

**INSTRUCTIONAL AND ASSESSMENT
PRACTICES IN THE PERSPECTIVE OF
HIGHER ORDER THINKING AT
SECONDARY SCHOOL LEVEL**

By

Tahseen Fatima



**NATIONAL UNIVERSITY OF MODERN LANGUAGES
ISLAMABAD**

December, 2024

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By

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M.Phil. Education, National University of Modern Languages Islamabad, 2016

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY IN EDUCATION

To

Department of Educational Sciences
Faculty of Social Sciences



NATIONAL UNIVERSITY OF MODERN LANGUAGES, ISLAMABAD

December, 2024

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Thesis Title: Instructional and Assessment Practices in the Perspective of Higher Order Thinking at Secondary School Level

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Registration #: 696-PhD/Edu/F-17

Doctor of Philosophy

Degree name in full

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ACKNOWLEDGEMENT

First and foremost, I express my deepest gratitude to Allah for His countless blessings, wisdom, strength, and guidance in enabling me to complete this research within the specified timeframe.

I extend my heartfelt appreciation to the respected Rector, Maj Gen Shahid Mahmood Kayani HI(M) (Retd), the Dean of the Faculty of Social Sciences, Prof. Dr. Muhammad Riaz Shad, and the Head of the Department of Educational Sciences, Dr. Khushbakht Hina, for their unwavering support throughout this process. I sincerely pray for their well-being and may Allah Almighty bless them with His protection and grace.

I am privileged to express my profound gratitude to my thesis supervisor, Dr. Hukam Dad Malik former Associate Professor and Head of Educational Sciences at NUML, now Director at the Institute of Education and Research, Muslim Youth University, Islamabad. His insightful guidance, dedication, and personal interest were instrumental in refining and completing this thesis. Without his consistent support, valuable feedback, and encouragement, this thesis would not have been possible.

I am deeply grateful to Dr. Aisha Bibi, my co-supervisor and Assistant Professor at NUML, Islamabad, for her unwavering support, insightful guidance, and continuous encouragement throughout this research. Her patience, constructive feedback, and willingness to assist at every stage greatly contributed to the quality and completion of this work.

I extend my sincere gratitude to the Federal Directorate of Education, Islamabad, for granting permission to conduct this study. I also deeply appreciate the principals and teaching staff of secondary schools in Islamabad for their kind cooperation in facilitating data collection.

Finally, I am deeply grateful to my family. This study fulfills the cherished wish of my late mother, Zarina Begum, whose prayers guided me. I sincerely appreciate my husband, Shahid Saleem, my brother, Col. Dr. Zaheer-us-Saeed, and my cousin, Dr. Aamna Saleem Khan, for their unwavering support, love, and encouragement throughout this journey.

Tahseen Fatima

Dedicated to

This work is dedicated to my beloved mother, Zarina Begum (Late), whose prayers, love and unwavering support guided my journey. Her sudden passing made continuing my Ph.D. an emotional challenge, but I persevered to honor her dream. As a single mother, she raised me alone, making countless sacrifices to ensure my education. Though she is not here to celebrate this milestone, her strength and love remain my greatest motivation. May Almighty Allah bless her with the highest place in Jannat-ul-Firdous. Ameen.

ABSTRACT

Thesis Title: Instructional and Assessment practices in the perspective of higher order thinking at secondary school level.

The main aim of the study was to investigate instructional and assessment practices in the perspective of higher order thinking with respect to Pakistan Studies at secondary school level. The study objectives were to: (i) determine teachers' perception towards the objectives of the curriculum of Pakistan Studies in the perspective of higher order thinking at secondary school level; (ii) investigate the instructional practices used for teaching Pakistan Studies concerning higher order thinking at secondary school level; (iii) find out instructional methods used for teaching Pakistan Studies concerning higher order thinking at secondary school level; (iv) explore demographic variables including area, gender and job experience in the context of curriculum objectives, instructional practices and methods at secondary school level; and (v) analyze the five years (2014-2018) annual question papers of Pakistan Studies in the context of higher order thinking at secondary school level (Grade X). A mixed-method sequential explanatory design was used. Out of 1000 teachers, 300 were selected by using proportionate stratified random sampling. The self-developed questionnaire and interview protocol were validated by the field experts. Reliability was checked through Cronbach Alpha .92. The questionnaire, document analysis and interview were used for data collection. For quantitative data, frequency, percentage, mean, standard deviation, mode, *t*-test and analysis of variance were analyzed using SPSS 21, while thematic analysis was conducted for qualitative data. The triangulation results showed qualitative findings confirming quantitative findings. Teachers perceived the Pakistan Studies curriculum as strengthening national identity, deepening historical understanding, and instilling gratitude for independence but noted its limited emphasis on observation, creativity, analysis and reflection. Instructional practices and methods related to higher order thinking were the least prevalent in teaching. The demographic factors had influenced on teachers' perceptions regarding knowledge acquisition as rural teachers scored higher than urban teachers. Annual question papers primarily assessed lower-order thinking. Activity-based teaching was identified as beneficial instructional practices. Formative assessments, objective type questions and projects were suggested as other useful assessment practices. The study recommended that diverse instructional practices and all cognitive levels may be applied to improve instructional and assessment practices. The annual question papers may be designed to focus on higher order thinking.

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LIST OF ABBREVIATIONS

Abbreviation	Terms
ACRs	Annual Confidential Report
ACQ	Acquiring
AEOs	Area Education Officers
AI	Artificial Intelligence
APP	Applying
ANOVA	Analysis of Variance
A.V. aids	Audiovisual aids
BISE	Board of Intermediate and Secondary Education
CPD	Continuous Professional Development
CRQs	Constructed Response Questions.
DVDs	Digital Versatile Disk.
ERQs	Extended Response Questions
F1	Female 1
EFA	Exploratory Factor Analysis
FDE	Federal Directorate of Education
FBISE	Federal Board of Intermediate & Secondary Education
HOT	Higher Order Thinking
HOTS	Higher Order Thinking Skills
SSC	Secondary School Certificate
ICT	Information and Communication Technology
IPR	Interview Protocol Refinement
KMO	Kaiser-Meyer-Olkin
LOTS	Lower Order Thinking Skills
M	Mean
M1	Male 1
M.A	Master of Arts
M.Phil.	Master of Philosophy
MMR	Mixed Methods Research

M.Sc	Master of Science
MCQs	Multiple-Choice Question
MDGs	Millennium Development Goals
NGOs	Non-Government Organizations
OBT	Original Bloom's Taxonomy
PPTs	PowerPoint presentation
PBL	Problem Based Learning
REF	Reflection on knowledge
PhD	Doctor of philosophy
Quan	Quantitative
Qual	Qualitative
RBT	Revised Bloom's Taxonomy
RQ	Research Question
SD	Standard Deviation
SBA	School-Based Assessment
SSC	Secondary School Certificate
STBB	Sind Textbook Board
TFP	Teach For Pakistan
TST	Test of Specification Table
TV	Television

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CHAPTER 1

INTRODUCTION

Education is viewed as the enrichment of life experiences aiming primarily to nurture individuals' behaviors, abilities and competence. It involves the transfer of knowledge among individuals and across generations. In the present global scenario, education has become increasingly complex as nations face competitive pressures and engage in a continuous pursuit of success. To thrive and expand their horizons, nations must consistently invest in quality education. This investment is vital for their survival and growth serving as an essential foundation for attaining success (Alya, 2014).

Effective teaching requires the integration of three fundamental components: curriculum or learning objectives, instructional and assessment activities (Figure 1.1). The alignment of these elements not only proves to be a time-saving measure but also enriches the value of the educational experience. The synergy of effective teaching is most evident when teachers adhere to the principles outlined by Mellon (2015). Firstly, the articulation of clear curriculum or learning objectives establishes a roadmap for both teachers and students. Teachers have an essential role in the implementation of curriculums (Klein, 1973). In this respect, teachers need to internalize the basic philosophy of curriculum. Curriculum objectives directly influence instructional and assessment practices. Instructional and assessment practices are shaped by curriculum objectives, their alignment is essential for fostering analysis, evaluation and creation. If these components are not aligned, the development of higher order thinking is not possible (Fry, Kitteridge, & Marshall, 2008). The efficiency of these curricula will be increased to that degree if teachers establish the learning-teaching atmosphere as required by the curricula. In this regard, it is believed that the instructors' perceptions of the curriculum reforms are essential. The curriculum and the teachers' understanding of its goals and structure are powerful resources used to plan lessons and improve student learning. Understanding enactment requires a careful examination of how teachers actually use curriculum and the reasoning behind those choices (Penuel, Phillips, & Harris, 2014).

Teachers' instructional and assessment practices both are pre-dominated by their perceptions, beliefs and attitudes. Furthermore, teachers' perceptions about curriculum are sources to discover more about their teaching objectives and practices. Kurniawati (2006) also suggested that recognizing teachers' views and perspectives leads to a deeper comprehension of their classroom activities and offers suggestions for improving their practice. Coherence with teachers' perceptions is essential for successful educational reform. Therefore, understanding how teachers perceive the curriculum is crucial. Examining their attitudes, values, ideologies and pedagogical theories provides insight into their instructional practices and the potential impact of nationwide reforms on them.

Secondly, learning activities, encompassing diverse approaches such as case studies, discussions and lectures are purposefully designed to align with and strengthen these learning objectives. They provide students with goal-directed practice, fostering meaningful and directed learning experiences. Lastly, the incorporation of effective assessments including tests, papers, assignments and presentations serve as a platform for students to refine the knowledge and skills outlined in the learning objectives. Simultaneously, assessments offer instructors a valuable insight into students' understanding, enabling targeted feedback that serves as a guiding tool for ongoing learning and improvement. The cohesive integration of these three components results in a holistic and purposeful educational environment that improves student engagement; comprehension; and retention of knowledge and skills.

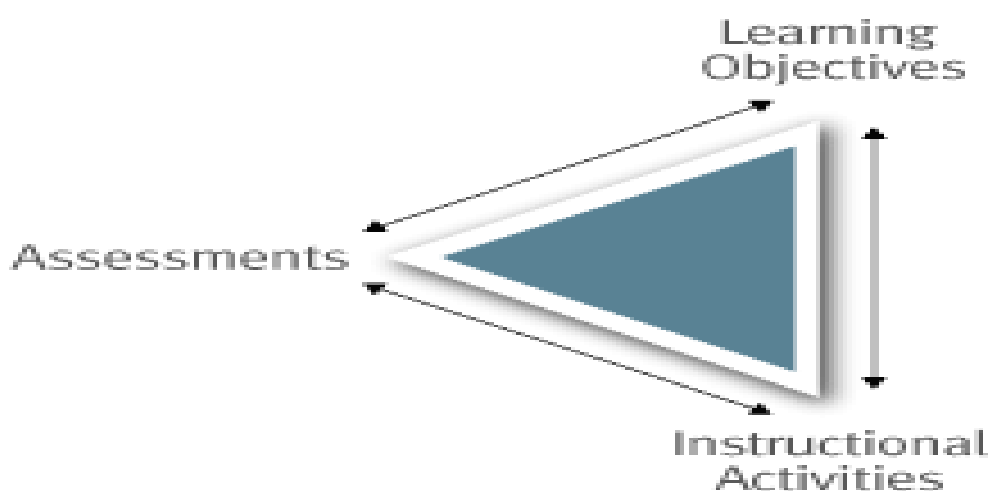


Figure 1.1 Major components of instruction (Mellon, 2015)

Teaching is a creative process that applies across all subjects with teachers' creativity playing a key role in enhancing student learning. Creative methods that foster metacognition are vital for developing critical thinking skills. Students flourish when given cognitive challenges, environment and time that encourages independent thought, guiding them towards effective decision making and problem-solving abilities (Padget, 2013).

To make students independent and proactive teachers employ various instructional practices and methods. Instructional practices cover the broader strategies and approaches educators utilize to establish effective learning environments. While instructional methods refer to the particular strategies used within those practices. Knowing the difference can assist teachers in selecting the best strategies and approaches to improve the academic performance of their students. Instructional practices include broader techniques and actions that teachers use to engage students in learning such as discussion, inquiry-based learning, collaborative learning, review of students' work and classroom activities. These practices shape how knowledge is delivered and applied during lessons that foster higher order thinking. Instructional methods are smaller but structured approaches to teaching such as lecture, audiovisual aids and textbook-based instruction. These methods are pre-planned and focus on content delivery; often with less student engagement (Joyce, Weil, & Calhoun, 2014).

These practices and methods are effective when students are able to select and apply the most suitable ones for their tasks. Instructional practices that enhance focus and information retention can motivate students, while evaluation data helps teachers make informed decisions about their instructional practices (Francisco & Celon, 2020).

Teaching methods have evolved over time due to new technologies and shifts in work environments. For example, the Industrial Revolution highlighted the need for specialized workplace training. Recent advances in cognitive psychology and digital technologies have transformed teaching and learning, but no single theory fully explains how people learn. Likewise, not all learning situations can be addressed by one instructional method (Moller & Harvey, 2008).

Omiebi-Davids (2011) highlighted in his book "Skills in Effective Teaching," that teachers of secondary schools instruct diverse classes, sharing knowledge across

different age groups and skill levels. Teaching not only deepens subject understanding but also develops psychomotor skills and talents. Effective teachers should be creative, motivated, approachable and skilled multitaskers with strong communication and adaptability. Instructional methods should be well-organized to help students effectively understand and apply knowledge.

According to Omiebi-Davids (2011), a teacher's lesson delivery greatly influences students' attitudes toward a subject. The way content is presented can either inspire or alienate them from learning. Teachers are often seen as knowledge transmitters, responsible for passing information to students, who must absorb it. Teachers set learning objectives and use assessments to measure their achievement.

Assessment is a crucial phase in education following instructional planning and delivery. After years of neglect, it became a critical concern in education by the 20th and early 21st centuries. Historically, the focus was on instruction and content delivery, with less emphasis on how students' learning was measured. However, as educational systems evolved, the role of assessment became more prominent leading to debates on fairness and effectiveness. While opinions differ on various assessment methods, experts agree that using multiple tools provides more accurate and valid results. No single assessment can offer perfect data, leading to the growing use of large-scale assessments, innovative evaluations and both formative and summative assessments (National Curriculum Framework, Pakistan, 2018).

Higher Order Thinking (HOT) i.e. creative, critical, logical and reflective thinking should be a key focus in secondary education. Integrating thinking skills enables students to overcome difficulties independently and collaboratively with creativity. Effective teaching of HOT equips students with the skills to go beyond mere memorization or recall of facts. It encourages them to engage in critical analysis, allowing them to break down complex concepts and evaluate different perspectives. By fostering the ability to draw conclusions, students learn to synthesize information, form judgments and make informed decisions. Furthermore, HOT promotes creativity and innovation, as students are encouraged to apply their knowledge to novel situations, generate new ideas and solve problems in original ways. This holistic approach prepares students to thrive in a complex and rapidly changing world. Higher order thinking and learning are strongly interconnected, with research demonstrating that teaching critical

thinking enhances academic achievement. For instance, the development of the “World Wide Web” as a global village can be attributed to the cognitive skills associated with HOT (Yee et al., 2011).

Nilson (2016) discussed in her book “Teaching at its Best”, how Dewey (1933) emphasized the importance of promoting critical thinking in education. Bloom, Engelhart, Furst, Hill and Krathwohl (1956) further developed thinking by classifying it into lower order and higher order stages. Effective teaching starts with establishing learning outcomes that correspond to these levels. Nilson (2016) also noted that instructional and assessment practices often emphasize lower-level thinking and factual recall particularly through teacher-led lectures and discussions.

Bloom’s taxonomy was revised to include cognitive processes such as remembering, understanding, applying, analyzing, evaluating, and creating. The revision emphasized the importance of teaching students to analyze by identifying relationships. Assessment methods that foster evaluation skills help students recognize patterns, solve problems and enhance cognitive abilities (Anderson & Krathwohl, 2001).

Angeli and Valanides (2009) (as cited in Kantar, 2014) emphasized that the development of higher order thinking (HOT) depends on teaching practices such as project-based learning, problem-solving and inquiry-based learning. These approaches encourage students to engage in analysis, synthesis and critical thinking.

Extensive researches highlighted the benefits of HOT instruction. Instructional practices e.g. project-based, inquiry-based and problem-solving learning; and integration focused on analysis, synthesis and assessment that are crucial for the development of these skills. Effective teaching requires educators to carefully plan how to assess critical thinking. Content alone is not enough for the development of HOT abilities. To enhance students’ critical thinking, researchers gave due weightage to teaching and evaluating HOTS. Assessments during the learning phases encourage them to focus on developing thinking skills (Barak et al., 2007; Angeli & Valanides, 2009; Wehlburg, 2011; Barnett & Francis, 2012).

Thomas and Thorne (2009) asserted that while some students may find HOT easier to learn, it remains a skill that can be developed with effort. They argue that HOT involves more than just retaining information; it requires creativity in handling, understanding and reorganizing facts and ideas. Educational objectives are achieved

when tasks are designed to focus on HOT. By aligning task design with learning goals, teachers can effectively train students in HOT and support its development.

Secondary education is a critical stage in formal education, serving as a bridge between primary and higher levels. It plays a vital role in expanding social and financial opportunities while fostering entrepreneurial skills. During this phase, adolescents experience significant developmental changes that shape their character. Typically offered in high schools to students around the age of 13 in classes IX and X, secondary education is essential for nurturing self-governance and leadership skills (Alya, 2014).

In Pakistan, secondary education includes Grades IX and X, catering to students aged 13 to 15 years. Students take standardized examinations after both grades and passing these exams earns them a Secondary School Certificate (SSC). The secondary school curriculum typically consists of elective subjects, such as Chemistry, Computer Science, Biology and Physics, alongside compulsory subjects including Urdu, Islamiat, English and Pakistan Studies (Ghaffar & Afridi, 2015).

In the context of Pakistan Studies, various teaching methods and practices can be employed to enhance student engagement and understanding of the subject. Lecture, quiz, globe, map are some effective teaching methods relevant to Pakistan Studies. Additionally, different teaching approaches such as scaffolding, collaborative learning, and inquiry-based learning are effectively implemented in the context of Pakistan Studies. Each approach encourages active engagement, critical thinking and a deeper understanding of the subject matter, while also fostering essential skills such as teamwork and research (Iqbal, 2018).

Pakistan's Vision 2030 underscores the need for industrialization and poverty reduction, emphasizing the development of higher order cognitive skills. However, current instructional practices often rely on outdated methods that do not effectively cultivate these skills. The gap between the skills taught and those required for real-world proficiency in higher order thinking (HOT) remains significant. In response, a pedagogical shift is emerging, encouraging educators to move away from rote memorization and traditional teacher-centered methods toward more learner-centered approaches that enhance cognitive skills (Ghaffar & Afridi, 2015).

In secondary education, there is a growing demand for graduates to be prepared for both employment and further education. However, existing teaching techniques at

this level have not evolved to align with this vision. This research aims to examine instructional and assessment practices in teaching Pakistan Studies at the Grade X level, specifically focusing on perspectives related to higher order thinking.

1.1 Rationale of the Study

Despite increasing challenges, education system of Pakistan is not updated according to the global demand. Teachers, regardless of their experience continue to struggle in updating their teaching methods to adequately prepare students for future careers. Understanding how teachers apply knowledge in the classroom and identifying the factors that hinder their professional growth is crucial for bringing about meaningful changes in educational practices (Zaki, Rashidi, & Kazmi, 2013).

Pakistan Studies was introduced in 1947 and became compulsory in 1978 from secondary to bachelor's level, including professional colleges (Khan, 2012). It covers history, geography, economy and culture (Ghaffar & Afridi, 2015). This study focuses on Pakistan Studies due to its role in shaping historical, political and constitutional awareness, fostering national and global citizenship and developing higher order thinking skills. Despite its significance, research on its role in promoting HOT at the secondary level is limited. The researcher's teaching experience and interest in improving instructional and assessment practices further motivated this study.

According to National Education Policy (2009), for confidence revival, the quality of education should be enhanced by setting educational inputs (curriculum), processes (instruction) and outputs (assessment) standards with the help of monitoring and evaluation. The challenge of educational system of Pakistan is to provide quality education that must be taken care of school curriculum, infrastructure, textbooks but the foremost important area is the quality of education (National Education Policy, 2018). The importance given by the Government to curriculum, instruction and assessment it is justified to work extensively on this specified area.

Within the Pakistan context, prior studies have delved into various aspects of Pakistan Studies such as classroom environment, textbooks' influence on patriotism and impact on political understanding. Despite of extensive research, there remains a scarcity of studies on instructional and assessment practices concerning HOT, particularly in teaching Pakistan Studies. Teacher perceptions of curriculum objectives in Pakistan Studies significantly impact instruction and assessment, especially in

fostering higher order thinking. Teachers' perceptions shape how they implement curriculum objectives. If teachers feel the curriculum promotes rote learning, it limits HOT development. Research by Khan (2017) shows that a misalignment between curriculum and teaching methods can hinder the promotion of critical thinking skills in students. Teachers' beliefs about the curriculum influence how they motivate students. If teachers perceive the objectives as rigid or disconnected, it may reduce their efforts to engage students in interactive, HOT-promoting activities. Ahmed (2015) found that teachers who see the curriculum as relevant are more likely to use student-centered approaches, fostering critical thinking.

This study explored the use of the revised Bloom's Taxonomy in designing Pakistan Studies question papers for Grade X (2014-2018) by the Federal Board of Intermediate and Secondary Education, Islamabad. Based on years of teaching experience, the researcher observed that teachers prioritize helping students achieve high grades over developing higher order thinking. Rind and Malik (2019) also found that the examination system prioritizes institutional reputation.

This mixed-method study examined the alignment of instructional and assessment practices with higher order thinking (HOT) in Pakistan Studies and assessed the cognitive levels of questions using Bloom's Revised Taxonomy. It evaluated their effectiveness in fostering HOT and addressed the existing gap in the curriculum.

1.2 Statement of the Problem

Students' academic success and their ability to adapt to a rapidly changing global landscape is based on cultivation of higher order thinking. HOT encompasses critical, creative and reflective skills, enabling learners to analyze, synthesize and evaluate information effectively. Despite the recognized importance of HOT, the existing literature reveals a lack of comprehensive investigation into how instructional and assessment practices are designed to cultivate HOT, specifically within the domain of Pakistan Studies, which is the least researched subject. This identified gap highlights the need to examine the implementation of these practices to promote HOT in Pakistan Studies classrooms. Therefore, the problem under study was to investigate the capability of existing instructional and assessment practices to nurture HOT among secondary school students particularly in Pakistan Studies teaching.

1.3 Research Objectives

The following objectives were addressed in the study:

1. To determine teachers' perceptions towards the objectives of the curriculum of Pakistan Studies in the perspective of higher order thinking at secondary school level;
2. To investigate the instructional practices used for teaching Pakistan Studies concerning higher order thinking at secondary school level;
3. To find out instructional methods used for teaching Pakistan Studies concerning higher order thinking at secondary school level;
4. To explore demographic variables, including area, gender and job experience, in the context of curriculum objectives, instructional practices and methods at secondary school level;
5. To analyze the five years (2014-2018 Group -1) question papers of Pakistan Studies (Grade X) in the context of higher order thinking at secondary school level.

1.4 Research Questions

The following research questions addressed the objectives:

1. How do secondary school teachers perceive and suggest other instructional practices to teach Pakistan Studies with a focus on promoting higher order thinking?
2. How do secondary school teachers perceive and suggest the use of other assessment practices to assess Pakistan Studies to foster higher order thinking?
3. Why do secondary school teachers face challenges in the implementation of instructional and assessment practices aimed at fostering higher order thinking?

1.5 Null Hypotheses

This study focused on testing the following null hypothesis including sub-hypotheses:

- H₀₁: There is no significant difference in teachers' perceptions towards the objectives of the curriculum of Pakistan Studies in the perspective of higher order thinking at secondary school level.
- H_{01.1}: There is no significant difference in urban and rural area teachers' perceptions towards the objectives of the curriculum of Pakistan Studies in the perspective of higher order thinking at secondary school level.
- H_{01.2}: There is no significant difference in male and female teachers' perceptions towards the objectives of the curriculum of Pakistan Studies in the perspective of higher order thinking at secondary school level.
- H_{01.3}: There is no significant difference in teachers' perceptions towards the objectives of the curriculum of Pakistan Studies in the perspective of higher order thinking with reference to job experience at secondary school level.
- H₀₂: There is no significant difference in teachers' perceptions about the instructional practices used for teaching Pakistan studies concerning higher order thinking at secondary school level.
- H_{02.1}: There is no significant difference in rural and urban area teachers' perceptions about the instructional practices related to acquiring knowledge used for teaching Pakistan Studies concerning higher order thinking at secondary school level.
- H_{02.2}: There is no significant difference in rural and urban areas teachers' perceptions about the instructional practices related to applying knowledge used for teaching Pakistan Studies concerning higher order thinking at secondary school level.
- H_{02.3}: There is no significant difference in rural and urban area teachers' perceptions about the instructional practices related to reflection on

knowledge used for teaching Pakistan Studies concerning higher order thinking at secondary school level.

- H_{02.4}: There is no significant difference in male and female teachers' perceptions about the instructional practices related to acquiring knowledge used for teaching Pakistan studies concerning higher order thinking at secondary school level.
- H_{02.5}: There is no significant difference in male and female teachers' perceptions about the instructional practices related to applying knowledge used for teaching Pakistan Studies concerning higher order thinking at secondary school level.
- H_{02.6}: There is no significant difference in male and female teachers' perceptions about the instructional practices related to reflection on knowledge used for teaching Pakistan Studies concerning higher order thinking at secondary school level.
- H_{02.7}: There is no significant difference in teachers' perceptions about the instructional practices related to acquiring knowledge used for teaching Pakistan Studies concerning higher order thinking with reference to job experiences at secondary school level.
- H_{02.8}: There is no significant difference in teachers' perceptions about the instructional practices related to applying knowledge used for teaching Pakistan Studies concerning higher order thinking with reference to job experiences at secondary school level.
- H_{02.9}: There is no significant difference in teachers' perceptions about the instructional practices related to reflection on knowledge used for teaching Pakistan Studies concerning higher order thinking with reference to job experience at secondary school level.
- H₀₃: There is no significant difference in teachers' perceptions about instructional methods used for teaching Pakistan studies concerning higher order thinking at secondary school level.

- H_{03.1}: There is no significant difference in urban and rural area teachers' perceptions about the instructional methods related to acquiring knowledge used for teaching Pakistan Studies concerning higher order thinking at secondary school level.
- H_{03.2}: There is no significant difference in urban and rural area teachers' perceptions about the instructional methods related to applying knowledge used for teaching Pakistan Studies concerning higher order thinking at secondary school level.
- H_{03.3}: There is no significant difference in urban and rural area teachers' perceptions about the instructional methods related to reflection on knowledge for teaching Pakistan studies concerning higher order thinking at secondary school level.
- H_{03.4}: There is no significant difference in male and female teachers' perceptions towards the instructional methods related to acquiring knowledge for teaching Pakistan studies concerning higher order thinking at secondary school level.
- H_{03.5}: There is no significant difference in male and female teachers' perceptions towards the instructional methods related to applying knowledge for teaching Pakistan studies concerning higher order thinking at secondary school level.
- H_{03.6}: There is no significant difference in male and female teachers' perceptions towards the instructional methods related to reflection on knowledge for teaching Pakistan studies concerning higher order thinking at secondary school level.
- H_{03.7}: There is no significant difference in teachers' perceptions towards the instructional methods related to acquiring knowledge for teaching Pakistan studies concerning higher order thinking with reference to job experience at secondary school level.
- H_{03.8}: There is no significant difference in teachers' perceptions towards the instructional methods related to applying knowledge for teaching

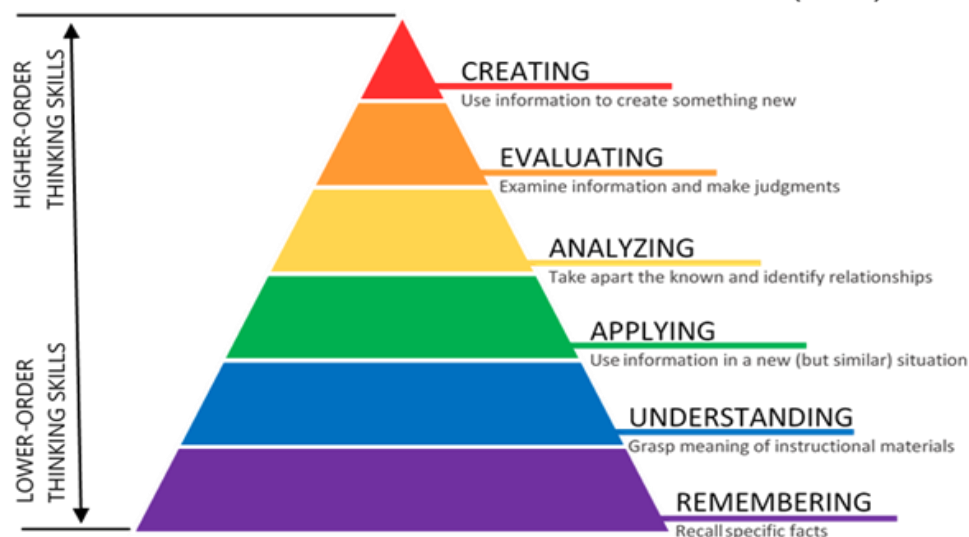
Pakistan studies concerning higher order thinking with reference to job experience at secondary school level.

H_{03.9}: There is no significant difference in teachers' perceptions towards the instructional methods related to reflection on knowledge for teaching Pakistan studies concerning higher order thinking with reference to job experience at secondary school level.

1.6 Theoretical Framework

The theoretical framework provides a foundation for guiding research and ensuring meaningful findings (Adom et al., 2018; Ravitch & Carl, 2016). This study is based on Revised Bloom's Taxonomy (Anderson & Krathwohl, 2001), which differentiates between lower and higher order thinking skills. It helps teachers structure instruction and assessment to foster cognitive development (Singh & Shaari, 2019). The study examines cognitive domains of the taxonomy and their alignment with instructional and assessment practices. Bloom's hierarchy includes remembering, understanding, applying, analyzing, evaluating and creating (Figure 1.2).

Revised Bloom's Taxonomy - Cognitive Domain (2001)



Source: [learning-process/designing-the-learning-experience/blooms-taxonomy/](#)

Figure 1.2 Revised Bloom's Taxonomy

The framework guides the investigation into cognitive development constructs i.e. acquiring, applying and reflection on Knowledge (Table 1.1).

Table 1.1*Theoretical Framework*

Cognitive Domain	Levels	Description	Teaching Methods
Remember	Acquiring Knowledge (Remembering, Understanding)	Enhancing previous knowledge or retrieving specific information from memory. Utilizing basic reasoning abilities to define word meanings, classify and compare items, and interpret events.	Comprehending new information, reviewing concepts, visualizing, inviting resource people for perspectives, showing supporting videos.
Understand	Acquiring Knowledge (Remembering, Understanding)	Developing a foundational understanding of concepts through activities.	Reading, presentations, discussions, asking questions, responding with nonverbal cues, sharing knowledge, and collaborative group work.
Apply	Applying Knowledge (Analyzing, Applying)	Engaging actively with information and employing advanced thinking skills.	Structuring concepts, empowering decision-making, and critical thinking, facilitating observation, fostering connections between subjects.

Table 1.1 continue

Cognitive Domain	Levels	Description	Teaching Methods
Analyze	Applying Knowledge (Analyzing, Applying)	Analyzing materials by breaking them down into parts.	Case studies, simulations, discussions, graphical organizers, decision- making, critical thinking, and observation.
Evaluate	Reflection on Knowledge (Evaluating, Creating)	Making judgments about occurrences and proposing alternative solutions to issues. Empowering learners to employ higher-level cognitive abilities.	Debates, expressing viewpoints, providing relevant reading materials, creating stimulating learning environments and connecting themes with real-world scenarios.
Create	Reflection on Knowledge (Evaluating, Creating)	Implementing novel skills and knowledge through research, strategy development, and group discussions. Empowering students to apply materials for meaningful learning.	Storytelling, contextualizing topics innovatively, using mind maps, and applying materials for meaningful learning.

Table 1.1 showed a complete picture of the Revised Bloom's Taxonomy levels, along with corresponding explanations and teaching methods designed to improve understanding of the cognitive processes essential to effective education.

1.6.1 Acquiring Knowledge: Remembering and Understanding

Acquiring knowledge involves enhancing and retrieving information from memory and can include basic reasoning activities like defining terms, classifying and interpreting events (Aktamis & Yenice, 2010). These tasks represent lower-order thinking skills (LOTS) that are vital for the development of higher-level thinking (Zohar & Schwartz, 2005). At this foundational level students recall and understand information using verbs such as identify, define and list. Teaching methods include reviewing concepts, using visual aids and incorporating diverse resources like guest speakers and videos. The understanding phase involves engaging in activities such as reading, presentations and discussions that encourage questioning, nonverbal responses and collaborative work (Saido, Siraj, Nordin, & Al-Amedy, 2017).

1.6.2 Applying Knowledge: Analyzing and Applying

In the applying knowledge phase, students engage actively with information, using advanced thinking skills like hypothesis formation, information gathering and critical assessment (Qin, 2011). This phase emphasizes understanding how information is practical and relevant in real-life scenarios. To develop these skills, students analyze materials by breaking them into parts and using tools like case studies, simulations and graphical organizers. Teaching methods focus on structuring concepts with cause and effect, encouraging critical thinking and applying knowledge through problem-solving activities such as case studies and projects. Instruction also includes practical exercises, such as model construction and scenario enactments, which enhance speaking skills and comprehension (Saido et al., 2017).

1.6.3 Reflection on Knowledge: Evaluating and Creating

The highest cognitive level, reflection on knowledge involves making judgments about events, proposing alternative solutions and utilizing advanced cognitive abilities (Phan, 2009; and Zachariades et al., 2013). In the 'Evaluate' domain, students assess content alignment with specific purposes through criteria-based evaluation, utilizing techniques like case studies, debates and large group discussions. Effective teaching methods foster student viewpoints, incorporate relevant readings, and create engaging real-world connections. The 'Create' domain emphasizes the application of new skills and knowledge through innovative methods such as research, strategy development and group discussions. Teaching techniques include storytelling,

using mind maps and encouraging students to apply their learning meaningfully (Saïdo et al., 2017).

1.7 Significance of the Study

The study explored teachers' perspectives on instructional and assessment practices aimed at fostering HOT in teaching Pakistan Studies at secondary level. The findings have several implications for various stakeholders. Government initiatives can be guided by these insights to enhance the quality of secondary education, potentially leading to the appointment of subject specialists and funding for infrastructure improvements in both urban and rural areas. School administrators can use the findings for teacher assessments, identifying training needs and organizing Continuous Professional Development (CPD) programs to promote a culture of improvement. Teachers can gain valuable insights into students' cognitive abilities, encourage responsible teaching and enhance student engagement by integrating ICT and diverse teaching methods. For students, innovative teaching methodologies can boost enthusiasm for learning of Pakistan Studies. The Boards of Intermediate and Secondary Education (BISEs) can use the study's quantitative analysis of question papers to better align exams with revised Bloom's taxonomy, improving assessment practices. Teachers' Training Institutes can organize training courses focused on revised Bloom's Taxonomy to enhance instructional and assessment skills. Textbook developers can incorporate higher order thinking skills into textbooks and assignments based on these insights. Overall, the research offers guidance for refining curriculum development, instructional and assessment practices in Pakistan Studies and suggests future research avenues across various educational levels and subjects to further inform educational policymakers and curriculum developers.

1.8 Methodology

1.8.1 Research Approach

A Mixed Method Research (MMR) approach with triangulation was employed to collect data. This approach integrates both quantitative and qualitative research components allowing for a comprehensive analysis (Schoone boom & Johnson, 2017). The purpose of using MMR in the study is to strengthen conclusions by combining insight from both research approaches thus enriching the understanding of the topic within the Pakistani context.

1.8.2 Research Design

According to Creswell and Creswell (2017), research design is a procedure for collecting, analyzing, interpreting and reporting the data.

Sequential explanatory research design (mixed methods) was applied in the present study. In the first phase, a quantitative approach was used to examine teachers' perceptions regarding instructional practices and for assessment practices five-year question papers of Pakistan Studies were analyzed in the context of revised Blooms' taxonomy. In the second phase, semi-structured interviews were taken for in-depth insight into teachers' perceptions regarding instructional and assessment practices specifically focusing on HOT. The results from both phases are integrated to form comprehensive conclusions.

Figure 1.3 is about the research design used in the study.

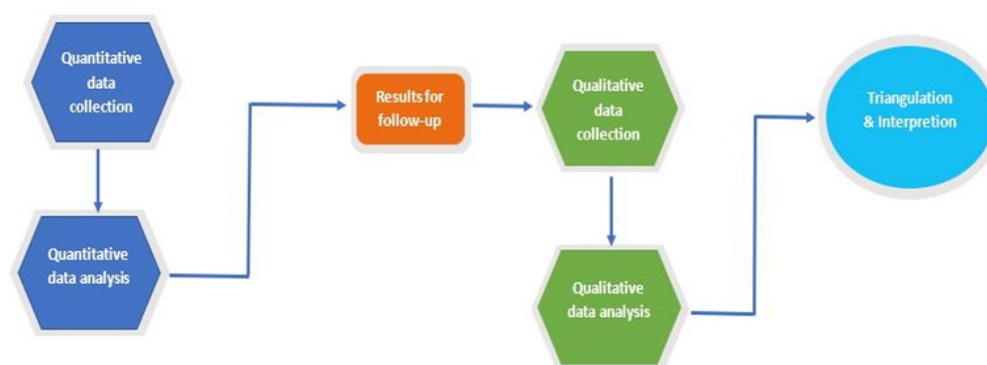


Figure 1.3 Triangulation design (Alele & Malau-Aduli, 2023)

1.8.3 Procedure of the Study

The list of secondary schools in Islamabad was obtained from the Federal Directorate of Education (FDE), Islamabad, for the purpose of sampling. A questionnaire and interview protocol were developed following a comprehensive review of related literature. Annual Pakistan Studies question papers (2014–2018) were retrieved from the Federal Board of Intermediate and Secondary Education, Islamabad, through its official website.

The questionnaire and interview protocol were validated by field experts to ensure content validity. The reliability of the questionnaire was assessed using

Cronbach's Alpha. Quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS) version 21, while qualitative data were examined through thematic analysis.

To ensure the robustness of findings results were cross-verified through triangulation employing a sequential explanatory research design.

1.8.4 Population

The study population consisted of all male and female secondary school teachers of Pakistan Studies working in schools under the Federal Directorate of Education (FDE), Islamabad.

1.8.5 Study Sample

The sample selection process was designed to ensure representation from both urban and rural secondary schools under the ambit of Federal Directorate of Education (FDE), Islamabad. At each selected school, 5 to 7 teachers were identified as teaching Pakistan Studies, resulting in a total sample of 300 teachers. This sample included 142 male and 158 female teachers selected randomly using a proportionate stratified sampling technique.

1.8.6 Research Instruments

The self-developed questionnaire, document analysis and semi-structured interview were used as research instruments.

- After a thorough review of related available literature, the researcher developed a questionnaire on Likert scale (5 point) to gauge the teachers' perceptions.
- The annual question papers of Pakistan Studies (2014-2018) from the Board of Intermediate and Secondary Education, Islamabad were used for document analysis. The focus was on analyzing both constructed and extended response questions in relation to the revised Bloom's taxonomy.
- Interview questions were developed after a thorough review of related available literature for semi-structured interviews.

1.8.7 Data Collection

The study collected primary data through questionnaire and interviews, obtaining direct responses from participants. Additionally, secondary data were

gathered through document analysis, specifically examining the annual Pakistan Studies question papers from 2014 to 2018.

Data were gathered in three phases:

Phase I: Quantitative data collection

Quantitative data were collected from a self-developed questionnaire. Prior permission was obtained from the Federal Directorate of Education, Islamabad as well as from the heads of institutions and participants. The researcher obtained contact information from the FDE, got permission through telephonic communication and visited sampled secondary schools with written approval. The researcher herself visited the sampled schools to collect the data.

Phase II: Qualitative Data Collection

Qualitative data were collected through document analysis of the subjective sections of the last five years (2014-2018) of question papers and interviews.

Phase III: Triangulation

The quantitative and qualitative data were triangulated.

1.8.8 Data Analysis

Descriptive and inferential statistics were used to analyze quantitative data.

- Quantitative data from the questionnaire were analyzed using descriptive statistics, including frequency, percentage, mean, standard deviation and mode, as well as inferential tests such as the independent sample t-test and Analysis of Variance (ANOVA).
- For document analysis, the question papers from the last five years (2014-2018) were analyzed thematically, guided by the Cognitive Process Dimension of Anderson's Taxonomy. The papers were first categorized according to the six cognitive levels: remembering, understanding, applying, analyzing, evaluating, and creating. After categorizing the questions thematically, descriptive statistics were applied to quantify the distribution of questions across these cognitive levels. Specifically, frequency and percentage were calculated to assess the proportion of questions corresponding to each cognitive process.

- A thematic analysis was conducted to explore the views on the interview questions, following Braun and Clarke's (2006) six-step framework. The steps included: familiarization with data; generating initial codes; searching for themes; review and refinement of themes; defining and naming themes; and producing the report.

1.9 Delimitations

Due to constraints in time, financial resources and human capacity, delimitations of the study were confined to;

1. secondary schools working under the ambit of FDE Islamabad,
2. Grade X teachers teaching Pakistan Studies as a compulsory subject,
3. Pakistan Studies Textbook published by the Punjab Textbook Board, Lahore, Pakistan,
4. subjective type questions of five years (2014-2018 Group-1) Pakistan Studies annual question papers administered by FBISE, Islamabad,
5. revised Bloom's taxonomy focusing on cognitive domain, and
6. demographic variables i.e. area, gender and job experience.

