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Evaluating Critical Thinking skills in the Grade IX English Textbook of Khyber Pakhtunkhwa

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Abstract

English textbook plays a significant role in formulating critical thinking skills, yet many curricula still focus on rote memorization rather than critical thinking. This study seeks to assess the Grade IX English Textbook used in Pakistani public schools to analyze the inclusion of critical thinking components. It highlights a notable gap in evaluating whether existing textbooks effectively cultivate these abilities. A content analysis approach was utilized, using a self-developed checklist on the basis of Bloom's Taxonomy and Facione's framework to determine the textbook learning objectives, lesson content, and exercise questions. The findings indicate that while elements like creativity and analysis appeared in the textbook to a large extent, evaluation and problem-solving skills are significantly lacking. This imbalance highlights a gap between the intended educational objectives and the actual content. The study recommends revising the textbook to include more open-ended questions, problem-solving activities, real-world tasks, and evaluation to promote students' higher-order thinking. Moreover, a more balanced incorporation of all critical thinking elements across different text types is suggested. These findings have practical implications for policymakers, curriculum developers, and educators seeking to enhance textbook design in accordance with 21st century learning needs.

Keywords: Critical thinking, Content Analysis, English Textbook, Bloom's Taxonomy, Facione's Framework, Secondary Education.

Introduction

In contemporary educational environments, critical thinking stands as a crucial 21st century competency that helps people successfully manage all aspects of life. According to Dwyer et al.

(2014), critical thinking is the process of analyzing information, evaluating arguments, problem-solving, and informed decision-making. Critical thinking, communication, collaboration, and creativity, known as the 4Cs of the 21st century skills, have been emphasized with innovation, confidence, and enthusiasm as their core attributes (Jamil et al., 2009). Education plays a vital role in developing these skills; many countries are reforming curriculum to mainstream skills that prepare youth for modern realities, like critical thinking, analytical reasoning, problem solving, and decision-making (Care et al., 2018). In a developing country like Pakistan, the goal of education in the 21st century is to integrate critical thinking skills into the curriculum (Azmat et al., 2021). Curriculum focuses heavily on helping students learn to think critically, reason logically, and problem-solving (Ministry of Education, 2006). In curriculum reforms, textbooks are the most important component that play a pivotal role in developing critical thinking abilities in learners by providing structured content that can be analyzed, questioned, and evaluated (Irafahmi et al., 2018). This study is guided by the theoretical frameworks of Bloom's Taxonomy and Facione's critical thinking Framework. The hierarchal model of Bloom's Taxonomy ranging from simple recall to higher order thinking skills offering a framework to assess how the textbook supports student development between these levels. This investigation is further strengthened through inclusion of Facione's Framework that includes students' interpretation skills, analysis abilities, inference capabilities and self-regulation competencies.

Bloom's Taxonomy

The educational goals and objectives get classified through Bloom's Taxonomy according to their complexity and specificity levels. Benjamin Bloom initiated the model back in 1956 to guide teachers in designing educational content that fosters student development of advanced thinking abilities for critical thinking learning (Krathwohl, 2002).

The taxonomy comprises of six levels, organized from simple to complex:

1. **Remembering**: Remembering basic concepts and facts.
2. **Understanding**: Explanation of concepts and ideas.
3. **Applying**: Using information in new situations.
4. **Analyzing**: Breaking down information into parts and understanding structure.
5. **Evaluating**: Making judgments based on criteria and standards.
6. **Creating**: Combining different ideas to form a unique coherent whole.

The advancement through these levels transforms students from basic recalling into complex evaluative and creating abilities that strengthen their critical thinking abilities (Riazi & Mosalanejad, 2010). Students acquire profound comprehension and analytical ability when they advance from memorizing historical event facts into analyzing causes and impacts and developing new interpretations in a classroom environment.

