy and usefulness of teaching material and textbook evaluation means measuring the effectiveness of textbooks to know about their utility. Tomlinson (2003) is of the view that evaluation is not only restricted to textbooks, rather it includes gauging the usefulness of any or all the factors in educational set ups. There is a difference between analysis and evaluation; it does not only try to find the gaps but brings the usefulness of the material to the forefront as well. Analysis might be carried out before or during the process of evaluation involving what is already there in the textbook. On the contrary, evaluation is concerned not only with material but with people and other related factors as well. This leads one to say that evaluation is an in-depth task.

Chambers (1997) comments that the choice of an appropriate textbooks is complicated because many stakeholders are involved in the process, hence, influencing the decision making. The better way out is the decision made by all the stakeholders. McDonough and Shaw (1993) suggest the scenario of choosing relevant textbooks requires professional ELT teachers. Harmer (1991) takes a relatively different position and believes that most of the instructional material is decided by stakeholders few in number while others are omitted from the process. This might lead to a situation where the textbooks will be decided by people having less awareness about learners’ level or other related issues linked with learners’ development per se. Since curriculum is the guideline for quality education which is materialized by textbooks, therefore, they need a cyclical and recurring process of evaluation in line with any of the prescribed models designed for the said purpose.

Dr. Benjamin Bloom along with his colleagues devised a taxonomy wherein they chalked out the manner in which people learn. In the *Taxonomy of Educational Objectives, Handbook I: Cognitive Domain*, Bloom (1956), and his team decided for a taxonomy containing three major domains: Cognitive, Affective and Psychomotor in which cognitive domain addresses the mental development, affective domain is related to behavioral improvement and psychomotor one is concerned with physical involvement in learning. The focus of the current study is on the analysis of textbooks by applying the cognitive domain. The Cognitive Domain yet again contains six sub-levels namely: *Knowledge, Comprehension, Application, Analysis, Synthesis* and *Evaluation*. The first three are regarded as the Lower Level Cognition (LLC) and the last three as Higher Level Cognition (HLC). Taxonomy demands the cognitive development in terms of moving on from LLC to HLC systematically. The study by Kropp and Stoker (1966) is the most valid, till this time, in asserting the credibility of the taxonomy.

Bloom believed that the taxonomy could:

- render a common mode of communication for different people, topics and levels
- provide a base for designing a curriculum
- provide a valid criteria for balance in objectives, activities and assessment
- propose a standard paradigm to judge curricula and syllabi

Some other researchers also worked to the same end. One such model is Wilson's Taxonomy worked out in Bloom's tradition. Likewise, Biggs and Collis proposed SOLO Taxonomy who later developed it further and came up with DIKW Pyramid. In 2000, Anderson and Krathwol formulated the Revised Bloom's Taxonomy (RBT) though it was not very warmly received.

As regards textbooks vis- a -vis application of such taxonomies/model, a number of studies have already been undertaken by researchers across Pakistan. Khalid (2009) conducted a research evaluating the English language course at Bachelor level by applying Charles Model of Evaluation. Mirza (2007) carried out a study on the Evaluation of English Teaching Course Offered by PAF Teachers' Training Institute Islamabad. Likewise, Habib (2014) evaluated English Textbook at SSC

Level in Government Schools of KPK by applying Creswell's Model. The current study is different in the sense that it focuses on the comparative analysis of English Textbooks I of SSC Level of Federal Textbook Board and KPK Textbook Board. The selected framework for this study is Bloom's Taxonomy of Educational Objectives. A brief description of the selected framework is given in section 3.1.

3 Research Methodology

This is a mixed method research i.e. qualitative and quantitative both. The researchers carried out an in-depth study of the textbooks which made it a qualitative research. According to Krippendorff (2004), reading and analyzing the textbooks come under the category of qualitative approach. Besides reading and analyzing, a "question analysis" was performed. This technique analyzed the questions in a textbooks in order to know whether the questions fulfill the assigned purpose or not. The content and question items in the exercises were cross checked to find the relevance of the questions with the material in the content, thus creating the categories of relevant and irrelevant questions. The existing and missing domains of the taxonomy were explored.

Further, the research data were analyzed quantitatively in the form of simple numbers, percentages and calculations. The results obtained from both the textbooks, after the calculations, were compared in order to know the extent to which the books follow the taxonomy. So this study is also evaluative, analytical and comparative in nature.

3.1 Theoretical Framework

The framework for this study is Bloom's Taxonomy of Educational Objectives. This taxonomy was proposed by Dr. Benjamin Bloom. The current study employed one of the three (*Cognitive, Affective* and *Psychomotor*) lenses of selected taxonomy. It was *Cognitive* domain which further breaks up into six sub levels, namely *Knowledge, Comprehension, Application, Analysis, Synthesis* and *Evaluation*.