1.10 Operational Definitions

Instructional Practices

Instructional practices refer to acquiring knowledge, applying knowledge and reflection on knowledge. It focuses on what teachers do during lessons. It is broader in nature and aims to enhance higher order thinking in teaching. These are as follows:

- Acquiring knowledge: (i) Ask students to exchange their concepts with one another, (ii) engage students in inferential activities (iii) encourage students to create their questions (iv) conduct pre-assessment to know about students' prior knowledge (v) give students many opportunities to identify learning problems (vi) observe students and ask questions when they engage in group activities.
- Applying knowledge: (i) observe students when they work individually. (ii) Facilitate students in conducting activities given in the exercises. (iii) Encourage students to practice an alternative way of thinking.

- Reflection on knowledge: (i) review students' homework work copies on regular basis. (ii) assess students' knowledge through open-ended questions (iii) prefer to apply a cooperative learning approach to the class.

Instructional Methods

Instructional methods refer to the selection of teaching methods that teachers plan prior to teaching. It is more specific in nature and focuses on identifying the exact practices employed in teaching. The instructional methods are as follows:

- Acquiring knowledge: lecture method, textbook method, brainstorming, oral presentation and lecture multimedia.
- Applying knowledge: computer assisted instruction, activity method, debates, demonstration, project method, problem-based learning, use of real objects and graphs.
- Reflection on knowledge: discussion method; group study; cooperative learning; organizing small groups; Inquiry/investigation; asking questions during teaching; visits to the Museum; use of internet, posters, PowerPoint presentation, assignment method, documentaries, interactive whiteboard, slides, globes, models and maps; study visits; resource people; and organizing contests.

Assessment Practices

Assessment practices categorize items based on the cognitive domain: remembering, understanding, and applying represent lower-order thinking, while analyzing, evaluating and creating correspond to higher order thinking.

Higher Order Thinking (HOT)

Higher order thinking (HOT) refers to the upper levels of Revised Bloom's Taxonomy: analyzing, evaluating and creating.

- Analyzing: Breaking down complex topics into smaller components to understand their structure and relationships and underlying components.
- Evaluating: Making judgments based on established criteria and standards.
- Creating: Combining elements in novel ways to develop new ideas, products, or solutions.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

2.1 Instructional Practices

A variety of practices and methods are used in the classroom to enhance students' learning and academic achievement. These instructional practices shape the learning environment, influencing students' perceptions and understanding of education. The way teachers structure their classroom environment both through direct teaching and indirect cues, can affect students' views on learning. The usage of instructional practices and resources are important to enhance higher order thinking when they are aligned with learning objectives (Osborne, 2021).

2.1.1 Instructional Practices and Higher Order Thinking (HOT)

Higher order thinking (HOT) is characterized by a broader use of mind to tackle novel challenges. It typically involves applying new or existing knowledge and manipulating that knowledge to reach a reasonable solution in novice situation. A mere repetition of learned information is not enough to answer a question or solve a problem; rather, it demands the ability to explain, assess or apply knowledge in a meaningful way. HOT is non-algorithmic, comprehensive, self-regulated, intentional that leads to varied solutions and advanced decision-making. Cognitive skills are vital in the learning process as an individuals' thought patterns significantly influence their capacity to learn, speed of learning and their overall academic performance. As a result, thinking abilities are deeply intertwined with the learning experiences. When students are encouraged to develop their thinking skills, it has a positive impact on their academic progress. Implementing effective teaching strategies enhances their ability to analyze, infer, reason, evaluate, generate ideas and create solutions (Heong et al., 2011).

Developing HOT abilities in students require teachers' sustained time and dedication that should be contextually and conceptually grounded. Teaching goes beyond the mere delivery of content; it involves instigating a conceptual shift in students. This transformation is best facilitated through collaborative dialogue during class activities. While teachers play a crucial role in providing robust explanations and

demonstrations, it is equally essential to create an environment where students can pose questions, engage in discussions and explore pertinent consequences within a practical problem-solving framework. In the realm of cultivating higher-level thinking, instructional practices take on a pivotal role. Active participation of teachers in cultivating a participatory classroom culture significantly influences students' conceptual understanding, analytical skills, problem-solving abilities and cognitive reconstruction (Shukla & Dungsungnoen, 2016).

According to Amushigamo (2017), teachers employ a range of methods to enhance effective instruction, particularly in student-centered classrooms. This involves choosing appropriate teaching practices that promote students' learning through discussions, conversations, critical thinking and inquiry with the goal of fostering understanding and knowledge. Students acknowledge the importance of instructional strategies for enhancing higher order thinking (HOT) and appreciate teachers' efforts in implementing these approaches to deepen their understanding of the subject.

A modern instructional approach known as the “smart class” utilizes innovative multimedia teaching methods. In a smart classroom instructors are equipped with computers and audio-visual tools. By utilizing a data projector, teachers can present diverse materials including interactive whiteboards, Digital Versatile Disks, PPTs and other formats. The smart class equipped with a vast digital library of teaching materials, meticulously designed to meet specific educational objectives. It serves as a comprehensive solution aimed at helping teachers tackle everyday classroom challenges while improving students' academic performance. Moreover, it facilitates rapid assessment of students' learning achievements during class sessions (Bala, Kaur & Kaur, 2017).

However, there are certain limitations associated with the use of smart classroom technology. One drawback is the cost which can be prohibitive for some institutions. Additionally, there is a need for teachers who are competent in utilizing smart technology effectively in their teaching practices. Before implementing smart class teaching, teachers must undergo proper training. Furthermore, the maintenance of electronic devices and the occurrence of technical faults pose additional challenges to this approach. Teaching methods exhibit various strengths and weaknesses. Despite its

traditional nature, many studies suggest that lectures using the "chalk and talk" method can be more effective than innovative teaching strategies that incorporate advanced technology (Bala et al., 2017).

In higher education, instructors predominantly prefer lecture and discussion methods (Guleker, 2015). Discussion enhanced students' learning outcomes (Stechler, 2021). Question-and-answer sessions, brainstorming and occasional discussions are frequently employed in classroom teaching (Musonda, 2019).

Teachers can employ various instructional methods to achieve educational objectives. Examples of methods that foster cognitive growth include discussions, 'chalk and talk' approach, recitation, team instruction, the questioning/Socratic method and field trips/excursions. Additionally, incorporating assessment practices into teaching is essential to ensure effective learning (Damilola, 2020).

The teachers lacking proficiency in higher order thinking skills (HOTS) struggle to create an appropriate learning environment which hinders the integration of these skills into students' learning experiences (Hawa, Abdullah, & Darussalam, 2018). The students demonstrated average performance in HOT content knowledge. The crucial role of teachers is known to enhance teaching practices to attain HOT (Dahalan, Ahmad, & Seman, 2020).

2.1.2 Instructional Resources and HOT

Tambo (2012) defined educational technology as encompassing various teaching resources. The resources aids teachers to teach effectively and assist students to enhance learning. No teaching-learning material is considered insignificant if it contributes to the development of higher order thinking (HOT). Still, how teachers employ technology remains crucial. Pictorial aids include charts, models, real objects and textual resources e.g. journals and textbooks can be leveraged to foster discussion, debates and analyses serve as platform for questioning. These approaches collectively contribute to promoting critical thinking abilities.

Nilson (2016) stressed the importance of provision of diverse opportunities to interact with new material through activities like reading, listening, speaking, writing, observing, creating, imagining, performing and experiencing. Whether engaging with content through reading or listening; activities such as note-taking, paired debates,

concept mapping, creative writing, problem-solving, formative assessments and quizzes may be incorporated while teaching. Teachers should guide students in preparing for these tasks and incorporate projects that enhance their abilities. It is essential to begin by assessing students' current knowledge, their perspectives and then integrating new knowledge, skills and talents into cognitive framework. Drawing from students' personal experiences and generational parallels can make learning more relevant by connecting subject matter to their daily lives' potential careers, or real-world issues. Finally, demonstrating enthusiasm and excitement for the subject is crucial. Practicing how to express emotions through voice and body language if it does not come naturally is important.

Leach (2006) emphasized the undeniable responsiveness of students to various screen-based media including television, video recordings and interactive whiteboard which capture their attention for extended periods. The key question, however, is whether these experiences enhance learning or simply serve to engage students. Interactive whiteboard provides a wide range of teaching methods but as with any tool, careful planning is essential to maximize their effectiveness. In delivering content, many educators prefer using PowerPoint presentations over traditional printed materials. Before incorporating Information and Communication Technology into their instructional practices, teachers must carefully assess the potential educational benefits in relation to the preparation time required.

Incorporating imaginative, inventive and challenging small-group tasks alongside traditional assignments can enhance active learning. Integrating these methods into lectures with interactive delivery and regular pauses fosters student engagement. Experiential learning approaches by placing students in real-world problem-solving situations may leverage students' emotions for subject understanding. To foster critical thinking, students should be encouraged to engage in arguments, evaluate different perspectives and participate in group discussions. Key elements that enhance student learning and assessment include teachers' subject expertise, relevant course materials, effective assessment practices, relatable examples, diverse instructional strategies and a strong teacher-student relationship (Nilson, 2016).

2.1.3 Aligning Instructional Practices to Learning Objectives

Aligning instructional practices with learning objectives (Table 2.1) is crucial for effective teaching. Instructional activities should be designed to foster critical thinking rather than relying solely on lectures, which support memorization but limit cognitive engagement. Using Bloom's Revised Taxonomy, teachers can identify the cognitive processes in learning outcomes to ensure instructional methods align with intended objectives, creating a more meaningful learning experience (Mansory, 2013).

Integrating active learning strategies such as discussions, case studies and problem-solving tasks can further enhance students' analytical and reflective abilities. Moreover, assessment methods should also align with these instructional strategies to accurately measure students' higher order cognitive skills and overall learning progress.

Table 2.1

Alignment of Revised Bloom's Taxonomy with instructional practices and examples of specific activities.

Learning Objective	Instructional Practices	Examples
Remembering	Remembering involves activities such as memorizing a poem, recalling state capital. Examples of this cognitive level include listing, describing, identifying (Heick, 2018).	• Lecture • Puzzles • Slides
Understanding	Understanding involves activities such as comprehending, describing, drawing conclusions (Heick, 2018).	• Discussion • Roleplay • Group work • Activity • Maps
Applying	Applying entails carrying out and putting theoretical knowledge into practical practice (Heick, 2018).	• Debates • Discussions • Practical work

Table 2.1 continue

Learning Objectives	Instructional practices	Examples
Analyzing	Analyzing encompasses arranging, analyzing, identifying, outlining, locating, organizing, and incorporating Break down the material into component (Heick, 2018).	• Group work • Problem-based learning • Fill in the blanks
Evaluating	Evaluating includes discovering, evaluating, examining, making assumptions, observing (Heick, 2018).	• Activities • Field trip • Self-study • Questioning
Creating	Creating involves activities such as creating, preparing, generating, discovering, designing (Heick, 2018).	• Projects • Presentations

2.2 Assessment

Assessment is a key element of teaching-learning process. According to Herrera and Macias (2015), teaching-learning process requires educators to have a thorough understanding of assessment methods. This understanding not only improves teaching strategies but also helps in supporting student growth and meeting the demands of different stakeholders.

The quality of teaching and learning plays a crucial role in the success of schools and students. To meet high expectations from teachers and bridge the gap between instructional methods and learning outcomes, substantial reforms in the assessment system are essential. As a key indicator of achievement, assessment should provide students with opportunities to apply critical thinking skills, fostering deeper understanding and cognitive development (Kumar, Singh, & Dhankhar, 2024).

Student assessments play a vital role in creating a dynamic learning environment by actively engaging students in the learning process. They serve as a catalyst for deeper involvement while fostering positive relationships among students, peers, and teachers. Additionally, assessments promote self and peer evaluation,

encouraging reflection on learning progress. They also help students gain a clearer understanding of their academic trajectory and future learning goals (Makonnen, 2014).

Assessments involve a wide range of elements closely tied to the teaching-learning process, including assessment procedures, tools, methods of application and the learners themselves. Continuous evaluation of student assessments remains a key focus, largely due to the significant influence assessments have on educational institutions (Giloi & Toit, 2013). The primary goals of assessments go beyond simple evaluation; teachers aim to prepare students for workforce demands while also validating the effectiveness of the education system (Kantar, 2014). Thus, assessments play a crucial role in connecting educational practices, students' readiness for real-world challenges and the overall success of the education system.

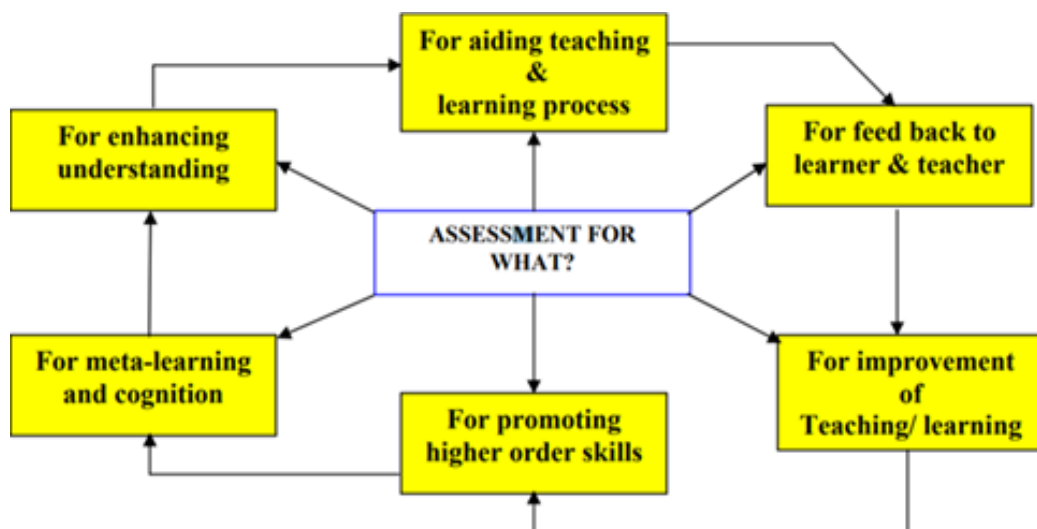


Figure 2.1 Purpose of Assessment

The primary purpose of assessment is to support teaching and learning (Gipps, 1994). Learning occurs when students actively construct meaning based on prior knowledge and experience (Watkins et al., 1996, 1998; Black, 1999). Taking responsibility for their learning fosters a cognitive or constructivist approach, enabling continuous reorganization and integration of knowledge (Rehmani, 2003).

The continuous students' progress throughout the teaching and learning process is a key focus of instruction (Damilola, 2020). Assessment is crucial in shaping instructional methods and influencing students' overall success in their academic pursuits (William, 2011). The strength of assessment lies in using tools such as quizzes, tests or assignments to evaluate a student's understanding of specific subject areas.

Ultimately, the effectiveness of assessment is highlighted by student performance at the end of a course (Tulu & Tolosa, 2018). Notably, classroom-based evaluations not only serve as indicators of academic achievement but also provide valuable feedback for students to identify areas for improvement and refine their skills. The prevailing view is that classroom assessment by integrating learning experiences and processes during instruction, significantly enhances students' learning and overall academic performance.

The teachers with experience and expertise possess comprehensive knowledge of assessment techniques. The necessity for both teachers and students to receive training in various assessment techniques is under scored. Such training is seen as instrumental in fostering a more diverse and effective approach to assessment within educational settings. Assessments serve as tool to measure students' knowledge relevant to the taught subject matter and various assessment practices have been employed to develop higher order thinking (HOT) (Almossa & Alzahrani, 2022; Garcia et al., 2020; Almossa, 2021; Watermeyer et al., 2021; Guangul et al., 2020).

2.2.1 Assessment Practices

Assessment can be defined as the systematic gathering of information and data concerning students' learning. Assessment refers to the process of evaluating or measuring something typically to gauge knowledge, understanding, skills or performance. It is a broader concept that encompasses various methods, techniques and strategies used to gather information about an individual or group abilities, achievements or progress. Assessment practices, on the other hand, specifically refer to the specific methods, techniques or strategies employed within the assessment process. These practices include design, administration, scoring and interpretation of assessment instruments or tasks. Assessment practices can vary widely depending on the context, purpose and desired outcomes of the assessment. At the secondary level, teachers employ a diverse array of methods for assessment which plays a crucial role in recognizing and addressing students' learning needs. These assessments serve as tools for monitoring progress, providing insights into students' achievements and influencing adjustments in teaching and learning practices. The scope of assessment practices encompasses various elements such as the types of assessments employed, materials and tools utilized, questioning strategies and the use of scoring rubrics. In essence,

assessment serves as a multifaceted process that contributes to informed decision-making in the educational environment (Klenowski & Wyatt-Smith, 2013).

In an educational setting, diagnostic assessment provides valuable insight into students' strengths and weaknesses. Teachers can leverage this information to refine their teaching approaches ensuring a better alignment with the individual needs of their students. Additionally, school inspectors benefit from the data generated through diagnostic assessment gaining a deeper understanding of the specific needs of schools within their districts or communities. This understanding empowers them to offer targeted support and professional development opportunities to teachers, fostering continuous improvement in the educational system. Furthermore, the knowledge obtained from diagnostic assessments can be effectively communicated to parents, encouraging them to play an active role in children's learning activities. By understanding their child's academic strengths and areas that may require additional attention, parents can provide focused support at home and engage in meaningful conversations with teachers. It is important to mention that "pre-assessment" is a synonymous term for diagnostic assessment, emphasizing the practice of assessing students' knowledge and skills before the initiation of a learning unit. This proactive approach allows teachers to gauge students' prior knowledge, tailoring instruction to ensure that lessons are appropriately challenging and address to the unique needs of each learner (Damilola, 2020).

Formative assessment encompasses a diverse range of practices within classrooms (Bennett, 2011). In a broad sense, formative assessment refers to a collection of activities conducted by both teachers and students to gather information that can be utilized as feedback for modifying teaching and learning activities (Black & Wiliam, 1998, p. 140). Instead of solely focusing on what students have already achieved, formative assessment serves the purpose of recognizing learning gaps, giving support for novel learning, anticipating imminent teaching steps (Bennett & Gitomer, 2009) and nurturing self-regulation in learning (Andrade & Heritage, 2018). This approach underscores the dynamic and ongoing nature of assessment as a tool for enhancing the learning process rather than merely measuring outcomes (Yan & Pastore, 2022).

Damilola (2020) further underscores the role of formative assessment, particularly in the early stages of instructional design and development. Its primary purpose is to monitor students' progress and offer timely feedback. By doing so, formative assessment assists in identifying gaps in teachers' lesson plans, ensuring the alignment of instruction with learning objectives.

Summative assessments go beyond evaluating individual students; they also assess the effectiveness of teaching and how students respond to the instructional methods and activities. These assessments serve as a measure of whether the intended teaching and learning objectives have been successfully achieved. In essence, summative assessments provide a comprehensive overview of student performance and the overall effectiveness of teaching and learning (Damilola, 2020).

Portfolio assessment involves compiling a selection of student work gathered from various classroom activities. Unlike time-pressured assessments, portfolios offer a comprehensive showcase of a student's capabilities, providing authentic evidence of their understanding and skills. This form of assessment enables students to involve in a reflective process, allowing them to critically evaluate their performance, abilities, growth and academic achievements (Damilola, 2020).

Confirmative assessment is conducted after a period of instruction to evaluate the continued effectiveness of the teachers' instructional methods. This assessment occurs at specific intervals such as the end of a term or session serving as a follow-up to the summative assessment. Norm-referenced assessment involves comparing a student's performance to the national average which may be determined by national, state or local government standards. Alternatively, it occurs when a teacher compares the average students with the class (Damilola, 2020).

Criterion-referenced assessment involves comparing students' performance against established standards or predefined learning goals. This form of assessment evaluates what students are expected to comprehend and accomplish at different stages in their educational journey. Ipsative assessment is a form of evaluation in which a student's present results compare with previous result. Self and peer assessments are designed to enhance metacognitive abilities by engaging students in reflective processes. In self-assessment, students evaluate their current knowledge and apply it to new learning situations. This practice contributes to form critical awareness and

reflexivity among them (Dearnley & Meddings, 2007). On the other hand, peer evaluation involves individuals at similar academic levels providing feedback and criticism on each other's work. Peer assessment not only fosters a critical mindset in students but also encourages them to evaluate both their own work and the work of their peers (Damilola, 2020).

In the realm of education, assessment has been identified as a key driver for student learning as indicated by prior research. Formative assessment (Black et al., 2006 & Dylan & Thompson, 2008) is considered beneficial for the learning process within a classroom setting. Critics of summative assessment including Narciss (2004), Rushton (2005) and Norman, Neville, Blake, & Mueller (2010) argued that it predominantly concentrates on unit assessments that may not exactly reflect students' conceptual understanding. However, Raupach, Brown, Anders, Hasenfuss and Harendza (2013) and Rodiger & Karpicke (2006) expressed a positive stance on summative techniques. On the contrary, Rust (2011) opposes them, contending that institutions often misuse statistics in the assessment of students. On the contrary, Harlen (2005) advocated for a blended approach, encouraging the integration of both formative and summative assessment methods. The majority of studies on this topic have not conclusively determined whether summative or formative assessments are more effective in facilitating student learning (Al-Kadri, 2016).

The multiple-choice items may encourage guessing and might not innately measure HOT. There is a need of assessment items that more directly and accurately quantify HOTS. Effective assessment processes should be carefully designed to indirectly stimulate and evaluate HOT, moving beyond the potential limitations associated with certain types of test items such as multiple-choice questions. This underscores the importance of thoughtful and intentional design in assessment practices to ensure they align with the goals of promoting and measuring higher order cognitive skills in students (DeLuca, Valiquette, Coombs, LaPointe-McEwan, & Luhanga, 2018).

The evaluation procedures and assessment tools are important for enhancing students' HOT. This emphasizes the integral role that well-designed assessment practices play in not only measuring but also fostering and improving HOTS among students. It underscores the importance of aligning assessments with learning objectives and employing diverse tools to effectively evaluate and enhance students' cognitive

abilities (Mohamed & Lebar, 2017). The traditional method of assessment predominantly relied on final examination conducted after each year. While some schools administered weekly examinations, the annual results did not incorporate the results of these regular tests. External final exams were a common practice at both the primary and secondary levels, with teachers having minimal influence in the assessment process, particularly in terms of certifying students. An interesting aspect of this situation is that external examining bodies encouraged teachers to assign scores to their students. However, the prevalence of exam leakages and associated malpractices has prompted a recognition of change in the assessment landscape. The most evident shift is towards continuous assessment throughout the course. The government should organize conferences, seminars and workshops to educate teachers on the proper administration of continuous assessment in secondary schools (Modup & Sunday, 2015).

Authentic assessments can effectively measure students' higher-order thinking skills (HOTS). This highlights the value of incorporating authentic assessments to gauge and foster students' abilities beyond rote memorization (Mohamed & Lebar, 2017). Summative assessments such as tests were widespread and often inclined towards knowledge-based questions that lack an effective gauge of HOTS. This underscores the need for a reassessment of assessment practices to better align them with the cultivation of critical thinking and advanced cognitive abilities in students (Umer, Zakaria, & Alshara, 2018).

In teaching-learning environment assessment primarily focuses on testing lower order thinking skills. So, students receive negligible feedback. Discussion in different workshops organized by Aga Khan University Examination Board (2012), it was revealed that most teachers provide little qualitative feedback to students to enhance their learning. Instead, feedback mostly consists of simple word e.g. 'good', 'needs improvement' etc. or even negative terms without offering suggestions on how students can enhance learning (Rehmani, 2012).

2.2.2 Assessment Practices and Development of HOT

Constructing assessments that effectively measure HOTS is highly recommended by educators. A prominent suggestion is to utilize open-ended question types, which are considered more conducive to assessing HOTS compared to traditional

multiple-choice formats. The adoption of mixed-format assessments that combine multiple-choice questions (MCQs) with open-ended questions is necessary for the development of HOT (Ku, 2009).

Brookhart (2010) identified three key categories of higher order thinking (HOT) assessment capabilities: (1) the ability to engage with others in unexpected situations, showcasing advanced thinking skills; (2) critical thinking skills; and (3) problem-solving abilities, which encompass the capacity to discover innovative solutions, propose unique approaches, and creatively define problems. Widana (2017) emphasized that HOT assessments are designed to evaluate a student's critical thinking ability, which includes the skill to critically assess learned material and apply it in new contexts. This process involves analyzing and applying data, establishing connections among various forms of data, and using that information to solve problems.

2.2.3 Public Examination System in Pakistan

Assessment plays an essential role in shaping students' academic progress. It is also a tool for determining whether a student is prepared to advance to the next grade level (Borghouts, Slingerland, & Haerens, 2017). To establish standardized measures, many governments worldwide utilize external examination systems to evaluate students' skills and readiness for subsequent educational levels. However, while external exams offer several advantages, they are often criticized for fostering teaching practices focused primarily on exam preparation (Islam, 2016; Kirkpatrick & Zang, 2011). Studies show that schools where external bodies conduct exams and where these results impact the institution's performance and reputation, tend to encourage exam-oriented teaching methods (Kirkpatrick & Zang, 2011). Consequently, if examinations emphasize lower-order thinking skills such as memorization, comprehension or application; teachers and students may also focus on these lower levels of learning. On the other hand, if exams prioritize higher order thinking skills like analysis, evaluation and creativity; learning objectives would shift accordingly. Research indicated that if a pattern of exam questions persists over an extended period, students are inclined to use these patterns to pass the examination without thoroughly covering the complete syllabus and teachers teach for testing, rather than for learning (Adegoke, 2011; Aworanti, 2011; Kirkpatrick & Zang, 2011, 2014; Kwok, 2004; Rehmani, 2012) (Rind, & Malik, 2019).

The public examination system in Pakistan has been criticized by various educationists and researchers (Bhatti, 1987; Warwick & Reimers, 1995; Greaney & Hasan, 1998; Mirza, 1999). The quality of examinations at the secondary and higher secondary levels administered by the Boards of Intermediate and Secondary Education (BISE) is generally subpar, often prioritizing rote learning and memorization over higher order skills. The current examination system relies on a summative approach that shapes the curriculum rather than measuring student achievement. Most BISEs lack the capacity to effectively design test papers and assess them, as well as to utilize data for analysis and constructive feedback aimed at improving teaching practices. The creation and scoring of tests are frequently outsourced with the expertise of external professionals involved in these processes often being inadequate. As a result, there has been minimal initiative in any province to reform the BISE. Efforts to reform related areas such as teacher preparation, induction, performance evaluation, curriculum development and textbook creation are fragmented and do not adequately incorporate student learning outcomes as a guiding principle. The administration of matriculation and intermediate examinations has drawn media criticism, with reports highlighting issues such as cheating at exam centers and the production of low-quality exam papers (Rehmani, 2003).

Numerous studies have criticized public examinations at both the school and tertiary levels in Pakistan (Aftab, Qureshi, & William (2014); and Ali, Ullah, & Hussain, 2016). The pressure on students intensifies with public examinations compelled them to seek private coaching with regular school attendance for adequate exam preparation. Students are further encouraged to review past question papers and learn concepts to show good performance (Aftab et al., 2014). The examinations conducted by public sector fails to gauge the academic competencies required for entry and progression in university-level education (Ali et al., 2016).

The content and format of test papers encourage students to rely primarily on memorization suggesting that teaching methods have not improved. Many teachers continue to follow traditional instructional approaches overlooking the importance of ongoing assessments in the educational process (Khan, 2011). Regardless of the examination scheme, traditional pedagogical methods, such as lectures and rote memorization, dominated among teachers and students. Difficulties in task management and a lack of time are significant challenges (Ahmed & Malik, 2011).

The teachers often favor instructional practices that primarily address lower-level cognitive skills, largely influenced by the fact that Board examinations typically assess these lower levels of cognition in students (Iqbal, 2018). The teachers of secondary school often lack the necessary tools and guidance to effectively nurture students' cognitive abilities (Schraw, 1998; Bransford et al., 2000; and Pintrich, 2002). Several factors contributing to this issue including the prevailing trend of increasing class sizes and a lack of resources (Gul, Kanwal, & Khan, 2020).

Teachers employ a variety of assessment methods including exercises, questioning, group work, drawing, demonstrations, problem-solving and conversations to evaluate student learning. These methods are employed to determine students' pass or fail status and to announce results based on test performance. Many teachers believe that the quality of education is maintained through the inclusion of test items derived from the taught subject matter in examination papers. In schools, home examinations are typically created by individual teachers, resulting in variations in test items from one teacher to another. This contrasts with centralized standardized tests which administer identical test items that are graded centrally. The centralized external examinations provide a more comprehensive measurement of students' thinking abilities leading to results that are considered more reliable (Mansory, 2013).

Nevertheless, exam questions play a pivotal role as a foundational element in effective assessment and education. They serve as crucial components for nurturing critical thinking and reasoning skills in students, reflecting their understanding and application abilities. Various assessment frameworks exist to evaluate students' learning capacities and achievements, and the effectiveness of assessment and inquiry hinges on the appropriateness and reliability of examination questions. Apart from being essential for successful student learning; well-constructed questions also contribute to the development and enhancement of judgment and cognitive abilities (Mehmood, Iqbal, & Farooq, 2016).

An effective exam paper should include a range of difficulty levels that align with students' varying abilities. The standard and specificity of questions along with their corresponding answers determine the level of difficulty. It is crucial to thoroughly analyze annual Secondary School Certificate Examination papers to ensure they address all three learning domains while maintaining a balance between lower and

higher-level learners. Bloom's Taxonomy emerged as a classification strategy in education, opposing mere memorization and rote learning (Mehmood et al., 2016).

Notably, Pakistan has undergone a significant transformation in its examination system. The FBISE introduced E-marking system as a pilot project for the subject of Computer Science proving its highly effective implementation. The adoption of this electronic marking system not only streamlined the process for paper checkers but also introduced transparency in the paper checking procedure. As part of this initiative, an initial group of up to 200 teachers underwent training in E-marking, and a systematic approach was developed to extend this training to additional teachers. This shift towards technology-based assessment methods demonstrates a commitment to modernizing and improving the efficiency and transparency of examination processes in Pakistan (Federal Board of Intermediate and Secondary Education, 2021).

FBISE has been a leader in adopting new technologies to enhance accessibility for both students and teachers. In 2021, FBISE introduced an innovative system called E-Marking for grading answer scripts. This system allows examiners to evaluate papers remotely by logging into their designated dashboard and marking responses directly on the screen. It represents a significant shift from the traditional manual marking process that has been in place for over 70 years, bringing increased transparency and efficiency. Additionally, E-Marking enables the delivery of exam results within just one month of the exam period. Furthermore, FBISE has recently decided to incorporate four additional subjects (Civics, Education, Islamic Studies and General Science) into the Onscreen Marking category effective from the annual examination of 2024 onwards. As part of this initiative, electronic sheets (E-sheets) have been developed for these subjects and the question papers have been restructured to align with the specifications of the E-sheets (S. Shah, personal communication, January 25, 2024)).

Additionally, the FBISE has initiated a modernization endeavor, aiming to introduce an Artificial Intelligence (AI)-based marking system for assessments and examinations. This move comes as the traditional marking method becomes obsolete in the face of AI advancements. FBISE intends to pioneer this innovative marking system in Pakistan, aligning with the widespread global use of AI-based marking systems. The successful implementation of the project will lead to its expansion across Islamabad, ensuring enhanced accuracy and transparency in the assessment process.

FBISE anticipates full integration of the AI-based marking system by 2025, marking a significant departure from traditional grading methods. This initiative is poised to benefit both FBISE and stakeholders including students and teachers by streamlining assessments and eliminating manual grading tasks. A pilot project is set to precede the full implementation, involving selection of colleges in Islamabad utilizing AI for marking send-up and pre-board examinations (Staff Report, 2024).

2.3 Teacher Training Programs: Instructional and Assessment Practices

Achieving the Millennium Development Goals (MDGs) necessitates substantial governmental support for teachers, educational institutions and teacher training initiatives. This support would enhance student outcomes. Emphasizing the pivotal role of education in the nation's progress, the authors stress that teacher education is responsible to maintain high educational standards. Instructional and assessment practices are embedded in teacher training programs (Farah, Fauzee, & Daud, 2016).

According to Siddiqui (2019), Pakistan currently boasts approximately 203 organized and operational teacher training institutions, along with over 300 teacher resource centers. In addition to state institutions, private teacher training facilities also present to train teachers in pedagogy. Despite the Pakistan government's efforts to enhance teacher training, several significant challenges i.e. finding competent teachers and equip them with required skills; lack of resources and motivation to develop skills; and inadequate distribution of capable and efficient teachers. Ayeni (2011) link professional development of teachers with job experience and training given in and outside of teacher training institutions aiming to prepare and shape future teachers for effective classroom teaching.

Recognizing the demands of the teaching profession, teachers must continually enhance their skills through innovative teaching practices. Staff development focuses on the improvement of logical capabilities and other skills to perform tasks effectively. Training in innovative teaching practices acts as a catalyst, bringing about significant changes in a teacher's perspective, reframing their responsibilities, broadening their outlook and enhancing their personal abilities (Hervie & Winful, 2018).

The interconnection between effective teaching, professional development and improved student achievement suggests that schools should prioritize each of these

components. In schools where teachers use the same resources teach the same curriculum and cover the same standards variations in student progress are often attributed to the teacher and their instructional methods. When students exhibit persistent deficiencies, teachers play a crucial role in creating and implementing interventions to address these issues. When teachers face challenges in motivating students to succeed, an instructional intervention may be necessary. In this context, professional development serves as an intervention aimed at improving teaching conditions by providing new knowledge, skills, or practices to enhance teaching effectiveness (Hoge, 2016). The teachers' training on incorporating HOTS in teaching is essential. Rather than merely probe answers from HOTS questions, teachers need to teach on how to think independently and express accordingly. Professional development becomes a means to achieve this instructional intervention (Tan & Halili, 2015).

2.4 Higher Order Thinking

Piaget's (1936) developmental stages marked the inception of describing cognitive development. Age has correlation with learning style portraying adulthood as an image of rationality, logic and self-reflection. Bruner (1960) proposed spiral curriculum in which students revisit already taught material in new situation with additional knowledge. HOT exceeds mere memorization or verbatim repetition, challenging students to move beyond rote memory, a process where information is memorized and recited without genuine understanding. In contrast, HOT involves moving beyond factual restatement. It demands that students actively engage with the information, requiring them to grasp, infer, classify, manipulate and combine data in creative ways to find innovative solutions to new problems. Educational policies worldwide increasingly emphasize the instruction of HOT as reflected in numerous standards and curriculum papers (Zohar, 2013). Despite of this emphasis a prevalent approach to information transmission in many classrooms continues to prioritize lower-order cognitive abilities (Vanderhook, 2020). Despite decades of implementation efforts, HOT has not become the standard in most educational settings (Vanderhok, (2020); Osborne, (2013); and Zohar (2013).

Rajendran (2008) defined Higher order thinking as the advanced use of cognitive abilities when faced with unfamiliar problems. HOT equips individuals with

the mental capacity to address complex challenges. It becomes evident that individuals are unable to solve encountered difficult issues by using only prior knowledge. According to Chinedu, Olabiyi, and Kamin (2015), by applying creative and critical thinking combined with drawing conclusions from previous information; individuals can effectively overcome these challenges.

Conversely, Prayoonsri, Tatsirin, Suntorapot and Jariya (2015) highlighted that factors such as motivation, demographics, environment, cognition, and behavior collectively influence the development and application of HOT among students. The complexity of HOT is evident in the diverse perspectives and approaches it receives across various academic and professional fields.

Pedagogy involves the art of teaching and dedicated educators strive to improve their practices. Effective teaching requires exploring methods to achieve key objectives such as fostering critical thinking in students. Higher-level reasoning is essential for students' intellectual growth, especially in today's complex world. As challenges become more demanding, advanced thinking skills are important for success in a competitive and globalized environment. HOT emphasizes real-world learning outcomes making it a vital component of education (Mainali, 2012).

The higher order thinking (HOT) is most effective when it becomes a habitual part of students' daily routines. Students should naturally apply HOT across different situations by engaging in discussions, critically analyzing observations and comparing experiences to find solutions. This ongoing process is shaped by everyday experiences in diverse and dynamic contexts, allowing students to continuously refine their thinking skills (Costa & Kallick, 2008).

2.4.1 Features of HOT

The important features of HOT are critical thinking and classroom environment.

Critical Thinking

Critical thinking is closely associated with the concept of creative thinking, suggesting that problems have multiple valid solutions and diverse problem-solving approaches. Critical thinking, therefore, is an art form known for its inventive nature. Research indicates that creativity goes beyond mere originality; it involves having a well-defined purpose. The critical thinking is an open-minded approach to addressing

questions, encompassing both factual and creative perspectives. In essence, critical thinking includes self-reflection, enabling the examination and interpretation of information for a fresh understanding of issues (Gormley, 2017).

The critical thinking is a focused intellectual activity involving mental processes such as attention, categorization and judgment for analysis and evaluation. It comprises personal skills like self-awareness, reasoning, open-mindedness and discipline which can be developed with encouragement. These “higher order” thinking skills contrast with Bloom's “lower-order” skills of remembering, understanding and applying (Cottrell, 2011).

The critical thinking as a structured and rigorous process for solving problems through analytical and rational thinking. It involves evaluating data, analyzing processes and selecting appropriate responses. Critical thinking is an active skill developed through reading, writing, listening and speaking, contributing significantly to problem-solving and decision-making abilities (Florea & Hurjui, 2015).

The classrooms that foster independent thinking and critical engagement are the most effective. Critical thinking enables students to evaluate their thoughts and understand their reasoning. These students are often enthusiastic learners viewing difficult tasks as opportunities for growth. They actively seek to apply critical thinking skills in class and with peers making teaching more enjoyable (Crawford, Saul, & Mathews, 2005). Anderson (2001) classified questions and objectives to guide critical thinking.

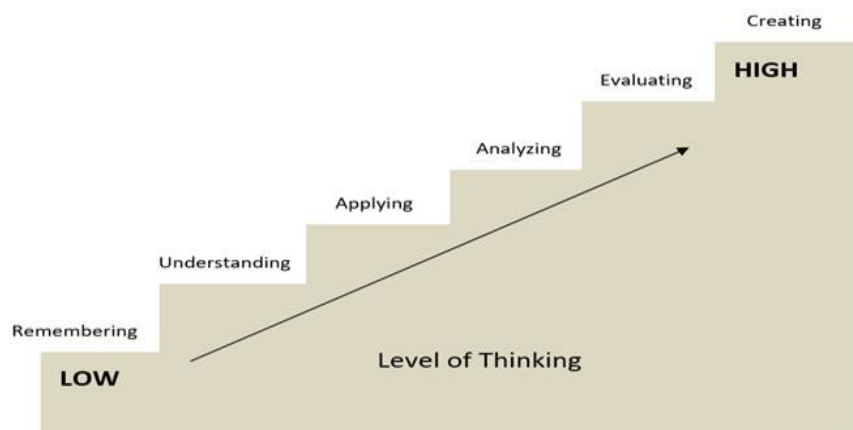


Figure 2.2 Levels of Thinking

Lower-level tasks involve recalling facts (Figure 2.1) while higher-level tasks involve creating new ideas and conclusions. Although it is important to address all cognitive levels, educators can encourage higher critical thinking by going beyond simple recall questions. To promote deeper cognitive engagement, teachers should restructure classrooms to regularly practice critical thinking.

Classroom Environment

Crawford et al. (2005) identified several key features of an effective classroom environment:

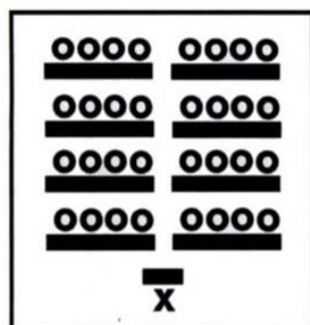
Shared Classroom Climate: Teachers and students collaboratively contribute to developing class rules. Cooperative learning practices are employed, assigning each student a role in assisting their peers in learning.

Teacher as Role Model: Teachers act as role models by demonstrating critical thinking skills and encouraging open discussions that promote the exchange of ideas and diverse perspectives.

Spirit of Inquiry and Openness: High-level questions, such as "Why?" and "What if?" are posed during problem analysis and decision-making. Students take on various roles in activities, engaging in predictive thinking, information gathering, organization, and challenging inferences.

Optimal Assistance for Students: Teachers focus on what students learn and how they think, encouraging critical thinking, investigation, and effective communication.

Collaborative Classroom Layout: The classroom layout promotes collaboration and communication among students. Traditional seating arrangements are challenged, emphasizing the importance of students' contributions and the value of sharing ideas. The physical classroom setup is designed to facilitate interaction and collaboration among students, fostering an environment where their voices are heard and valued.



This design is best for listening to the teacher, but it is not good for interaction among students. Teachers who want students to talk to each other avoid this arrangement.

Figure 2.3 Assemble Classroom Space in large group

The traditional classroom setup with rows of students facing the teacher (Figure 2.2) might be suitable for a lecture-style presentation where the primary mode of interaction is between the teacher and the students. However, if the goal is to foster student interaction, collaboration and communication; this setup may hinder those objectives. Teachers aiming to encourage peer-to-peer interaction should consider alternative classroom arrangements that facilitate group work, discussions and collaborative learning experiences. Flexible seating arrangements, group tables or arrangements that allow students to face each other can contribute to a more interactive and engaging learning environment.