Facione's critical thinking Framework

Critical thinking Framework from Facione represents an organized program that both develops and evaluates critical thinking abilities. Throughout multiple years Peter Facione discussed this framework which was first outlined in 1990 (Facione, 2011). The framework underwent additional development throughout the years leading to important revisions in the earliest part of the 2000s which enhanced its application for critical thinking. He outlines key cognitive processes that are essential for effective critical thinking:

1. **Interpretation**: People use analytical thinking to discover the purpose or significance behind provided data and occurrences. The ability to understand information depends on successful organizing and clarifying and decoding to decode its true meaning.

2. **Analysis**: Characters assess logical observations and understand the mental processes of reasoning. The evaluation process examines conclusion formation as well as the support provided by evidence.
3. **Inference**: The ability to reason from available evidence in drawing conclusions. Understanding how to make logical predictions about future events and deliver reasoned judgments constitutes this skill.
4. **Evaluation**: People evaluate both the significance of information sources and their trustworthiness during this phase. This process enables the evaluation of argument strength together with source reliability assessment.
5. **Explanation**: Showing a logical process for explaining one's end results. Clear justification of thinking patterns finds a place in this aspect.
6. **Self-Regulation**: A person must evaluate and think about their process of reasoning while also analyzing their personal biases for self-improvement.

An increasing number of studies exploring how English textbooks integrate these skills, employing diverse methodologies to evaluate their effectiveness. These studies highlight the significant yet inconsistent integration of critical thinking components in English textbooks. Rohmatika et al. (2021) and Barnard (2021) both found identifiable presence of critical thinking elements but still remain uneven, with Barnard emphasizing on implicit questions in the *English in Mind* textbook and Rohmatika noting minimal critical thinking skills across textbooks from grades 1 to 12. While Nastiti (2020) highlighted the significant role of textbooks in strengthening critical thinking through reading materials, she also identified the insufficient presence of critical thinking across chapters. Similarly, Mardhiyatuzakiyah (2023), utilizing the Cambridge framework, revealed that although most critical thinking elements were present, key elements such as problem-solving and decision-making were missing, focusing on the need for improved material adhering with modern competency frameworks. While Qasim et al. (2021) offers a comparative dimension, indicating that the OPE (Oxford Progressive English) textbook was more effective in developing critical thinking elements than PTB (Punjab Textbook Board) yet it is less than 50%. Based on the reviewed studies, while all studies recognize the potential of English textbooks to embed critical thinking skills, they consistently advocate for curriculum revisions to ensure a more comprehensive balanced, and strategic integration of critical thinking skills. Several important shortcomings exist in Pakistani educational contexts regarding curriculum integration of critical thinking. A study by Naseer et al. (2022) demonstrates that Pakistan Studies textbooks at the secondary level insufficiently provide critical thinking-based questions because these books focus on rote memorization instead of developing analytical competencies. Similarly, a study conducted by Jamil et al. (2024) have detected better critical thinking integration in Grade IX Chemistry and Physics textbooks. Likewise, the 2006 Biology curriculum promote critical thinking through inquiry-based learning and open-ended questions but may not fully address the diverse needs of students. Despite of the fact that focus on critical thinking has increased over the year yet critical thinking integration across all subjects is inconsistent (Batool et al., 2022). Collectively, these studies establish that Pakistan needs improved, consistent integration of critical thinking across all subjects and grade levels to effectively develop critical thinking skills throughout its national educational system.

Research objectives

This study seeks to evaluate critical thinking skills in Grade 9th English textbook. The main objectives of the study are as follows:

1. To analyze the content of the English textbook to assess the inclusion of key components of critical thinking skills.
2. To evaluate the extent to which elements of critical thinking skills are present in the English Textbook

3. To identify and categorize specific sections within the English textbook where the development of critical thinking skills may be insufficient or lacking.