4. Data Analysis

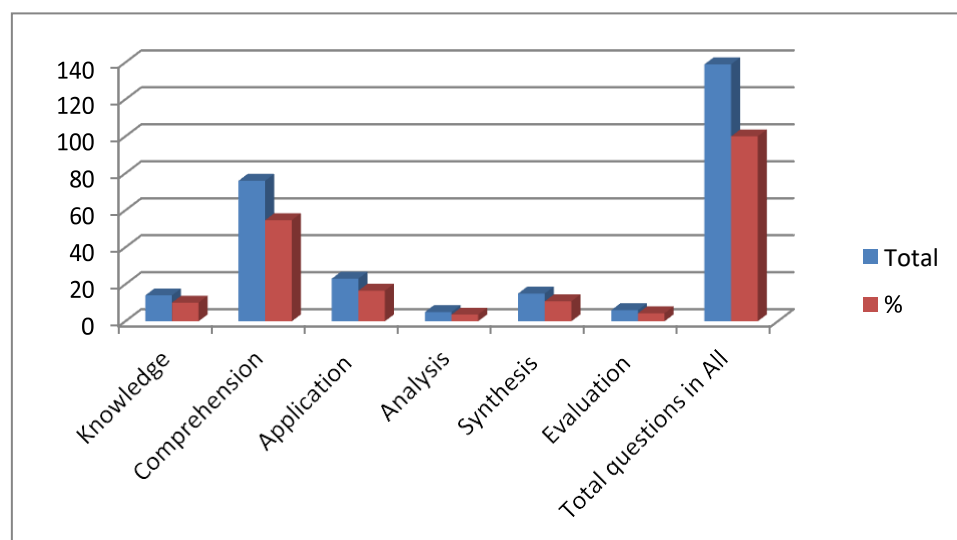
4.1 Book I: Federal Board

Blooms Taxonomy of Educational Objectives: Cognitive Domain

Units 1-12

Level s	Knowl dge	Comprehen sion	Applicati on	Analy sis	Synthesis	Evalu ation	Total questio ns in All
Total	14	76	23	5	15	6	139
%	10.07	54.67	16.54	3.59	10.79	4.31	100

Table 1: Cognitive Domain in FTBB Book I



Graph1

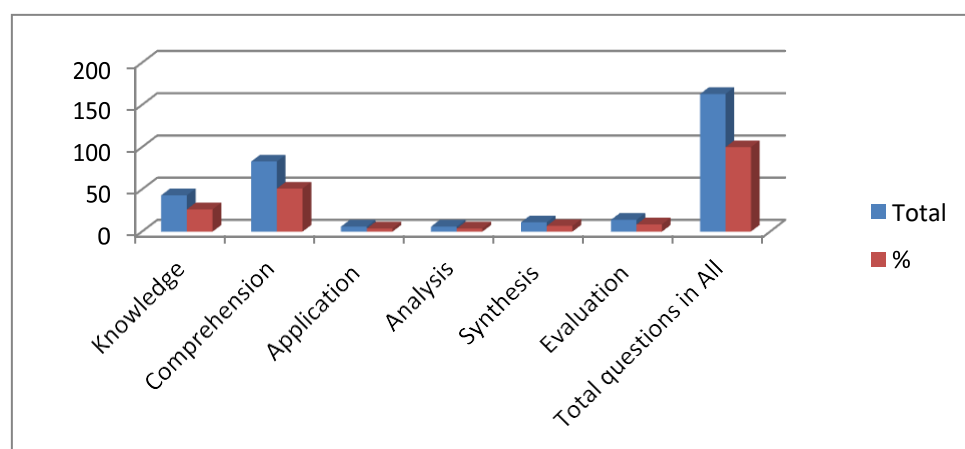
The table given above shows 139 questions of Cognitive Domain wherein the highest number of questions find their place under the second sub level of *comprehension* which is 76 (54.67%). On the contrary, the lowest number of questions fall under the fourth level of *Analysis* carrying 5 items with the smallest percentage 3.59% and *Evaluation* with 6 questions with another small percentage of 4.31%. The sub level of *Knowledge* has 14 items with yet another small percentage, i.e. 10 %, *Application* with 23 questions (16.54%) and *Synthesis* is with 15 items having 10.79%. The picture as a whole very clearly suggests that

distribution of questions vis-à-vis sub levels of the Cognitive Domain is not balanced.