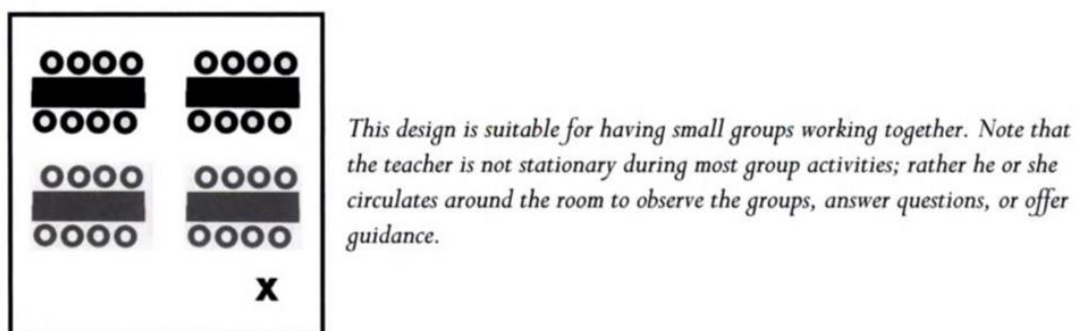


Figure 2.4 Assemble Classroom Space in small group

Indeed, this design is well-suited for fostering small-group collaboration (Figure 2.3). It allows students to work closely with their peers, promoting discussion, sharing of ideas, and collaborative problem-solving. The teacher's ability to circulate easily among the groups enhances the opportunity for individualized support and feedback. This setup encourages a more interactive and dynamic learning environment, where students actively engage with the content and with each other. It aligns with instructional approaches that emphasize student-centered learning and cooperative learning strategies.

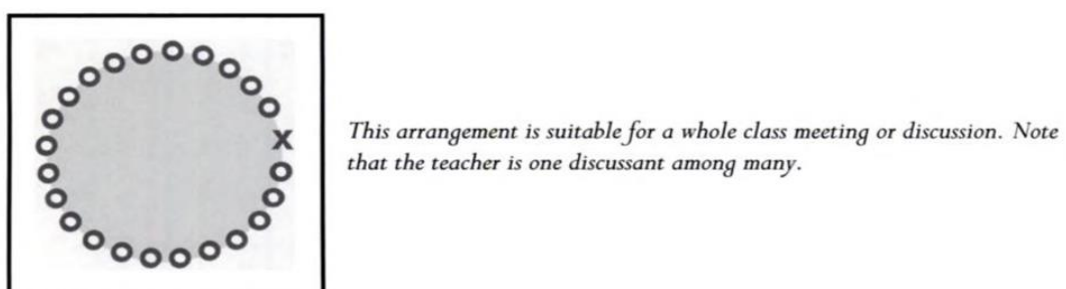


Figure 2.5 Assemble Classroom Space for the entire class

This configuration is well-suited for fostering whole-class discussions and conversations (Figure 2.4). It promotes a more inclusive and participatory atmosphere where the teacher is positioned among the students rather than at the front, signaling a shift towards a more collaborative learning environment. This arrangement encourages open dialogue, active engagement and the sharing of diverse perspectives among students. It reflects a pedagogical approach that values student input, critical thinking and collaborative learning experiences. The teacher's central location within the discussion circle facilitates interaction with all students, fostering a sense of community and shared learning (Crawford et al., 2005).

2.4.2 Methods for Development of HOT

Thomas and Thorne (2009) suggested that to improve students HOT, teachers can implement the following methods:

- i. Provide students with information about HOT and make them aware of their skills. Assess students' conceptual understanding by asking relevant questions;
- ii. Encourage students to express their ideas freely. Guide and support students in clarifying misconceptions using effective communication skills;
- iii. Employ demonstration methods, especially in science subjects like Chemistry, Biology, and Physics, to facilitate understanding. Adapt language to suit auditory learners, ensuring clarity and comprehension;
- iv. Communicate knowledge in a step-by-step manner for clarity and effectiveness across different age groups. Promote gradual learning by breaking down topics into subtopics;
- v. Teachers should adopt teaching practices that help students master basic concepts before progressing to more complex ones;
- vi. Encourage parents to participate in their children's education by discussing study material and relating it to everyday life;
- vii. Instill the habit of interrelating different concepts for a holistic understanding. Foster the creation of a network of ideas connected to existing knowledge;
- viii. Enhance the ability to compare innovative knowledge with existing knowledge;
- ix. Discourage rote learning as it fails to measure HOTS;
- x. Train students in pictorial presentation, recognizing that visual learning is often more effective;

- xi. Encourage students to create mind maps to understand abstract ideas;
- xii. Develop problem-solving approaches to promote HOT. Teach students different techniques for problem-solving;
- xiii. Encourage students to use a step-wise strategy to solve problems, applicable to both academic and everyday life challenges;
- xiv. Promote cooperative learning in schools to enable students to solve problems collectively in a supportive environment;
- xv. Encourage students to ask questions to stimulate reasoning and critical thinking. Foster a positive environment where questioning is seen as valuable for learning; and
- xvi. Implement group and pair work to foster collaboration among students.

2.4.3 Higher Order Thinking Instruction

Cognitive abilities, fundamental to cognitive enhancement, encompass all psychological processes and activities involved in acquiring, developing and organizing knowledge. These abilities include intelligence, perception, attention, memory, reasoning, decision-making, problem-solving, visualization and perceptual functions. Among these, reasoning is particularly crucial; it involves intellectualizing, synthesizing information about events, situations or ideas and generating new inferences and ideas (Metin, Aral, Uzun, & Karaca, 2023).

The core objective of education is learning. Achieving this objective requires the employment of effective teachers utilizing effective teaching methodologies. Reflecting on historical shifts; students were formerly engaged in Gurukuls where instructors held a continuous responsibility to shape students' lives for their well-being and society's benefit. Over time, this model evolved into structured schooling where students attended for designated periods and instructors armed with a blackboard and chalk delivered lectures to enhance subject comprehension. In this traditional paradigm, teachers assumed the primary responsibility for imparting knowledge ensuring students grasped the material efficiently (Hoge, 2016).

Acknowledging the evolving educational landscape, Alwehaibi, (2012); Riasat, et al. (2010); De Corte and Masui (2009); and Costa and Kallick, (2008) advocated the need of ongoing and intensive professional development for teachers. This focus extends to integrating HOT into teaching practices as a crucial component of

professional training aimed at enhancing students' cognitive abilities. The ultimate objective is to transform teachers into contributors within the school's knowledge-building community, moving beyond being mere knowledge communicators.

For decades, a primary educational objective has been the cultivation and enhancement of students' HOT (Fisher (1999); Marzano (1993); and Zohar and Schwarter, (2005). The aspiration is to nurture students who possess critical thinking abilities, enabling them to proficiently respond to the demands of the real world. Despite some unfavorable reports, substantial steps have been made in advancing the teaching of HOT. The focal point should be on prioritizing implementation and planning of HOT (Zohar, 2013).

Several studies highlighted the critical roles of both the learning environment and targeted instruction in fostering higher order thinking skills (HOTS) (Miri, David, & Uri, 2007). Teaching higher order thinking skills (HOTS) requires continuous teacher training, fostering specific attitudes, adopting a thinking-focused instructional approach, applying relevant taxonomies and promoting language that encourages critical thinking (Rajendran, 2008). Instructors' metacognitive abilities play a crucial role in teaching higher-order thinking skills and remain a key area of focus (Shukla & Dungsungnoen, 2016).

The creation of friendly environment in which students feel comfortable to share their ideas is essential for the development of HOT. Teachers should actively involve students in activities such as question creation, reflection, handling complex scenarios and behavior modification. Engaging learners in such class activities not only enhances their higher-level thinking abilities but also aids them in making informed judgments and solving problems in their daily lives (Yao, 2012).

2.4.4 Can HOT be Imparted?

The question of whether HOT can truly be imparted is a subject of debate among educators. Some teachers view thinking abilities as innate, comparable to “common sense,” influenced by individual social and cultural perspectives (Atkinson, 1997). The notion of “thinking as a skill” is considered controversial, contributing to hesitancy in teaching thinking (Hart, 1993, as cited by Fisher, 1999). The thinking is not an innate disposition and it should be developed properly (Puchta, 2012). However, there is a perspective that thinking skills including HOT can indeed be developed through

practice, although not instantaneously (Rajendran, 2008). This suggests that contrary to the belief that thinking is an innate ability, it can be taught and cultivated over time (Yen & Halili, 2015).

2.4.5 Challenges in Teaching HOT

The following are the challenges that are faced by the teachers during teaching HOT.

2.4.5.1 Time

Educating HOT is a time-consuming internal process, requiring rapid reflection, articulation, justification, interaction, discussion and questioning. The tight schedules in various subjects pose challenges for teachers to plan lessons rich in HOT content (Limbach & Waugh, n.d.; Sparapani, 1998). Instructors, constrained by curriculum coverage priorities, may find it challenging to incorporate innovative teaching strategies (Tanujaya, 2016). The pressure to convey extensive knowledge within limited timeframes impedes activities that promote HOT. The constraints of fulfilling curriculum requirements and achieving specific educational objectives may limit the opportunities for educators to focus on fostering critical thinking skills in their students. The prevailing emphasis on content coverage and standardized assessments further reinforces this time-related challenge in incorporating activities that stimulate HOT within the educational setting (Aziz, Ismail, Ibrahim, & Samat, 2017).

2.4.5.2 Student Factors - Attitude/Inspiration

Some students prefer easy ways and are reluctant to engage in thinking beyond straightforward solutions leading to a lack of interest in imaginative thinking (Aziz et al., 2017).

2.4.5.3 Teacher Factors

The competence of teachers is a significant factor affecting the successful integration of HOT into the educational process:

Teacher may design learning opportunities aligned with Bloom's Taxonomy to help students develop necessary cognitive skills across its domains. This can involve various instructional methods including lectures, discussions, case studies and problem-solving activities. When creating these learning experiences, educators should consider the complexity associated with each cognitive domain. Tasks that align with Bloom's higher-level cognitive domains typically require students to analyze information or

devise solutions to complex problems (ElJishi, Abdel-Hameed, Khuddro & Zayed, 2024).

A noteworthy challenge is identified in the realm of teachers' understanding and implementation of HOT. Teachers often struggle to differentiate between lower-order and HOT within Bloom's taxonomy and feel unsure about how to implement effective practices for teaching HOT. Their inability to design and apply appropriate strategies for teaching HOT poses a major challenge in the classroom. Despite positive opinions about HOT and a conviction that teaching for HOT could enhance students' intellectual capabilities, many teachers likely lack the requisite HOT skills and knowledge (Marlina, 2013). This underscores the need for targeted professional development and support for educators to bridge the gap in understanding and effectively integrate HOT into their teaching methodologies (Singh et al., 2020).

The challenges in teaching HOT are further underscored by various studies highlighting teachers' struggles and limitations in this area. Some studies have reported instances of teachers being unable or unwilling to teach HOT while others expressed uncertainty about their capacity to impart HOTS (Yee et al., 2011). The teachers have insufficient knowledge of HOT and were unprepared to effectively teach it (Yusoff & Seman, 2018).

When teachers are insufficiently prepared, they often adopt a transmission-based teaching style that hinders the development of deeper teacher-student interactions necessary for fostering higher order thinking skills (HOTS). Teachers need to devote enough time to facilitating meaningful student discussions, as these exchanges and reasoning processes are essential to making HOTS development more explicit. Another barrier to successfully integrating HOTS in classrooms is the excessive focus on completing the curriculum. Teachers often rush to cover content in order to meet curriculum objectives, resulting in a broad but shallow exposure to information leaving little time for activities that cultivate HOTS. This hurried approach contradicts the explicit method recommended for teaching HOTS which involves repeatedly applying thinking strategies in various contexts, with teachers explicitly emphasizing the core principles underlying HOTS (Aziz et al., 2017).

In today's globalized world, where students must be equipped with advanced thinking skills, addressing the challenges related to fostering higher order thinking

(HOT) in classrooms is critical. Professional development and training programs are essential for enhancing teachers' abilities and confidence in promoting HOT effectively.

Aziz et al. (2017) emphasized that developing HOTS in students requires comprehensive preparation, practical exercises and sufficient financial resources along with targeted teacher training. Significant funding from educational sectors is also crucial to support and implement initiatives that cultivate HOTS. This underscores the need for a holistic and well-resourced approach to successfully integrate HOT in educational practices.

2.4.5.4 Assessment

It is essential for teachers to align assessment methods with the cognitive domain they are evaluating. For example, if the lesson aims for students to analyze a case study, an appropriate assessment might involve writing an essay or presenting their findings to the class. By using Bloom's Taxonomy-based assessment strategies, educators can evaluate students' learning outcomes and determine whether they have developed the desired thinking skills (Domínguez-Gonzalez, Hervás-Gomez, Díaz-Noguera & Reina-Parrado, 2023).

The challenges related to assessment further compound the issues in promoting HOT. Teachers face constraints due to accountability challenges, where quantifiable academic achievements are emphasized. The pressure to meet examination demands often leads teachers to adhere to conventional instructional practices. To effectively foster HOT, there is a need for assessments that go beyond merely measuring content mastery and instead focus on acknowledging and rewarding HOT abilities. However, the prevailing trend of prioritizing content objectives over thinking goals poses a challenge to the meaningful integration of HOT into educational practices. Addressing these assessment challenges is crucial for creating an environment that truly values and encourages the development of HOTS among students (Zohar, 2013).

2.4.5.5 Learning Environment

The learning environment is based on:

- a) Traditional Seating Arrangement: The conventional desk arrangement impedes lively intellectual exchanges, requiring a shift towards a stimulating environment that encourages thinking processes.

- b) Transition from Passive to Active Learning: The influence of drill-and-practice and rote learning calls for support in transitioning students from passive to active learning, specifically in HOT.
- c) Cultural Perspectives: Some argue that critical thinking is perceived as a Western approach, posing challenges in Asian educational contexts where logical thinking might be considered peculiar (Rashid & Hashim, 2008).
- d) Challenges in Large Class Settings: Teaching HOT to a large group is considered more challenging, as teachers may lack expertise in managing students' thinking skills, requiring a profound understanding of the importance of teaching HOT (Sing et al., 2020).

2.4.5.6 Resources

Insufficient resources for both teachers and students hinder the interactive learning process, necessitating improvements in professional development resources for teachers in HOT and classroom practices (Yen & Halili, 2015).

2.4.6 Teachers' Role: Implementation of HOT

According to Fogarty (2009), teachers play four key roles in fostering the development of students' HOTS. The primary role is “teaching for thinking,” where teachers create a classroom environment that encourages students to actively engage in critical thinking. Another role identified is “teaching of thinking,” where teachers pose questions that prompt students to connect their existing knowledge with new and unfamiliar scenarios. Additionally, “teaching with thinking,” entails structuring activities that stimulate students’ thinking through interactive discussions and dialogues. Finally, the role is “teaching about thinking,” whereby teachers guide students to become more aware of their cognitive processes.

The taxonomy becomes a valuable tool for maintaining consistency in assessment methods, content and instruction. Acknowledging the need for varied instructional methods across different subjects, the revised Bloom's taxonomy serves as a guide to ensure the validity of assessment methods with every level and are compatible with the corresponding instructional practices. This approach not only promotes effective assessment but also encourages consistency in instructional practices across diverse subjects and domains. Bloom's taxonomy serves as more than a mere classification system; it represents a deliberate attempt to organize various cognitive processes hierarchically. The progression through each level is contingent

upon a student's proficiency in completing the preceding level or levels (phases). To illustrate, a student engaged in applying knowledge (Phase 3) must possess foundational information (Phase 1) while simultaneously comprehending that information (Phase 2). This classification and its hierarchical structure stand as the widely embraced framework that guides teachers in facilitating their students' cognitive learning journey. In essence, teachers utilize this framework to emphasize HOTS. Bloom's educational taxonomy, often illustrated as a pyramid with increasing levels of cognitive complexity at the top, categorizes the highest three levels as analysis, synthesis and evaluation. These levels encompass critical thinking and HOT which are central to the taxonomy. When educators discuss HOTS, they generally refer to cognitive processes at these advanced stages. Studies suggest that the use of creative HOTS by students significantly improves their comprehension (Cox, 2019).

Brookhart (2010) pointed out that recall questions within the original Bloom's taxonomy can vary in difficulty that underscore the importance for teachers to recognize that higher-level questions can be both approachable and challenging. To effectively promote HOT, questions should be explicitly designed.

2.5 Influence of Learning Theories on Instruction and Assessment

Learning theories play a crucial role in shaping instructive practices and can contribute to the enhancement of HOTS among students. Several theories highlighted different aspects of learning that can positively impact HOT. Cognitive constructivist theory posits that learners actively construct knowledge by integrating new ideas with prior understanding (Stapleton & Stefaniak, 2019). Knowledge is developed through an interactive learning process that includes reflection and critical thinking. Assessment, therefore, focuses on students' ability to apply Higher Order Thinking Skills (HOTS) through problem-solving and discussions (Onzi, Mugizi, Rwothumio & Mugenyi, 2023). This highlights the importance of incorporating cognitive constructivist approaches in teaching practices to create learning environments that foster reflection, critical thinking, and problem-solving. Such strategies can effectively enhance HOTS by encouraging active knowledge construction and meaningful engagement with learning tasks.

Constructivism emphasizes active participation, collaborative learning, teacher support and contextual learning (Mugizi, Katuramu, Dafiewhare, & Kanyesigye, 2021).

Teaching methods empower students to connect new concepts to existing knowledge and engage them through critical thinking and problem-solving (Demirci, 2017). Collaborative learning occurs in small groups (Le, Janssen, & Wubbels, 2018) while teacher support involves providing care and assistance. Contextual learning ties knowledge to real-world applications (Roza, Rafli & Rahmat, 2019) enhancing student engagement and enjoyment (Mugizi, et al., 2021). Constructivism provides a comprehensive framework for designing teaching methods that actively engage students. By integrating collaborative, supportive and context-based approaches; educators can create meaningful learning experiences that not only enhance critical thinking and problem-solving skills but also foster deeper engagement and enjoyment in the learning process.

Behaviorist theory posits that behavior is a learned habit influenced by stimulus-response linkages, where learning results from external stimuli like feedback and consistent practice (Mugizi et al., 2020). Both Constructivist and Behaviorist theories advocate for strategies such as active and collaborative learning, teacher guidance and reinforcement (Juavinett, Erlich & Churchland, 2018). Behaviorism focuses on transforming student behavior through interactions between stimulus and response, incorporating life skills like self-understanding and problem-solving (Marsitah, Annisa, Rainapia, Yani, & Oktari, 2023). The teachers prioritize constructivist approaches, fostering independent learning, critical thinking and personalized support to enhance student success (Onzi et al., 2023). Combining behaviorist strategies with constructivist approaches can effectively shape behavior while fostering critical thinking and independent learning.

Cognitivism shifts the focus from observable behavior to internal cognitive processes, emphasizing memory, problem-solving, and language (Piaget, 1952; and Vygotsky, 1978). Unlike Behaviorism, who responds to external stimuli, Cognitivism sees learning as an active process where students organize and analyze new information (Yilmaz, 2011). This shift towards learner-centered instruction promotes active knowledge construction through connections to prior understanding. Transformative learning encourages reflective thinking and critical dialogue to shift paradigms (Siritheeratharadol, Tuntivivat & Intarakamhang, 2023). Social constructivism emphasizes collaborative activities and interactions to assess critical thinking and higher order skills (Akpan, Igwe, Mpamah, & Okoro, 2020). Cognitivism, particularly

through social constructivism, highlights the importance of learner-centered and collaborative approaches that foster critical thinking, reflective learning and active knowledge construction.

2.6 Pakistan Studies

In 1947, the Pakistan Educational Conference in Karachi endorsed the inclusion of Pakistan Studies, though it was not explicitly named. By 1960, “Social Studies” was mandatory in schools, and in 1976, it was renamed Pakistan Studies for high school students. In 1978, Pakistan Studies announced as compulsory subject at all levels of education including professional colleges (Khan, 2012).

Pakistan Studies, a multidisciplinary subject covers geography, climate, democracy, history and societal aspects. It aims to enhance students’ spiritual and civic development by improving their comprehension, creativity and application skills while promoting national unity and regional integration. Despite its challenges and perceived repetitiveness, the subject is vital for fostering students’ national awareness and responsibility (Ramzan, Bibi, & Kousar, 2012).

2.6.1 Curriculum Objectives of Pakistan Studies

Curriculum objectives serve as a roadmap for effective teaching and learning. When teachers are well-informed about these objectives, they can design focused lessons, assess students more accurately and promote higher order thinking (Ornstein & Hunkins, 2017). The objectives of the National Curriculum of Pakistan Studies provide a structured framework that enhances teachers' instructional effectiveness. By aligning their teaching with these objectives, teachers can design well-focused lessons, implement appropriate assessment strategies and foster higher order thinking skills among students. These objectives help instill national integrity, civic responsibility and awareness of Pakistan’s historical and cultural heritage, enriching teachers’ understanding and engagement with the subject. A clear set of objectives also streamlines instructional planning, enabling teachers to efficiently translate curriculum goals into classroom practices, select suitable teaching methods and optimize time management. Furthermore, by incorporating activities and assessments that promote higher order thinking, teachers experience professional fulfillment, ensuring students develop analytical, evaluative and creative skills. Ultimately, a well-defined curriculum empowers teachers to adopt effective instructional practices that encourage active

learning and a deeper understanding of Pakistan Studies (Government of Pakistan, Ministry of Education, 2006).

Research highlighted that well-defined curriculum objectives directly influence classroom instruction and assessment (Anderson & Krathwohl, 2001). If the curriculum explicitly incorporates higher order thinking skills, teachers are more likely to adopt instructional practices that encourage analytical and evaluative thinking (Saido et al., 2017). In contrast, if the objectives focus primarily on knowledge transmission rather than critical thinking, classroom practices will likely emphasize rote memorization and factual recall. Therefore, National Curriculum for Pakistan Studies' objectives are a useful tool for educators, directing their instructional practices, methods and improving students' educational experiences. Teachers can promote critical thinking, cultural sensitivity, and a feeling of national identity by coordinating their instruction with these goals. This will ultimately help to create knowledgeable and involved citizens. The objectives provide teachers with a clear understanding of what students are expected to learn at each grade level. This clarity helps teachers plan their lessons more effectively, ensuring that they cover essential content and skills. Additionally, the objectives often emphasize higher order thinking skills, such as analysis, evaluation, and creativity. By focusing on these skills, teachers can design activities that encourage students to think critically about historical events, cultural contexts, and contemporary issues, thus enhancing their analytical abilities (Naseer, 2020).

2.6.2 Teachers' perceptions and curriculum objectives

Teachers' perceptions regarding curriculum objectives are vital as they significantly influence instructional and assessment practices. Understanding these perceptions can lead to improved teaching strategies, enhanced student engagement, and better learning outcomes. Research suggests that teachers' beliefs about curriculum objectives shape their pedagogical choices and classroom interactions, ultimately affecting student achievement (Pajares, 1992; Richardson, 1996). Addressing teachers' beliefs and perceptions is essential for effective curriculum implementation and overall educational success.

Teachers' instructional practices are influenced by their knowledge and opinions regarding curriculum objectives. When teachers perceive curriculum goals as relevant and achievable, they are more likely to adopt instructional strategies that align with

them (Fives & Buehl, 2012). However, if they view these objectives as unrealistic or disconnected from students' needs, they may resort to traditional, teacher-centered methods (Borg, 2003). Studies indicate that professional development and training can help shape teachers' perceptions, making them more receptive to curriculum reforms and innovative teaching practices (Guskey, 2002; Avalos, 2011). Thus, ensuring alignment between curriculum objectives and teachers' perceptions is critical for fostering meaningful learning experiences.

The objectives of the Pakistan Studies curriculum aimed at fostering HOT are as follows:

- i. Cultivate appreciation for the gift of Pakistan as an independent and sovereign state;
- ii. Highlight the importance of national unity, cohesion and patriotism;
- iii. Develop students' observation, creativity, analysis and reflective skills;
- iv. Promote understanding of Pakistan's ideology, the Muslim struggle for independence and the efforts to create a modern Islamic welfare state;
- v. Introduce students to Pakistan's historical, political, and constitutional developments;
- vi. Enhance awareness of Pakistan's multicultural heritage, fostering an appreciation for socio-cultural diversity and unity;
- vii. Deepen knowledge of Pakistan's physical geography and human resources;
- viii. Provide insight into national socio-economic activities and the contributions of Pakistanis to societal development;
- ix. Examine Pakistan's strategic role in international politics and its relations with neighboring and Muslim countries; and
- x. Emphasize the rights and responsibilities of citizens in an independent state (Government of Pakistan, Ministry of Education, 2006).

2.6.3 Assessment System of Pakistan Studies

At initial phase, nine important subjects at the Secondary School Certificate (SSC) level were targeted. These subjects include Chemistry, Mathematics, Physics, Computer Science, Biology, Urdu, Islamiyat, Pakistan Studies and English. The significant change introduced is that students are no longer limited to a single textbook; instead, they are encouraged to study any book that is in accordance with the given

curriculum. As part of this reform, the FBISE successfully administered a Student Learning Outcome (SLO) based annual examination at the secondary level in 2022. This shift aims to enhance the accuracy and credibility of the examination system by focusing on student learning outcomes and moving away from a strict reliance on textbooks (Policy Guidelines for Pakistan Studies Paper Pattern, 2019).

The current assessment system based on summative evaluation is criticized for dictating the course content and emphasizing factual knowledge over creative reasoning, critical thinking comprehension and understanding. Mansory suggests that the existing system promotes a focus on memorization-based teaching practices and a teaching-for-testing approach rather than fostering genuine learning. The author points out significant drawbacks in the examination system, from the process of setting examination papers to the distribution of results (Mansory, 2013).

2.6.4 Policy for Assessment of Pakistan Studies Question Papers

FBISE issued guidelines in June 2019 for Pakistan Studies question papers, detailing the cognitive domains to be assessed. The distribution of cognitive domains and relevant verbs is as follows:

Knowledge (30%): includes verbs i.e. organize, describe, remember, identify, explain, arrange, generate, connect, name and list etc.

Understanding (50%): Encompasses verbs like categorize, explain, debate, clarify, convey, recognize, identify, locate, describe, assess, choose, interpret, reword, distinguish and contrast etc.

Application (20%): Features verbs i.e. utilize, operate, resolve, illustrate, draw, select, express, arrange, evaluate and implement etc.

The given guidelines are designed to ensure a comprehensive assessment, evaluating students' knowledge, comprehension and practical application of the subject matter (Policy Guidelines for Pakistan Studies, 2019).

2.6.5 Instructional Methods of Teaching Pakistan Studies

According to Yasin, Rasool and Azim (2021), the influence of teaching practices on students' academic performance is well recognized. Studies indicate that modern teaching methods especially those involving activity-based instruction can lead

to improved grades and enhanced problem-solving skills. Contemporary, instructional approaches including various information processing methods have shown a more significant impact on learning compared to traditional teaching methods.

Ghaffar and Afridi (2015) highlighted the enthusiasm of Pakistan Studies teachers for engaging in practices designed to enhance classroom instruction in the book “The Teaching of Pakistan Studies”. These teachers are keen to employ processes that contribute to improved teaching outcomes. Whether it involves incorporating efficient techniques or executing successful methods; teachers are actively involved in determining the most suitable approaches for specific teaching and learning situations. This selection, implementation and application of appropriate methods are essential steps undertaken by teachers in the pursuit of achieving their teaching objectives in the context of Pakistan Studies.

When selecting instructional methods, teachers should consider factors such as the context of the teaching environment, the nature of the subject matter, the time required for the method, the materials necessary for implementation and the expected outcomes of the method. These elements help to determine the suitability, applicability and effectiveness of teaching strategies in Pakistan Studies. Each method has its unique qualities and appropriateness, and it is the responsibility of teachers to apply them effectively while adhering to these guidelines (Ghaffar & Afridi, 2015).

The Pakistan Studies National Curriculum (2006, 2018) recommends the following teaching methodologies for the effective instruction of Pakistan Studies (Iqbal, 2018).

2.6.5.1 Lecture Method

Lectures should be carefully structured, with an emphasis on problem-solving and incorporating visual aids such as diagrams, photos, graphics and charts to promote engagement. To avoid one-sided delivery, lectures should be designed to foster interaction. Teachers can periodically ask questions to keep students engaged and students should be encouraged to ask questions as well. This allows for responses from either the teacher or their peers, creating an interactive environment where students actively participate, develop social skills and demonstrate their understanding. This approach enriches the overall learning experience (Government of Pakistan, Ministry of Education, 2006).

The lecture method as a traditional instructional approach is widely utilized and effective particularly in large classrooms. This method relies on the teacher's ability to communicate information effectively and students often find credibility in the lecturer's personal experiences. The lecture method is suitable for addressing a large audience, simultaneously allowing the instructor to precisely define the presentation's objectives and supplement textual content with additional explanations (Malik, 2011).

Despite its effectiveness in large classrooms, the lecture method has certain drawbacks including limited student involvement, unrealistic assumptions about student learning and the risk of disengagement from the learning process. In response, educators have increasingly explored alternative teaching approaches, shifting towards more interactive sessions between instructors and students. The rapid advancement of information technology has driven changes in education, offering new opportunities for implementing more effective instructional strategies. In this context, multimedia has become one of the most popular teaching tools, enabling the delivery of educational content in a more diverse and engaging manner (Bala et al., 2017).

Various teaching methods are employed in schools for teaching Pakistan Studies including lectures, problem-solving, textbook methods, discussions, project work, and study trips. The choice of methods depends on individual differences among teachers. One of the teacher's most crucial decisions is determining which teaching method will be most effective in achieving course objectives. This decision-making process is facilitated when teachers are aware of the available methods and their suitability for achieving teaching goals (Rahman et al., 2011).

Several recommendations to enhance the effectiveness of the lecture method were proposed. Firstly, the importance of ensuring that the lecture is intelligible, clear, and incorporates demonstrations of concepts through real-life situations. Secondly, instructors have to maintain a focused approach to the subject matter ensuring a clear and organized presentation. Thirdly, active student participation during lectures, urging educators to provide students with opportunities to ask questions, make comments and express reactions were encouraged. Additionally, if necessary, instructors should review the main points to reinforce understanding. Finally, the combination of lecture method with other teaching practices increases effectiveness of teaching to achieve instructional goals (Iqbal, 2018).

2.6.5.2 Discussion Method

Group discussions are important and effective form of interaction that offers numerous benefits to students. Engaging in discussions enhances their understanding of a given topic, allowing them to explore various perspectives and evaluate their assumptions in light of diverse views. Additionally, discussions contribute to the development of students' communicative skills. When setting up a discussion, the teacher should pick a topic that builds on the material students have recently studied, providing ample room for innovative ideas. The chosen topic should not simply repeat facts from textbooks or teacher lectures. To promote equal participation, all students should have the opportunity to contribute. The teacher can encourage engagement by asking probing questions like, "What is your reasoning behind that?" and "Could you provide more details?" These questions encourage students to provide thoughtful responses. Concluding discussions with a brief and precise summary is essential highlighting key questions for further inquiry and discussion. This approach ensures that the discussion serves as a meaningful learning experience for students. Within a group setting, participants collaborate to achieve shared objectives. Small group discussions typically involve four or five participants are viewed as a viable approach to altering the format of larger classes (Jones, 2014). Group discussions can be seen as a "circle of knowledge," where individuals work collectively in a circular arrangement. The concepts of grouping and student pairing are all aimed at realizing specific learning objectives (Asrita & Nurhilza, 2018).

The benefits of the group discussion method emphasized its ability to provide additional knowledge from diverse perspectives, fostering comprehension and encouraging creativity among students. This collaborative approach and promoting elaboration have been associated with enhanced academic achievement (Blankenstein, Dolmans, Van Der Vleuten, & Schmidt, 2011). Furthermore, the effectiveness of group discussions in learning depends on the collaboration between teachers and students that serves a crucial role in improving the overall educational experience.

Group discussions offer students a platform to enhance their thinking abilities by engaging in collaborative learning. The cooperative learning yields better outcomes than individual activities or competitive approaches. Previous research has shown that collaborative methods significantly enhance students' cognitive skills and learning abilities in higher education. Group discussions, in particular, help students grasp

complex concepts, improve problem-solving through advanced thinking, boost confidence and promote connections with peers and the broader social environment (Karami, Pakmehr, & Aghili, 2012). Evidence from Fung and Leung (2016) reinforces the idea that group work is crucial for cultivating students' critical thinking skills.

2.6.5.3 Inquiry/Investigation

Inquiry or investigation is a methodical process that involves posing questions, gathering and analyzing information, and drawing conclusions. Effective questioning is crucial in learning, enhancing cognitive skills and fostering critical thinking. For years, questions have been fundamental to education (Tofade, Elsner, & Hanies, 2013). Teachers need to master the art of asking relevant questions to engage students and promote deeper understanding. While lower-level questions can aid initial learning, they often fail to develop critical thinking skills. Research shows that many questions posed by teachers focus on rote memorization which limits their impact on students' intellectual growth (Vanderhook, 2020).

The National Curriculum for Pakistan Studies (2006) outlines following steps for effective classroom inquiry:

Topic Selection: The teacher chooses a topic and students develop inquiry questions about it such as "What factors led to the demand for Pakistan?".

Formulating Hypotheses: Students propose hypotheses like "Economic, social, political and cultural suppression led to the demand for Pakistan".

Planning: Students decide on sources, methods, time management and people to consult for information.

Information Gathering: Students collect data from books, museums and online resources.

Recording: Students note key ideas, evidence and references.

Evaluation: Students analyze their findings, seeking relationships and supporting their conclusions with evidence.

Presentation: Students present their findings creatively, using posters, articles, presentations or role-playing.

Action: Based on their findings, students suggest and implement actions such as writing a letter to the government.

Reflection: Students reflect on the effectiveness of their actions and understand their real-world implications (Government of Pakistan, Ministry of Education, 2006).

These steps promote academic achievement, diverse perspectives, problem-solving skills, self-directed learning, and teamwork while fostering HOT.

2.6.5.4 Cooperative Learning

The cooperative learning refers to classroom techniques where students work in small groups of two or more members. Each group completes specific tasks to achieve a shared goal and group members receive reinforcement based on their group's performance. This approach yields several significant benefits, including Students working collaboratively often experience enhanced self-esteem as they contribute to group efforts and receive positive feedback from their peers. Cooperative learning fosters an environment where students are more engaged and focused on their tasks, leading to increased productivity and effective use of learning time. Collaborative interactions foster HOTS by encouraging students to analyze information, engage in discussions and solve problems together. Peer discussions and shared perspectives allow students to develop a more comprehensive and in-depth grip on the topic (Algani & Abu Alhaija, 2021).

Cooperative learning cultivates teamwork skills and ability to collaborate effectively with others is considered as an important skill for academic and professional success. Positive interactions within cooperative learning groups contribute to an improved overall attitude towards school and teachers that create a more positive learning environment. By encouraging collaboration and communication, cooperative learning equips students with the social and interpersonal skills essential for leading productive and satisfying lives (Federal Board of Intermediate and Secondary Education, 2018).

2.6.5.5 Activity Method

The modern activity-based approach in education prioritizes creativity and spontaneity, valuing hands-on experiences in real-life situations. This method aims to individualize and socialize the learning process fostering diverse experiences for

students to gain knowledge and expertise. Regarding Pakistan Studies, an activity-based curriculum becomes integral. Students can engage in various activities under the guidance of their teachers including dramatizing, observing, collecting, experimenting and constructing. The Grade 10 Pakistan Studies curriculum also recommends activities such as reading, creating maps, making graphs and charts, constructing models, staging presentations and engaging in field trips, gardening and camping (Ahmad, 2018).

These activities are planned to engage students in the learning process and promote a comprehensive understanding of Pakistan Studies. The suggested activities in the present book of Pakistan Studies include:

- i. Encourage students to research and compile a list of countries with Muslim-majority populations;
- ii. Prompt students to identify and list the member countries of the European Union;
- iii. Facilitate a discussion among students to explore various perspectives on the Kashmir issue;
- iv. Conduct group presentations where each group discusses the benefits of their assigned energy source, providing written feedback to the teacher;
- v. Have students examine a map highlighting mineral deposits and discuss the locations of natural resources;
- vi. Instruct students to research and create a visual representation of Pakistan's trade balance;
- vii. Organize a census debate. Conduct a debate on the significance and challenges of conducting a census, emphasizing its role in national planning; and
- viii. Encourage students to present speeches on the impact of population growth in Pakistan, focusing on potential challenges (Ahmad, 2018).

2.6.5.6 Study Trips

According to Ghaffar and Afridi (2015), study trips are essential to the learning experience, aligning with the objectives of education to make citizens responsible to serve their communities. The integration of real-world experiences into the curriculum particularly in subjects like Pakistan Studies, is essential for achieving these objectives. A study trip becomes a pivotal activity offering students an opportunity to connect with their social, cultural and geographical surroundings. Study trips hold immense

significance as they enable students to delve into the history of their ancestors and gain insights into their cultural heritage. These trips provide a platform for students to explore real-life situations, encouraging them to observe, discuss and respond to their experiences during visits to specific locations.

The impact of a study trip extends beyond traditional classroom learning, offering a unique blend of education and enjoyment. When integrated into the teaching approach, educational excursions complement classroom instruction, providing students with authentic experiences that leave a lasting impression. There is no substitute for the profound impact of a study trip, making it a valuable component of the learning journey (Ghaffar & Afridi, 2015).

2.6.5.7 Assignment Method

According to Ghaffar and Afridi (2015), a task assigned to students, known as an assignment, is a specific task or project given to students that they have to complete within time. It represents a form of commitment and responsibility on the part of the learner who undertakes the task with the understanding that they are accountable for its completion. Assignments can encompass a range of activities, including problem-solving, comprehension exercises or addressing specific social issues. This educational strategy involves the teacher assigning tasks to students accompanied by clear instructions and a stipulated time frame for completion. The assignment serves as a supplementary component to traditional classroom instruction fostering self-study and reinforcing the learning objectives introduced in class. Assignments allow students to actively engage in their learning demonstrating their understanding and mastery of the subject matter. The assignment method contributes to a comprehensive learning experience by motivating students to apply and extend their knowledge beyond the confines of the classroom, promoting a deeper engagement with the subject matter.

2.6.5.8 Use of Audio-Visual Aids

Brown and Green (2015) discussed in “The Essentials of Instructional Design” how instruction design has been thoughtfully approached by various historical figures. Comenius (1592-1671) was a pioneer in integrating visual aids into teaching. His work, “Orbis sensualium pictus” (The Visible World Pictured) is noted as the first illustrated textbook created for classroom use.

The Chinese proverb "One seeing is worth a hundred tellings" encapsulates a profound truth that holds significant relevance in the realm of education. This truth finds expression in the essential role played by visual aids which go beyond being mere supplements to learning—they are indispensable. Visual aids serve as catalysts for introducing novel images and experiences into the educational process. Visual aids are not just add-ons; they are imperative elements that bring about experiential learning. They enable students to establish connections between components and words, resulting in a richer understanding of the subject matter. Moreover, visual aids contribute to time efficiency for both teachers and students, offering a streamlined means of conveying complex information. The benefits of visual aids extend beyond mere information transfer. They serve to enhance and broaden students' appreciation of the material, providing an enjoyable form of entertainment in the learning process. In essence, the utilization of visual aids in education aligns with the idea that experiential learning, facilitated through visual stimuli is a powerful and effective method for fostering comprehension and engagement among students (Ghaffar & Afridi, 2015).

The teachers of Pakistan Studies must recognize the necessity, significance, nature and applicability of specific teaching resources coupled with the ability to effectively incorporate them into the classroom. Teaching tools play a pivotal role in enhancing understanding. Although financial constraints in many institutions hinder the provision of adequate audiovisual resources in every classroom; the growing significance of visual aids in effectively conveying concepts to large audiences cannot be overstated (Malik, 2011).

Audio-visual aids are essential for effective instruction in Pakistan Studies providing dynamic tools for educators. The chalkboard, whether traditional black or the newer soft green, is widely used in schools especially in secondary education where cost constraints may limit the use of whiteboards. Slides offer a convenient way to share visual content, often tailored to the local context while pictures with emphasis on accuracy and artistic detailing are recommended for effective teaching. Models provide tangible and three-dimensional representations though preparation challenges may arise due to time and resources. Exhibits, borrowed from museums or locally created, add an engaging dimension to subject units. Maps and globes symbolically represent geographical elements while globes offering a dynamic perspective. Graphs and charts, ranging from bar graphs to organizational diagrams, provide visual alternatives for

conveying information and enhancing students' understanding of various educational objectives. These varied audio-visual aids contribute to a comprehensive and engaging pedagogical approach in the teaching of Pakistan Studies (Ghaffar & Afridi, 2015).

A common finding across these studies is the perceived boredom associated with the lecture method of teaching Pakistan Studies leading to a call for more engaging and interactive instructional approaches. Additionally, there is a focus on the need to enhance students' HOTS abilities, with studies like Gull and Saeed (2020) and Malik and Zaheer (2012) pointing out deficiencies in assessing cognitive abilities beyond basic definitions.

2.7 Related Researches

Shah, Butt, Saleem and Rafique (2023) conducted a study to investigate the challenges associated with classroom assessment in Lahore, Pakistan. The researchers employed a concurrent mixed-methods design with a sample size of 360 participants. Data collection involved the use of a self-developed questionnaire. The analysis of the quantitative data was done by using SPSS version 21, incorporating both descriptive and inferential statistics. Qualitative data were obtained by taking classroom observations and semi-structured interviews. The study identified several significant challenges including a lack of interest from parents and students, insufficient guidance on assessment from school administrations and a deficiency in professional training for teachers regarding assessment practices. The study recommended that school administrations actively engage all stakeholders and provide comprehensive and regular professional training for teachers through relevant educational departments to effectively address these challenges.