Methods

The nature of this research is qualitative, as it seeks to explore the presence and extent of critical thinking elements in the Grade IX English textbook through an in-depth content analysis. Content analysis of textbook will help to identify critical thinking components in learning objectives and exercises in each unit. For content analysis a check list was used as a data collection tool to identify the elements. Core elements of checklist including analysis, reasoning, evaluation, Inference, reflection problem-solving and creativity, each with specific indicators. Each unit of textbook was completely examined using the developed checklist to ascertain the frequency and existence of the specified critical thinking components. The data gathered through content analysis was further analyzed by thematic analysis to provide an extensive overview and in-depth knowledge to improve the curriculum's effectiveness and promote critical thinking among students.

Data Collection Tool

A complete checklist was designed for data collection purpose to evaluate of critical thinking elements in the textbook contents. This checklist was designed under the frameworks of Blooms taxonomy and Facione. It was further refined through Cambridge Competency Framework (Sumarni & Darmahusni, 2023). It consists of seven main components: analysis, reasoning evaluation, inference, problem solving and creativity. These components are further sub divided into parts. Different elements of critical thinking interpret different angles and every section of the exercise questions and objectives are analyzed according this checklist.

Findings

Inclusion of Critical Thinking Elements in Textbook

The following table conclude the occurrence of critical thinking elements across the textbook, with a focus on the presence of these elements in objectives, exercise questions and/or activities. The presence of these elements and subparts was checked through checklist. This provides a clearer picture of how critical thinking is integrated and distributed across the textbook's content.

Table 1: *Occurrences of critical thinking Elements in textbook*

Critical Thinking Element	Learning objectives	Exercise Questions	Total Occurrences
Analyze	4	21	25
Reasoning	0	25	24
Evaluate	1	19	6
Reflection	3	13	16
Inference	4	20	27
Problem Solving	0	10	13
Creativity	1	26	31

Table 1 of the current study shows the Grade IX English textbook distribution of critical thinking elements. The results show that the most highlighted item is creativity, repeated 31 times overall, most of them being (26) repeated in exercise questions and very few of them (1) repeated in learning objectives. The term inference is also readily present with 27 occurrences all equal in learning objectives (4) and exercise questions (20). Analysis follows with 25 occurrences, most of them, but not all, to be found in exercises. Also, reason is a part of the exercises with 25 cases and a total of 24. Reflection appears in 16 instances in total and is more obviously distributed in

learning objectives (3) than used in other aspects. The least emphasized component is problem solving with a frequency of 13 instances, which is solely contained in exercise questions with no given in the learning objectives. Evaluation is also poorly represented, coming up only 6 times, once in learning objectives and 19 times in exercises.