4.2 Book I: Khyber Pakhtunkhwa Board Blooms Taxonomy of Educational Objectives: Cognitive Domain Units 1-1

Levels	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation	Total questions in All
Total	43	83	06	06	11	14	163
%	26.38	50.92	3.68	3.68	6.74	8.58	100

Table 2: Cognitive Domain in KPKTBB Book I



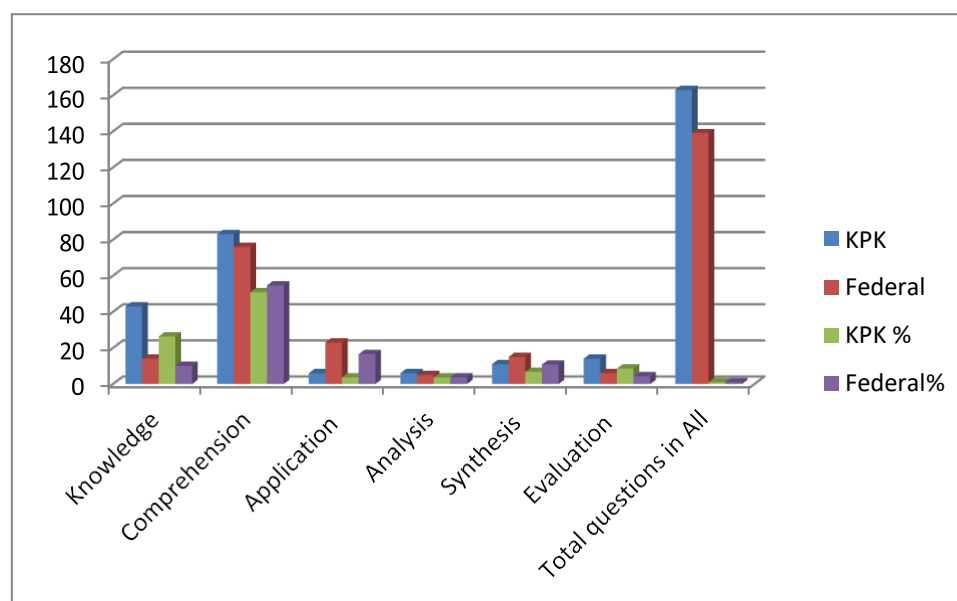
Graph 2

Table 2 shows 163 questions pertaining to Cognitive Domain out of which the highest number of items is in the sub level of *Comprehension*; 83 items with the highest percentage of 50.92 while the lowest numbers are in *Application* and *Analysis* with 6 items and 3.68 percentages in each. *Synthesis* is not very healthy either in terms of percentage; 11 items (6.74%). The levels of *Knowledge* and *Evaluation* are suggest a balance with 43 items (26.38%), 14 questions (8.68%) in each simultaneously. The overall distribution shows a lack of balance.

4.3 Comparison: Book I of Federal and Khyber Pakhtunkhwa Boards Blooms Taxonomy of Educational Objectives: Cognitive Domain

Table 3: Cognitive Domain in FTBB and KPKTBB Book I

Levels	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation	Total questions in All
KPK	43	83	06	06	11	14	163
Federal	14	76	23	5	15	6	139
KPK %	26.38	50.92	3.68	3.68	6.74	8.58	100%
Federal %	10.07	54.67	16.54	3.59	10.79	4.31	100%



Graph 3

Table 3 collectively presents the data and percentages of both the textbooks. In both the textbooks, the entire sub levels have been placed but the number of questions in each sub level is not uniform. The sub level of *Comprehension* is the highest in both (50% in KPK and 54% in FTBB). In KPKTBB, sub level of *Knowledge* is second highest with 26% while in FTBB, the second highest is *Application*. *Analysis* and *Evaluation* both

have been allotted smallest portion in both the textbooks. The proportionate sub level is KPKTBB is *Knowledge* (26%) while in FTBB, it is *Application* (16.54%). It is clear from the table and percentages that the order of LLC to HLC is not followed in a standardized manner. There is random distribution of questions in each sub level in both the textbooks.

5. Critical Discussion: FTBB Book I- KPK TBB Book I

The comparison, as supported by table 3, shows that there is absence of the uniform division of questions in all the sub levels of Cognitive Domain of both the textbooks. In FTBB, *Comprehension* contains the highest (76 items) while *Application* is second in rank (23 items). The lowest items are in *Analysis* (5 questions) and *Evaluation* (6 questions). *Knowledge* and *Synthesis* carry 14 and 15 items simultaneously.

In KPKTBB, the highest number of items are in *Comprehension* (83) and the second highest are in *Knowledge* (43). The lowest are in *Application* (06) and *Analysis* (06). *Synthesis* carries (11) and *Evaluation* is with 15 items.