According to Pebriyenni, Muslim, Sumarni and Ananda (2022), HOTS practices empower students to use and impart information to new settings, solve difficulties and engage in critical and creative thinking. Thinking, being a cognitive process, encompasses various aspects such as critical, rational, reflective, metacognitive and innovative thinking. The activation of HOTS occurs when individuals confront new challenges, uncertainties, queries or confusion. In essence, HOTS involves dealing with situations that have not been encountered previously and is defined by a combination of the aforementioned cognitive traits. The processes of analysis, synthesis and evaluation along with analyzing, evaluating and creating all contribute to HOTS. While

lower-order thinking serves as the foundation for acquiring HOT skills in the classroom, it is acknowledged that lower-order skills are relatively easier to comprehend, impart, assess and learn. Despite their simplicity, lower-order skills lay the groundwork for the development of more advanced cognitive abilities.

Furthermore, Ghazanfar and Nauman (2022) conducted document analysis to evaluate the integration of Bloom's Taxonomy objectives in assessment papers for the subject English from the intermediate boards of Hyderabad and Sukkur. Their quantitative research based on the analysis of past examination papers over five years revealed a predominant emphasis on low-order thinking skills.

Mahroof and Saeed (2021) investigated the question papers of BISE, Lahore, of Computer Science using item analysis and Bloom's taxonomy as frameworks. The study involved a sample of 100 students from Grades 9 and 10 at schools in Lahore. The analysis centered on question papers from the years 2015 and 2016 which were provided by BISE. For the item analysis, ConQuest software was employed. The results revealed that the most of the questions primarily assessed students' knowledge and understanding skills with a notable scarcity of questions evaluating HOT abilities e.g. analysis, synthesis and evaluation. Additionally, the item analysis highlighted that many questions fell outside the acceptable range for item difficulty and discrimination having some items being either excessively easy or overly challenging. This indicates a potential misalignment of the question papers with the principles of Bloom's taxonomy.

Conversely, Siddiqui, Mughal, Soomro and Dool (2021) examined the challenges within training programs in Pakistan and explored possible solutions. The challenges encompass administrative and faculty-related problems. The identified problems are the formulation and execution of policies and plans for teacher training programs. Challenges in providing effective and supportive induction programs for new teachers; insufficient financial resources allocated to teacher training institutes; factors leading to a lack of motivation among teachers; disparities in the deployment of experienced and efficient instructors; and challenges related to the frequency of instructional activities. To address these problems, Siddiqui et al. (2021) proposed solutions including fostering a positive and conducive environment for effective teacher training, ensuring accountability in teacher training programs, adequately allocating

financial/other resources to teacher training institutes, establishing systematic and well-structured professional training programs.

Weli and Ollor (2021) highlighted the crucial role of ongoing professional development programs for teachers who act not only as educators but also as curriculum implementers and facilitators. The authors stress that continuous teacher professional development is vital for sustaining and enhancing teachers' educational capabilities.

Nevertheless, Kipkoech (2021) conducted a study in secondary schools within the Bureti region to investigate the field trips in History and Government education. Despite the belief among teachers and students that the field trip approach offers greater benefits than the traditionally employed teacher-centered methods, the study revealed that the majority did not frequently use this approach. The study recommended that History and Government teachers incorporate field trips more regularly into their instructional practices.

Sari, Sumarmi, Astina, Utomo and Ridhwan (2021) conducted a study aimed at enhancing students' motivation and critical thinking skills by incorporating inquiry mind maps. The research revealed that the implementation of the inquiry mind map tool led to notable changes in students' learning motivation and their aptitude for critical thinking. The study suggested that providing additional learning resources could further contribute to the development of critical thinking.

Sing et al. (2020) highlighted the difficulties teachers encounter in teaching HOTS in large groups noting that they often lack the knowledge and skills needed for effective instruction. Negative opinions about HOT may further contribute to the challenges faced by teachers. Teachers experience time constraints in preparing for class suggesting that the demands of the curriculum and other responsibilities may limit their ability to incorporate HOT into their teaching methods. The study highlighted that students' language skill levels pose a challenge in teaching HOT. This could imply that language proficiency may be a barrier to engaging in HOT tasks.

Wilson and Narasuman (2020) explored the challenges teachers face and the strategies they use to incorporate HOT into School-Based Assessments (SBA). The findings indicated that teachers faced difficulties in developing the evaluation tool and often relied on reference resources instead of drawing on their knowledge and experience. The study suggested that teachers should create a Test of Specification

Table (TST) before designing an assessment instrument to better align with the objectives and expectations of HOT.

On the contrary, Gul et al. (2020) said that teachers often utilize HOT domain in their instruction. The teachers' instructional methods were examined in conjunction with the revised Bloom's taxonomy to determine the extent to which they incorporate instructional practices linked with all six domains of the revised taxonomy. The study intended to explore the impact of teachers' qualifications and teaching experiences on their preferences for these instructional practices. The results revealed that teachers frequently utilize the higher order domain, while the other large domains were found to be used on average. Interestingly, academic qualification and teaching experience did not show significant correlations with these instructional practices. The study suggests that teachers invest time in designing teaching methodologies that can enhance higher-level thinking skills in students, thereby improving their learning qualifications. It advocates for teachers to adopt methodologies that encourage students to think critically, engage in discussions, seek information independently, express their opinions, incorporate diverse perspectives and connect concepts to the real world. Additionally, the study proposes that educational departments and administrations provide additional support for teachers in implementing these methodologies.

Similarly, Gul et al. (2020) emphasized that teachers appreciate the application of the revised Bloom's taxonomy for several reasons. First, it serves as a valuable tool for deepening their understanding of the learning process. By examining cognitive development, teachers can see how lower-level knowledge progresses into higher order thinking (HOT). This framework assists in prioritizing content and organizing lessons to optimize instructional time. For instance, teachers can establish foundational knowledge through memorization before advancing to higher order skills.

Naseer, Muhammad, and Masood (2020) analyzed Grade IX Pakistan Studies textbooks and found that the text-based questions primarily focused on clarification rather than HOT. The study called for textbook authors to incorporate more critical thinking exercises. Similarly, Ahmad, Khan and Ghaffar (2020) discovered that Pakistan Studies and Islamiyat textbooks emphasized moral and civic virtues but neglected performance-based character traits. They recommended enhancing learning

outcomes, providing teacher guidance, and including exercises to foster character building and critical thinking development.

In another study, Naseer et al. (2020) assessed textbooks from the Punjab Textbook Board to evaluate their alignment with high-order thinking skills. They argued for pedagogical practices that support these skills stating that quality textbooks should fulfill this role. By using qualitative data analysis, they found that the textbooks primarily featured low-order thinking questions. They recommended a blended approach that combines low-order with high order thinking questions for comprehensive cognitive development.

In line with this, Gul et al. (2020) emphasized the growing importance of efficiently communicating ideas to a broad audience via visual aids. Despite the inherent costliness of audio-visual aids, they are becoming increasingly crucial tools for educators. Visual aids not only offer educators the means to effectively communicate concepts but also present extension workers with a unique opportunity to engage with large groups of people. The use of visual aids enables students to communicate effectively with audiences fostering a more interactive and effective learning experience.

Pius, Awang, Ahmad, and Dahlan (2019) conducted research on teachers' readiness to integrate HOTS into History instruction by examining their knowledge, abilities and available teaching materials. The study highlighted that incorporating HOTS enhances teachers' own thinking abilities while fostering creativity, critical thinking and innovation. However, the research also noted that students' higher-level thinking did not reach a satisfactory level. It was suggested that a teacher's willingness to integrate HOTS significantly influences the success or failure of this integration into History topics.

Rind and Malik (2019) evaluated the quality of question papers (Mathematics, Science and English, 2005-2016) administered by BISE Sindh, Pakistan. By using the revised Bloom's taxonomy, their analysis revealed that the majority of the questions primarily evaluate students' abilities to remember and comprehend information. Additionally, the study found a frequent pattern of using the same items year after year.

Singh and Shaari (2019) explored the level of cognitive demand in reading comprehension questions designed by Iranian teachers. The findings indicated that

more than 90% of the questions aligned with the first two levels of Bloom's taxonomy. This tendency was associated with factors such as knowledge deficits, insufficient awareness, questioning skills and the experience of test developers and teachers

Umer et al. (2018) revealed that during the academic years 2003-2004 and 2005-2006, a significant majority 87 percent and 86 percent, respectively of items prepared by teachers were aligned with level 1 (knowledge) of Bloom's taxonomy. This trend indicates a prevailing inclination in school evaluation methods that emphasize students' recall of content potentially hindering the development of HOT. The findings highlighted the need for a more comprehensive approach to assessment that promotes critical thinking and advanced cognitive skills. Similarly, Kantar's study (2014) identified a deficiency in the integration of student-centered methodologies within assessment and instructional programs. The evidence presented indicated a strong focus on teaching content and evaluating student retention reflecting a reliance on traditional and behavioral curricular methods that prioritize teaching to the test. Such instructional approaches often restrict students' opportunities to engage in higher level thinking processes.

Yuliati and Lestari (2018) examined students' HOT abilities in responding to HOTS questions in higher studies. By using qualitative methods and cognitive tests, the study found that while students' thinking abilities need improvement, those with higher learning abilities perform better on HOTS questions compared to their peers.

Additionally, Ramzan et al. (2012) reported their findings that in Pakistan Studies classes, teachers typically read the content and provide answers leading to a passive learning environment. While educational technology is utilized in various subjects, the researchers noted that in comparison to science classes, Pakistan Studies classes do not seem to benefit significantly from the use of instructional technology. The suggestion was made that incorporating instructional technology in Pakistan Studies classrooms could potentially enhance students' understanding and absorption of concepts. This implies that the effective integration of educational technology might contribute to a more engaging and interactive learning experience in Pakistan Studies.

However, Iqbal (2018) investigated student interest in Pakistan Studies at the university level in Karachi using a quantitative approach and average percentage analysis. The study found that traditional lecture methods often resulted in student

disengagement, primarily due to resource constraints that restricted teachers to conventional approaches. It recommended diversifying teaching methods to enhance student engagement and make the subject more appealing.

In a study by Qureshi, Zahoor, and Zahoor (2017) on the link between assessment and student learning, the researchers found that evaluating educational achievements in any subject poses a challenging task. Despite this, a majority of researchers have yet to determine whether formative or summative assessment proves more efficient in student learning. Although, the study results indicated that students' summative assessments acted as motivators for learning.

On the other hand, Zulkpli, Mohamed and Abdullah (2017) conducted a comparative study to evaluate teachers' knowledge in teaching thinking skills, surveying 199 mathematics teachers. The analysis revealed that primary school teachers had a lower level of knowledge compared to secondary school teachers. The study revealed that there is a need for teachers to master thinking skills themselves to effectively teach them to students suggesting that mathematics teachers should continuously improve their own skills to better instruct their students.

Saido et al. (2017) investigated the scientific teaching methods used by secondary school science teachers in Iraqi Kurdistan along with the effect of gender and job experience on these methods. By using the SUSQ (Strategies Use Survey Questionnaire), the study surveyed 212 seventh-grade science teachers. Results showed that the strategy for acquiring knowledge was the most frequently employed, while the strategy for applying knowledge was the least used. The study also found that gender and experience significantly influenced the teaching methods of the participants.

Furthermore, Kausar, Kiyani, and Suleman (2017) studied the effect of classroom environment on the academic achievement of 10th-grade students in Pakistan Studies in Rawalpindi. Using an experimental design with pre-test and post-tests, the study divided students into control and experimental groups. Data were analyzed using descriptive and inferential statistics. The results showed that a well-organized and dynamic classroom environment significantly improved students' academic performance. The study recommended creating vibrant and well-managed classrooms to enhance learning outcomes in Pakistan Studies.

Ishfaq, Tahir, and Khan (2017) assessed the impact of the Pakistan Studies Textbook on fostering patriotism at secondary level. The study showed that while the Textbook emphasized values such as nationalism, tolerance, democracy, human rights, social harmony and national progress; it lacked sufficient coverage of the contributions of national heroes and did not effectively cultivate a strong sense of obligation among students.

Similarly, Muzaffar, Javaid, and Sohail (2017) examined the role of Pakistan Studies in developing political awareness among students of Multan, Faisalabad and Rawalpindi. The results revealed low political awareness; and content analysis indicated a lack of essential political knowledge in the curriculum. Additionally, Muhammad and Brett (2017) investigated the instructional practices and attitudes of Pakistan Studies teachers regarding regional, national and global identity in Punjab, Pakistan. Their findings showed that most teachers relied on traditional methods, constrained by an assessment system focused primarily on textbook content.

On the other hand, Iqbal, Haq, and Akhalq (2017) investigated the challenges and difficulties in Pakistan Studies teaching at secondary and higher levels. The study sampled teachers from both public and private schools of Islamabad and Rawalpindi. The findings revealed several challenges including students perceiving Pakistan Studies as a dull subject, overemphasis on the lecture rather than activity-based learning and discussion. The subject being considered less valuable than science subjects, classes often scheduled in later hours and the perception that any school teacher can teach Pakistan Studies without specific expertise in the subject. The study also highlighted the reliance on textbooks, the absence of activities in the Pakistan Studies textbook and a shortage of A-V aids including multimedia resources for teachers.

According to Iqbal et al. (2017), the textbooks for Pakistan Studies are often designed in a way that focuses on presenting facts without incorporating activities that could engage students in a more interactive learning experience. The non-serious attitude of students is attributed to two main factors. Firstly, the use of the lecture method which tends to be monotonous and uninteresting, contributes to the disengagement of students. Additionally, the paper pattern for Pakistan Studies primarily consists of questions and answers that influence teachers to rely on lecture-based teaching methods potentially affecting student interest and engagement.

Abosalem and Abosalem (2016) conducted a study examining a mathematics test focused on fractions for eighth and ninth-grade students. The goal was to assess how teacher-made tests align with Bloom's Taxonomy levels. The test, consisting of five sections, was analyzed using the behavior matrix. Findings revealed that a majority of test items primarily assessed the lower levels of thinking.

Umami-Risalatil (2016) assessed students' ability to create reading questions using Bloom's taxonomy to gauge their HOTS. The study found that students' question formulation was generally low indicating potential difficulties or limitations in their capacity for HOT in relation to reading materials.

Fadila (2015) conducted a qualitative case study examining the assessment tools used by teachers and their alignment with standardized assessment requirements. The study aimed to identify factors that hindered student-teachers from meeting these assessment criteria. Utilizing a descriptive approach, the research employed documentation and interviews to achieve its objectives. The findings revealed various assessment techniques for evaluating the cognitive domain, including objective-type questions, short-answer questions, and descriptive questions. Notably, 47% of student-teachers successfully met all test requirements in their assessment designs. While some fell short on specific indicators, all assessments were considered proficient indicating a capacity to create assessments in accordance with standardized testing standards.

Ghavifekr and Rosdy (2015) explored teachers' views on the effectiveness of integrating ICT to enhance teaching and learning in classrooms. A survey was conducted among teachers from government schools in Malaysia. The study highlighted that teachers are responsible for incorporating computer-based communication into traditional educational practices. The findings revealed that teachers' preparedness with ICT tools and resources was critical to the success of technology-based teaching. Additionally, professional development programs were identified as key factors for the improvement of students' learning experiences. However, the effective use of ICT in classrooms largely depends on teachers' readiness and proficiency with the technology. Teachers need to be confident in their ICT skills to successfully integrate and apply it in their instruction. A study in an Irish school showed that teachers lacking confidence often avoided using ICT. Similarly, many

teachers in Canada expressed reluctance to adopt technology due to concerns about being outpaced by students with greater ICT expertise.

Chinedu et al. (2015) advocated for the integration of HOT across all educational levels, with a focus on higher education. They emphasize that thinking skills should be embedded in the curriculum to help students solve problems independently, collaboratively and creatively. The study also underscores the need for instructors to have the knowledge and skills to foster these abilities in their students. Their research into teaching practices in design and technology education identified effective concepts such as interference, visualization and strategy for enhancing HOT. Additionally, the study highlighted the value of activities like brainstorming and collaborative learning in developing students' HOTS.

Similarly, Akbar (2015) examined the effect of cooperative learning on motivation, social skills and academic achievement in Pakistan Studies in Khyber Pakhtunkhwa. The experimental study revealed that: 1) Cooperative learning enhanced academic performance, 2) Students retained more information than with traditional methods, 3) Social skills improved, and 4) Motivation increased through collaborative activities.

Similarly, Hashmi (2014) analyzed Pakistan Studies Textbooks published by Sindh Textbook Board for grades IX and X comparing their content with federal educational objectives. By using an adapted content analysis checklist, the study found that while the textbooks largely aligned with national goals, there were significant gaps in the material including outdated statistics and inadequate subject matter.

Khan (2012) evaluated the curriculum of Pakistan Studies across secondary, higher secondary and higher levels in Khyber Pakhtunkhwa. The study found that while the curriculum effectively promotes national values and civic awareness, it lacks depth in exploring the country's philosophy. It was noted for its accurate historical content and contribution to students' social interaction and critical thinking skills, but it could better engage students in understanding and addressing social issues.

Malik and Zaheer (2012) analyzed Pakistan Studies examination papers (2007-2011) of BISE Rawalpindi using Bloom's Taxonomy to evaluate cognitive abilities. The analysis revealed that the examinations mostly tested students' knowledge and

understanding. The study recommended revising the assessment to include questions that evaluate HOTS.

Khan, (2012) stressed that teaching methods play an important role in the curriculum development as they dictate how knowledge is delivered to students. Teachers are required to carefully plan their instructional approaches including decisions on content, sequencing and strategies such as the use of audiovisual aids. Common methods employed in teaching include the inquiry method, discussion method, micro-teaching, project method, lecture demonstration and team teaching.

Ramzan et al. (2012) examined the teaching practices used in Pakistan Studies instruction at a private English-medium school in Gilgit Baltistan. Despite having access to a range of essential teaching aids including laptops, audio-visual equipment, internet and reference books, it was observed that these resources were rarely utilized by teachers. The primary reason cited for this limited use was the pressure to cover the extensive syllabus before examination leading to a predominant reliance on the lecture method for teaching Pakistan Studies. The researchers highlighted that incorporating instructional technologies in teaching practices could enhance students' interest in the subject. The use of educational technology was associated with increased creativity, critical thinking, problem-solving skills and independent thinking among students. Learning was perceived as more engaging and these technologies were seen as potential motivators for students.

In a separate study, Malik (2012) investigated the effectiveness of teaching methodologies in Pakistan Studies through qualitative research using interviews in Mianwali (Punjab) with a sample of 20 schools. Malik found that teachers predominantly relied on lecture methods, with minimal use of teaching aids like maps.

Additionally, Khan (2011), investigated prevalent assessment practices among secondary school teachers. The findings indicated that “multiple-choice” assessments rank as the most commonly employed method followed closely by “short and long answers”. This highlighted the pervasive use of multiple-choice assessments shedding light on their versatility in accommodating various cognitive levels including those associated with HOT.

Rahman et al. (2011) conducted experimental research to evaluate different teaching styles in Pakistan Studies, emphasizing that effective teaching methods are

vital for student support. The study utilized instructional methods, including lectures, discussions. Involving a sample of 62 Grade X students, the research compared the effectiveness of discussion and lecture methods, finding that the discussion method was deemed more effective.

Nasreen, Naz, and Awam (2011) did a comparison among the perspectives of students and teachers on Pakistan Studies teaching practices at the secondary level in Lahore. The findings revealed that teachers primarily adhered to the Lahore Board's exam pattern, emphasizing exam results over methods like projects, critical analysis or social surveys. The study recommended improved supervision, teacher training and feedback to enhance teaching practices.

Brookhart (2010) described a noteworthy example about items of test designed to enhance HOT. This example demonstrates that MCQs assessments could be applied to foster HOTS. Instead of merely selecting the correct answer to a question that tests basic recall such as the knowledge understanding, students are prompted to choose the part that best imitates the overarching theme or concept.

Doganay and Bal (2010) presented a perspective emphasizing the importance of developing assessment methods that not only support teachers in their roles but also effectively unveil students' capabilities. According to their perspective, it is essential to design assessment practices that contribute to the skill development of students for the utilization of a diverse array of assessment practices particularly emphasizing the importance of "performance-based assessment". In contrast, they discourage assessments that primarily involve recalling information. These could include traditional methods like observations, multiple-choice questions, and short answer questions which are frequently employed in classrooms. The underlying idea is to move beyond assessments focused solely on rote memorization and encourage evaluations that provide comprehensive understanding of students' abilities and competencies. This aligns with the broader trend in education towards fostering critical thinking and practical application of knowledge.

The literature highlights the importance of instructional practices and assessment practices that leads to the formation, development and enhancement of HOT. Textbooks play a pivotal role in the holistic and balanced development of personality that is translated by teachers at grassroot level. The knowledge taught by

teachers go around already set predetermined objectives. Assessment practices are the medium to measure students' mastery over the taught subject matter. Best use of instructional and assessment practices ultimately enhances higher order thinking skills among students.

Table No 2.2*List of reviewed articles (SLR)*

S. no	Authors & year	Title	Sample	Method	Journal	Findings
1.	Abosale & Abosale (2016)	Exploring Students' Learning Styles and Misconceptions in Fraction Division: A Study on Assessment Techniques and Higher Order Thinking Skills.	Grades VIII and IX Students.	Quantitative	Int. J. Second. Educ.	The study discovered that a majority of teacher-created exams predominantly assessed lower-level cognitive abilities.
2.	Algani, & Alhaija, (2021)	The effect of the co-operative learning method on students' academic achievement in mathematics.	130) male and female teachers and (40) students of sixth grades	Experimental	Multicultural Education, 7(3), 329-339.	The study's conclusion indicates that students achieve higher academic success in mathematics when employing the cooperative learning approach compared to the conventional learning method.
3.	Akbar, (2015)	Effect of collaborative learning approach on academic achievement, social skill development and motivation level of secondary school students in Pakistan.	Sixty-eight students of 9th class	Experimental	Doctoral Dissertation, Northern, University, Nowshera.	The study concluded that collaborative learning positively impacted academic achievement, improved information retention, enhanced social skills, and increased student motivation.
4.	Chinedu, Olabiya, & Kamin, (2015)	Strategies for improving higher order thinking skills in teaching and	Textbooks, journal articles and internet search.	Library based work	Journal of Technical Education and Training (JTET) 35 Vol. 7, No.2	The study identified that the concepts of interferences, visualization, and strategy

		learning of design and technology education.				were effective in enhancing HOT. Furthermore, the research revealed that organizing and providing opportunities for brainstorming and collaborative learning to students can also contribute to the improvement of HOT.
5.	Dahalan, Ahmad, & Seman, (2020)	Higher Order Thinking in the Content Knowledge of History Lesson in Malaysia.	200 upper secondary school students	Survey study	Historia: Journal Pendidikan dan Peneliti Sejarah, 3(2), 75-80.	The findings indicate that students' HOTS, including application, analysis, and evaluation, are at a moderate level.
6.	Fadhila, (2015)	Student Teachers 'ability in Designing Assessment Instruments at English.	19 student teachers	Qualitative case study	Teacher Education Department Uin Sunan Ampel Surabaya (Doctoral dissertation, Uin Sunan Ampel Surabaya).	Six different assessment methods were identified: multiple-choice questions, descriptive questions, short-answer questions, fill-in-the-blank, matching, and true/false questions.
7.	Guleker, (2015)	Teaching Strategies to Promote Critical Thinking: Faculty-Reported Practices in Albania.	Instructors in three private universities via google docs and 57 answers were received.	Quantitative Survey	International Journal of Teaching and Education, 3(4), 6-14.	The study highlights that faculty should deliberately incorporate critical thinking into their teaching methods, especially if it's a course objective. It also points out that, despite having effective

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| 8. | Ghavifekr, Rosdy, (2015) | Teaching and learning with technology: Effectiveness of ICT integration in schools. | 101 teachers | Quantitative | International journal of research in education and science, 1(2), 175-191. | strategies and tools, student success is not always assured. The findings indicate that teachers well-versed in ICT tools are key to effective technology-based teaching. Additionally, the study underscores the importance of professional development programs for teachers to improve students' learning experiences. |
| 9. | Gull, & Saeed. (2020) | An analysis of Pakistan Studies BISE Lahore question papers at the secondary level. Pakistan | Question papers (2015-2017) of Pakistan Studies | checklist | Journal of Educational Research and Evaluation, Volume 8, Issue 2, Pages 46-57. | MCQs mainly assessed the knowledge level, while short and long answer questions focused on knowledge and comprehension. The BISE secondary level exams lacked effective evaluation of students' skills in application, analysis, synthesis, and evaluation. |
| 10 | Hashmi, (2014) | Content analysis of the provincial Pakistan Studies textbook for class IX-X. | Text book of Pakistan studies | Qualitative research paradigm. content analysis checklist by (Marsh & White, 2006) was used for the study. | Journal of Education and Social Sciences, 2(1), 67-77. | The study highlighted several issues with the Pakistan Studies textbook, including outdated material, factual inaccuracies, misalignment with national objectives, and |

						poor-quality content and printing.
11	Hawa, Abdullah & Darussal (2018)	Teacher Readiness Implementing Higher Level Thinking Skills in Teaching.	143 samples consisting of all trained teachers teaching History subjects	Quantitative	Journal Kurikulum & Pengajaran Asia Pasifik/Asia Pacific Curriculum & Teaching Journal6(3), hlm. 22-31.	The study found a strong link between History teachers' expertise, skills, and teaching techniques and their ability to incorporate HOT in the classroom.
12	Iqbal, Haq & Akhalq, (2017)	Prospects of Teaching of Pakistan Studies: Aims, Problems, and Issues	Male and female teachers teaching Pakistan Studies.	Qualitative	The Sindh University Journal of Education-SUJE, 45(2).	The findings reveal that students perceive Pakistan Studies as a dull subject. The emphasis is placed on the lecture technique, rather than adopting an activity-based educational approach and encouraging discussions. Additionally, there is a prevailing perception among students, school management, and parents that science subjects hold more significance and value.
13	Iqbal, (2018)	The interest of the Students of Karachi University in The Teaching Methods of Pakistan Studies.	20 students from whole class.	Quantitative research design	Pakistan Journal of Educational Research, 1(2).	The study found that the conventional approach to teaching Pakistan Studies is as dull as the typical lecture-based methods employed by most educators. Limited

						resources constrain teachers from adopting alternative teaching techniques. The research also indicated that a shift in teaching methods could enhance students' interest in the subject. Consequently, the study suggests that teachers consider altering their teaching approaches.
14	Kausar, Kiyani & Suleman, (2017)	Effect of Classroom Environment on the Academic Achievement of Secondary School Students in the Subject of Pakistan Studies at Secondary Level in Rawalpindi District, Pakistan studies	Fifty students of tenth class.	Experimental	Journal of Education and Practice Volume 8, Issue 24.	The results revealed that the academic development of secondary school students is positively impacted by a well-organized and dynamic classroom environment.
15	Kipkoech, (2021)	Use of Field Trip Method in History and Government Instruction in Secondary Schools	15 schools and 300 students Purposive sampling was employed to select 25 History and Government teachers	Cross-Sectional Survey Design	East African Journal of Education Studies, 3(1), 70-76.	The research uncovered that most teachers and students refrained from utilizing the field trip approach, despite their acknowledgment that it potentially provides more benefits compared to the teacher-centered

						methods they habitually employed.
16	Malik & Zaheer, (2012)	An Examination of Pakistan Studies Exam Papers at the Secondary Level.	Pakistan Studies Examination Papers from 2007 to 2011.	Qualitative	Interdisciplinary Journal of Contemporary Research in Business, 4(5), 340-366.	The study's findings reveal that the secondary-level question paper for Pakistan Studies does not assess application, analytical, synthesis, or evaluation abilities.
17	Muhammad & Brett, (2017)	Challenges in Teaching Citizenship within an Islamic Context: Perspectives and Practices of Pakistan Studies Teachers on Teaching Identity.	27 Pakistan Studies teachers	Qualitative	Citizenship Teaching & Learning, 12(3).	As per the findings, a significant number of teachers still adhere to traditional instructional practices, hindered by an assessment system that predominantly evaluates students' comprehension of textbook content.
18	Muzaffar, Javaid & Sohail, (2017)	Role of Pakistan Studies in Promoting Political Awareness at Secondary Level in Pakistan	480 students	Quantitative	Bulletin of Education and Research, 39(3), 57-74.	The survey revealed students' low political awareness, and content analysis showed a lack of core political knowledge in the material.
19	Naseer, Muhammad & Masood, (2020)	Critical Thinking Skills in a Secondary School Pakistan Studies Textbook: A Qualitative Content Analysis.	The ninth-grade Pakistan Studies textbook published by the Punjab Textbook Board,	Qualitative	Sjesr, 3(4), 84-95.	The qualitative content analysis revealed that the ninth-grade textbook questions did not meet the criteria for critical or HOTS. Most questions were

			used in secondary-level education.			multiple-choice, fill-in-the-blanks, or matching, which promoted rote memorization rather than deeper thinking.
20	Osuji & Nkporon, (2019)	Perceived Impact of Modern Teaching Methods on Academic Performance in Public Secondary Schools: Implications for Educational Administration	630 senior secondary school students.	Descriptive survey research design.	International Journal of Innovative Education Research 7(4):13-30, ISSN: 2354-2942	The study discovered that secondary school students perform well academically when engaging with collaborative and mobile technology techniques, which are integral components of contemporary teaching methods.
21	Pius, Awang, Ahmad & Dahalan, (2019)	The Teachers' Readiness in Integrating Higher Order Thinking Skills (Hots) In Teaching and Learning History Subject.	200 secondary school students	Survey study.	The 2nd International Conference on Sustainable Development and Multi-Ethnic Society (pp. 34-40). Red white Pres.	Teacher readiness is essential for incorporating HOTS into History teaching. However, students' proficiency in HOTS remains unsatisfactory.
22	Rind & Malik, (2019)	Trends in Examinations at the Secondary and Higher Secondary Levels in Pakistan.	Examination papers from 2005 to 2016 English, Mathematics, and Sciences (i.e., Biology, Physics, Chemistry) of grades X and XII.	Desk review approach,	Social Sciences & Humanities Open, 1(1), 100002.	The study found that most exam items assess memorization and comprehension, with many being repeated verbatim each year.

23	Sari, Sumarmi, Astina, Utomo & Ridhwan, (2021)	Increasing students critical thinking skills and learning motivation using inquiry mind map.	206 students	Quasi-experimental	International Journal of Emerging Technologies in Learning (iJET).	The research found that using an inquiry mind map tool improved students' motivation and critical thinking skills.
24	Saido, Siraj, Nordin & Al-Amedy, (2017)	Teaching strategies for promoting higher order thinking skills: A case of secondary science teachers	212 7th grade science teachers.	Quantitative	MOJEM: Malaysian Online Journal of Educational Management, 3(4), 16-30.	The study findings indicated that the predominant strategy among 7th-grade science teachers is the knowledge acquisition strategy, emphasizing the memorization of basic science concepts. Conversely, the least utilized strategy is the application of knowledge, such as problem-solving and hands-on activities. Additionally, gender and experience were identified as significant factors influencing the teaching strategies employed by the study participants.
25	Siddiqui, Mughal, Soomro & Dool, (2021)	An Overview of Challenges in Teacher Training in Pakistan and Proposed Solutions.	Published studies in the field in the context of Pakistan, national education	Qualitative	IJORER: International Journal of Recent Educational Research, 2(2), 215-223.	The study found that teacher training issues in Pakistan include administrative and faculty-related problems, such as policy shortcomings,

			n policy, and other relevant literature.			inadequate teacher induction, funding shortages in training institutes, teacher demotivation, uneven deployment of experienced instructors, and infrequent instruction.
26	Wilson & Narasuman, (2020)	Investigating Teachers' Implementati on and Strategies on Higher Order Thinking Skills in School-Based Assessment Instruments.	68 teachers	descriptive quantitative research design.	Asian Journal of University Education, 16(1), 70-84.	The findings indicate that teachers encountered challenges in creating the evaluation tool. Instead of developing assessment items, teachers relied on reference resources.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter pinpointed the research methodology used in the study, which aimed to explore instructional and assessment practices in teaching of Pakistan Studies at secondary schools focusing on higher order thinking. A mixed-methods approach incorporating quantitative and qualitative methods was employed.

Research Philosophy, Approach and Methodological Choice

Research philosophy encompasses a set of beliefs about the nature of reality (ontology), knowledge (epistemology), and research methods (methodology). Leavy (2017) identifies six key paradigms: post-positivism, interpretivism/constructivism, critical theory, transformational, pragmatism, and arts-based/aesthetic intersubjectivity. Pragmatists consider Mixed Methods Research (MMR) a suitable paradigm for integrating quantitative and qualitative research (Teddlie & Tashakkori, 2009; Creswell & Plano Clark, 2011). Pragmatists argued that research should start with a practical problem that can lead to actionable solutions ensuring that its findings can be applied in the future (Cohen, Manion, & Morrison, 2007). From a methodological standpoint, pragmatism encourages the use of mixed methods that combines quantitative and qualitative approaches (Kivunja & Kuyini, 2017). Therefore, the study followed a pragmatic research philosophy and employed a mixed-methods approach based on the belief that utilizing diverse data sources foster a deeper understanding about the research problem.

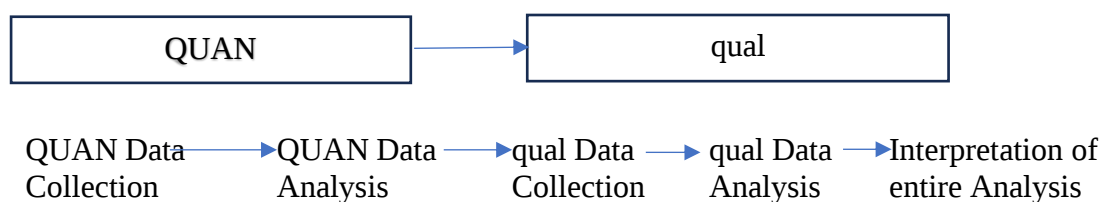
Rationale for Mixed Methods Research (MMR)

Mixed methods research (MMR) integrates both quantitative and qualitative approaches to address research questions effectively (Noble & Heale, 2019). It enhances the scope of a study by providing both depth and breadth enabling researchers to generalize findings while also exploring detailed perspectives through both closed-ended and open-ended data (Creswell, 2003). It offers complementary perspectives that deepen the understanding of a phenomenon by integrating varied viewpoints and opening new directions for future studies (Teddlie & Tashakkori, 2009). The

combination of methods compensates the limitations of each approach resulting in stronger and more accurate conclusions. It deals result validation by comparing and contrasting data from both methodologies. Finally, employing one method to inform the other allows for more nuanced conclusions (Clark, & Ivankova, 2015). The mixed methods approach was chosen due to its capacity to provide a more complete perspective on educational challenges by utilizing the strengths of quantitative and qualitative data for triangulation. Using multiple methods enhances the credibility of the findings through triangulation, where results from one method can be cross-checked and confirmed by another (Kamal, 2019).

3.2 Research Design

This research employed sequential explanatory design (Figure 3.1) containing two sequential phases of data collection. The first phase involved the collection of quantitative data through a self-developed questionnaire from teachers. The second phase involved qualitative data collection through document analysis and semi-structured interviews. According to Creswell and Plano Clark (2018), a sequential explanatory design involves initially gathering quantitative data followed by the collection of qualitative data to offer explanations or further insights into the quantitative results. This approach is based on the rationale that quantitative data provides a broad overview of the research problem, additionally qualitative analysis is necessary to refine, expand or explain this overall understanding.



Source: (Creswell & Creswell, 2017)

Figure 3.1 Sequential Explanatory Design

Sequential Explanatory Design Procedure

On the basis of visual model for mixed-methods sequential explanatory design proposed by Ivankova, Creswell and Stick (2006), the following visual model was framed for the study.

Visual Model for Mixed-Methods Sequential Explanatory Design Procedure

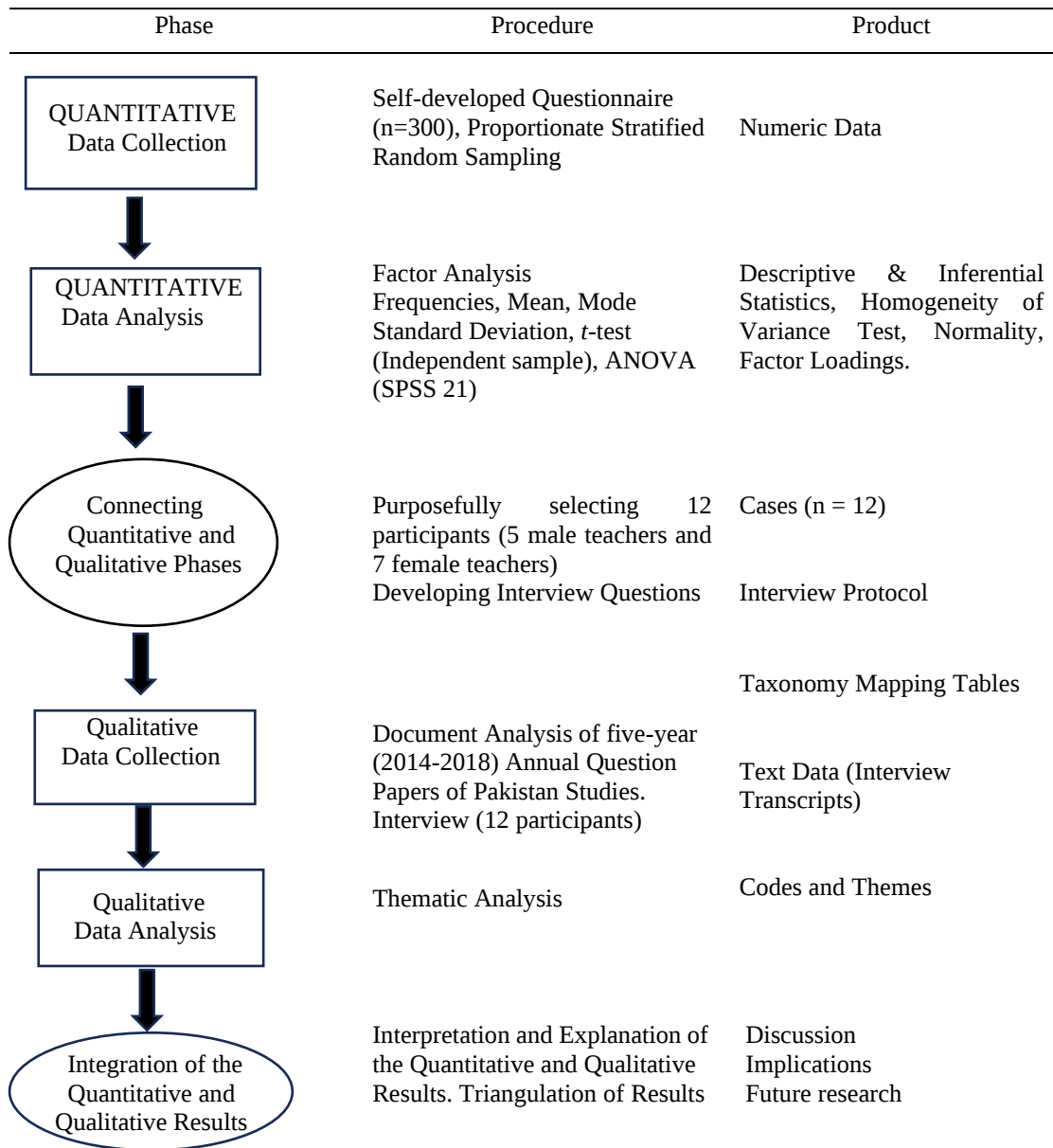


Figure 3.2 Visual Model for Mixed-Methods Sequential Explanatory Design Procedure.

Figure 3.2 shows that the study employed sequential explanatory design initiating with the collection of quantitative data using a self-developed questionnaire administered to 300 Pakistan Studies teachers selected through proportionate stratified random sampling. The factor analysis, descriptive (frequencies, percentage, mean,

mode and standard deviation) and inferential statistics (*t*-test and ANOVA) using SPSS 21 were applied. The document analysis of the Pakistan Studies annual question papers (2014 to 2018) was conducted and organized in the Taxonomy Mapping Tables (Annex S). Twelve teachers (5 male and 7 female) were purposefully selected from the sample for the interviews. Interview questions were developed and the data were coded and analyzed thematically after collection. Finally, the quantitative and qualitative results were integrated through triangulation providing a joint interpretation and explanation of the findings (Table 4.29). This integration facilitated a comprehensive discussion of the results their implications and suggestions for future research.

3.3 Population

3.3.1 Population of Interest

All male and female secondary school teachers teaching Grade 10th during the session 2019-2020 in public sector secondary schools (urban and rural) under the jurisdiction of FDE, Islamabad affiliated with the Federal Board of Intermediate and Secondary Education (FBISE) Islamabad were the population of interest of the study.

The study was divided into two phases. Phase I focused on selecting the target population for the quantitative study, while phase II involved identifying the population of qualitative participants.

3.3.1.1 Quantitative Targeted Population

All secondary school teachers teaching Pakistan Studies (Grade X) were treated as the target population. 1000 teachers (Table 3.1) averaging 5 to 7 teachers per secondary school across 140 schools were identified as those specifically teaching Pakistan Studies (M. Tariq, personal communication, May 14, 2018).