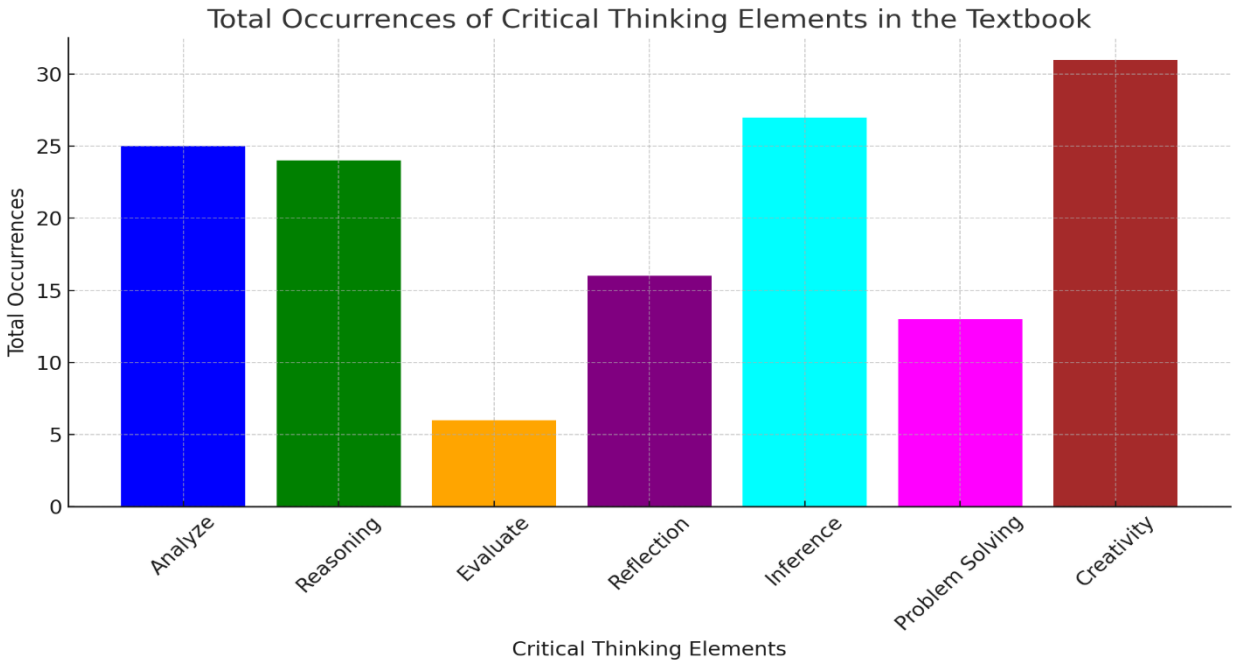

Figure 1: *Graphical representation of occurrences of critical thinking elements*

Figure 1 of the study indicates the overall incidences of critical thinking elements in Grade IX English textbook. Creativity represented as the most common element (31) followed by inference (27) and analysis (25). Reasoning is heavily signified as well as 24 occurrences and reflection 16 ones. Such elements as problem solving (13) and evaluation (6) are discussed much less often, and so these elements are the least prominent. On the whole, the figure allows noting that the textbook is very much concentrated on areas of creativity, inference and analysis, whereas the problem-solving skills and evaluation receive little to no attention.

Findings

1. The Grade IX English textbook major part emphasize on critical thinking components, with 149 out of 257 questions (57.6%) designed to develop critical thinking skills.
2. The textbook contains critical thinking elements; however, their distribution is inconsistent.
3. In the textbook, the components of critical thinking including creativity, analysis, and inference are the most frequently used critical thinking elements.
4. The textbook provides limited focus on evaluation and problem-solving abilities, indicating insufficient development of these critical thinking elements.
5. The learning objectives at start of each chapter do not cover significant portion of critical thinking components.
6. Reasoning an important element of critical thinking is moderately focused in the textbook, this focus was limited to cause-and-effect questions to foster logical thinking and structured decision-making.
7. Inference another important element of critical thinking is mostly integrated in textbook content however its inclusion only noticed in implicit meaning, figurative language, and interpretation of poems.

8. Reflection-based questions appear in the textbook with some frequency, however they lack in fostering deep thinking, handling multiple viewpoints or reflect on personal experiences.
9. Critical thinking elements are mostly integrated in the short questions and open ended questions they are missing throughout the textbook.