There is absence of balance in number of questions in the sub levels of Cognitive Domain of both textbooks though none of the sub levels is missing. This strongly suggests that no systematic allocation was followed in placing the questions in the sub levels. Similarly, there is a lack of order in terms of LLC to HLC (moving on from Lower Order Cognition to Higher Order Cognition). The better pattern would be to place the questions starting from *Knowledge* and *Comprehension* and moving on to the rest of the sub levels. In the same fashion, there is a lack of congruency of items in the exercises with the content of the units of the textbooks. Questions in the exercises should be from the material taught in the content of the lessons. This way, young learners would not be confused and would be more comfortable in achieving the goal of their cognitive development.

6. Findings

- The study was carried out to find out whether the question items in the exercises of the textbooks follow the Cognitive Domain of Bloom's taxonomy or not. It is evident that there is a lack of balance in terms of distribution. According to tables 1, 2 and 3, there is either very low number of items placed in some of the sub levels or too high number of questions in the other sub levels.

- With regard to the second question of finding the missing sub level/s, it was found that no sub level was missing. All the sub levels of the Cognitive Domain were present in the exercises of the textbooks.
- The third point of inquiry was to find the order of the sub levels of the Cognitive Domain. There was a lack of order found after the analysis. There was no pattern followed moving on from LLC to HLC.
- The last question was to know the congruency of the questions with the exercises of the textbooks. To this, it can safely be said that majority of the questions, especially those of grammar, were not in line with the content taught.

7. Conclusion

The study was about the application of the Cognitive Domain of Bloom's Taxonomy on the exercises of FTBB Book I and KPKTBB Book I of English at SSC level. The data showed that the Cognitive Domain has not been followed uniformly in all the exercises of the mentioned textbooks though all the sub levels are present. Similarly, the sub levels of the Cognitive Domain have not been placed in a systematic way according to LLC-HLC. There is no congruency of the questions with the content of the units. Many questions have no connection with the content taught in the textbooks.

8. Recommendations

Preparing a textbook according to some authentic and time tested educational model is necessary and the same proposition has been followed in designing the above two books if looked from Bloom's angle. However, all the sub levels and the three domains of the taxonomy have not been followed uniformly. As a matter of fact, it is imperative to have clear objectives in terms of cognitive development through language learning in the textbooks to guide teachers and learners to the right direction. This implies that question items in the exercises and the content they are based on must match up. The teaching of English requires dealing with grammar as well but the grammar should be properly planned and then placed in the textbooks. In other words, there should not be any randomness in this regard. Last but not least, textbooks should be designed by assigning the task to the experts, which would help in improving the quality of learning.

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Appendix

FTBB Book I

Cognitive Domain Level 1 Knowledge

Unit 1

What was the first revelation?

Cognitive Domain Level 2 Comprehension

Unit 1

Why was the Holy Quran sent in Arabic?

Cognitive Domain Level 3 Application

Unit 1

Use the following words in the sentences.

Century, conquest, influential, determination, delegation, quietly, urge, ignorance

Cognitive Domain Level 4 Analysis

UNIT 2

How will you elaborate Quaid-e-Azam Muhammad Ali Jinnah's quote?

Cognitive Domain Level 5 Synthesis

UNIT 1

Writing Skills

Summarize paragraph 2 of the lesson in three to four sentences.

Cognitive Domain Level 6 Evaluation

UNIT 2

C- Which steps should be taken to make our nation patriotic?

KPKTBB Book I

Cognitive Domain Level 1 Knowledge

Unit 1

When and where was our Holy Prophet born?

Cognitive Domain Level 2 Comprehension

Unit 1

Why did people call him "Amin" and "Sadiq"?

4.6.3 Cognitive Domain Level 3 Application

Unit 1-5

Unit 3 and 5, no question of application

Unit 1

Vocabulary

Make meaning full sentences of the following words:

i Worship

(There are five more alike words)

Cognitive Domain Level 4 Analysis

Unit 2

What does the author mean by saying “Muslims could not get rid of”.
Write in 2-4 sentences.

Cognitive Domain Level 5 Synthesis

Unit 1-5

There are no questions of Synthesis in units 1-5.

Unit 8

People showed unexpected heroism when the avalanche hit the village.
Write a note.

Cognitive Domain Level 6 Evaluation

Unit 2

- A. What do you understand by the statement “Islam recognizes the importance of both individual and the community which he termed as “Millat-e-Islamia” write a paragraph?
- B. Write a paragraph on ‘what would I do if I were the principal of the School?’
- C. Write an essay on “ Allama Muhamamd Iqbal as a national poet”.