The detail is as under:

Table 3.1

Quantitative Targeted Population

Targeted Population	No.	%
Male teachers	468	46.8
Female teachers	532	53.2
Total	1000	100

Source: List provided by the Federal Directorate of Education, Islamabad.

Table 3.1 showed data on the quantitative targeted population of the study showing a total of 1000 secondary school teachers. Out of this total, 468 were male teachers accounting for 46.8% of the population while 532 were female teachers, representing 53.2% of the total. This indicates a slightly higher proportion of female teachers compared to male teachers within the targeted population. The gender distribution provides a balanced representation, allowing the study to explore instructional and assessment practices with considerations of gender differences.

All secondary level schools located in both urban and rural areas of Islamabad were included for schools' selection (Table 3.2).

Table 3.2

Total number of Secondary Schools (Education sectors wise)

Education Sectors	Gender	Secondary Schools
Islamabad (Urban)	Female	26
	Male	19
Bhara Kau (Rural)	Female	18
	Male	12
Nilore (Rural)	Female	11
	Male	11
Sihala (Rural)	Female	13
	Male	10
Tarnol (Rural)	Female	10
	Male	10
Total		140

Source: <http://fde.gov.pk/institutions.htm>

Table 3.2 presented the distribution of secondary schools across different education sectors and genders.

3.3.1.2 Qualitative Targeted Population

The population of document analysis were the annual question papers of the examination system.

All secondary school teachers (male and female) who volunteered to participate in the interviews were the target population of the qualitative phase.

3.4 Sampling Technique and Sample

The selection of samples was divided into two phases:

Phase I: Quantitative Sample Selection

Phase II: Qualitative Sample Selection

3.4.1 Phase I: Quantitative Sample Selection

The sample was selected for questionnaire administration.

3.4.1.1 Sampling Technique and Sample Size (Questionnaire)

The proportionate stratified random sampling technique was employed to determine the sample, allowing for the generalization of results to the broader population. In the initial stage, 103 public secondary schools under the Federal Directorate of Education (FDE), Islamabad, were selected (Krejcie & Morgan, 1970) (Annex P). The population of schools (130 boys' and girls' schools in urban and rural areas) was stratified based on area. Specifically, the sample included 15 urban boys' schools, 36 rural boys' schools, 19 urban girls' schools, and 33 rural girls' schools (Annex O). This stratification ensured that the selected sample reflected the area distribution of the population. Random selection was conducted within each stratum using a Random Number Generator (RNG) to ensure unbiased school selection.

Secondary school teachers were further stratified by gender. A list of 468 male and 532 female teachers was obtained from the FDE, Islamabad. A sample size of 30% of the total 1,000 teachers was targeted, resulting in a selection of 300 teachers (Neuman, 2007). The final sample included 142 male teachers and 158 female teachers, ensuring proportional representation.

Table 3.3

Calculated Sample Size of Secondary School Teachers

Respondents	Total population	Sample size calculated
Male Teachers	468	142
Female Teachers	532	158
Total	1000	300

Table 3.3 presents the calculated sample size of secondary school teachers based on the total population. Out of 1000 teachers, a sample of 300 was selected. The sample includes 142 male teachers from a population of 468 and 158 female teachers from a population of 532, ensuring proportional representation.

3.4.2 Phase II: Qualitative Sample Selection:

The sample was selected for document analysis and interview.

3.4.2.1 Sampling Technique and Sample Size (Document Analysis)

The purposive sampling is a common approach employed in document analysis studies (Flick, 2018). In the present study, purposive sampling was employed to select the annual question papers of Pakistan Studies spanning five years (2014–2018) administered by the Federal Board of Intermediate and Secondary Education, Islamabad. 90 questions (75 constructed response questions and 15 extended response questions) from the selected question papers were analyzed on the basis of cognitive level to gain in-depth knowledge about assessment practices. By analyzing consecutive years' question papers, a comprehensive picture was taken about the questions asked during the specified period of time.

3.4.2.2 Sampling Technique and Sample Size (Interview)

Qualitative research requires a sample of 11-20 respondents (Casteel & Bridier, 2021). The principle of saturation guides the sample size ensuring that additional data do not yield new information (Essah-Hienwo, 2023). In purposive sampling, participants are chosen based on specific characteristics relevant to the study (Nikolopoulou, 2022). So, purposive sampling was used to address the research objectives.

In this study, 12 Pakistan Studies teachers (5 male and 7 female) were selected by using purposive sampling technique. The teachers were selected on the basis of age (over 40); teaching experience (minimum 15 years); and academic and professional qualification (M.A./M.Phil. /PhD degree).

Table 3.4*Demographic Information (Interviewee)*

Participant Code	Gender	Age (Years)	Teaching Experience (Years)	Academic/Professional Qualification
F1	Female	54	30	Doctorate in Education
F2	Female	45	19	M.Phil. in International Relations
F3	Female	53	24	Master in Pakistan Studies
F4	Female	40	20	M.Phil. in Education
F5	Female	46	18	Master in History
F6	Female	45	18	Master in Pakistan Studies
F7	Female	55	27	Master in History
M1	Male	50	20	Ph.D. scholar in Education
M2	Male	50	20	M.Phil. in Pakistan Studies
M3	Male	45	18	Master in History
M4	Male	40	15	M.Phil. in Education
M5	Male	45	18	M.Phil. (History)

Table 3.4 presents the demographic information of teachers who participated in the study, including both male and female teachers with diverse characteristics. Female participants (F1 to F7) and male participants (M1 to M5) range in age from 40 to 55 years. Their teaching experience varies between 15 and 30 years. Their academic and professional qualifications range from a Master's degree to Doctor of Philosophy (PhD).

3.5 Research Instruments

The study used three research instruments: questionnaire, document analysis and interview.

3.5.1 Questionnaire

Development of Questionnaire

The study objective was to examine the instructional and assessment practices related to HOT. After an extensive review of related available literature, the questionnaire was developed in two parts: part 1 dealt with objectives of the curriculum

of Pakistan Studies in developing higher order thinking on five-point Likert scale (strongly agree, agree, neutral, disagree and strongly disagree); and part 2 was about instructional practices used for promoting higher order thinking on five-point Likert scale (always, often, sometime, seldom and never). The self-developed questionnaire was aligned with the study's objectives and designed with concise and straightforward sentences to encourage collaboration and full participation of all teachers.

The questionnaire comprised of demographic information of teachers regarding area, gender and job experience; objective of the curriculum of Pakistan Studies in developing HOT of students (4 items); and 49 items regarding three constructs of HOT (acquiring knowledge, 15 items; applying knowledge, 11 items; and reflection on knowledge, 23 items). A cover letter of questionnaire (Annex A) preceded the questionnaire, explaining the research's purpose and ensuring respondent confidentiality. The questionnaire was developed in English (Annex B) and then translated into Urdu (Annex C). The final version was designed in both English and Urdu languages (Annex D) to accommodate the bilingual instruction of the subject of Pakistan Studies.

3.5.2 Document Analysis

Document analysis was conducted within the framework of Anderson's taxonomy. The annual Pakistan Studies question papers from 2014 to 2018 (Annex F) were analyzed. A total of 90 questions were sampled, comprising 75 constructed response questions and 15 extended response questions. The alignment of these questions was examined with the cognitive complexity levels outlined in the revised Bloom's taxonomy.

3.5.3 Interview

Development of Interview Protocol

The interview is a data collection interaction where one individual, known as the interviewer, poses inquiries to another individual referred to as the respondent. These interviews can occur either in person or over the telephone (Babbie, 2020). In research endeavors interviews are commonly integrated with various data collection methods to furnish the researcher with a comprehensive dataset for analysis (Turner & Hagstrom, 2022). The researcher developed an interview guide (Annex K) about teachers demographic information; interview protocol matrix (Annex I) to sought

teachers responses regarding instructional practices to teach Pakistan Studies with focus on higher order thinking, suggestions regarding assessment practices to foster higher order thinking and challenges that teachers face during instruction and assessment to develop higher order thinking and interview questions (Annex L) regarding development of higher order thinking in students, satisfaction about the prevailing instructional practices, receive any training for teaching Pakistan Studies subject, suggestions about other instructional practices to be apply in teaching Pakistan Studies to develop higher order thinking, issues regarding implementation of instructional practices in the perspective of higher order thinking and suggestion to improve the annual question papers of Pakistan Studies.

3.6 Verification of Research Instruments

3.6.1 Validity of Questionnaire and Interview Protocol

Content validity: The questionnaire and interview protocol underwent a thorough evaluation by a panel of professionals to ensure content validity. Experts (Annex E) reviewed both instruments, assessing their clarity, relevance, and alignment with the study's objectives. Based on expert feedback, necessary refinements were made, including revisions to wording, formatting and arrangement for better suitability.

For the questionnaire, initial statements were examined, leading to modifications such as the removal of items related to the use of a chalkboard or tape recorder. Originally comprising 60 items, the questionnaire was revised under the supervisor's guidance, resulting in a final version with 53 items.

Similarly, the interview questions were validated through expert judgment. The experts provided feedback on question clarity, structure, and appropriateness for capturing teachers' perspectives on instructional and assessment practices. Adjustments were made to refine the wording and ensure the questions effectively elicited relevant responses. The final interview guide was structured to align with the study's objectives while maintaining comprehensibility and coherence.

Face validity: The face validity of both the questionnaire and interview protocol was assessed by experts. Each expert received both the English and Urdu versions of the questionnaire and interview protocol. The experts evaluated several factors, including

the clarity of language, relevance of questions, structure and the estimated time required for completion.

For the questionnaire, the experts' feedback led to several modifications (Table 3.5). Items were rephrased, excluded and added to ensure the questionnaire's alignment with the research objectives. After these revisions, the total number of questionnaire items was reduced from 60 to 53 (Table 3.6).

For the interview protocol, experts assessed the clarity and appropriateness of questions in capturing teachers' perspectives on instructional and assessment practices related to higher-order thinking (HOT). Based on expert recommendations, adjustments were made to improve the wording and sequence of questions to enhance clarity and coherence. Some redundant or ambiguous questions were rephrased or removed, ensuring that the final set of interview questions effectively elicited relevant and meaningful responses.

In response to the feedback of experts, the following modifications were made in the questionnaire.

Table 3.5

Changes in Questionnaire Items

Scale	Total Items	Rephrased Item No.	Item Excluded	Items Added	Total Items
Curriculum objectives	6 (1-6)	1,3	3	1	4
Acquiring knowledge (practices + methods)	16 (7-13 and 23-31)	8,9	1	Nil	15
Applying Knowledge (practices + methods)	12 (14-17 and 32-39)	15,16,39	2	1	11
Reflection on Knowledge (practices + methods)	26 (18-22 and 40-60)	18,20,54,55	3	Nil	23
Total	60	11	9	2	53

Table 3.5 presents the changes made to the questionnaire items across different scales. For the curriculum objectives scale, the total number of items remained 6, with items 1 and 3 being rephrased, and 3 items excluded, while 1 new item was added, resulting in a retention of 4 items. In the acquiring knowledge scale, the total items were reduced from 16 to 15, as items 6 and 8 were rephrased, and 1 item was excluded, with no new items added, retaining a total of 15 items. For applying knowledge, the total items decreased from 12 to 11, with items 15, 16, and 39 being rephrased, 2 items excluded, and one new item added, retaining a total of 11 items. In the reflection on the knowledge scale, the total items remained at 26, with items 18, 20, 54, and 55 being rephrased, and 3 items excluded, resulting in no new items added and retaining 23 items. Overall, these adjustments led to a total of 53 items being retained across the questionnaire. Hence; the total items of questionnaire were reduced from 60 to 53.

Table 3.6

Detail of Questionnaire Items

Variables	Associated Items	Total Items
Objectives of curriculum	Items 1,2,3,4	04
Acquiring knowledge	Items 5, 6,7, 8, 9, 10, 17, 18, 19, 20, 21, 22, 23, 24, 25	15
Applying knowledge	Items 11, 12, 13, 6,27,28,29,30,31,32,33	11
Reflection on knowledge	Items 14, 15, 16, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45,46,47, 48, 49, 50, 51, 52, 53	23 53

Table 3.6 shows the questionnaire evaluated four main variables: curriculum objectives, acquiring, applying and reflection on knowledge. It included a total of 53 representative items across these variables: 4 for curriculum objectives, 15 for acquiring knowledge, 11 for applying knowledge, and 23 for reflection on knowledge. This thorough assessment provided a detailed exploration of curriculum objectives and the processes of knowledge acquisition, application and reflection.

Construct Validity: Exploratory factor analysis (EFA) was utilized to measure the construct validity of questionnaire items related to three constructs i.e. acquiring, applying and reflection on knowledge of HOT.

Factor Analysis (FA): Factor analysis is particularly useful for reducing a large number of related variables into a more manageable set before conducting further analyses. It also plays a crucial role in refining questionnaires by identifying and removing irrelevant items that do not contribute to a clear understanding of the measured constructs (Cattell, 1966). In this study, factor analysis was applied to identify the underlying factors in the questionnaire measuring instructional and assessment practices in the perspective of higher order thinking. The suitability of the data for factor analysis was assessed using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. In the first phase, pilot study was conducted aiming to refine the research instruments. This involved the modification, deletion or addition of items to better align with the study's context. Participants in the pilot study were presented with items across various domains, including curriculum objectives (6 items), acquiring knowledge (16 items), pilot items for applying knowledge (12 items) and reflection on knowledge (26 items). Following participant responses, the researcher employed factor analysis to identify and eliminate items exhibiting poor variability, while retaining those that loaded onto substantive factors. Any items remaining in the pilot instrument underwent clarification and scrutiny to ensure appropriate item selection. Factor analysis was applied to confirm the factorial validity of the questionnaire.

Exploratory Factor Analysis (EFA): Chan and Idris (2017) asserted that the primary goal of EFA is to categorize and organize survey questions into constructs under specific factors. EFA was used to measure the construct validity of questionnaire items related to acquiring, applying and reflection on knowledge of HOT. Exploratory Factor analysis using the Principal Component Analysis with varimax rotation is used to analyze factor structure and correlation between items.

The Assumptions of EFA

Sampling Adequacy: In the present study before factor analysis, the satisfaction of assumptions for conducting factor analysis was applied using the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity (Table 3.7). If KMO score exceeds 0.6 and Bartlett's test is significant then it is generally accepted as an indication of factorability (Coakes & Ong, 2011). In the present study the KMO measure yielded a value of .832 indicating a high level of sampling adequacy.

Table:3.7*KMO and Bartlett's Test*

Item	Value
KMO	.832
Bartlett's Test of Sphericity Approx. Chi-Square	878.90
df	66
sig.	.000

Table 3.7 presented the results of the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity for the data set. The KMO value of .832 indicates a high level of sampling adequacy, suggesting that the data is well-suited for factor analysis, as it exceeds the commonly accepted threshold of 0.6. Additionally, Bartlett's Test of Sphericity produced a significant result, with an approximate chi-square value of 878.90, 66 degrees of freedom and a p-value of 0.000. This significance indicates that the correlation matrix is not an identity matrix, confirming the presence of meaningful relationships among variables. Taken together, the high KMO value and the significant result from Bartlett's Test of Sphericity provide strong support for the factorability of the data matrix.

Factorability: Bartlett's Test of Sphericity was conducted to assess the factorability of the correlation matrix. The test yielded a significant result ($\chi^2 = 878.90$, $df = 66$, $p < .001$), indicating that correlations among variables were sufficiently strong for factor analysis. In this study, the questionnaire initially consisted of 16 close-ended items related to instructional practices. Exploratory Factor Analysis (EFA) was applied to these 16 items, resulting in three factors with 12 retained items. The rotated component matrix revealed that 12 of the 16 items were pure variables, while the remaining four were complex variables. This outcome suggests that the questionnaire effectively identified three distinct factors.

Initial Factor Extraction: Initially, the researcher did not obtain the desired results, as some items loaded onto unintended factors. Factors were retained based on the eigenvalue > 1 rule, the scree test, Bartlett's chi-square test, partial correlation and variance extracted. A factor is considered interpretable when its associated items exhibit

similarity and logically align with the theoretical framework, serving as cohesive indicators of a unified construct (DeVellis & Thorpe, 2021). In this study, an initial loading threshold of .42 was set. As a result, three factors with 12 retained items were included, while the remaining items were excluded due to having component values below .42.

These items were gradually removed: ACQ1 (I aim to enhance students' interest in the subject), APP4 (I conduct group presentations), REFK3 (I ask questions as students work to gauge their understanding) REF5 (I guide students to conduct research and develop a visual representation) leading to the following final result.

Table 3.8

Rotated Component Matrix of the Items (Instructional Practices)

Item No	Component/Factors			Dimensions
	1	2	3	
1	.80			ACQ
2	.73			
3	.67			
4	.50			
5	.51			
6	.42			
7		.72		APPK
8		.74		
9		.66		
10			.78	REFK
11			.80	
12			.58	

Note. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

Table 3.8 indicates that there are three factors extracted. Factor 1; labeled as acquiring knowledge, included items # 1, 2, 3, 4, 5 and 6. Loadings on this factor ranged from .42 to .80. Factor 2; labeled as applying knowledge included items # 7, 8 and 9. Loadings on this factor ranged from .66 to .74. Factor 3; labeled as reflection on Knowledge, included items # 10, 11 and 12. Loadings on this factor ranged from .58 to

.80. Loadings below .42 were not considered. In summary, the factor loadings provide insight into the relative importance of each questionnaire item in contributing to the identified factors.

Correlation Matrix: The correlation matrix was reviewed before conducting EFA to confirm inter-variable correlations. The total variance explained showed that the first three components accounted for 54.69% of the variance, indicating a significant contribution of the extracted factors.

Table 3.9

The percentage of Variance of New Factors (Extraction Method Principal Component Analysis)

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.019	33.491	33.491	4.019	33.491	33.491	2.514	20.952	20.952
2	1.395	11.622	45.112	1.395	11.622	45.112	2.337	19.477	40.430
3	1.150	9.584	54.697	1.150	9.584	54.697	1.712	14.267	54.697
4	.868	7.235	61.931						
5	.770	6.418	68.349						
6	.743	6.193	74.542						
7	.645	5.375	79.917						
8	.588	4.902	84.819						
9	.530	4.413	89.231						
10	.497	4.142	93.374						
11	.418	3.486	96.860						
12	.377	3.140	100.000						

Table 3.9 presents the results of the Total Variance Explained through Principal Component Analysis for the factors derived from the Exploratory Factor Analysis. The 'Initial Eigenvalues' represent the eigenvalues of each component, indicating the amount of variance explained by each factor. The first factor has an eigenvalue of 4.019, explaining 33.49% of the variance. As we progress through subsequent factors, the eigenvalues decrease reflecting a diminishing contribution to the overall variance. The "Extraction Sums of Squared Loadings" show the total variance explained by each factor after extraction. The first factor accounts for 33.49% of the total variance and as we consider more factors, the cumulative percentage increases. The second factor contributes an additional 11.62%, resulting in a cumulative variance of 45.11%. The pattern continues for subsequent factors, with the third factor explaining 9.58%, bringing the cumulative variance to 54.69%. The "Rotation Sums of Squared Loadings"

indicate the variance explained by each factor after rotation. Rotation helps simplify the interpretation of factors. The first factor, after rotation, explains 20.95% of the variance, the second factor contributes 19.47%, and the third factor adds 14.26%. Collectively, these factors account for 54.69% of the total variance. In summary, the results suggest that the three factors derived from the Exploratory Factor Analysis explain a significant proportion of the variance in the data providing a structured and meaningful representation of the underlying patterns in the survey questions related to (HOT).

Inter-item correlation: The inter-item correlation among the 12 items was calculated using the correlation coefficient to assess their relationship. High inter-item correlations suggest that the items effectively measure the same underlying construct, while low correlations indicate relative independence between items (DeVellis, 2016).

Table 3.10

Correlation Matrix of Instructional Practices (12 items)

Variables		ACQ1	ACQ2	ACQ3	ACQ4	ACQ5	ACQ6	APP1	APP2	APP3	REF1	REF2	REF3
ACQ1	Pearson Correlation	1											
	Sig. (2-tailed)												
ACQ2	Pearson Correlation	.511**	1										
	Sig. (2-tailed)	.000											
ACQ3	Pearson Correlation	.367**	.389**	1									
	Sig. (2-tailed)	.000	.000										
ACQ4	Pearson Correlation	.349**	.308**	.368**	1								
	Sig. (2-tailed)	.000	.000	.000									
ACQ5	Pearson Correlation	.297**	.432**	.331**	.282**	1							
	Sig. (2-tailed)	.000	.000	.000	.000								
ACQ6	Pearson Correlation	.316**	.431**	.332**	.414**	.368**	1						
	Sig. (2-tailed)	.000	.000	.000	.000	.000							
APP1	Pearson Correlation	.176**	.310**	.322**	.420**	.465**	.459**	1					
	Sig. (2-tailed)	.002	.000	.000	.000	.000	.000						
APP2	Pearson Correlation	.138*	.273**	.136*	.238**	.316**	.353**	.373**	1				
	Sig. (2-tailed)	.017	.000	.019	.000	.000	.000	.000					
APP3	Pearson Correlation	.235**	.211**	.281**	.335**	.411**	.341**	.332**	.397**	1			
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000				
REF1	Pearson Correlation	.075	.039	.131*	.128*	-.004	.113	.109	.186**	.112	1		
	Sig. (2-tailed)	.195	.502	.023	.027	.950	.051	.060	.001	.052			
REF2	Pearson Correlation	.297**	.163**	.227**	.263**	.173**	.216**	.164**	.185**	.231**	.402**	1	
	Sig. (2-tailed)	.000	.005	.000	.000	.003	.000	.004	.001	.000	.000		
REF3	Pearson Correlation	.183**	.179**	.091	.241**	.163**	.246**	.134*	.226**	.220**	.205**	.326**	1
	Sig. (2-tailed)	.001	.002	.117	.000	.005	.000	.021	.000	.000	.000	.000	

**/* Correlation is significant at 0.01 and 0.05 level (2-tailed).

ACQ1=Exchange of concepts, ACQ2=Inferential activities, ACQ3=Encouraging question creation, ACQ4 =Pre-assessment, ACQ5= Opportunities to identify learning problems, ACQ6=Observations in group, APP1=Observe individual activities, APP2 =Facilitating conducting activities, APP3= Encourage alternative way of thinking, REF1 =Review homework copies, REF2= Open-ended questions, REF3=Cooperative learning.

Table 3.10 presents a correlation matrix exploring the relationships among various instructional practices employed by teachers. The practices include encouraging students to exchange concepts, engaging in inferential activities, promoting question creation, conducting pre-assessments, providing opportunities for problem identification, observing individual activities, facilitating in conducting activities, promoting alternative thinking, reviewing homework, assessing knowledge through open-ended questions and applying a cooperative learning approach. Pearson correlation coefficients revealed significant relationships between several instructional practices. There is a strong positive correlation between encouraging students to exchange concepts and engaging them in inferential activities ($r = 0.511, p < 0.001$). A moderately positive correlation exists between encouraging students to create their questions and conducting pre-assessments to gauge prior knowledge ($r = 0.367, p < 0.001$). There is a moderately positive correlation between conducting pre-assessments and providing opportunities for students to identify important learning problems ($r = 0.349, p < 0.001$). There is a moderate positive correlation between observing students in group activities ($r = 0.316, p < 0.001$) and individual activities ($r = 0.176, p = 0.002$). There is a weak positive correlation between facilitating students in exercises and encouraging alternative ways of thinking ($r = 0.138, p = 0.017$). There is a moderately positive correlation between reviewing homework and assessing students' knowledge through open-ended questions ($r = 0.297, p < 0.001$). The preference for applying a cooperative learning approach shows weak to moderate positive correlations with various instructional practices including encouraging alternative thinking, facilitating exercises and assessing knowledge through open-ended questions ($p < 0.05$). The significant correlations indicate potential associations between certain instructional practices. Educators may consider these findings when designing instructional approaches, emphasizing cooperative learning and integrating activities that promote concept exchange, question creation and problem identification.

Inter-scale correlations: Inter-scale correlations among constructs were examined, revealing significant correlations between "Applying Knowledge" and "Acquiring Knowledge" ($r = .589, p < .01$), as well as between "Reflection on Knowledge" and "Applying Knowledge" ($r = .324, p < .01$), and "Reflection on Knowledge" and "Acquiring Knowledge" ($r = .310, p < .01$).

Table 3.11*Inter-Scale Correlations*

	Acquiring Knowledge	Applying Knowledge	Reflection on knowledge
Acquiring Knowledge	1		
Applying Knowledge	.589**	1	
Reflection on knowledge	.324**	.310**	1

** Correlation is significant at 0.01 level (2-tailed).

Table 3.11 shows inter-scale correlations among three key dimensions: Acquiring Knowledge, Applying Knowledge and Reflection on Knowledge. Each correlation coefficient represents the strength and direction of the relationship between the respective scales. The correlation between Acquiring Knowledge and Applying Knowledge is significant at a high level ($r = 0.589$, $p < 0.01$, two-tailed), indicating a positive and moderately strong association between these two dimensions. This suggests that teachers who excel in instructional practices related to acquiring knowledge also tend to perform well in applying that knowledge. Similarly, the correlation between Acquiring Knowledge and Reflection on Knowledge is also significant ($r = 0.32$, $p < 0.01$, two-tailed). Although this correlation is weaker compared to the first, it still implies a positive relationship, suggesting that teachers who emphasize acquiring knowledge in their instructional practices may also engage in reflective practices. Furthermore, Applying Knowledge and Reflection on Knowledge exhibit a moderate and significant correlation ($r = 0.31$, $p < 0.01$, two-tailed). This implies that teachers who effectively apply knowledge in their teaching practices are also likely to engage in reflective practices. In summary, the inter-scale correlations indicate significant positive relationships among Acquiring Knowledge, Applying Knowledge and Reflection on Knowledge. These findings suggest a degree of coherence in teachers' instructional practices across these dimensions, highlighting the interconnected nature of effective instructional practices.

Normality of data: To evaluate the normality assumption, skewness and kurtosis statistics were computed for each variable. The skewness and kurtosis statistics for each

construct indicated acceptable levels of normality, with skewness ranging from -.80 to -.54 and kurtosis ranging from .03 to .21.

Table 3.12

Normality of Data

S. No.	Constructs	Skewness	Kurtosis
1.	Acquiring Knowledge	-.687	.044
2.	Applying Knowledge	-.805	.217
3.	Reflection on Knowledge	-.545	.032

Table 3.12 shows skewness and kurtosis for three constructs: Acquiring knowledge; Applying knowledge and Reflection on knowledge, assessing the normality of data distribution. Skewness measures distribution asymmetry and kurtosis indicates peakness or flatness. Acquiring Knowledge shows a skewness of -.687, implying a slight leftward skewness, suggesting a tendency for higher scores. Applying Knowledge exhibits a skewness of -.805, indicating a mild leftward skewness, suggesting a concentration of scores toward higher values. Reflection on Knowledge has a skewness of -.545, indicating a mild leftward skewness with a focus on higher scores. In terms of kurtosis, all three constructs have positive values near zero. Acquiring Knowledge (.044), Applying Knowledge (.217), and Reflection on Knowledge (.032) suggests a relatively normal distribution with moderate peakness. To summarize slight leftward skewness is noted for all constructs, with moderate peakness in their distributions. Overall, data for Acquiring Knowledge, Applying Knowledge, and Reflection on Knowledge approximate a normal distribution with a slight concentration of scores toward higher values.

Scree plots: The scatterplots were examined to visually assess the relationships among variables. The scatterplots exhibited clear linear patterns indicating a strong linear relationship between the variables. This observation supports the assumption of linearity required for factor analysis. Cattell's criterion calls for retaining those factors that lie above the elbow of the plot.

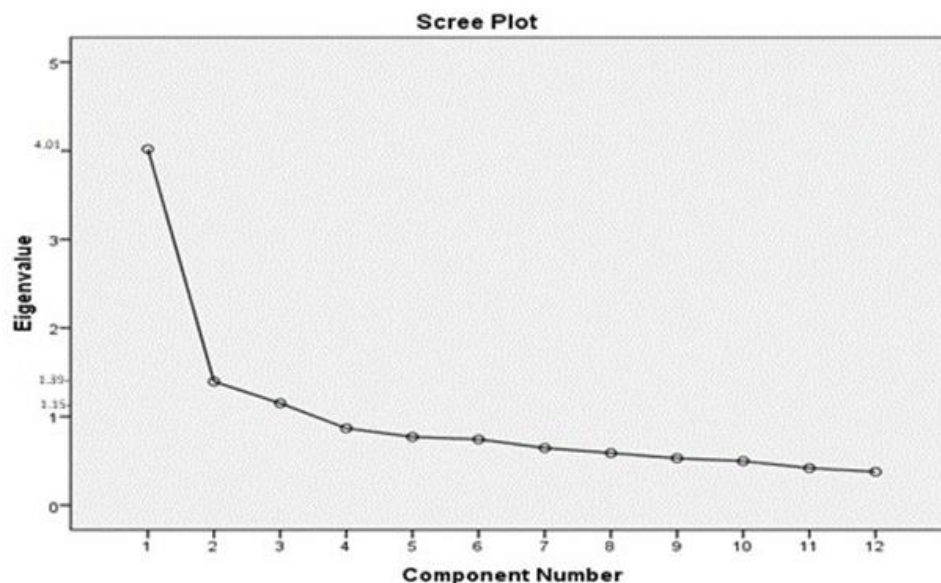


Figure 3.3 Cattell's Criterion Scree Plot with a distinct elbow (SPSS Output)

Figure 3.3 illustrated Scree Plot, a graphical representation depicting factors and their corresponding eigenvalues. The x-axis represents the factors or components, while the y-axis represents the eigenvalues. This visual representation aids in discerning the point at which the eigenvalues start to level off, helping to identify the optimal number of factors to retain in the analysis (Beavers et al., 2013). In the context of the study, three new components were successfully derived through factor analysis. These components were specifically developed to assess students' higher order thinking. The application of factor analysis, as illustrated by the Scree Plot, facilitated the effective identification and extraction of these components, thereby enhancing the study's capacity to investigate and measure distinct aspects of higher order thinking in students.

Factor Analysis Results: The Kaiser-Meyer-Olkin (KMO) test and Bartlett's test confirmed the adequacy of sampling and sphericity assumption based on the respondents' sample size. Additionally, the calculated Cronbach's alpha fell within the recommended limits (Taber, 2018). Furthermore, Table 3.9 displays the rotated component matrix of the measurement variables, namely acquiring knowledge, applying knowledge and reflection on knowledge. The findings reveal that the factor loadings for these variables exceed 0.4 indicating a strong starting point for the study. These results demonstrate a robust relationship among all variables within their respective factors. Overall, these findings support the satisfaction of assumptions for

conducting factor analysis, including sampling adequacy, factorability of the correlation matrix, normality of data and linear relationships among variables.

3.7 Pilot Testing

Pilot study has the critical role in the assessment of the effectiveness of research instruments (Malmqvist, Hellberg, Mollas, Rose, & Shevlin, 2019). The pilot study sample size should be set at approximately 3% of the total population (Connelly, 2008).

A mixed-method approach was employed for the pilot testing which was divided into two phases for thorough evaluation. The first phase concentrated on quantitative testing while the second phase explored qualitative aspects. This structure allowed quantitative data collection to evaluate the effectiveness of questionnaire alongside qualitative insight into participants' perceptions and experiences.

Phase 1: Pilot Testing of Questionnaire

Initially, 10 schools were randomly selected. The selection was based on feasibility with a focus on the availability of schools and teachers who could participate in the pilot study. 4 boys' schools and 6 girls' schools were included in the pilot study. After obtaining permission from the Federal Directorate of Education (FDE) (Annex M), the researcher personally visited these schools. The pilot study sample consisted of secondary school teachers who taught Pakistan Studies to Grade X students. Based on the recommendation for a pre-testing sample size of 30 teachers (Perneger, Courvoisier, Huddleston, & Gayet-Ageron, 2015), a total of 30 teachers (12 male and 18 female) were selected to assess the clarity, reliability and effectiveness of the research instruments before full-scale data collection. The questionnaire was piloted with these teachers.

Table 3.13

Sample for the Verification of Questionnaire (pilot study)

Variables	Population	Pilot testing sample		
		Total	Gender	
Schools	140	10	4 (Boys)	6 (Girls)
Teachers	1000	30	12 (Male)	18 (Female)

Table 3.13 presents the sample selected for pilot testing. A total of 10 schools were included, comprising 4 boys' schools and 6 girls' schools. Additionally, 30 teachers participated in the pilot study, including 12 male and 18 female teachers.

Table 3.14

Response Rate for the Verification of Questionnaire (pilot study)

Categories	Research Questionnaire						Response Rate
	Sample		Sent		Returned	Discard	Used
Teachers	M	F	M	F			
	12	18	12	18	30	0	30
							100%

Table 3.14 presents the response rate for the verification of the questionnaire during the pilot study. All 30 selected teachers (12 male and 18 female) returned the questionnaire, with no discarded responses resulting in a 100% usable response rate. This indicates strong participant engagement and a high response rate for the research instrument.

Data collection was conducted using a self-developed questionnaire. The researcher personally visited selected secondary schools of Islamabad, under the jurisdiction of FDE Islamabad.

During these visits, the researcher administered a self-developed questionnaire having 53 items organized into four aspects: curriculum objective, acquiring, applying and reflection on knowledge. The researcher was present in the schools while participants completed the survey providing immediate assistance and guidance if any difficulties or problems arose during the process. By being present on-site, the researcher could promptly address any issue that emerged, ensuring a smooth and efficient data collection process. During the pilot study, it became evident that participants typically required around 25-30 minutes to complete the questionnaire. Thus, for the main study, a maximum completion time of 30 minutes was deemed satisfactory to ensure a high response rate among the teachers involved.

Phase II: Pilot Testing of Interview

The researcher purposefully selected two teachers from two secondary schools under FDE, Islamabad and conducted semi-structured interview with two subject specialists (1 male and 1 female among 30 teachers) to assess the interview protocol.

The valuable comments provided by experts in the preliminary guide were incorporated into the final instrument.

Table 3.15

Sample for the Verification of Interview (pilot study)

Interviewees	Gender		Total
	Male	Female	
Teachers	1	1	2

Table 3.15 displayed the sample size for the pilot study of interview conducted with teachers, categorized by gender. It shows that there was 1 male teacher and 1 female teacher included in the sample resulting in a total of 2 teachers.

Table 3.16

Response Rate for the Verification of Interview (pilot study)

Designation	Interviews						Response rate	
	Sample size		Interviewed		Answered	Not answered	Used	
	M	F	M	F				
Teachers	1	1	1	1	6	0	6	100%
Total	1	1	1	1	6	0	6	100%

Table 3.16 provides a comprehensive depiction of the robust participation observed among participants, comprising both male and female teachers from secondary level schools. Additionally, it highlights the notable rate of return responses obtained during the interviews, underscoring the active engagement and cooperation of the participants in the study.

The researcher conducted interviews with two subject specialists as part of piloting a semi-structured interview. Changes were made based on the feedback received and the interviews were not recorded but notes were taken. Pilot testing allowed for data reproduction from individual interviews. The pilot study confirmed the feasibility of the interview process and necessary adjustments were made. The pilot participants were not included in the final study. Permission was obtained from

interviewees (Annex J) before administering the interviews and their responses were noted promptly.

Reliability of Research Instruments

Reliability of Questionnaire

The reliability of the questionnaire was assessed using SPSS version 21. To measure this, the coefficient of internal consistency (Cronbach's alpha) was calculated, yielding a value of .92. This high Cronbach's alpha indicates strong consistency among the questionnaire items affirming its reliability for conducting the research.

Table 3.17

Reliability Statistics

Constructs	No of Items	Cronbach alpha
Objectives of Curriculum	04	.67
Acquiring knowledge	15	.71
Applying knowledge	11	.74
Reflection on knowledge	23	.88
Overall Reliability	53	.92

Table 3.17 showed that the reliability of the questionnaire was assessed using Cronbach's alpha. For the construct of Objectives of the Curriculum, which included four items, the Cronbach's alpha was $\alpha = .67$, indicating moderate internal consistency. The construct of Acquiring Knowledge, consisting of 15 items, had an alpha of $\alpha = .71$, reflecting acceptable reliability. The Applying Knowledge construct, made up of 11 items, demonstrated good internal consistency with an alpha of $\alpha = .74$. The Reflection on Knowledge construct, comprising 23 items, showed high internal consistency with an alpha of $\alpha = .88$. The overall reliability for all 53 items was $\alpha = .92$, suggesting excellent internal consistency for the questionnaire.

Reliability of Interview

The interview protocol was developed and refined using the Interview Protocol Refinement (IPR) Framework introduced by Castillo-Montoya (2016). This systematic approach ensured that the interview questions were well-structured, aligned with the research objectives and capable of eliciting relevant and meaningful responses from participants. This framework assists qualitative researchers in improving the reliability

of their interview protocols, leading to improved quality of data gathered during interviews (Shoozan & Mohamad, 2024). This framework outlines four steps: (1) ensuring that interview questions align with research questions, (2) constructing an inquiry-based conversation, (3) obtaining feedback on the interview protocol, and (4) piloting the interview protocol. The four phases of the IPR Framework were used to formulate a semi-structured interview questions for gathering data through open-ended questions before data collection:

Phase 1: Ensuring interview questions are aligned with research questions

The researcher creates an interview protocol matrix to align interview questions with research questions.

Phase 2: Constructing an inquiry-based conversation

The researcher focused on designing questions that encouraged meaningful discussions in the interview protocol. Efforts were made to create a conversational and engaging atmosphere while ensuring key topics were addressed clearly and concisely. To validate the protocol, leading questions were refined through collaborative discussions with the supervisor in preparation for the pilot interview. Each question was carefully examined for clarity and ease of understanding, avoiding technical jargon and using straightforward language.

Phase 3: Receiving feedback on the interview

The researcher actively sought feedback to enhance the interview's effectiveness. Input was gathered through close reading, think-aloud activities and a thorough internal review by supervisors. This process led to refinements in the interview guide. Additionally, external reviewers evaluated the protocol to assess the validity of the questions. Their insights contributed to improving the language and sequencing of the questions for better clarity and coherence.

Phase 4: Piloting the interview

During the pilot study, the researcher gathered feedback from subject specialists and integrated their constructive comments into the preliminary interview guide. Conducting actual interviews under real conditions allowed for an assessment of the interview protocol's effectiveness before the full-scale study. This pilot test not only

refined the interview instruments but also provided valuable insights into participants' experiences related to the research topic (Shoozan & Mohamad, 2024).

3.8 Data Collection

The study employed a Sequential Explanatory design, combining both quantitative and qualitative data collection methods. These methods included a questionnaire, document analysis and interviews.

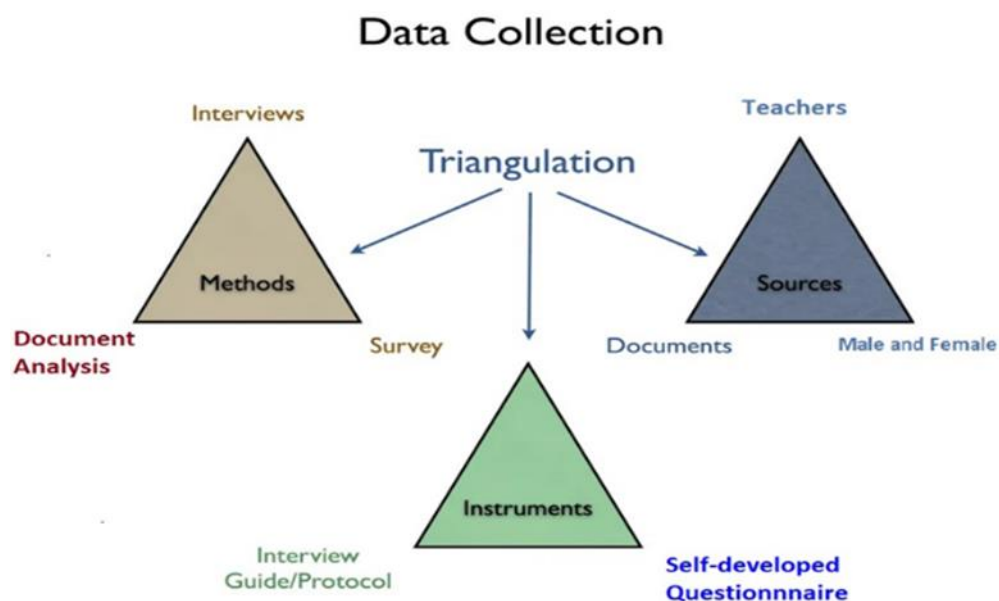


Figure 3.4 Triangulation in data collection

The primary data was gathered through questionnaire and interview, allowing for direct responses from teachers. Concurrently, secondary data was collected from the annual question papers of Pakistan Studies from the past five years (2014-2018). This combination of primary and secondary data provided a comprehensive and robust dataset for analysis in the research study.

Data Collection (Questionnaire)

Before data collection, formal approval was obtained from the Federal Directorate of Education (FDE) Islamabad. The researcher collaborated with Area Education Officers (AEOs) to facilitate data collection from institutions under their jurisdiction. Initially, telephonic communication was used to seek permission from the heads of institutions for administering the research instruments. Once approval was granted, the researcher personally visited each institution met with the heads and obtained consent from the teachers. During these visits, questionnaires were distributed

to teachers, with responses collected either on the same day or during follow-up visits. The overall response from teachers was highly positive and supportive, leading to the successful distribution and return of all 300 questionnaires.

Data Collection (Document Analysis)

Collection of Documents

The researcher retrieved question papers for Pakistan Studies from the Federal Board of Islamabad for five consecutive years (2014-2018). A total of 90 questions were selected for analysis, comprising 75 constructed response questions and 15 extended response questions.