Discussion

The findings of the study indicate that Grade IX textbook on English contains a significant proportion of higher-order thinking skill (HOTS) questions, 57 percent of the exercises set in the textbook aim at developing analysis, inference, creativity, which implies a positive tendency of moving away the rote learning to critical thinking. A large part of questions that focus on lower-order thinking skills (LOTS) is nevertheless present, however, indicating that the transition is not complete. The most covered components of critical thinking are analysis and creativity, whereas some other important elements of critical thinking such as evaluation, reasoning, and problem-solving are covered in minimum, resulting in an uneven integration of critical thinking elements in the textbook. Such an imbalance distribution and prioritization restricts the ability of students to develop critical thinking skills. In past textbooks in Pakistan laid more stress on rote learning (Manan, 2019), however recent reforms has brought a positive shift toward competency-based learning and higher-order thinking (Anjum & Tapio, 2025). Despite these developments still there is space for improvement as in Grade IX English textbook. Inconsistencies in incorporating evenly elements of critical thinking are evident that may limit the possibility to engage students in evaluation, problem-solving, and evidence-based reasoning. Additionally, the learning objectives and exercise questions in the given textbook are not adequate in development of critical thinking. Reasoning and problem solving skills are significantly not included in learning objectives, and the reflection based activities are more superficial they do not help provoke engagement, understanding realities and their connections to the real world among students. Inference is used mostly in poetry and figurative language thus limiting the students to use this skill in the wider spectrum. Similarly, reasoning is confined to cause-and-effect problems instead of developing evidence-based argumentation and reasoning. Forehand (2010) has also emphasized on the holistic development of critical thinking among students. Although it seems to be a step in the right direction to include both creativity and analysis, it ends in partial skill development because there is no systematic organization of integrating all the elements involved in critical thinking. The textbook need to include a wide range of critical thinking skills, especially evaluation, reasoning and problem-solving, coupled with increased reflective and inference abilities, in order to better prepare students to compete in real world challenges.

Conclusion

The evaluation of the Grade IX English textbook indicates both strengths and areas for improvement in developing critical thinking skills among students. Research shows that 57% of the exercises use higher-order thinking skills which focus mainly on analysis, creativity and inference. This reveals a positive shift beyond rote memorization towards cognitive development. However, the research findings exhibited a significant imbalance in critical thinking element distribution because problem-solving and evaluation competencies received minimal integration. The learning objectives of the textbook also lack a structured approach to enhancing critical thinking, further limiting students' ability to nurture comprehensive cognitive skills. While reasoning is moderately focused, it remains insufficient in promoting structured logical thinking and decision-making. Inference is particularly addressed through poetry interpretation, limiting students' ability to apply this skill across different text. Similarly, reflection-based activities do not adequately encourage diverse perspectives, deep thinking, or personal engagement. Comparisons with previous studies reveal that although the Pakistani curriculum is making steps toward integrating critical thinking components, the current incorporation remains partial. The textbook

needs a structured method to integrate critical thinking consistently throughout its contents because its current focus primarily on these skills has created an imbalance. Moreover, aspects such as curriculum design, assessment techniques, and teacher preparedness play a vital role in examining how successfully these abilities are developed in students. A more balanced inclusion of critical thinking elements would prepare students for higher education and real-world problem-solving challenges. Based on the findings of this research, the following suggestions are proposed to strengthen the incorporation of critical thinking elements in the Grade IX English textbook:

1. The textbook should provide a more structured and equally distributed approach to include all critical thinking abilities, confirming that evaluation and problem-solving receive the same emphasis as analysis and creativity.
2. More open-ended and real-world application-based content should be included to improve students' ability to critically evaluate information and develop solutions.
3. Scenario-based, dilemmas and case studies exercises should be incorporated to encourage problem-solving.
4. All aspects of critical thinking including reasoning, evaluation, and problem-solving the learning objectives should clearly reflect in the learning objectives.
5. Inference abilities should not be confined to poetry analysis but should also introduce into prose, non-fiction, and real-life scenarios.
6. Questions should allow students to critically analyze their assumptions and reasoning processes rather than just sharing personal opinions.
7. The education authorities should revise textbook content to integrate a comprehensive approach to critical thinking, ensuring connection with competency-based learning styles.
8. Assessment frameworks should be designed to evaluate students' ability to analyze, evaluate, and apply knowledge rather than emphasizing primarily on factual recall.

Recommendations for future studies

1. Future research may examine how critical thinking elements appear in textbooks designed for science education and social studies education to understand their distribution throughout all subjects.
2. A comparative study between different grade levels (e.g., Grade VI–XII) to evaluate how critical thinking development progresses through different subjects.
3. A cross-national comparison can determine how critical thinking is embedded in English textbooks from various education systems (e.g., Pakistani vs. international curricula).

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