Document Selection Process

The selection of documents was guided by Flick's (2018) four criteria: meaning, authenticity, credibility and representativeness (Figure 3.5).

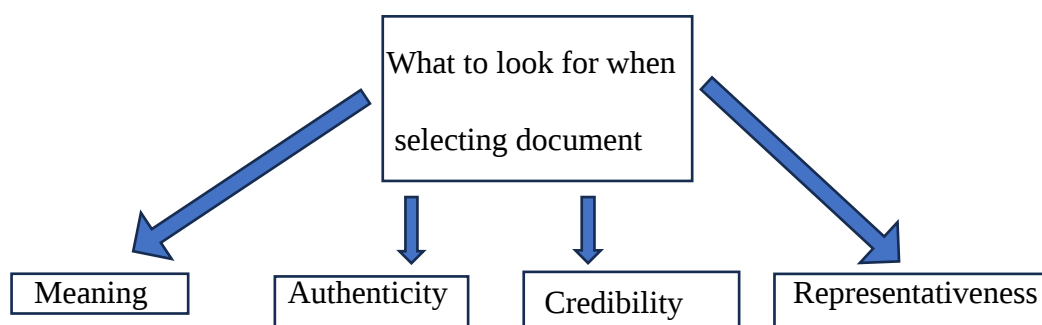


Figure 3.5 Criteria for selection of documents (Created by Fatima)

Meaning: The researcher interpreted the content of the question papers in alignment with the study's objectives focusing on educational assessment and the revised Bloom's taxonomy.

Authenticity: The papers were sourced from the official FBISE website, ensuring their originality and relevance to the study.

Credibility: The reliability of the FBISE as a source was verified to ensure the documents were free from errors or distortions.

Representativeness: The selected question papers reflect a typical range of examination content and difficulty over the study period (Morgan, 2022).

By adhering to these criteria, the researcher ensured the appropriateness and reliability of the documents for analysis contributing to the study's objectives.

Data Collection (Interview)

Semi-structured interviews were conducted, where the interviewer verbally presented the questions and took note of the responses. To ensure a thorough understanding, the interviewer paid close attention to both the subject and context, clarifying or repeating questions when necessary to improve the clarity of responses.

Procedure for Interview

The interview procedure encompassed three main phases: planning, conducting and documenting the interview.

Planning for the Interview: Semi-structured interviews were chosen for data collection. Due to teachers' hesitancy during the pilot study, no video or audio recordings were made. Instead, responses were documented through note-taking and confidential identifiers were used to maintain teachers' anonymity (e.g., M1 to M5 for male teachers, F1 to F7 for female teachers).

Conducting the Interview: Trust and rapport were key to successful interviews (Sahoo, 2022). Interviews were conducted at schools with prior permission. The complex questions were given sufficient time for discussion. The researcher asked one question at one time and repeated questions when needed. At the end of each interview, teachers were thanked for their contributions.

Documenting/Recording the Interview: Various methods exist for documenting and evaluating interviews such as audiotape recording, videotape recording and note-taking. Even when interviews are recorded, it is advisable for researchers to also take notes as a precaution in case there are technical issues with the recording equipment (Creswell & Creswell, 2017). The data was transcribed and carefully read the interview notes multiple times to become familiar with the data and gained an initial understanding of the responses. Key points and significant phrases from the responses were highlighted. They were assigned codes and short labels to summarize the main ideas or concepts in the data. Similar or related codes were grouped together to form themes. Themes represented broader patterns in the data that aligned with the study's objectives. The identified themes were reviewed to ensure that they accurately captured

the interview data. Any irrelevant or overlapping themes were refined or merged. Each theme was given a clear and descriptive name reflecting its core meaning. The themes were finalized to ensure that they provided valuable insight into the research problem. Each theme was described in detail using examples and quotes to support the findings. The interview lasted a maximum of 30 minutes.

3.9 Data Analysis

The study's objectives determined the choice of suitable statistical tests. Following a mixed-methods research design, the study applied statistical and graphical analysis of the raw data. The analysis included descriptive statistics, reliability testing, document analysis, factor analysis and thematic analysis to thoroughly explore and interpret the collected data.

Data analysis was divided in three phases:

Phase I: Quantitative Data Analysis (Questionnaire)

Phase II: Qualitative Data Analysis (Document Analysis and Interview)

Phase III: Triangulation

Phase I: Quantitative Data Analysis (Questionnaire)

Descriptive analysis i.e. frequency, percentage, mean, mode and standard deviation was used to interpret the research data. Inferential statistics i.e. *t*-test (independent sample) and analysis of variance (ANOVA) were applied to test the study's hypotheses using SPSS version 21. A level of significance was 0.05.

Phase II: Qualitative Data Analysis (Document Analysis and Interview)

Following the quantitative analysis, the researcher conducted a thematic analysis on document analysis and interview to explore the qualitative aspects of the data.

Document Analysis (Assessment Procedure)

Thematic analysis known for its versatility is an ideal method for qualitative analysis (Braun & Clarke, 2013). The visual materials like text-based documents can be analyzed qualitatively (Flick, 2018). In the present study, the following steps were

employed to comprehensively analyze the Pakistan Studies annual question papers from 2014 to 2018, using Revised Bloom's taxonomy:

Coding Questions: Each question in the question papers was systematically coded based on revised Bloom's taxonomy. Braun, Clarke, Hayfield and Terry (2019) identified three distinct schools of thematic analysis, each associated with a different approach. The first emphasizes a 'reflexive' approach, the second focuses on 'coding reliability,' and the third employs a 'codebook' approach.

The "codebook" approach in thematic analysis entails the systematic development of a set of codes that categorize and organize the data based on recurring themes or patterns (Braun & Clarke, 2006). By adhering to a predefined set of codes outlined in the codebook researchers ensure consistency and reliability in the coding process. This systematic approach enables researchers to identify and analyze patterns within the data effectively (Saldana, 2021). In the present study, the analysis of the annual question papers for Pakistan Studies from 2014 to 2018 was conducted using the codebook approach (Annex H). It is recommended particularly for first time or small-scale studies to code on hard-copy printouts initially rather than via a computer monitor (Bazeley, 2007). There's a certain level of control and ownership that comes with manipulating qualitative data on paper and writing codes in pencil (Saldana, 2021).

Categorization: Questions were categorized into one of the six cognitive levels based on the type of cognitive skill required to answer them. For example, questions requiring rote memorization were categorized under Remembering, while those demanding critical analysis were classified under Analyzing or Evaluating. In the present study, the coding process involved manual identification of the cognitive levels for each question through a two-step approach.

Firstly, key verbs in the questions were carefully identified and their cognitive levels were matched with those recognized in the literature (Anderson & Krathwohl, 2001).

Secondly, questions without key verbs were classified into specific cognitive levels based on their conceptual meanings. Remembering-level questions involved simple recollection of information, understanding-level questions required interpretation and generating conceptual meanings and application-level questions needed using previous information to solve unfamiliar ideas. Analysis-level questions involved breaking down concepts, identifying elements and exploring relationships, while evaluating-level

questions required decision-making based on criteria. Creating-level questions involved generating a new approach and bringing components together.

Thirdly, questions with multiple key verbs or expressing more than one cognitive level were assigned to higher cognitive levels.

Fourthly, essential verbs belonging to more than one cognitive category were identified and used in classification. Finally, questions lacking clearly stated key verbs or having ambiguity were coded by synthesizing related verbs with a focus on conceptual understandings. The researcher considered both key verbs and conceptual meanings in the classification process.

Each item was assigned a code. The first code determined the cognitive complexity required by students to reply to that item, according to the revised Blooms taxonomy. If an item tests students' memory, it was labelled as "L1". If the item tests student comprehension, it was labelled as "L2." The item was labelled "L3" if it evaluated student application abilities. If the item tests student analytical ability, it was labelled as "L4". If the item tests student evaluation abilities, it was labelled as "L5". If the item examines a student's ability to create, it was labelled as "L6."

Counting and Statistical Analysis: After coding, the number of questions at each cognitive level was counted for each paper. Quantitative analysis was performed using Microsoft Office Excel 2010 to assess the distribution of questions across cognitive levels. The software facilitated the computation of data in terms of frequency and percentage distributions. The primary purpose of employing descriptive analysis was to summarize and interpret qualitative data based on themes, presenting them to the reader in an organized and interpreted manner (Yıldırım & Şimşek, 2016). A total of 75 Constructed Response Questions (CRQs) and 15 Extended Response Questions (ERQs) were precisely coded into six distinct categories of cognitive complexity: remembering, understanding, applying, analyzing, evaluating and creating. Questions that fell under remembering, understanding and applying were categorized as lower-order thinking questions, whereas those that involved analyzing, evaluating and creating were classified as higher order thinking questions.

The incorporation of quantitative and qualitative methods facilitated a thorough comprehension of the distribution and depth of cognitive demands present in the designated question papers. This approach offered a nuanced perspective regarding

their alignment with the revised Bloom's taxonomy. The goal was to gain insight into the cognitive demands and assessment methods employed in these specific question papers.

Interview

The researcher employed Braun and Clarke's (2006) six-step thematic analysis framework to analyze teachers' interview responses, aiming to gain deeper insight into Pakistan Studies instruction and assessment. The process involved coding responses to six research questions, with privacy ensured through unique codes for each participant (e.g. M for male and F for female). The analysis began with data familiarization followed by generating initial codes to highlight key concepts and patterns. These codes were then grouped into themes relevant to each research question. A critical review refined the themes, ensuring accuracy and coherence. Each theme was defined, named and organized into a narrative that explored instructional and assessment practices and challenges in Pakistan Studies teaching at secondary school level.

Phase III: Triangulation

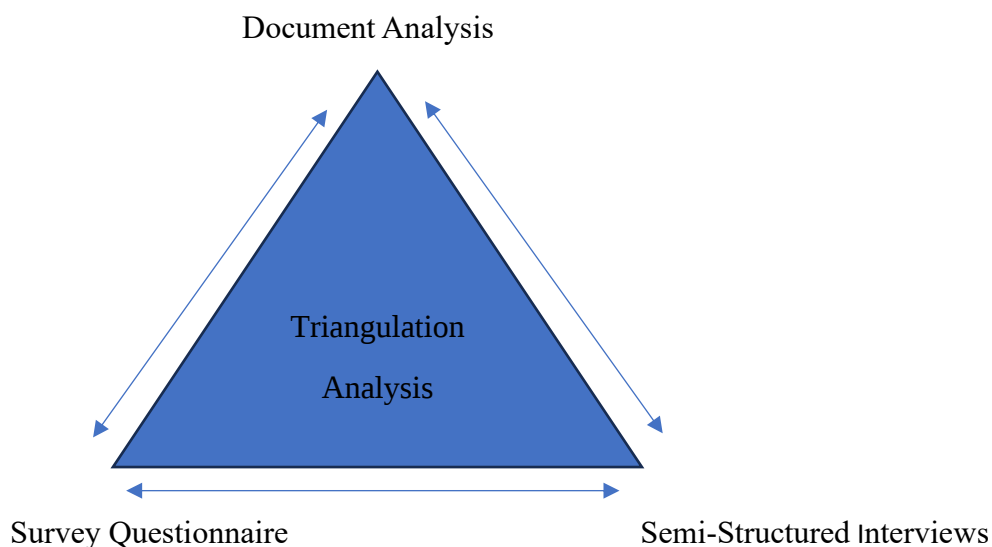


Figure 3.6 Triangulation of data Analysis

Note: Created by Fatima (2024).

Figure 3.5 illustrated the researcher's multi-faceted data analysis approach, drawing from three main sources: a self-developed questionnaire, document analysis and semi-structured interviews. Quantitative data were analyzed using descriptive and

inferential statistics via SPSS version 21. For qualitative analysis, thematic analysis was employed for document and interview data, using the codebook approach and six-step framework proposed by Braun and Clarke's (2006). This framework involves: 1) familiarization with data, 2) generating initial codes, 3) searching for themes, 4) reviewing themes, 5) defining and naming themes and 6) producing the final report.

The objective of the researcher in utilizing a mixed-method design was to triangulate the data, aiming to examine the instructional and assessment practices in the perspective of higher order thinking. This method was selected to improve the trustworthiness and accuracy of the research outcomes. As emphasized by Gibson (2017) and Fusch, Fusch, and Ness (2018), triangulation strengthens the significance of research findings and enhances the researcher's confidence in the reliability of the results. Quantitative and qualitative data integration is a vital aspect of mixed methods research, enhancing the analysis and understanding of phenomena (Fielding, 2012). This innovative approach combines numerical results with qualitative insights, providing a more profound comprehension of the data and overcoming limitations associated with singular method (Creswell, 2013) (Othman, Steen, & Fleet, 2020).

The present study applied data integration at five levels: data, design, method, interpretation and reporting level.

Data level Triangulation: To enhance validity, the researcher employed data-level triangulation by integrating three distinct sources: (1) a self-developed questionnaire, (2) document analysis, and (3) semi-structured interviews. The study first explored the perceptions of secondary school teachers (male and female) under the jurisdiction of the Federal Directorate of Education, Islamabad. Additionally, five years of Pakistan Studies question papers were analyzed, and semi-structured interviews were conducted with teachers to validate and strengthen the conclusions drawn from the findings.

Design Level Triangulation: The study adopted an explanatory sequential design, beginning with quantitative data analysis in Phase I, followed by qualitative exploration in Phase II. This design was chosen based on a systematic review, which highlighted a lack of mixed-method studies on the topic. By integrating both approaches, the study aimed to provide deeper insights and a more comprehensive understanding of the research problem.

Methodological Triangulation: Methodological triangulation was achieved through the use of a Mixed Methods Research (MMR) approach, integrating both quantitative and qualitative data collection techniques. Surveys, document analysis and interviews were employed to obtain comprehensive insights.

Interpretation and Reporting Level: At this level, key findings from both quantitative and qualitative data were presented in parallel. The integration of these findings created coherence, highlighting areas of confirmation or discordance as illustrated in Table 4.29 (Othman et al., 2020)

3.10 Research Ethics

This study strictly adhered to ethical guidelines, emphasizing participant informed consent, the right to withdraw, confidentiality and anonymity. Ethical considerations were integrated throughout the research process. Permission for data collection was obtained from the Federal Directorate of Education (FDE), and approval was sought from the heads of secondary schools prior to data collection.

Before administering the surveys, participants were informed about the research's purpose and their voluntary participation was requested. Informed consent, a critical procedure to ensure approval before data collection (Iphofen & Tolich, 2018), was obtained. Consent forms (Annex J) outlining the benefits and potential risks of participation were distributed to all teachers involved in the surveys and interviews. Only those who voluntarily agreed to participate were included in the study, ensuring their right to withdraw at any stage of the research process, thereby maintaining ethical integrity. A total of 12 participants, who expressed their willingness were interviewed.

Participants were assured that their information would be used solely for this research and would remain confidential. To protect confidentiality and privacy, each individual in the quantitative data was assigned a unique numerical identifier. For gender identification, “1” and “2” were used to represent female and male teachers, respectively. These identifiers were used exclusively during the quantitative phase. In the qualitative interviews, participants were referred to by alphabetical identifiers, “F” (female) and “M,” (male) to safeguard their anonymity. This approach ensured participants' privacy throughout the research upholding ethical standards.

CHAPTER 4

ANALYSIS AND INTERPRETATION OF THE DATA

4.1 Introduction

This chapter focuses on analyzing and interpreting the results obtained through the administration of research instruments (questionnaire, document analysis and interviews) to examine instructional and assessment practices from a higher order thinking perspective. The study employed a descriptive research design using a Mixed Methods Research (MMR) approach, following an Explanatory Sequential Research design. For quantitative data collection, a self-developed 5-point Likert scale questionnaire was used to assess instructional and assessment practices. Responses were gathered from 300 secondary school teachers (male and female) from both urban and rural areas under the Federal Directorate of Education, Islamabad, Pakistan. Teachers indicated their agreement with curriculum objectives using response categories: Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree. For other items, frequency was measured using options: Always, Often, Sometimes, Seldom and Never. Data analysis was conducted using SPSS (Version 21), where descriptive statistics (frequencies, percentages, mean, mode, and standard deviation) were applied to analyze demographic data. Inferential statistics, including t-tests and analysis of variance (ANOVA), were used to test hypotheses related to teachers' responses concerning area, gender and job experience.

Qualitative data were collected through document analysis and semi-structured interviews, which were analyzed using thematic analysis. Document analysis involved reviewing Pakistan Studies annual question papers from the past five years (2014–2018), focusing on their alignment with revised Bloom's taxonomy. Thematic analysis was applied to identify key patterns and themes within the question papers, providing insights into the application of higher order thinking. Additionally, interview responses were coded and analyzed for emerging themes and patterns, further enhancing the depth of interpretation.

This chapter comprised three phases which are outlined as follows:

Phase 1. Quantitative data analysis

Phase II. Qualitative data analysis

Phase III. Triangulation of results

4.2 Phase I: Quantitative Data Analysis

Section I: Response Rate of Questionnaire

This section presents the response rate of secondary school teachers.

Table 4.1

Response Rate of the Respondents

Respondents	Sample	Distributed questionnaire	Total return	Useable	%
Secondary school teachers	300	300	300	300	100

Table 4.1 presents the response rate of secondary school teachers who participated in the study. Out of 300 distributed questionnaires, all were returned and deemed usable resulting in a 100% response rate. This high response rate reflects a strong level of participation from the targeted population of secondary school teachers.

Section II: Descriptive Statistics Analysis

Quantitative descriptive analysis focuses on characteristics of secondary school teachers (male and female) under the ambit of the FDE, Islamabad, Pakistan. The analysis includes participants' demographic information such as area, gender and job experience.

Demographic Characteristics

Participants were asked to provide information regarding their area, gender and job experience as part of the study.

Table 4.2*Demographic Characteristics of Respondents (n=300)*

Respondents	Area		Gender		Job experience (in years)				
	Urban	Rural	Male	Female	Less than 5	6-10	11-15	16-20	Above 20
Secondary school Teachers	165	135	142	158	08	15	74	62	141
Percentage	55%	45%	47%	53%	2.7%	5%	24.7%	20.6%	47%

Table 4.2 presents the demographic analysis categorizing participants based on three variables: area, gender and job experience. Regarding the area variable, the majority of participants were from urban areas, constituting 55% (n = 165) of the sample, while 45% (n = 135) were from rural areas. The table further indicates that the sample comprised 47% (n = 142) male participants and 53% (n = 158) female participants, highlighting that the majority of respondents were female. In terms of their job experience, participants were further classified into different experience levels. Among them, 3% (n = 8) had 5 years or less of experience, 5% (n = 15) had 6 to 10 years, 24.7% (n = 74) had 11 to 15 years, 20.6% (n = 62) had 16 to 20 years, and 47% (n = 141) had over 20 years of experience. Overall, the analysis included a total of 300 participants representing the entire sample population. The results are also presented in pie graphs (Figures 4.1, 4.2, 4.3).

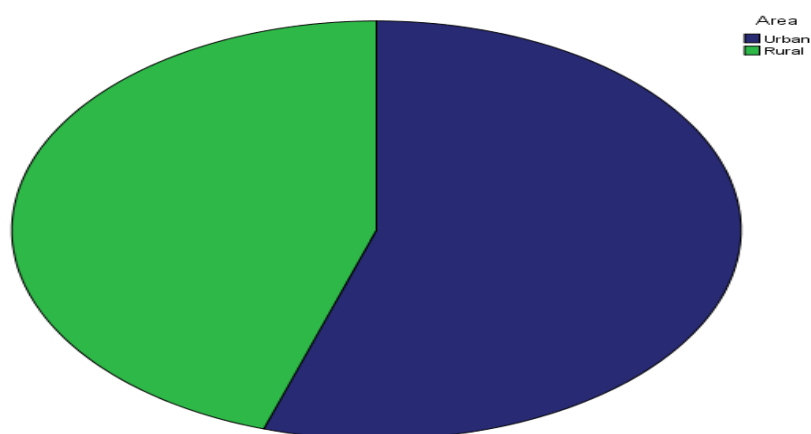


Figure 4.1 Area wise frequency distribution of respondents

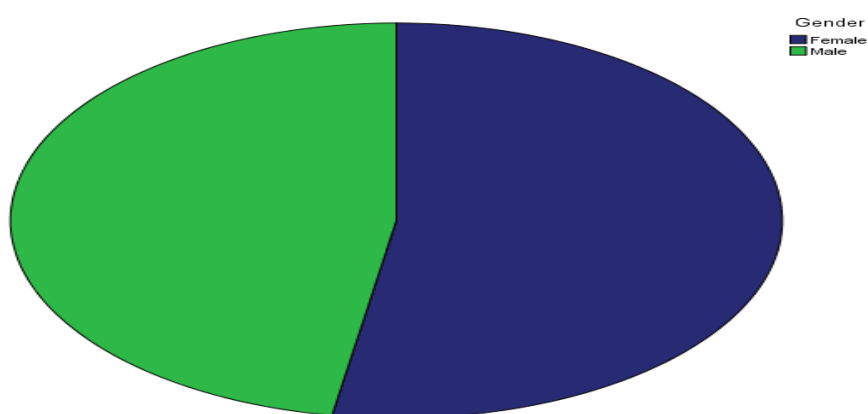


Figure 4.2 Gender wise frequency distribution of respondents

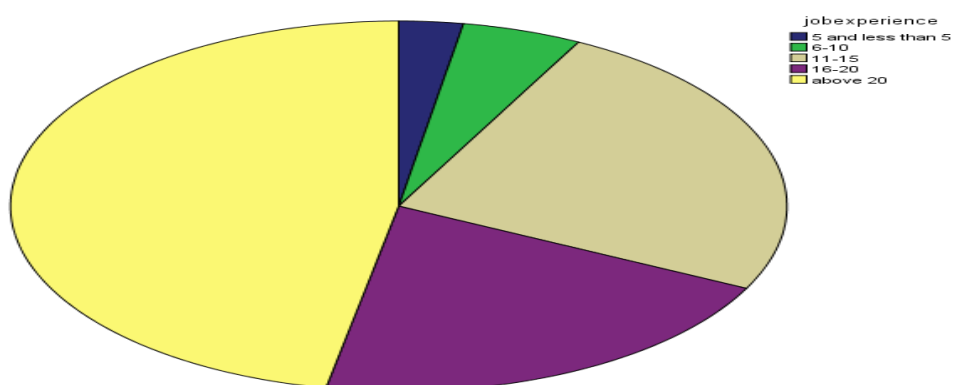


Figure 4.3 Job experience wise frequency distribution of respondents

Section III: Analysis of Research Objectives and Hypotheses

Objective 1. To determine teachers' perception towards the objectives of the curriculum of Pakistan Studies in the perspective of higher order thinking at secondary level.

Table 4.3

Frequencies, Percentages, Mean, Standard Deviation, and Mode for Teachers' Perceptions of the Objectives of the Pakistan Studies Curriculum (n = 300)

S.No	Statements	SA	A	N	DA	SDA	Mean	SD
		5	4	3	2	1		
1.	Inculcate a sense of gratitude to Almighty Allah for blessing us with an independent and sovereign state.	208 68%	92 32%	0 0%	0 0%	0 0%	4.69	.46
2.	Encourage traits of observation, creativity, analysis and reflection in students.	10 5%	49 16%	57 18%	143 47%	41 14%	2.48	1.02
3.	Acquaint the students with various phases of Pakistani's historical, political, and constitutional developments.	129 41%	157 51%	9 5%	5 3%	0 0%	4.36	.62
4.	Emphasize the rights and obligations of the citizens of an independent and sovereign state.	118 39%	146 49%	29 10%	6 2%	1 .3%	4.25	.73
	Overall Mean							3.93
	Overall SD							1.60
	Overall Mode							4

Note: SA=Strongly Agree, A= Agree, N=Neutral, DA=Disagree, SDA= Strongly Disagree, SD= Standard Deviation

Table 4.3 presents distribution of responses across Likert-scale categories for statements related to curriculum objectives. Mean scores indicate the average level of agreement and standard deviations reflect the variability of responses around the mean. Statement 1 received overwhelmingly positive responses, with 68% strongly agreeing and 32% agreeing. The mean score of 4.69 (SD=.46) suggests a strong endorsement of the objective. Statement 2 garnered mixed responses, with only 21% agreeing (SA or A), (47%) indicating disagreement. The mean score of 2.48 (SD=1.02) indicates a lower level of endorsement and higher variability among responses. Statement 3 elicited predominantly positive responses, with 92% either agreeing or strongly agreeing. The mean score of 4.36 (SD=.62) reflects strong support for the objective. Similarly, Statement 4 received significant agreement, with 88% of respondents indicating agreement. The mean score of 4.25 (SD=.73) suggests a high endorsement of the objective. Overall, the data demonstrate broad support for educational objectives related to patriotism and historical awareness. However, the lower mean score for Statement 2 underscores the need for further exploration or refinement of strategies to cultivate observation, creativity, analysis and reflection in students. Further investigation may be warranted to understand the factors contributing to this variation. The high mean scores across Statements 1, 3, and 4 suggest strong support for initiatives promoting national identity and civic awareness. Additionally, the overall mean (3.93) and standard deviation (1.60), with a mode of 4, highlight the central tendency of the responses, indicating a consistent inclination toward agreement with the stated curriculum objectives.

The analysis of teacher perceptions regarding the curriculum objectives in Pakistan Studies reveals significant insights. These findings highlight both areas of consensus and divergence among teachers, indicating a need for targeted interventions to address discrepancies in perceived objectives.

Research objective No. 02. To investigate the instructional practices used for teaching Pakistan studies concerning higher order thinking at secondary school level.

Table 4.4

Frequencies, Percentages, Mean, Standard Deviation, and Mode for Instructional Practices in Acquiring Knowledge (n = 300)

Statements	Always 5	Often 4	Sometime 3	Seldom 2	Never 1	Mean	SD
Ask students to exchange their concepts with one another.	64 (21%)	84 (28%)	107 (36%)	23 (8%)	22 (7%)	3.48	1.12
Engage students in inferential activities.	58 (19%)	92 (31%)	72 (24%)	57 (19%)	21 (7%)	3.36	1.19
Encourage students to create their questions.	104 (35 %)	139 (46%)	57 (19%)	0 (0%)	0 (0%)	4.16	.71
Conduct pre-assessment to know about students' prior knowledge.	83 (28%)	143 (48%)	63 (20%)	11 (4%)	0 (0%)	3.99	.79
Give students many opportunities to identify	85 (28%)	126 (42%)	62 (21%)	25 (8%)	2 (1%)	3.89	.93

Table 4.4 continue.....

Statements	Always 5	Often 4	Sometime 3	Seldom 2	Never 1	Mean	SD
important learning problems.							
Observe students and ask questions when they engage in group activities.	79 (26%)	125 (42%)	65 (22%)	24 (8%)	7 (2%)	3.82	.99
Overall Mean							3.78
Overall SD							0.55
Overall Mode							3.83

Table 4.4 provides an overview of the frequencies, percentages, mean and standard deviation scores related to teachers' instructional practices of acquiring knowledge based on a total of 300 responses. Table shows that participants were provided ratings on a five-point scale ranging from "Always" to "Never" for various instructional practices. The results indicate that the majority of participants often or always ask students to exchange their concepts with each other (Mean=3.48, SD =1.12) and engage students in inferential activities (Mean=3.36, SD=1.19). Encouragingly, a significant percentage of participants (35%) reported always encouraging students to create their questions (Mean=4.16, SD=0.71). Additionally, a substantial proportion of participants reported often or always conducting pre-assessments to gauge students' prior knowledge (Mean=3.99, SD=0.79) and giving students many opportunities to identify important learning problems (Mean=3.89, SD=0.93). Observing students and asking questions during group activities also received positive responses, with a mean of 3.82 and a standard deviation of 0.99. The overall mean score for all practices is 3.78, suggesting that, on average, teachers tend to implement these practices frequently. The standard deviation of 0.55 suggests a moderate level of variability in the

participants' responses. The mode of 3.83 indicates that the most common response for these practices is "often."

Table 4.5

Frequencies, Percentages, Mean, Standard Deviation, and Mode for Instructional Practices in Applying Knowledge (n = 300)

Statements	Always 5	Often 4	Sometime 3	Seldom 2	Never 1	Mean	SD
Observe students when they work individually.	64 (21%)	27 (09%)	67 (22%)	132 (44%)	10 (4%)	3.01	1.23
Facilitate students in conducting activities given in the exercises.	08 (3%)	59 (20%)	163 (53%)	56 (19%)	14 (5%)	2.97	.82
Encourage students to practice an alternative way of thinking.	42 (14%)	59 (20%)	58 (19%)	113 (38%)	28 (9%)	2.91	1.22
Overall Mean							3.00
Overall SD							0.65
Overall Mode							2.67

Table 4.5 summarizes the frequencies, percentages, mean and standard deviation scores associated with teachers' instructional practices of applying knowledge, based on responses from 300 participants. The results indicate that observing students when working individually is a common practice, with 21%

reporting "Always" and 44% reporting "Seldom" (Mean=3.01, SD=1.23). Facilitating students in conducting activities from exercises received mixed responses, with only 3% reporting "Always" and 54% reporting "Sometimes" (Mean=2.97, SD=0.82). Encouraging students to practice alternative ways of thinking also showed varying levels of acceptance, with 14% reporting "Always" and 38% reporting "Seldom" (Mean=2.91, SD=1.22). The overall mean rating for all instructional practices in the Applying Knowledge is 3.00, suggesting a moderate level of agreement with these practices. This suggests that, on average, teachers tend to implement these practices moderately. The SD of 0.64 indicates a relatively moderate level of variability in participants' responses. The overall Mode of 2.67 indicates that "sometimes" is the most frequently reported response for these applying knowledge practices. It is concluded that the predominant practices among teachers in the context of applying knowledge involve facilitating students to conduct activities given in the exercises, with most teachers reporting that they do this sometimes. In contrast, the observation of students when they work individually is less frequent, with the majority of teachers reporting that they seldom engage in this practice. Similarly, the encouragement of students to practice an alternative way of thinking is also reported as occurring with a moderate frequency, as most teachers indicated that they sometimes engage in this particular practice.

Table 4.6

Frequencies, Percentages, Mean, Standard Deviation and Mode for Instructional Practices in Reflection on knowledge (n=300)

Statements	Always 5	Often 4	Some time 3	Seldom 2	Never 1	Mean	SD
Review students' homework copies on regular basis.	119 (40%)	116 (39%)	21 (7%)	44 (14%)	0 (0%)	4.03	1.02
Assess students' knowledge through open-ended questions.	65 (22%)	86 (29%)	54 (18%)	74 (25%)	21 (7)	3.33	1.25

Table 4.6 continue.....

Statements	Always 5	Often 4	Someti mes 3	Seldom 2	Never 1	Mean	SD
Prefer to apply a cooperative learning approach to the class.	28 (9%)	51 (17%)	78 (26%)	122 (41%)	21 (7%)	2.81	1.09
Overall Mean							3.39
Overall SD							0.67
Overall Mode							3.33

Table 4.6 presents the frequencies, percentage, mean and standard deviation scores associated with teachers' instructional practices related to the reflection on knowledge. The findings indicate reviewing students' homework copies regularly is a common practice, with 40% reporting "Always" and 39% reporting "Often" (Mean=4.03, SD=1.02). Assessing students' knowledge through open-ended questions is also prevalent, with 22% reporting "Always" and 29% reporting "Often" (Mean=3.33, SD=1.25). However, the application of a cooperative learning approach is less frequent, with only 9% reporting "Always" and 17% reporting "Often" (Mean = 2.81, SD = 1.09). The overall mean score is 3.39, with an overall mode of 3.33. This implies that average teachers tend to engage in these reflection practices moderately with often being the most frequently reported response for individual practices. The analysis of the provided data leads to the conclusion that a significant majority of teachers consistently engage in the practice of reviewing students' notebooks. This is evident from the high percentage (40%) of teachers who reported always undertaking this activity. In contrast, a comparatively smaller number of teachers reported always assigning open ended questions and employing cooperative learning strategies. Specifically, 22% of teachers reported always using open-ended questions, and only 9% reported always applying a cooperative learning approach in the classroom. These findings suggest variations in the frequency of these reflective practices among the surveyed teachers, with the review of students' notebooks being a more consistently adopted practice. The SD of 0.67

indicates a relatively moderate level of variability in participants' responses. In conclusion, these findings highlight the prevalence of certain reflective practices among educators, emphasizing the need for further exploration and promotion of cooperative learning approaches in the context of reflecting on knowledge.

Objective 3. To find out instructional methods used for teaching Pakistan studies concerning higher order thinking at secondary school level.

Table 4.7

Frequencies, Percentages, Mean, Standard Deviation and Mode for Instructional Methods used for Acquiring Knowledge (n=300)

Statements	Always 5	Often 4	Sometimes 3	Seldom 2	Never 1	Mean	SD
Lecture Method	182 (61%)	104 (35%)	10 (3%)	4 (1%)	0 (0%)	4.55	.62
Interactive Lecture	103 (34%)	140 (47%)	50 (17%)	7 (2%)	0 (0%)	4.13	.76
Lecture + diagrams	87 (29%)	126 (42%)	64 (21%)	20 (7%)	3 (1%)	3.91	.92
Lecture + photos	54 (18%)	114 (38%)	90 (30%)	25 (8%)	17 (6%)	3.54	1.05
Lecture + charts	43 (14%)	120 (40%)	98 (33%)	24 (8%)	15 (5%)	3.51	1.00
Lecture + multimedia	9 (3%)	36 (12%)	79 (26%)	39 (13%)	137 (46%)	2.14	1.20
Textbook Method	189 (63%)	111 (37%)	0 (0%)	0 (0%)	0 (0%)	4.63	.48
Brainstorming	32 (11%)	74 (25%)	55 (18%)	127 (42%)	12 (4%)	2.96	1.12
Oral presentation	88 (29%)	137 (46%)	60 (20%)	12 (4%)	3 (1%)	3.98	.86
Overall Mean							3.70
Overall SD							0.43
Overall Mode							4

Table 4.7 summarizes the frequencies, percentages, mean and standard deviation scores about instructional methods used for acquiring knowledge, based on responses from 300 participants. In this assessment of teaching methods, participants were asked to rate the frequency of use for various instructional methods on a scale from "Always" to "Never." The results indicate that the lecture method is commonly employed, with 61% of participants reporting its frequent use (Mean = 4.55, SD = 0.62). Interactive lectures were also well-received, with 34% reporting "Always" and 47% reporting "Often" (Mean=4.13, SD=0.76). The combination of lectures with diagrams received positive responses, with 29% "Always" and 42% "Often" (Mean=3.91, SD=0.92). However, methods involving multimedia, such as lectures with photos, charts, and multimedia, received comparatively lower ratings. For instance, lectures with multimedia had only 3% reporting "Always" and 12% reporting "Often" (Mean=2.14, SD=1.20). The textbook method garnered high usage, with 63% reporting "Always" (Mean=4.63, SD=0.48). Brainstorming and oral presentations had varying levels of acceptance, with Mean ratings of 2.96 and 3.98, respectively. The overall mean score for all instructional methods is 3.70 suggesting a generally favorable and frequent use of instructional methods for acquiring knowledge among the teachers. The SD of 0.43 indicates a relatively low level of variability in the participants' responses. The overall mode of 4.00, suggests a generally favorable and frequent use of instructional methods for acquiring knowledge among the teachers. These findings provide insights into the prevalent use and perceived effectiveness of different teaching methods in the educational context under study.

Additionally, the limited use of multimedia-based instructional methods suggests a gap in integrating technology-driven teaching approaches. This reliance on traditional methods like lectures and textbooks may hinder the development of higher order thinking skills among students. Enhancing teachers' capacity to incorporate interactive and technology-supported strategies could improve student engagement and conceptual understanding.

Table 4.8

Frequencies, Percentage Mean, Standard Deviation and Mode for Instructional Methods used for Applying Knowledge (n=300)

Statements	Always 5	Often 4	Some time 3	Seldom 2	Never 1	Mean	SD
Computer-assisted instruction	18 (6%)	42 (14%)	70 (23%)	75 (25%)	95 (32%)	2.38	1.23
Activity Method	41 (14%)	63 (21%)	94 (31%)	52 (17%)	50 (17%)	2.98	1.26
Debates.	41 (14%)	116 (39%)	117 (39%)	25 (8%)	0 (0%)	3.57	.84
Demonstration	27 (9%)	58 (19%)	65 (22%)	49 (16%)	101 (34%)	2.54	1.36
Project Method	13 (4%)	40 (13%)	78 (26%)	44 (15%)	125 (42%)	2.24	1.24
Problem-based learning	13 (4%)	33 (11%)	53 (18%)	41 (14%)	160 (53%)	1.99	1.24
Use of real objects	26 (9%)	58 (19%)	68 (23%)	66 (22%)	82 (27%)	2.60	1.30
Graphs	29 (10%)	42 (14%)	80 (27%)	62 (21%)	87 (28%)	2.55	1.30
Overall Mean							2.60
Over SD							0.53
Overall Mode							2.25

Table 4.8 provides an overview of the frequencies, percentages, mean and standard deviation scores related to instructional methods used for applying knowledge. For applying knowledge, participants were provided ratings on a five-point scale from "Always" to "Never." The findings reveal diverse practices across different methods. Computer-assisted instruction had limited usage, with only 6% reporting "Always" and 32% reporting "Never" (Mean=2.38, SD=1.23). The activity method received varied

responses, with 14% reporting "Always" and 17% reporting "Never" (Mean=2.98, SD=1.26). Debates were relatively well-received, garnering 14% "Always" and 39% "Often" (Mean=3.57, SD=0.84). The demonstration had mixed usage, with 9% reporting "Always" and 34% reporting "Never" (Mean=2.54, SD=1.36). The project method saw limited adoption, with 4% reporting "Always" and 42% "Never" (Mean=2.24, SD=1.24). Problem-based learning and the use of real objects were less frequently employed, receiving lower mean ratings of 1.99 and 2.60, respectively. Graphs were used moderately, with 10% reporting "Always" and 29% "Never" (Mean=2.55, SD=1.30). The average score for all instructional methods used to apply knowledge is 2.60 with an overall mode of 2.25. This indicates a moderate level of implementation for these methods, with "never" being the most frequently reported response. This analysis concludes that debates are more commonly employed by teachers, with most utilizing them "sometimes" in teaching Pakistan Studies. In contrast, project methods, activity methods, problem-based learning, demonstration methods graphs and real objects are not frequently used. The SD of 0.53 suggests a relatively low level of variability in participants' responses. In conclusion, these findings underscore the need for a more diversified approach to instructional methods for applying knowledge, taking into account the varying levels of acceptance and usage among teachers.

Table 4.9

Frequencies, Percentages, Mean, Standard Deviation and Mode for Instructional Methods used for Reflection on Knowledge (n=300)

Statements	Always 5	Often 4	Some time 3	Seldom 2	Never 1	Mean	SD
Discussion	98	150	41	11	0	4.12	.77
Method	(33%)	(50%)	(14%)	(4%)	(0%)		
Group Study	36	60	57	20	127	2.53	1.49
	(12%)	(20%)	(19%)	(7%)	(42%)		
Cooperative	20	37	51	21	171	2.05	1.35
learning	(7%)	(12%)	(17%)	(7%)	(57%)		
Organize small	19	57	56	24	144	2.28	1.38
groups	(6%)	(19%)	(19%)	(8%)	(48%)		
Inquiry/	57	122	95	18	8	3.67	.94
investigation	(19%)	(41%)	(32%)	(6%)	(3%)		
Ask questions	137	124	29	5	5	4.28	.83
during teaching	(46%)	(41%)	(10%)	(2%)	(2%)		
Visits to	09	43	89	51	108	2.31	1.18
Museum	(3%)	(14%)	(30%)	(17%)	(36%)		
Use of Internet	11	65	90	30	104	2.50	1.26
	(4%)	(22%)	(30%)	(10%)	(35%)		
Use of posters	25	78	129	43	25	3.12	1.03
	(8%)	(26%)	(43%)	(14%)	(8%)		
PowerPoint	3	39	88	41	129	2.15	1.14
presentation	(1%)	(13%)	(29%)	(14%)	(43%)		
Use of	53	131	94	17	5	3.70	.88
Assignment	(18%)	(44%)	(31%)	(6%)	(2%)		
Method							
Use of	07	49	87	46	111	2.32	1.19
Documentaries	(2%)	(16%)	(29%)	(15%)	(37%)		

Table 4.9 continue

Statements	Always 5	Often 4	Some time 3	Seldom 2	Never 1	Mean	SD
Use of interactive whiteboard.	59 (20%)	92 (31%)	45 (15%)	12 (4%)	92 (31%)	3.05	1.53
Use of Slides	09 (3%)	34 (11%)	74 (25%)	40 (13%)	143 (48%)	2.09	1.20
Use of Globbs.	26 (9%)	56 (19%)	76 (25%)	39 (13%)	103 (34%)	2.54	1.35
Use of Maps.	31 (10%)	69 (23%)	72 (24%)	37 (12%)	91 (30%)	2.71	1.37
Study visits.	07 (2%)	39 (13%)	89 (30%)	52 (17%)	113 (38%)	2.25	1.16
Resource people	13 (4%)	33 (11%)	89 (30%)	43 (14%)	122 (41%)	2.24	1.21
Organizing Contests.	16 (5%)	98 (33%)	124 (41%)	30 (10%)	32 (11%)	3.12	1.02
Use of Models.	14 (5%)	61 (20%)	84 (26%)	32 (11%)	109 (36%)	2.46	1.29
Overall Mean							2.77
Overall SD							0.43
Overall Mode							2.60

Table 4.9 shows a comprehensive overview of responses of teachers regarding the frequencies, percentages, mean and standard deviation scores examining the instructional methods employed for the reflection on knowledge. The results reveal Discussion Method emerged as a frequently used approach, with 33% reporting "Always" and 50% reporting "Often" (Mean=4.12, SD=0.77). Conversely, Cooperative Learning and Organizing Small Groups were less prevalent, with 7% and 6% reporting "Always," respectively (Mean=2.05, SD=1.35 and Mean=2.28, SD=1.38).

Inquiry/Investigation demonstrated a moderate level of utilization, with 19% reporting "Always" and 41% reporting "Often" (Mean=3.67, SD=0.94). Ask Questions During Teaching was a commonly practiced method, with 46% reporting "Always" and 41% reporting "Often" (Mean=4.28, SD=0.83). On the other hand, PowerPoint Presentation and Resource People were less frequently used, each with 1% and 4% reporting "Always," respectively (Mean=2.15, SD=1.14 and Mean=2.24, SD = 1.21). The average score for all instructional methods used for reflecting on knowledge is 2.77 with an overall mode of 2.60. This suggests that, on average, teachers tend to employ these instructional methods moderately, with often being the most frequently reported response for individual methods. The SD of 0.42 suggests a relatively low level of variability in participants' responses. In conclusion, this analysis indicates that teachers consistently employ certain methods, such as asking questions and using the discussion method. Conversely, other methods are less emphasized in the instruction of Pakistan Studies for Grade X.

Table 4.10

Overall Mean, Standard Deviation, and Mode for Constructs of Higher Order Thinking (HOT) in Instructional Practices

Constructs of HOT	Overall Mean	SD	Overall Mode
Acquiring Knowledge	3.78	0.55	3.83
Applying Knowledge	3.00	0.65	2.67
Reflection on Knowledge	3.39	0.67	3.33

Note. HOT = Higher Order Thinking, SD= Standard Deviation

Table 4.10 provides the overall mean, standard deviation and mode scores for the constructs of HOT, namely acquiring, applying and reflecting on knowledge. Acquiring knowledge has the highest overall mean (M=3.78) among the constructs, with a relatively low standard deviation (SD=0.55), indicating a moderate level of consensus among respondents. The mode of 3.83 suggests that the most frequent response falls within the higher end of the scale. This suggests a generally positive sentiment and a moderate level of agreement among participants regarding instructional practices aimed at acquiring knowledge. Applying Knowledge has a lower overall mean (M=3.00) compared to the other constructs, with a higher standard deviation (SD = 0.65), indicating greater variability in responses. The mode of 2.67 indicates that the

most frequent response is slightly below the midpoint of the scale. These results indicate a moderate level of agreement but with slightly higher variability in responses, suggesting diverse perspectives on instructional practices related to applying knowledge. Reflection on Knowledge falls between the other two constructs in terms of overall mean ($M=3.39$) and standard deviation ($SD=0.67$). The mode of 3.33 suggests that the most frequent response is slightly above the midpoint of the scale, indicating a tendency towards agreement among respondents. These findings provide insights into the distribution and central tendencies of responses within each construct, highlighting potential areas of strength or divergence in perceptions related to Higher Order Thinking. In conclusion, the overall means across these constructs demonstrate a generally positive perception of instructional practices aligned with higher order thinking. The standard deviations suggest some variability in participants' perspectives, highlighting the need for flexibility and diversity in instructional practices to effectively promote higher order thinking skills. These findings provide valuable insights for educators and policymakers aiming to enhance instructional practices for fostering higher order thinking skills.

Table 4.11

Overall Mean, Standard Deviation, and Mode for Constructs of Higher Order Thinking (HOT) in Instructional Methods

Constructs of HOT	Overall Mean	SD	Overall Mode
Acquiring Knowledge	3.70	0.43	4.00
Applying Knowledge	2.60	0.53	2.25
Reflection on Knowledge	2.77	0.43	2.60

Note. HOT = Higher Order Thinking, SD= Standard Deviation

Table 4.11 presents the overall mean, standard deviation (SD), and mode scores for acquiring knowledge, applying knowledge and reflection on knowledge (constructs of HOT) related to instructional methods. The overall mean score for acquiring knowledge is 3.70, indicating a relatively high level of agreement among respondents regarding the effectiveness of instructional methods aimed at acquiring knowledge. The SD 0.43 suggests a moderate level of variability in responses around the mean. The mode score of 4.00 indicates that the most common response falls within the range of 4.00, further supporting the consensus on the effectiveness of these methods. The overall mean score for Applying Knowledge is 2.60, which is lower than that for

Acquiring Knowledge. This suggests a comparatively lower level of agreement among respondents regarding the effectiveness of instructional methods aimed at applying knowledge. The higher standard deviation of 0.53 indicates greater variability in responses. The mode score of 2.25 suggests that while there is variability, the most common response tends to be around 2.25. The overall mean score for Reflection on Knowledge is 2.77, falling between the scores for Acquiring Knowledge and Applying Knowledge. This indicates a moderate level of agreement among respondents regarding the effectiveness of instructional methods aimed at promoting reflection on knowledge. The standard deviation of 0.43 suggests a relatively consistent pattern of responses, and the mode score of 2.60 indicates that the most common response falls within the range of 2.60. In conclusion, the analysis reveals variations in the perceived effectiveness of different constructs of HOT instructional methods. While there is strong agreement regarding the effectiveness of methods for acquiring knowledge, perceptions are more mixed for methods aimed at applying and reflecting on knowledge. These findings highlight the need for educators to tailor instructional approaches to effectively promote higher order thinking skills across different learning objectives.

Research objective No 4: To explore demographic variables including area, gender and job experience in the context of curriculum objectives, instructional practices and methods at secondary school level.

Testing Hypotheses

Testing Hypotheses of Curriculum Objectives

- H₀₁: There is no significant difference in teachers' perceptions towards the objectives of the curriculum of Pakistan Studies in the perspective of higher order thinking at secondary school level.
- H_{01.1}: There is no significant difference in urban and rural area teachers' perception towards the objectives of the curriculum of Pakistan Studies in the perspective of higher order thinking at secondary school level.

Table 4.12*Area-wise Analysis of Curriculum Objectives*

Variables	Area	n	Mean	Homogeneity of variance (Levene's Test)	P-Value	Hypothesis status
Curriculum Objectives	Urban	165	4.28	.48(1-298) P=.48	.48	H _{01.1} : Accepted
	Rural	135	4.39			

Significance level $p < .05$

Table 4.12 presents the comparison of mean scores for curriculum objectives between urban and rural areas. The sample consisted of 165 participants from urban areas and 135 participants from rural areas. The mean score for urban areas was 4.28, while rural areas had a slightly higher mean score of 4.39. Levene's Test for homogeneity of variance indicated no significant difference in variances between the two groups $F(1-298)=0.48$, $p=.48$, confirming the assumption of equal variances. Consequently, the null hypothesis (H_{01.1}) stating no difference in curriculum objective scores between urban and rural areas was accepted ($p=.48$). These findings suggest comparable achievement levels for curriculum objectives between urban and rural areas. The analysis revealed that there is no significant difference in curriculum objective scores between urban and rural areas, indicating that both settings are equally effective in achieving curriculum objectives.

Gender-wise Analysis of Curriculum Objectives

H_{01.2}: There is no significant difference in male and female teachers' perception towards the objectives of the curriculum of Pakistan Studies in the perspective of higher order thinking at secondary school level.

Table 4.13*Gender-wise Analysis of Curriculum Objectives*

Variable	Gender	n	Mean	Homogeneity of variance (Levene's Test)	P-value	Hypothesis Status
Curriculum Objectives	Male	142	4.22	8.47(1-298) P=.00	.00	H _{01.2} Rejected
	Female	158	4.43			

Significance level $p < .05$

Table 4.13 compares the mean scores for curriculum objectives between male and female teachers. The sample consisted of 142 male teachers and 158 female teachers. The mean score for male teachers was 4.22, while female teachers had a higher mean score of 4.43. Levene's Test for homogeneity of variance indicated a significant difference in variances between the two groups $F(1-298)=8.47$, $p=.00$), violating the assumption of equal variances. As a result, the null hypothesis ($H_{01.2}$) which stated that there was no significant difference in perceptions of the curriculum objectives between male and female teachers, was rejected. The analysis showed a significant difference in these perceptions between the two groups. Female teachers demonstrated a higher mean perception score compared to male teachers.

Job experience-wise Analysis of Curriculum Objectives

$H_{01.3}$: There is no significant difference in teachers' perception towards the objectives of the curriculum of Pakistan Studies in the perspective of higher order thinking with reference to job experience at secondary school level.

Table 4.14

<i>Job experience-wise Analysis of Curriculum Objectives</i>						
Variable	Experience (in years)	n	Mean	Homogeneity of variance (Levene's Test)	P-value	Hypothesis status
Curriculum Objectives	5 and less than 5	08	4.06	1.59(4-295) p=.17	.10	H _{01.3} Accepted
	06-10	15	4.16			
	11-15	74	3.87			
	16-20	62	3.93			
	Above 20	141	3.95			
Significance level p< .05						

Table 4.14 presents the mean scores for curriculum objectives based on different levels of job experience. The sample sizes and mean scores vary across different experience categories. Levene's Test for homogeneity of variance indicated no significant difference in variances between the groups $F(4-295)=1.591$, $p=.17$), supporting the assumption of equal variances. As a result, the null hypothesis ($H_{01.3}$)

stating no significant difference in perception towards the curriculum objectives across different levels of job experience was accepted. The analysis revealed no significant difference in teachers' perceptions of the Pakistan Studies curriculum objectives at the secondary level, considering higher order thinking, across various levels of job experience.

Testing Hypotheses Instructional Practices

Area-wise analysis of instructional practices

H₀₂: There is no significant difference in teachers' perception about the instructional practices used for teaching Pakistan studies concerning higher order thinking at secondary school level.

H_{02.1}: There is no significant difference in urban and rural area teachers' perception about the instructional practices related to Acquiring knowledge used for teaching Pakistan studies concerning higher order thinking at secondary school level.

H_{02.2}: There is no significant difference in urban and rural area teachers' perception about the instructional practices related to Applying knowledge used for teaching Pakistan studies concerning higher order thinking at secondary school level.

H_{02.3}: There is no significant difference in urban and rural area teachers' perception about the instructional practices related to Reflection on knowledge used for teaching Pakistan studies concerning higher order thinking at secondary school level.

Table 4.15

Area-wise Analysis of Constructs of HOT (Instructional Practices)

Variables	Area	n	Mean	(Levene's Test)	P-value	Hypothesis status
Acquiring knowledge	Urban	165	3.90	8.77 (1-298) p=.003	.00	H _{02.1} : Rejected
	Rural	135	4.01			
Applying knowledge	Urban	165	3.93	2.50 (1-298) p=.11	.11	H _{02.2} : Accepted
	Rural	135	3.87			

Table 4.15 continue.....

Variables	Area	n	Mean	(Levene's Test)	P-value	Hypothesis status
Reflection on knowledge	Urban	165	4.26	2.83 (1-298)	.09	H _{02.3} : Accepted
	Rural	135	4.26	p=.09		

Significance level $p < .05$

Table 4.15 compares the mean scores for instructional practices related to acquiring knowledge, applying knowledge and reflection on knowledge between urban and rural areas. For acquiring knowledge, urban areas had a mean score of 3.90, while rural areas had a slightly higher mean score of 4.01. Levene's Test for homogeneity of variance indicated a significant difference in variances between the groups $F(1-298) = 8.77, p = .00$ leading to the rejection of the null hypothesis ($H_{02.1}$) stating no significant difference in perception between urban and rural areas. However, for applying knowledge and reflection on knowledge, Levene's Test showed no significant difference in variances between urban and rural areas ($p > .05$), leading to the acceptance of the null hypotheses ($H_{02.2}$ and $H_{02.3}$). The analysis revealed a significant difference in perception regarding instructional practices related to acquiring knowledge between urban and rural areas. However, there were no significant differences in perception regarding instructional practices related to applying knowledge and reflection on knowledge between the two areas.

Gender-wise Analysis of Instructional Practices

H_{02.4}: There is no significant difference in male and female teachers' perception about the instructional practices related to acquiring knowledge used for teaching Pakistan studies concerning higher order thinking at secondary school level.

H_{02.5}: There is no significant difference in male and female teachers' perception about the instructional practices related to applying knowledge used for teaching Pakistan studies concerning higher order thinking at secondary school level.

H_{02.6}: There is no significant difference in male and female teachers' perception about the instructional practices related to reflection on knowledge used for teaching Pakistan studies concerning higher order thinking at secondary school level.

Table 4.16*Gender-wise Analysis of Constructs of HOT (Instructional Practices)*

Variables	Gender	n	Mean	Homogeneity of variance (Levene's Test)	P-value	Hypothesis status
Acquiring knowledge	Male	142	3.88	3.78(1-298) p=.05	.05	H _{02.1} : Accepted
	Female	158	4.01			
Applying knowledge	Male	142	3.84	.59 (1-298) p=.44	.44	H _{02.2} : Accepted
	Female	158	3.96			
Reflection on knowledge	Male	142	4.27	.01 (1-298) p=.91	.91	H _{02.3} : Accepted
	Female	158	4.26			

Significance level $p < 0.05$

Table 4.16 compares the mean scores for instructional practices related to acquiring, applying and reflection on knowledge between male and female teachers. For acquiring knowledge, male teachers had a mean score of 3.88, while female teachers had a slightly higher mean score of 4.01. Levene's Test for homogeneity of variance indicated no significant difference in variances between the groups ($p=.05$), leading to the acceptance of the null hypothesis (H_{02.4}) stating no significant difference in perception between male and female teachers. Similarly, for applying knowledge and reflection on knowledge, Levene's Test showed no significant difference in variances between male and female teachers ($p>.05$), leading to the acceptance of the null hypotheses (H_{02.5} and H_{02.6}). The analysis revealed no significant difference in perception regarding instructional practices related to acquiring knowledge, applying knowledge, and reflection on knowledge between male and female teachers.

Job experience-wise Analysis of Instructional Practices

H_{02.7}: There is no significant difference in teachers' perception of the instructional practices related to acquiring knowledge used for teaching Pakistan studies concerning higher order thinking with reference to job experiences at secondary school level.

H_{02.8}: There is no significant difference in teachers' perception about the instructional practices related to applying knowledge used for teaching

Pakistan studies concerning higher order thinking with reference to job experiences at secondary school level.

H_{02.9}: There is no significant difference in teachers' perception about the instructional practices related to reflection on knowledge used for teaching Pakistan studies concerning higher order thinking with reference to job experience at secondary school level.

Table 4.17

Job experience-wise Analysis of Constructs of HOT (Instructional Practices)

Variables	Experience (in years)	n	Mean	Levene's Test	P- value	Hypothesis status
Acquiring knowledge	Less than 5	08	3.58	1.52(4-295) p=.19	.62	H _{02.7} = Accepted
	06-10	15	3.95			
	11-15	74	3.79			
	16-20	62	3.76			
	Above 20	141	3.77			
Applying knowledge	Less than 5	08	2.91	1.99(4-295) p=.09	.80	H _{02.8} = Accepted
	06-10	15	3.06			
	11-15	74	2.89			
	16-20	62	3.00			
	Above 20	141	2.97			
Reflection on knowledge	Less than 5	08	3.08	1.74(4-295) p=.13	.18	H _{02.9} = Accepted
	06-10	15	3.48			
	11-15	74	3.27			
	16-20	62	3.49			
	Above 20	141	3.41			

Significance level $p < .05$

Table 4.17 presents the mean scores for instructional practices related to acquiring, applying and reflection on knowledge across different levels of job

experience. Levene's Test for homogeneity of variance indicated no significant difference in variances between the groups for all instructional practices ($p > .05$), supporting the assumption of equal variances. Consequently, the null hypotheses ($H_{02.7}$, $H_{02.8}$, and $H_{02.9}$), stating no significant difference in perception across different levels of job experience regarding acquiring, applying and reflection on knowledge were accepted. The analysis revealed no significant difference in perception regarding instructional practices related to acquiring, applying and reflection on knowledge across different levels of job experience.

Testing Hypothesis Instructional Methods

Area-wise analysis of instructional methods

- H_{03} : There is no significant difference in teachers' perception about the instructional methods used for teaching Pakistan studies concerning higher order thinking at secondary school level.
- $H_{03.1}$: There is no significant difference in urban and rural area teachers' perception about the instructional methods related to acquiring knowledge used for teaching Pakistan studies concerning higher order thinking at secondary school level.
- $H_{03.2}$: There is no significant difference in urban and rural area teachers' perception about the instructional methods related to applying knowledge used for teaching Pakistan studies concerning higher order thinking at secondary school level.
- $H_{03.3}$: There is no significant difference in urban and rural area teachers' perception about the instructional methods related to reflection on knowledge used for teaching Pakistan studies concerning higher order thinking at secondary school level.

Table 4.18*Area-wise Analysis of Constructs of HOT (Instructional Methods)*

Variables	Area	n	Mean	Levene's Test	P-value	Hypothesis status
Acquiring knowledge	Urban	165	3.83	.68 (1-298) p=.68	.68	Ho _{3.1} : Accepted
	Rural	135	3.85			
Applying knowledge	Urban	165	3.34	.69 (1-298) P=.69	.69	Ho _{3.2} : Accepted
	Rural	135	3.38			
Reflection on knowledge	Urban	165	3.36	.71(1-298) P=.71	.71	Ho _{3.3} : Accepted
	Rural	135	3.40			

Significance level $p < .05$

Table 4.18 presents the mean scores for instructional methods related to acquiring, applying and reflection on knowledge among urban and rural area teachers. Levene's Test for homogeneity of variance indicated no significant difference in variances between urban and rural groups for all instructional methods ($p > .05$), suggesting equal variances. Consequently, the null hypotheses (H_{03.1}, H_{03.2}, and H_{03.3}), positing no significant difference in perception between urban and rural teachers regarding instructional methods related to acquiring, applying and reflection on knowledge, were accepted. The analysis indicates that there is no significant difference in perception between urban and rural area teachers concerning instructional methods related to acquiring, applying and reflection on knowledge.

Gender-wise Analysis of Instructional Methods

H_{03.4}: There is no significant difference in male and female teachers' perception about the instructional methods related to acquiring knowledge for teaching Pakistan studies concerning higher order thinking at secondary school level.

H_{03.5}: There is no significant difference in male and female teachers' perception about the instructional methods related to applying knowledge for teaching Pakistan studies concerning higher order thinking at secondary school level.

H_{03.6}: There is no significant difference in male and female teachers' perception about the instructional methods related to reflection on knowledge for teaching Pakistan studies concerning higher order thinking at secondary school level.

Table 4.19

Gender-wise Analysis of Constructs of HOT (Instructional Methods)

Variables	Gender	n	Mean	Levene's Test	P-value	Hypothesis status
Acquiring knowledge	Male	142	3.81	.94(1- 298) P=.94	.94	H _{03.4} : Accepted
	Female	158	3.86			
Applying knowledge	Male	142	3.25	.84(1- 298) P=.84	.84	H _{03.5} : Accepted
	Female	158	3.46			
Reflection on knowledge	Male	142	3.34	.72(1- 298) P=.72	.72	H _{03.6} : Accepted
	Female	158	3.41			

Significance level $p < .05$

Table 4.19 analysis of instructional methods related to acquiring, applying and reflection on knowledge among male and female teachers revealed no significant difference in variance between the two gender groups, as indicated by Levene's Test for homogeneity of variance ($p > .05$). This suggests that there are equal variances between male and female teachers' perceptions of instructional methods. Consequently, the null hypotheses (H_{03.4} Acquiring knowledge, H_{03.5} Applying knowledge, and H_{03.6} Reflection on knowledge) which assert no significant difference in perception between male and female teachers regarding instructional methods, were accepted. In conclusion, the findings indicate that there is no statistically significant difference in perception between male and female teachers concerning instructional methods related to acquiring knowledge (M=3.81 for males, M=3.86 for females, $p=.94$), applying knowledge (M=3.25 for males, M=3.46 for females, $p=.84$), and reflection on knowledge (M= 3.34 for males, M=3.41 for females, $p=.72$). These results suggest that gender does not significantly influence teachers' perceptions of instructional methods in the context of higher order thinking.

Job experience-wise Analysis of Instructional Methods

H_{03.7}: There is no significant difference in teachers' perception about the instructional methods related to acquiring knowledge for teaching Pakistan studies concerning higher order thinking with reference to job experience at the secondary school level.

H_{03.8}: There is no significant difference in teachers' perception about the instructional methods related to applying knowledge for teaching Pakistan studies concerning higher order thinking with reference to job experience at secondary school level.

H_{03.9}: There is no significant difference in teachers' perception about the instructional methods related to reflection on knowledge for teaching Pakistan studies concerning higher order thinking with reference to job experience at secondary school level.

Table 4.20

Job-experience wise Analysis of Constructs of HOT (Instructional Methods)

Variables	Experience (in years)	n	Mean	Levene's Test	P-value	Hypothesis status
Acquiring knowledge	Less than 5	08	3.69	2.53 (4-295) p=.04	.56	H _{03.7} = Accepted
	06-10	15	3.68			
	11-15	74	3.65			
	16-20	62	3.78			
	Above 20	141	3.70			
Applying knowledge	Less than 5	08	2.34	.28(4-295) p=.89	.03	H _{03.8} = Accepted
	06-10	15	2.34			
	11-15	74	2.51			
	16-20	62	2.66			
	Above 20	141	2.67			
Reflection on knowledge	Less than 5	08	2.49	1.31(4-295) p=.26	.16	H _{03.9} = Accepted
	06-10	15	2.62			
	11-15	74	2.75			
	16-20	62	2.82			
	Above 20	141	2.79			

Significance level $p < 0.05$

Table 4.20 presents the mean scores for instructional methods related to acquiring, applying and reflection on knowledge among teachers with different job experience levels. Levene's Test for homogeneity of variance showed no significant difference in variances across job experience groups for all instructional methods ($p > .05$), indicating equal variances. Consequently, the null hypotheses ($H_{03.7}$ Acquiring knowledge, $H_{03.8}$ Applying knowledge, and $H_{03.9}$ Reflection on knowledge), suggesting no significant difference in perception among teachers with different job experience levels regarding instructional methods, were accepted. The findings indicate that there is no statistically significant difference in perception among teachers with different job experience levels concerning instructional methods related to acquiring knowledge ($M = 3.69$ for less than 5 years, $M=3.68$ for 6-10 years, $M=3.65$ for 11-15 years, $M=3.78$ for 16-20 years, $M=3.70$ for above 20 years, $p=.04$), applying knowledge ($M=2.34$ for less than 5 years, $M=2.34$ for 6-10 years, $M=2.51$ for 11-15 years, $M=2.66$ for 16-20 years, $M=2.67$ for above 20 years, $p=.89$), and reflection on knowledge ($M=2.49$ for less than 5 years, $M=2.62$ for 6-10 years, $M=2.75$ for 11-15 years, $M=2.82$ for 16-20 years, $M=2.79$ for above 20 years, $p=.26$).

4.3 Phase II: Qualitative Data Analysis

According to Smith et al. (2009), qualitative research methodology is considered one of the best practices in research. Qualitative analysis is an effective method for extracting knowledge and insights from written or visual information. It involves the systematic analysis and interpretation of data using techniques such as document analysis, focus groups, content analysis, and thematic analysis. These methods enable researchers to identify patterns, themes, and key insights, leading to a deeper understanding of the research topic.

4.3.1 Section I: Document Analysis

Research objective No. 05. To analyze the five years (2014-2018 Group -1) question papers of Pakistan Studies of secondary level (Grade X) in the context of higher order thinking.

Table 4.21

Analysis of 2014 Pakistan Studies Annual Question Paper (Constructed and Extended Response Questions) – FBISE

Cognitive Levels	CRQs	Percentage (CRQs)	ERQs	Percentage (ERQs)
Remembering	09	56%	0	0%
Understanding	06	38%	02	67%
Applying	0	0%	0	0%
Analyzing	01	6%	01	33%
Evaluating	0	0%	0	0%
Creating	0	0%	0	0%
Total	16	100	03	100

Note: CRQs= Constructed Response Questions, ERQs= Extended Response Questions.

Table 4.21 presents the analysis of the Pakistan Studies annual question paper 2014, highlighting a strong emphasis on lower-order cognitive skills. In the constructed response questions, 56% target remembering, while 38% focus on understanding. There is minimal focus on higher order thinking, with just 6% targeting analyzing and no questions assessing applying, evaluating or creating. In the Extended response questions, the emphasis shifts slightly towards higher cognitive skills, with understanding accounting for 67% of the questions and analyzing making up 33%. However, there is still no presence of applying, evaluating or creating. Overall, the analysis indicates a predominant focus on recall and comprehension rather than the development of higher order thinking. The lack of questions assessing application, evaluation and creation suggests that the exam primarily tests memorization rather than encouraging higher order thinking.

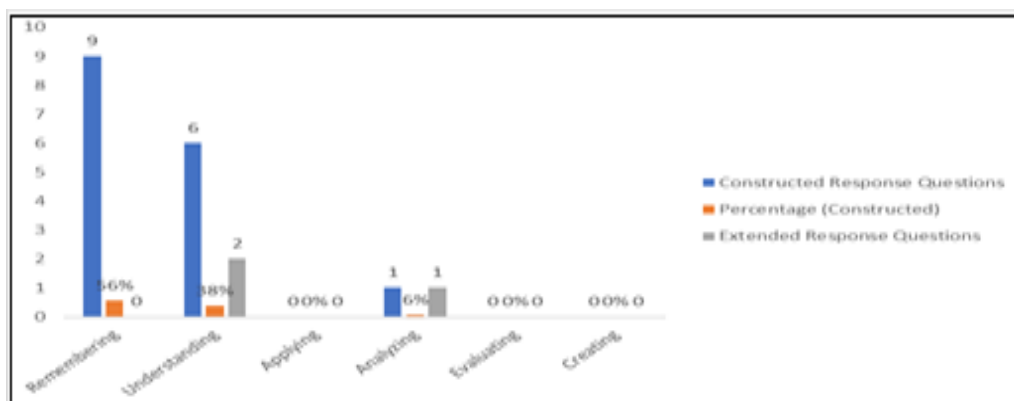


Figure 4.4 Graphic Representation of Table 4.21

Table 4.22

Analysis of 2015 Pakistan Studies Annual Question Paper (Constructed and Extended Response Questions) – FBISE

Cognitive Levels	CRQs	Percentage (CRQs)	ERQs	Percentage (ERQs)
Remembering	07	44%	0	0%
Understanding	07	44%	02	67%
Applying	01	6%	0	0%
Analyzing	0	0%	01	33%
Evaluating	01	6%	0	0%
Creating	0	0%	0	0%
Total	16	100	03	100

Note: CRQs= Constructed Response Questions, ERQs= Extended Response Questions.

Table 4.22 illustrates the distribution of cognitive levels in the 2015 Pakistan Studies annual question paper, highlighting a predominant focus on lower-order thinking. Among the constructed response questions, 44% assess remembering and understanding, while applying (6%) and evaluating (6%) receive minimal attention. Notably, analyzing (0%) and creating (0%) are completely absent. In contrast, the Extended response questions primarily assess understanding (67%) and analyzing (33%), reflecting a slight shift towards more complex cognitive processes. However, remembering, applying, evaluating and creating are entirely missing in this section. Overall, the distribution reveals a

strong emphasis on lower-order thinking in the Constructed response questions. However, higher order thinking remains underrepresented in the examination paper.

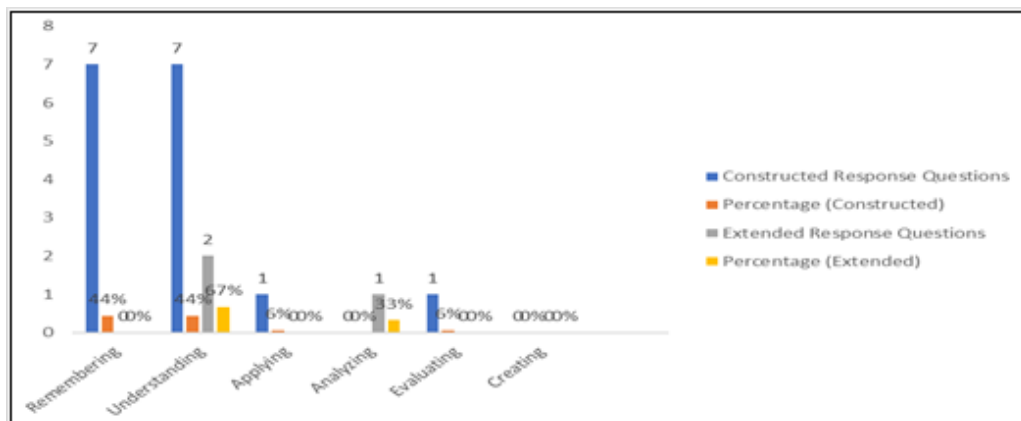


Figure 4.5 Graphic Representation of Table 4.22

Table 4.23

Analysis of 2016 Pakistan Studies Annual Question Paper (Constructed and Extended Response Questions) – FBISE

Cognitive Levels	CRQs	Percentage (CRQs)	ERQs	Percentage (ERQs)
Remembering	10	62.5%	0	0%
Understanding	05	31.25%	03	100%
Applying	0	0%	0	0%
Analyzing	01	6.25%	0	0%
Evaluating	0	0%	0	0%
Creating	0	0%	0	0%
Total	16	100	03	100

Note: CRQs= Constructed Response Questions, ERQs= Extended Response Questions.

Table 4.23 presents the cognitive level distribution in the 2016 Pakistan Studies annual question paper, analyzing constructed and extended response questions. The results indicate a continued emphasis on lower-order thinking

skills. Among the Constructed response questions, the majority (62.5%) assess remembering, followed by understanding (31.25%), with only a small portion (6.25%) targeting analyzing. Notably, applying, evaluating and creating are completely absent, reflecting a lack of higher order thinking (HOT) assessment. For the Extended response questions, 100% focus solely on understanding, with no representation of other cognitive levels. Overall, the data from 2016 question paper demonstrates a strong focus on remembering and understanding.

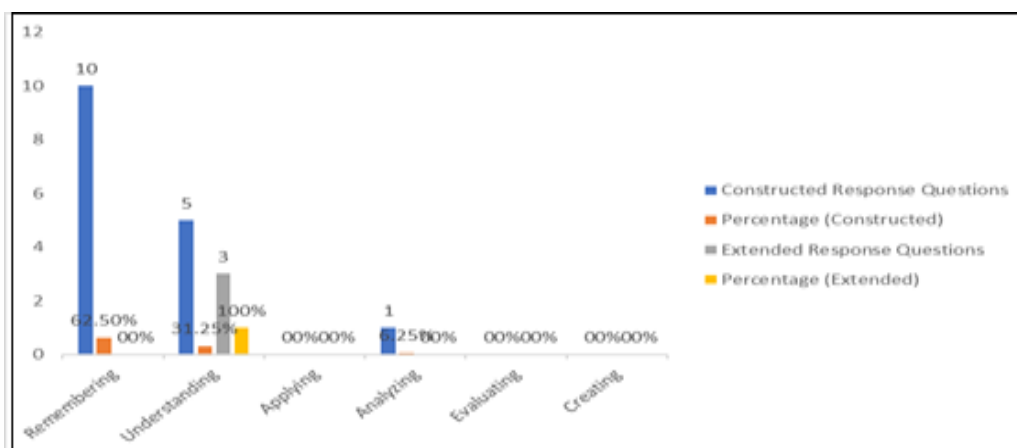


Figure 4.6 Graphic Representation of Table 4.23

Table 4.24

Analysis of 2017 Pakistan Studies Annual Question Paper (Constructed and Extended Response Questions) – FBISE

Cognitive Levels	CRQs	Percentage (CRQs)	ERQs	Percentage (ERQs)
Remembering	14	87.5%	01	33.33%
Understanding	02	12.5%	02	66.67%
Applying	0	0%	0	0%
Analyzing	0	0%	0	0%
Evaluating	0	0%	0	0%
Creating	0	0%	0	0%
Total	16	100%	03	100%

Note: CRQs= Constructed Response Questions, ERQs= Extended Response Questions.

Table 4.24 presents the cognitive level distribution in the 2017 annual question paper for Pakistan Studies, revealing a strong emphasis on lower-order thinking. Among the constructed response questions, the vast majority (87.5%) assess remembering, while only 12.5% focus on understanding. Applying, analyzing, evaluating and creating are entirely absent. For the Extended response questions, the focus is primarily on understanding (66.67%) and remembering (33.33%), with no representation of higher order thinking (applying, analyzing, evaluating or creating). Overall, the 2017 paper demonstrates a predominant focus on remembering and understanding across both question types. Constructed response questions heavily favor remembering, while Extended response questions include a significant portion dedicated to understanding. The lack of questions on higher order i.e. applying, analyzing, evaluating and creating highlights a continued trend of limited assessment of advanced cognitive abilities in this examination.

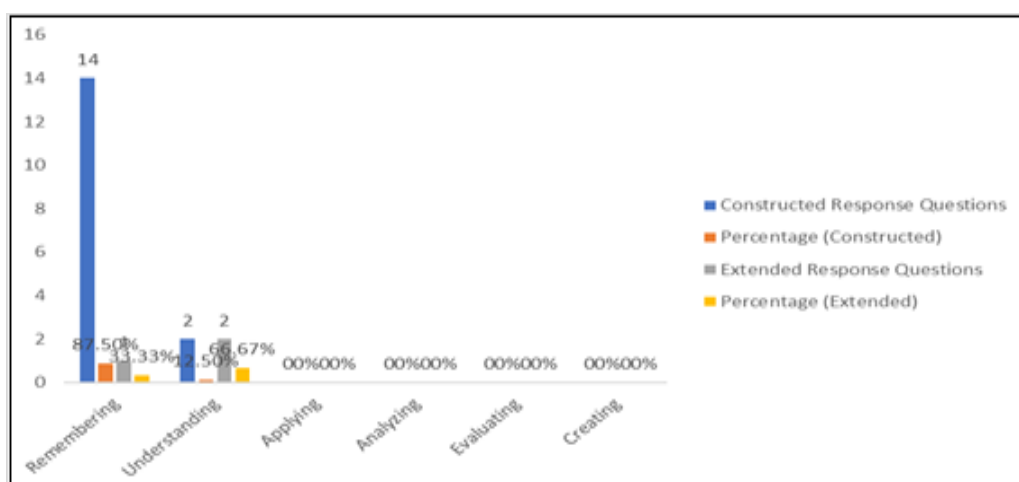


Figure 4.7 Graphic Representation of Table 4.24

Table 4.25

Analysis of 2018 Pakistan Studies Annual Question Paper (Constructed and Extended Response Questions) – FBISE

Cognitive Levels	CRQs	Percentage (CRQs)	ERQs	Percentage (ERQs)
Remembering	08	72.73%	0	0%
Understanding	02	18.18%	01	33.33%
Applying	0	0%	0	0%
Analyzing	0	0%	02	66.67%
Evaluating	01	9.09%	0	0%
Creating	0	0%	0	0%
Total	11	100%	03	100%

Note: CRQs= Constructed Response Questions, ERQs= Extended Response Questions.

Table 4.25 presents a distribution of questions across various cognitive levels in Pakistan Studies annual question paper (2018) (Constructed and Extended response questions) administered by FBISE, Islamabad. The question papers reveal a distribution of cognitive levels with a noticeable emphasis on remembering and understanding. For Constructed response questions, a majority (72.73%) are focused on remembering, with a smaller portion addressing understanding (18.18%) and evaluating (9.09%). There are no questions assessing applying, analyzing or creating. In contrast, Extended response questions place a significant emphasis on higher order thinking, particularly analyzing (66.67%), with some focus on understanding (33.33%). There are no questions on remembering, applying, evaluating or creating. Overall, the analysis of question paper 2018 shows a predominant focus on remembering in Constructed response questions and a shift towards higher order thinking in Extended response questions, especially analyzing. This indicates a partial but notable increase in the assessment of complex cognitive processes compared to previous years, though the overall assessment still remains limited in scope for higher order thinking.

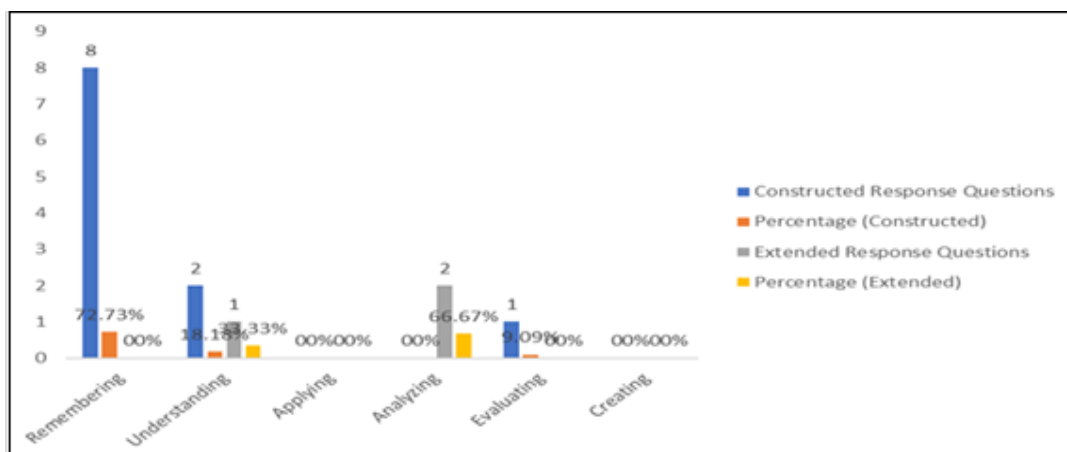


Figure 4.8 Graphic Representation of Table 4.25

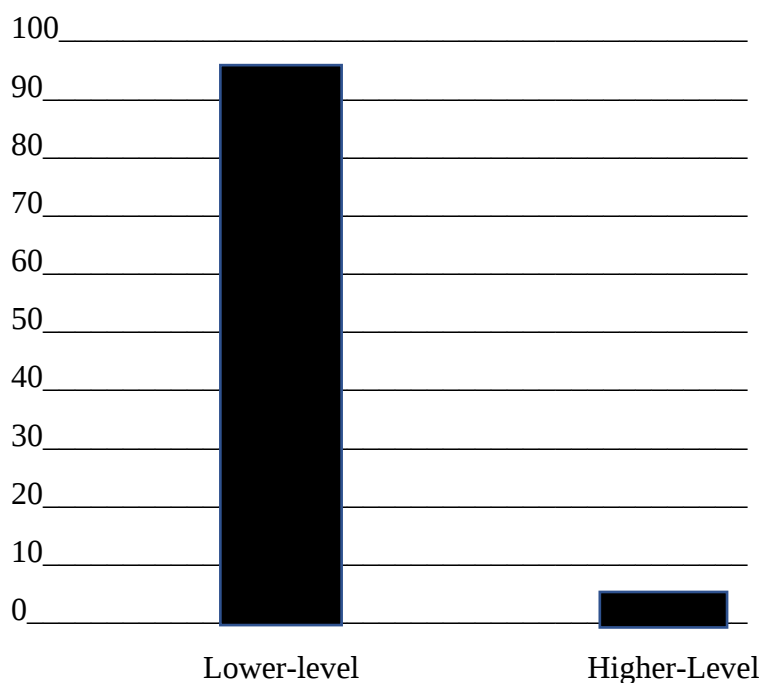


Figure 4.9 Total number of questions at lower and higher levels

Figure 4.9 presents the distribution of total questions based on cognitive levels. The horizontal axis displays the total number of questions, ranging from 0 to 100, while the vertical axis signifies the division between lower and higher-level questions, revealing approximately 96 percent fall under the lower-level category. These questions predominantly involve tasks such as recalling information, reproducing knowledge, or applying learned concepts and skills. In contrast, a smaller proportion, constituting around 4 percent of the total questions, belongs to the higher-level category. These questions necessitate more advanced cognitive processes, including analysis,

evaluation, and the synthesis of information. The table thus highlights a notable emphasis on lower-level cognitive skills in the assessed questions, with a comparatively limited focus on higher order thinking tasks. This table serves as a useful tool for educators, administrators, and curriculum developers to gauge the cognitive rigor embedded in an assessment and ensure a balanced approach that aligns with educational objectives.

Table 4.26

Document Analysis (Distribution of question papers of Pakistan Studies (2014-2018) according to Question Types

Question Type	Knowledge dimension	Cognitive dimensions					
		Remember	Understand	Apply	Analyze	Evaluate	Create
CRQs and ERQs	Factual	48					
	Conceptual		38		1		1
	Procedural			1		1	
	Metacognitive						

Note: Constructed Response Questions (CRQs). Extended Response Question (ERQs)

Table 4.26 outlines a detailed classification of constructed and extended response questions based on their knowledge dimension and cognitive dimensions. The questions are strategically grouped into three knowledge dimensions: Factual, Conceptual, and Procedural. Factual questions, numbering 48, primarily assess the recall of factual information and align with the cognitive dimension of remember. The conceptual dimension, represented by 38 questions, evaluates the understanding and conceptual grasp of the material, corresponding to the cognitive dimension of understanding. Additionally, there is one question categorized under the procedural dimension, emphasizing the application of procedures and aligning with the cognitive dimension of application. The table also mentions the Analyze and Evaluate dimensions, though specific questions under these categories are not provided. Furthermore, there is one question under the create dimension, assessing the ability to generate novel ideas or solutions. Notably, the table lacks information regarding questions falling under the metacognitive dimension, which involves an awareness and

control of one's cognitive processes. Overall, the table offers a comprehensive breakdown of how constructed and extended response questions engage with diverse knowledge and cognitive dimensions, providing valuable insight into the cognitive skills assessed by these question types.

4.3.2 Section II: Analysis of Interviews

In the study, three main research questions were analyzed using Thematic analysis. The researcher selected a sample of 12 teachers, comprising 5 males and 7 females for the study.

Research Question 1: How do secondary school teachers perceive and suggest the use of other instructional practices to teach Pakistan Studies, with a focus on promoting higher order thinking?

Research Question 2: How do secondary school teachers perceive and suggest the use of other assessment practices to assess Pakistan studies to foster higher order thinking?

Research Question 3. Why do secondary school teachers face challenges in the implementation of instructional and assessment practices aimed at fostering HOT?

Procedure of the Analysis of Interviews

In this study qualitative data were collected through semi-structured interviews with male and female teachers from diverse professional backgrounds, with teaching experience ranging from 15 to 30 years. The participants' ages varied from 40 to 55 years, ensuring a broad spectrum of perspectives. A total of twelve respondents from public-sector schools were selected for the interviews, including five male and seven female teachers. The analysis began with the first interview focusing on identifying emergent themes and patterns within the responses.

Thematic Analysis

The researcher employed thematic analysis following the six-step framework outlined by Braun and Clarke (2006) to systematically identify, analyze and interpret recurring themes within the qualitative data. This analysis was closely aligned with the predefined research questions, offering a structured exploration of instructional and assessment practices, as well as the challenges faced by teachers. To maintain participant confidentiality, each respondent was assigned a unique code (Dzimiri & Marimo, 2015). The coding system consisted of a number and a capital letter, such as M1 or F1, where the number (e.g., 1) represented the specific respondent, while the

letter (M) denoted a male participant and (F) represented a female participant. This approach ensured privacy while allowing for individual identification within the dataset.

Following Braun and Clarke's (2006) methodological steps ensured a rigorous and systematic thematic analysis process. The choice of thematic analysis was based on its suitability for systematically exploring and interpreting qualitative data. This approach not only captured surface-level instructional practices but also revealed deeper challenges, issues, and potential solutions suggested by participants. The rationale for employing Braun and Clarke's thematic analysis lies in its strong alignment with the research questions, its flexibility in handling diverse data, and its structured approach, making it particularly suitable for examining the complexities of instructional and assessment practices, as well as the challenges in teaching Pakistan Studies at the secondary school level. Additionally, Braun and Clarke's (2006) six-step framework facilitate an in-depth exploration of both explicit and underlying themes within the dataset (Maguire & Delahunt, 2017).

Braun and Clarke's (2006) 6-step framework

Step 1: Familiarization with Data

Step 2: Generating Initial Codes

Step 3: Searching for Themes

Step 4: Review and Refinement of Themes

Step 5: Defining and Naming Themes

Step 6: Producing the Report

Step 1: Familiarization with Data

The dataset under consideration encompasses responses to a series of open-ended questions, spanning opinion of teachers (M1 to M5 and F1 to F7). These responses provide insight into diverse perspectives on the effectiveness of current instructional and assessment practices. The approach entails a thorough examination of each written transcript through multiple readings to grasp the situation. It involved carefully reading through each transcript with the researcher making marginal notes to capture important details. The process of re-reading ensured that all details provided in

each transcript were retained allowing the researcher to gradually extract the main ideas from the data. Phrases and words specifically related to instructional and assessment practices are identified from each transcript. The process of reading and re-reading contributes to providing a comprehensive understanding of the participants' perspectives.

Step 2: Generating Initial Codes

Following a comprehensive review of the data encompassing opinions of teachers, the next step involves generating initial codes to identify key concepts, phrases, or patterns within the responses. The approach employed is open coding, signifying the absence of pre-set codes. The researcher individually coded each transcript, systematically working through every segment of text relevant to or directly addressing the research question.

Open coding is a qualitative research method that involves the preliminary exploration and analysis of raw data. In the thematic analysis framework, open coding is integral to the process of generating initial codes. The ensuing initial codes have been identified based on the emergent themes discerned in the dataset. The initial coding was initially conducted manually, utilizing hard copies of the transcripts and employing pens and highlighters (Maguire & Delahunt, 2017). As the coding progressed, the researcher generated new codes and occasionally modified existing ones.

Table 4.27

Codes from the Perceptions of Secondary School Teachers

Research questions	Codes
RQ1	Brainstorming; Problem-solving; Research-based Learning; Cooperative Learning; Questioning and Friendly environment.
RQ2	Dissatisfaction; Lecture Method; Textbook-centric; Ignored activities and Overburdened Teachers.
RQ3	Lack of training and attention Continuous Professional Development.
RQ4	Visits to historical places; Enhanced use of PowerPoint; Group discussions; Problem-based learning; Computer activities; Audio-Visual Aids; Study tours, Internet and multimedia utilization.

Table 4.27 continue

Research questions	Codes
RQ5	Lack of Resources; Infrastructure issues; Heavy schedule; Time constraints; Shortage of trained teachers and Poor quality of learning.
RQ6	Practical-based exams; Objective and Project-based questions; inclusion of Map, Globe and diverse Bloom's Taxonomy Levels.

Table 4.27 presents the initial codes extracted from teachers' perceptions, categorized according to the research questions. These codes serve as foundational elements for further refinement into broader themes during the subsequent stages of thematic analysis.

Step 3: Searching for Themes

In this step, the initial codes generated from the dataset were organized and grouped into main themes relevant to each research question (interview protocol). These themes provide a structured framework for understanding the diverse perspectives and insights shared by the participants to each research question. The themes were further refined and examined for patterns.

Step 4: Review and Refinement of Themes

During this step, the initially identified themes undergo a meticulous examination and refinement process to ensure their accuracy and comprehensiveness in capturing the essence of the data. Themes generated in previous step are carefully reviewed, modified and developed to enhance clarity. To assess each theme all relevant data associated with it is gathered and color-coded for clarity. The researchers systematically review the data associated with each theme assessing whether the information truly supports the identified theme.

Step 5: Defining and Naming Themes

At this stage, each refined theme was clearly defined and a distinctive name was assigned to encapsulate its essence. This step was crucial in ensuring a shared understanding of the thematic content and enhancing the clarity of research findings. By providing precise definitions and meaningful labels, the researcher facilitated effective communication of the key insights derived from the analysis.

Table 4.28*Qualitative Analysis (N = 12)*

Themes	Categories	Codes	Occurrence
Instructional practices for developing higher order thinking	Perceptions	Brainstorming	06
		Questioning	07
		Research-based Learning	06
		Friendly environment	03
		Problem-solving	06
Dissatisfaction with current instructional practices	Dissatisfaction	Lecture method	10
		Textbook-centric	08
		Ignored activities	09
Lack of training and attention in professional development	Lack of training in teaching Pakistan Studies	Insufficient training	11
		Lack of attention in CPD programs	10
Teachers' suggestions on other instructional practices	Instructional practices	Visit to historical places	09
		Use of PowerPoint	05
		Computer activities	04
		AV aids	10
		Problem-based learning	07
		Internet and multimedia	08
		Cooperative learning	06
		Questioning	08
		Group discussion	04
Examination improvement recommendations	Suggestions for examination improvement	Practical-based exams	06
		More objective type questions	06
		Project-based questions.	07
		Inclusion of Maps/globes.	06
		Inclusion of all levels of Revised Bloom's Taxonomy in assessment	07
		More focus on formative assessment.	07
		Involvement of subject specialists in paper setting.	10
Challenges in implementing higher order thinking practices	Challenges	Overburdened teachers	10
		Lack of resources	11
		Lack of subject specialists	10
		Lack of funds	08
		Overcrowded classes	07
		Limited visual Aids	07
		Teachers' disengagement in paper setting	09
			07

Table 4.28 presents key themes, categories and codes derived from the study, along with their occurrence frequencies. It highlights instructional practices for

developing higher order thinking, teachers' dissatisfaction with current practices, lack of professional development opportunities and suggested other instructional practices. Additionally, it emphasizes the need for practical assessments, objective-based questions and subject specialists' involvement in paper setting, while also addressing challenges in implementing higher-order thinking practices.

Theme 1: Instructional practices for developing Higher Order Thinking

The thematic analysis of teachers' perspectives on instructional and assessment practices in Pakistan Studies revealed several key themes. The first theme, instructive practices for developing higher order thinking (HOT), indicated that six teachers emphasized brainstorming, seven preferred questioning, and six highlighted research-based learning and problem-solving. Additionally, three teachers stressed the importance of maintaining a friendly classroom environment to foster HOT skills. This theme underscores how HOT promotes critical thinking and creativity among students. Teachers widely agreed that methods such as brainstorming, cooperative learning, problem-solving, and research-based learning are effective in developing higher cognitive skills. They also highlighted the importance of utilizing internet resources to enhance students' analytical abilities. The respondents emphasized that fostering HOT requires individual attention and diverse instructional strategies, stating, *“I think through cooperative learning, questioning, project method, debates, and a friendly environment, a teacher can develop higher-order thinking in students. Students might be encouraged to ask questions frequently”* (Teacher M1, M4, M2, F3, F6).

The teachers explained that

Teachers need internet access and department-organized workshops to enhance their instructional practices and stay updated with modern teaching methodologies. They should enhance their studies; they should get training every year or at least one time in three years. It needs time and a competent teacher who can guide the students to learn and predict outside the box. Students may be guided to do extensive reading about the topic to broaden their vision. To develop higher order thinking, the use of group discussions and brainstorming is essential (Teacher F2, F4, F7, M5).

The analysis of the provided excerpts reveals several noteworthy insights into teachers' perceptions of higher order thinking (HOT). Primarily, educators widely

acknowledge the manifold benefits associated with HOT, recognizing its pivotal role in fostering critical thinking and creativity among students. In conclusion, teachers are encouraged to engage in continuous professional development by consulting the internet, attending department-arranged workshops, and enhancing their studies. Regular training is recommended, preferably on an annual basis or at least once every three years, to ensure continuous professional development. Additionally, collaborative activities, including group discussions and resource sharing through brainstorming, are emphasized to enhance instructional effectiveness. The excerpts underscore the importance of dedicated time and competent guidance from teachers to foster students' learning, encouraging extensive reading to broaden their perspectives beyond conventional boundaries. Moreover, the significance of a conducive learning environment is emphasized, with a focus on creating a friendly setting that encourages students to pose questions actively. Participants highlighted the importance of cooperative learning, debates and questions to foster higher order thinking.

Theme 2: Dissatisfaction with Current Instructional Practices

The thematic analysis revealed a significant level of dissatisfaction among teachers regarding current instructional practices in Pakistan Studies. A majority of teachers expressed concerns over the dominance of the lecture method, with ten teachers highlighted its excessive use. Similarly, eight teachers criticized the textbook-centric approach, which limits opportunities for interactive learning. Additionally, nine teachers pointed out that essential learning activities are often ignored, further restricting students' engagement and critical thinking development. These findings suggest that the current instructional methods fail to foster higher order thinking, reinforcing rote memorization rather than analytical skills. Teachers emphasized the need for interactive teaching approaches, including multimedia, cooperative learning, and problem-based instruction, to improve student engagement and learning outcomes. Most of the teachers mentioned, "*Teachers are using just a textbook or lecture method. Students are passive, feeling bored and burdened*" (Teachers F3, F6, F7, M2, M3, M5). This underscores the need for alternative instructional methods.

Theme 3. Lack of Training and attention in Professional Development

The analysis revealed a widespread concern among teachers regarding inadequate training and limited professional development opportunities in Pakistan

Studies instruction. Eleven teachers emphasized the issue of insufficient training, indicating that they had not received adequate preparation to implement effective teaching strategies. Additionally, ten teachers highlighted the lack of attention given to Continuous Professional Development (CPD) programs, suggesting that existing professional development initiatives do not focus on equipping teachers with the necessary skills to promote higher-order thinking. Based on the interview data, many respondents emphasized the necessity of training for teachers. One respondent noted, *"FDE organizes continuous professional development (CPD) training for science subjects. However, I haven't participated in any professional development for teaching Pakistan Studies. As teachers, we mainly share knowledge with students and lack adequate training and seminars to enhance our teaching skills"* (Teacher M5). Another respondent commented, *"FDE training primarily focuses on science subjects, and subjects like Pakistan Studies are often neglected. We haven't received any specific training for Pakistan Studies teaching"* (Teacher F7).

Most respondents stated that

Teachers of Pakistan Studies lack adequate training and seminars that could enhance their teaching abilities. In the Federal Directorate of Education, Islamabad, the focus of training is primarily on science subjects, with insufficient attention given to subjects like Pakistan Studies. While the FDE conducts continuous professional development (CPD) training for science subjects, we have not had the opportunity to attend any professional training specifically tailored to teaching Pakistan Studies. Our department is not interested in this subject, Although the Federal Directorate of Education (FDE) organizes continuous professional development (CPD) training for science subjects, the respondents reported not having attended any professional training specific to teaching Pakistan Studies. FDE's trainings are primarily focused on science subjects, and unfortunately, Pakistan Studies is not given due importance in the training programs (Teachers F1, F2, F6, M1, M2, M3, M4).

One teacher stated *"I had attended a workshop regarding Pakistan Studies I got knowledge about the world globe and learned how to draw the outline of a Map of Pakistan but mostly FDE organized continuous professional development (CPD)*

Training for science subjects (Teacher F4). Another respondent said “*Yes, I had got the training in teaching the subject of Pakistan Studies at Quaid-e-Azam University Islamabad very long ago. I think more teacher training programs may be organized*” (Teacher F3).

Teachers express a unanimous need for mandatory training on effective teaching methods based on interview data. They highlight a lack of training opportunities, with one respondent emphasizing the absence of quality training and seminars to enhance teaching abilities. The disparity in training focus is evident, as some teachers note that the Federal Directorate of Education (FDE) primarily organizes continuous professional development (CPD) sessions for science subjects, neglecting the importance of similar training for Pakistan Studies. The majority of respondents reveal a dearth of professional development opportunities specifically tailored for the teaching of Pakistan studies, signaling a need for comprehensive training initiatives in this subject.

Theme 4: Teachers' suggestions on other Instructional Practices

Teachers highlighted the need for diverse instructional practices to enhance student engagement and promote higher-order thinking in Pakistan Studies. Nine teachers suggested organizing visits to historical places, allowing students to connect theoretical knowledge with real-world experiences. Five teachers recommended the use of PowerPoint presentations, while four teachers advocated for computer-based activities to make lessons more interactive. The use of audiovisual (AV) aids was emphasized by ten teachers, reinforcing the importance of multimedia in improving content delivery. Seven teachers supported problem-based learning, and eight teachers suggested the integration of internet resources and multimedia to facilitate a more dynamic learning environment. Furthermore, six teachers recommended cooperative learning as an effective strategy, while eight teachers stressed the role of questioning techniques in encouraging critical thinking. Lastly, four teachers emphasized the importance of group discussions to promote student participation and collaborative learning.

Based on interview data, a teacher suggested that

There is a need to shift towards Problem-based learning by incorporating diverse teaching methods such as demonstrations and the use of audio-visual

aids. Classrooms should be equipped with PowerPoint presentations, multimedia facilities, and internet access. Additionally, students should have access to library resources, and teachers should employ various interactive methods, such as group discussions, to engage students more effectively, moving beyond the traditional lecture method (Teacher M3).

The following are excerpts of the teachers:

Other than classroom activities, students should go for study tour. They have to be facilitated to use audio-visual aids, multimedia, field trips, internet, documentaries, problem-based learning, PPT, library books and group discussions (Teachers M1, M2, M4, F1, F2, F3, F5).

Teachers should incorporate 2-3 instructional methods, including project-based learning and the use of maps. They should encourage library visits and consult various books, including latest maps and graphs, which should be made available in all institutions. However, no strategy will be effective unless class sizes are reduced to a reasonable limit. Additionally, students should be taught how to use field notes after visiting real-world locations to enhance their learning experience (Teachers F3, F4, F6, F7, M4, M5).

One respondent from rural area suggested that

Students should have access to the internet and library books and there should be a focus on Problem-based learning. He recommended increasing the use of PowerPoint presentations and group discussions and incorporating multimedia, reading materials, and videos in classrooms. In rural schools, some teachers from the NGO "Teach for Pakistan" teach secondary level students using other instructional and assessment practices. TFP provides monthly training, coaching, group meetings and observations requires teachers to submit pre-work and reflections, including reading materials and videos. These methods could also be applied in teaching of Pakistan Studies (Teacher M2).

The analysis of teachers' perspectives on instructional practices highlights a shared emphasis on diverse teaching methods beyond higher-order thinking (HOT). Teachers advocate for problem-based learning, computer activities, and visual aids, along with study tours, internet resources, multimedia, and skill-based learning to enhance

instruction. A rural teacher's input highlights alternative approaches used by "Teach for Pakistan" educators, including a structured five-step lesson plan and continuous professional development. Overall, the findings reflect a strong commitment to innovative and multifaceted instructional strategies in teaching Pakistan Studies. These findings highlight the necessity of interactive and technology-driven instructional methods to foster a more engaging and effective learning environment in Pakistan Studies.

Theme 5. Challenges in Implementing Higher Order Thinking Practices

The thematic analysis revealed several challenges that hinder the implementation of higher order thinking (HOT) practices in Pakistan Studies classrooms. The most frequently reported issue was the lack of resources, identified by eleven teachers, which limits the availability of modern teaching tools and interactive learning materials. Similarly, 10 teachers highlighted that overburdened teachers struggle to implement innovative instructional strategies due to excessive workload and administrative responsibilities. Another significant barrier was the shortage of subject specialists, noted by 10 teachers, which affects the quality of content delivery and the integration of advanced teaching methodologies.

Furthermore, eight teachers reported lack of funding as a critical issue, restricting access to essential learning resources, training programs, and infrastructure improvements. Seven teachers identified overcrowded classrooms, which limit student-teacher interaction and make personalized instruction challenging. Additionally, seven teachers emphasized the absence of visual aids, making it difficult to engage students effectively. Lastly, nine teachers noted that teachers' disengagement in paper setting prevents assessments from aligning with HOT principles, as exams continue to focus on rote memorization rather than critical thinking and analysis.

In the interviews, most of the teachers stated *"Time limitations as a major issue. They cannot incorporate creative and innovative teaching techniques due to the limited time allocated for the subject"* (Teachers F6, F3, M4, M5, F2, F5).

Some teachers mentioned *"Inadequate training and a shortage of modern teaching tools. This lack of training often forces them to rely on traditional methods, and students' disinterest in Pakistan Studies"* (Teachers M2, F3, F4).

Many teachers stated

Large class sizes and the lack of subject-specific teachers are main challenges. Large classes divide the attention and make it difficult for both teachers and students to engage in teaching and learning effectively. Pakistan Studies is often scheduled at the end of the day with only two periods per week, leading to student fatigue and decreased attention (Teachers M1, M3, M5, F2, F4, F5, F7).

Another teacher stated “*Outdated teaching methods, lack of proper infrastructure, resources, and funding are the greatest barrier to promoting creativity*” (Teacher M4).

Teachers identify various challenges in incorporating higher order thinking (HOT) in their teaching practices. These challenges include a lack of resources, insufficient training, overcrowded classrooms, a shortage of trained teachers, and poor learning quality. The impact of COVID-19 is also highlighted, with concerns about the unavailability and unawareness of modern techniques during the pandemic. The shortage of subject teachers and large class sizes further compound the difficulties in providing individual attention to students. Teachers express frustration with the restrictions imposed by traditional teaching methods, emphasizing the need for proper training and modern technology. Funding constraints, time limitations, and unfavorable timetabling for Pakistan Studies contribute to the inability to incorporate creative and innovative teaching techniques. Teachers stress the necessity of group discussions and professional guidance to encourage deep thinking. This suggests a need for addressing resource gaps in educational institutions. These findings underscore the structural and resource-related obstacles that educators face in fostering higher-order thinking, emphasizing the need for policy-level reforms, improved teacher training, and better resource allocation.

Theme 6. Examination Improvement Recommendations

Teachers provided several recommendations to enhance the examination system for Pakistan Studies. Six teachers advocated for practical-based exams, suggesting that hands-on assessments would better evaluate students' understanding and application of concepts. Similarly, six teachers recommended incorporating more objective-type questions, while seven teachers emphasized the need for project-based questions to foster creativity and critical thinking.

Additionally, six teachers highlighted the importance of integrating maps and globes into assessments to enhance geographical understanding. Seven teachers stressed that exams should cover all levels of Revised Bloom's Taxonomy, ensuring a balanced evaluation of students' cognitive abilities beyond mere recall and comprehension. Another seven teachers suggested placing greater emphasis on formative assessment, allowing for continuous evaluation and improvement rather than relying solely on summative exams.

A significant concern was the lack of subject specialists in examination paper setting, which ten teachers viewed as a major issue. They advocated for the inclusion of subject experts to ensure that assessment questions align with curriculum objectives and promote higher order thinking skills.

These recommendations indicate a collective desire among teachers to modernize the examination system by making it more analytical, application-based, and aligned with contemporary educational standards. Implementing these changes could improve students' conceptual understanding and reduce reliance on rote memorization.

Based on the interview data, teachers suggested several changes to the typical examination system. They emphasized the importance of formative assessments and the involvement of subject-specific teachers as paper setters. For example, one teacher stated, *"More focus should be given to formative assessment to provide feedback, and relevant subject teachers must be assigned the duty of paper setters"* (Teacher M2).

Additionally, many participants recommended a significant shift towards objective-type questions. Many teachers stated:

70% of the questions in the paper on Pakistan Studies should be objective type, while 30% should be project-based. Some topics from the book should be assigned to students for presentations, and these presentations should be part of the final examination. Exams should be practical-based (Teacher M3, M4, F3, F4, F5, F6).

Teachers mentioned the importance of engaging students with the subject matter in a meaningful way. *"The pattern of the Pakistan Studies paper should be objective type, including short questions and multiple-choice questions (MCQs). This will help*

students develop an interest in learning about their native country rather than memorizing book content (Teacher M4, M5, F7).

Teachers also highlighted the need for innovation in question papers. For instance, one teacher remarked:

The typical examination system should end now. The paper of Pakistan Studies should consist entirely of objective questions from the whole book, and each student should receive a different objective-type question paper. Diagnostic tests, summative and unit tests can be included (Teacher F5).

Moreover, concerns were raised regarding the limited use of revised Bloom's taxonomy in question papers. One teacher elaborated "*Revised Bloom's taxonomy is not fully utilized when creating questions for Pakistan Studies. Paper setters only apply the first three levels, which limits the assessment of higher order thinking skills*" (Teacher M3).

Teachers advocate for a significant overhaul of the traditional examination system, emphasizing the need for a more dynamic and formative assessment approach. Suggestions include assigning subject teachers as paper setters, providing item analysis training, and incorporating a higher percentage of objective-type questions (70%) and project-based assessments (30%) in Pakistan Studies papers. Many propose practical-based exams, urging an end to the conventional exam pattern. Teachers express a desire for objective-type questions in the entire book, with each student receiving a unique question paper to avoid repetition. Furthermore, recommendations include the mandatory use of maps/globes in question papers and the inclusion of diagnostic tests, summative assessments, and unit tests. Despite recognizing the relevance of revised Bloom's taxonomy, teachers highlight its limited application, with questions predominantly addressing the first three levels, particularly in Pakistan Studies at the Secondary Level.

Assigning clear and distinct names to each theme ensures that they are easily recognizable and convey their content accurately. These names aim to capture the core of each theme, allowing for efficient communication and interpretation during the analysis and reporting phases of the research.

Step 6: Producing the Report

In the final phase of Braun and Clarke's (2006) thematic analysis, the identified themes are synthesized into a cohesive narrative, aiming to summarize the crux of the collected data.

The exploration into strategies for fostering higher order thinking skills among students uncovered various pedagogical approaches. Effective means such as brainstorming, problem-solving, research-based learning, cooperative learning, and cultivating a friendly environment were recognized as instrumental in nurturing cognitive abilities. Teachers expressed discontent with prevailing instructional practices in Pakistan studies, highlighting issues such as the lecture-centric method, a textbook-centric approach and the perceived burden of their responsibilities. The dissatisfaction underscored the need for a departure from traditional approaches.

Concerns about professional development deficiencies emerged, with participants noting insufficient training and a lack of attention to Pakistan Studies in professional development programs. This highlighted a gap in addressing the unique needs of teachers in this subject. Teachers proposed innovative instructional practices for higher order thinking, including visits to historical places, enhanced use of multimedia tools, group discussions, problem-based learning, and leveraging technology for effective learning experiences. This showcased a collective desire for a pedagogical revolution.

However, implementing higher order thinking practices faced challenges such as infrastructure issues, lack of resources, heavy schedules, time constraints, shortage of trained teachers, poor learning quality, and insufficient funding. These implementation issues served as barriers to the seamless integration of innovative practices. Suggestions to improve examinations included practical-based exams, objective and project-based questions and the incorporation of diverse levels of Bloom's Taxonomy to enhance the evaluation process. This emphasized the importance of reevaluating assessment methods to align with the desired shift in instructional practices.

By weaving these themes together, the research report offers a rich and nuanced exploration of instructional practices and challenges in Pakistan studies teaching at secondary level, specifically focusing on higher order thinking. Grounded in

participants' voices through examples from the data the report provides a comprehensive understanding of the study's objectives.

4.4 Phase III: Triangulation of Results

Triangulation is a technique for improving the validity and trustworthiness of research findings (Cohen, Manion, & Morrison, 2007). In research, triangulation involves combining multiple methods to address the limitations inherent in any single method. This approach enhances the validity and reliability of the findings by corroborating evidence from different sources (Nobel & Heale, 2019). In this study triangulation was achieved through the use of three distinct research methods.

In quantitative phase, a survey was conducted using a self-developed questionnaire, which included demographic variables and items related to curriculum objectives, instructional practices and methods. The survey data were subjected to statistical analysis to determine teachers' perceptions regarding instructional and assessment practices in the perspective of higher order thinking.

In qualitative phase, firstly document analysis was employed focusing on the analysis of annual Pakistan Studies question papers (2014-2018). Thematic analysis was applied to extract key themes and patterns from the question papers, providing valuable insight into the assessment practices used to evaluate higher order thinking. Secondly, semi-structured interviews were conducted with teachers who were teaching Pakistan Studies at secondary school level. These interviews were analyzed using Thematic analysis aimed to explain teachers' perceptions about instructional and assessment practices.

By integrating data from these three methods, methodological triangulation was achieved in this research study. The survey provided quantitative data, the document analysis offered insights from existing materials and the interviews provided qualitative insights from the perspectives of the teachers. The convergence of findings from these diverse sources strengthened the overall validity and reliability of the study results.

4.4.1 Integration of Quantitative and Qualitative Analysis

Mixed method results according to the objectives of the study.

Table 4.29*Mixed Methods Results*

Quantitative		Qualitative	Confirmation /Discordance of results
(Questionnaire; Instructional Practices)	(Document Analysis: Annual question papers 2014-2018; Assessment Practices)	(Interview: Instructional and Assessment Practices)	
The curriculum of Pakistan Studies does not promote observation, creativity, and reflection (M = 2.48).	Assessment practices in Pakistan Studies are predominantly limited to lower order thinking such as remembering and understanding; neglecting analysis, evaluation and creation.	Teachers highlighted <i>time constraints, inadequate training and lack of modern teaching tools, infrastructure issues, inadequate funding and resources as barrier to adopt creative instructional practices</i> . They recommended <i>practical-based examination with 70% objective type questions and 30% project-based questions. They emphasized the use of maps and globes. Unseen questions may be asked to reduce rote memorization.</i>	Confirmation
Instructional practices of acquiring knowledge were based on lower order thinking (M = 3.78).	Assessment practices focused on remembering and understanding.	Teachers identified <i>outdated methods, large class sizes, lack of subject specialists and poor timetabling as major obstacle to foster creativity</i> . They suggested to enhance teaching practices by using <i>PowerPoint presentations, group discussions, multimedia, field trips, blended learning, internet access and library resources. Skill-based learning and innovative approaches</i> were recommended.	Confirmation
Heavy reliance was on textbook (M = 4.63); and open-ended questions were rarely used (M = 3.33).	Annual question papers focused heavily on remembering, with minimal focus on applying, analyzing and creating.	Most of the teachers stated that there is an over-reliance on textbook and a need to use interactive instructional methods. Few teachers reported, open-ended questions should be used as compared to traditional assessment methods.	Confirmation
Problem-based learning was least prevalent (Mean = 1.99).		Most of the teachers apply <i>traditional methods like lecture and discussion, limiting adoption of innovative approaches</i>	Confirmation
		Teachers said due to <i>FBISE paper pattern, students try to get maximum numbers by cramming rather than deep learning. Paper pattern may be improved that promote students to write responses on the basis of their own thinking and perception.</i>	Confirmation

Table 4.29 continue.....

Quantitative		Qualitative	Confirmation /Discordance of results
(Questionnaire; Instructional Practices)	(Document Analysis: Annual question papers 2014-2018; Assessment Practices)	(Interview: Instructional and Assessment Practices)	
Project Method was least prevalent (M=2.24).	Project-based assessments which could better measure HOT are not utilized.	Most of the teachers suggested a <i>mix of project-based assessments, oral presentations and inquiry-based tasks to cater to different learning styles and promote critical thinking. Pakistan Studies paper should be organized on the basis of 50% MCQs and 50% weightage should be given to extended response questions.</i>	Confirmation
PowerPoint presentations were least used (M=2.15).	Majority of questions focus on remembering with least number of questions regarding higher order thinking.	Most of the teachers said that <i>typical examination system should be end now. Presentations should be a part of examination. Invite teachers to participate in examination paper-setting.</i>	Confirmation
	Document analysis shows consistent patterns of stereotype questions across years.	Teachers recommended that <i>analytical and critical questions be asked instead of asking stereotype questions. Compare and contrast the phenomenon, why and why not be added. Cramming should be discouraged.</i>	Confirmation

Table 4.29 presents the mixed-methods results, highlighting the alignment between quantitative and qualitative findings regarding instructional and assessment practices in Pakistan Studies. The quantitative findings on curriculum objectives indicate that teachers disagreed with the statement that the Pakistan Studies curriculum promotes creativity, analysis, observation, and reflection. This was confirmed by document analysis, which revealed that annual examination questions (2014-2018) primarily assessed lower-order thinking skills such as remembering and understanding, rather than higher order thinking skills like analysis, evaluation, and creation.

The quantitative analysis of instructional practices found that acquiring knowledge was the most frequently practiced instructional method. This was supported by qualitative interviews, where teachers reported a reliance on traditional teaching methods, including lectures and textbook-based instruction. Document analysis further reinforced these findings, as examination questions focused mainly on lower-order cognitive skills, suggesting that instructional practices were not effectively fostering

critical thinking or active learning. Teachers, however, advocated for integrating more interactive teaching strategies, such as multimedia, PowerPoint presentations and field trips, to enhance student engagement.

The quantitative analysis of instructional methods showed that the lecture method was the most commonly used, with limited use of innovative approaches. This was echoed in interview responses, where teachers acknowledged their dependence on traditional methods due to factors such as outdated teaching approaches, large class sizes, poor timetabling, and a lack of subject specialists. Document analysis also confirmed this pattern as exam questions did not encourage active learning or critical thinking. Teachers expressed the need for blended learning and multimedia resources to improve student engagement, highlighting a gap between current practices and modern instructional methodologies.

The qualitative analysis of assessment practices revealed that teachers recommended updating the existing examination system. They suggested a stronger focus on formative assessment and proposed that 70% of questions should be objective-based, while 30% should involve project-based assessments. Teachers also emphasized the need to incorporate student presentations as part of the final examination. Document analysis from 2014-2018 indicated that exams predominantly assessed lower-order thinking (remembering and understanding) while rarely including evaluation or creative thinking. This revealed a disconnect between instructional objectives and the examination framework, which still promotes rote memorization over critical thinking and practical application.

Challenges identified during the qualitative thematic analysis included infrastructure issues, lack of study tours, inadequate funding and resources, overcrowded classrooms, overburdened teachers, time constraints, and a shortage of trained teachers or subject specialists. These barriers made it difficult for educators to implement higher order thinking practices effectively.

Overall, the convergence of findings from quantitative and qualitative analyses confirmed that instructional and assessment practices in Pakistan Studies are largely focused on lower-order thinking. Teachers acknowledged the need for curriculum and examination reforms, advocating for modern instructional practices, skill-based learning and diverse assessment methods to enhance higher order thinking in students.

CHAPTER 5

SUMMARY, FINDINGS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The study aimed to investigate instructional and assessment practices in the perspective of higher order thinking at secondary school level. The study objectives were to: (i) determine teachers' perception towards the objectives of the curriculum of Pakistan Studies; (ii) investigate the instructional practices used for teaching Pakistan Studies; (iii) find out the instructional methods used for teaching Pakistan Studies; (iv) explore demographic variables including area, gender and job experience in the context of curriculum objectives, instructional practices and methods; and (v) analyze the five years (2014-2018 Group -1) question papers of Pakistan Studies (Grade X) in the context of higher order thinking at secondary school level. To address the objectives, the research questions were: (i) how do secondary school teachers perceive and suggest other instructional practices to teach Pakistan Studies with a focus on promoting higher order thinking? (ii) how do secondary school teachers perceive and suggest the use of other assessment practices to assess Pakistan studies to foster higher order thinking? (iii) why do secondary school teachers face challenges in the implementation of instructional and assessment practices aimed at fostering higher order thinking?

The study population comprised of all male and female teachers teaching in public secondary schools under the jurisdiction of FDE Islamabad. The context of the study was secondary schools located in Islamabad, Pakistan. The proportionate stratified random sampling technique was applied for sample selection. A sample of 300 secondary school teachers from a population of 1000 teaching Pakistan Studies to Grade X was selected for quantitative data collection. Additionally, 12 teachers were selected using a purposive sampling technique for qualitative interviews. Furthermore, annual question papers of Pakistan Studies (2014–2018) were analyzed as part of the document analysis. Three null hypotheses and twenty-one sub-hypotheses were formulated to achieve the study objectives.

The Sequential Explanatory research design of mixed method approach was applied that involved two sequential phases: collection and analysis of quantitative data; collection and analysis of qualitative data. The research instruments were self-developed questionnaire, document analysis and semi-structured interviews. Permissions were taken from principals and respondents. The question cover page was distributed to the teacher. The self-developed questionnaire having 53 items on 5-point Likert scale was given to 300 respondents to investigate the perspectives of teachers regarding curriculum objectives; instructional practices and methods in the context of higher order thinking at secondary level. The Cronbach Alpha was applied to check reliability. The document analysis was done to analyze question papers (2014-2018, Group-1) of Pakistan Studies (Grade X) in the light of revised Bloom taxonomy. Semi-structured interviews were taken from 12 interviewees to gather information about secondary school teachers' perceptions about other instructional and assessment practices; and challenges in the implementation of instructional and assessment practices aimed at fostering HOT. Validity of the questionnaire and semi-structured interview was checked by experts. The reliability coefficient of self-developed questionnaire was .92.

Descriptive statistics i.e. frequency, percentage, mean, standard deviation, mode and inferential statistics i.e. independent sample *t-test* and analysis of variance (ANOVA) were used by applying Statistical Package for Social Sciences (Version 21). The data from document analysis and semi-structured interviews were examined through thematic analysis.

5.2 Findings

The findings were presented in following phases:

Phase I: Findings based on Quantitative Data Analysis.

Phase II: Findings based on Qualitative Data Analysis.

Phase III: Findings based on Triangulation.

5.2.1 Phase I: Findings based on Quantitative Data Analysis

This phase comprised of findings based on analysis of perceptions of teachers regarding the objectives of Pakistan Studies curriculum; instructional practices and instructional methods (acquiring, applying and reflection on knowledge); demographic

variables including area, gender and job experience; document analysis of 2014-2018 annual question papers.

Findings of research objective 1: To determine teachers' perceptions towards the objectives of the curriculum of Pakistan Studies in the perspective of higher order thinking at secondary school level.

Analysis of objectives of Pakistan Studies Curriculum

1. Teachers strongly agreed (68%) and agreed (32%) with the objective that curriculum of Pakistan Studies inculcate a sense of gratitude to Almighty ALLAH for blessing us with an independent and sovereign state ($M=4.69$; $SD=.46$).
2. Teachers disagreed (47%) and strongly disagreed (14%) with the objective that curriculum of Pakistan Studies encourage traits of observations, creativity, analysis and reflection in students. 5% strongly agreed, 16% agreed and 18% were neutral ($M=2.48$; $SD=1.02$).
3. Teachers agreed (51%) and strongly agreed (41%) that curriculum of Pakistan Studies acquaint the students with various phases of Pakistan historical, political and constitutional developments. 3% disagree and 5% were neutral ($M=4.36$; $SD=.62$).
4. Teacher agreed (49%) and strongly agreed (39%) that curriculum of Pakistan Studies emphasize the rights and obligations of the citizens of an independent and sovereign state. 2% strongly disagreed and 10% were neutral ($M=4.25$; $SD=.73$).

The overall mean score for all objectives was 3.93 indicating a generally positive perception. $SD=1.60$ suggests moderate variability in teachers' responses. These findings underscore both the strengths and areas for potential improvement in the perceived objectives of the Pakistan Studies curriculum (Table 4.3).

Finding of research objective 2: To investigate the instructional practices used for teaching Pakistan Studies concerning higher order thinking at secondary school level.

Analysis of instructional practices (acquiring knowledge)

1. Teachers sometimes asked students to exchange their concepts with one another (36%), while a few negated the statement (7%). The overall mean score indicates a moderate implementation of this practice ($M = 3.48$, $SD = 1.12$).
2. Teachers often engaged students in inferential activities (31%), while a few never did so (7%). The overall mean score indicates a moderate level of engagement ($M = 3.36$, $SD = 1.19$).
3. Teachers often encouraged students to create their own questions (46%), while some only did so sometime (19%). The overall mean score suggests a strong tendency toward this practice ($M = 4.16$, $SD = 0.71$).
4. Teachers often conducted pre-assessments to understand students' prior knowledge (48%), while a smaller proportion seldom did so (4%). The overall mean score indicates a frequent use of this practice ($M = 3.99$, $SD = 0.79$).
5. Teachers often provided students with opportunities to identify important learning problems (42%), while a small percentage never did so (1%). The overall mean score suggests a frequent application of this practice ($M = 3.89$, $SD = 0.93$).
6. Teachers often observed students and asked questions during group activities (42%), whereas a small percentage never did so (2%). The overall mean score ($M = 3.82$, $SD = 0.99$) indicates that this practice was frequently applied (Table 4.4)

Analysis of instructional practices (applying knowledge)

1. Teachers seldom observed students when they worked individually (44%), while a small percentage never did so (4%). The overall mean score ($M = 3.01$, $SD = 1.23$) indicates that individual student observation was infrequent.
2. Teachers sometimes facilitated students in conducting activities given in the exercises (53%), while a small percentage always did so (3%). The overall mean score ($M = 2.97$, $SD = 0.82$) suggests that facilitation of activities was moderate.

3. Teachers seldom encouraged students to practice an alternative way of thinking (38%), while a smaller proportion always did so (14%). The overall mean score ($M = 2.91$, $SD = 1.22$) indicates limited encouragement for alternative thinking (Table 4.5)

Analysis of instructional practices (reflection on knowledge)

1. Teachers always reviewed students' homework copies on a regular basis (40%), while a smaller proportion sometime did so (7%). The overall mean score ($M = 4.03$, $SD = 1.02$) reflects a high frequency of homework review.
2. Teachers often assessed students' knowledge through open-ended questions (28%), while a smaller proportion never did so (7%). The overall mean score ($M = 3.33$, $SD = 1.25$) indicates a moderate use of open-ended assessments.
3. Teachers seldom preferred to apply a cooperative learning approach in class (41%), while a small proportion always preferred it (9%). The overall mean score ($M = 2.81$, $SD = 1.09$) indicates a low preference for this approach (Table 4.6).

Finding of research objective 3: To find out instructional methods used for teaching Pakistan studies concerning higher order thinking at secondary school level.

Analysis of the instructional methods (acquiring knowledge)

1. The majority of teachers always used the lecture method (61%) to teach Pakistan Studies for developing higher order thinking, while very few seldom used it (1%). The overall mean score indicates a high reliance on this method ($M = 4.55$, $SD = 0.62$).
2. Teachers often used the interactive lecture method (47%), while a smaller proportion seldom used it (2%). The overall mean score ($M = 4.13$, $SD = 0.76$) suggests a high preference for this approach in teaching Pakistan Studies to develop higher-order thinking skills.
3. Teachers often used lecture and diagrams (42%), while a small percentage never used them (1%). The overall mean score ($M = 3.91$, $SD = 0.92$) indicates a moderate to high preference for this method in teaching Pakistan Studies to develop higher order thinking skills.

4. Teachers often used lecture and photos (38%), while a small percentage never used them (6%). The overall mean score ($M = 3.54$, $SD = 1.05$) indicates a moderate preference for this method in teaching Pakistan Studies to develop higher-order thinking skills.
5. Teachers often used lecture and charts (40%), whereas a small percentage never used them (5%). The overall mean score ($M = 3.51$, $SD = 1.00$) suggests a moderate preference for this method in teaching Pakistan Studies to develop higher-order thinking skills.
6. Teachers never used lecture and multimedia (46%), while only a small percentage always used this method (3%). The overall mean score ($M = 2.14$, $SD = 1.20$) indicates minimal integration of multimedia in teaching Pakistan Studies to develop higher-order thinking skills.
7. Teachers predominantly relied on the textbook method, with the majority always using it (63%) and the remaining often using it (37%). The high mean score ($M = 4.63$, $SD = 0.48$) reflects its frequent application in teaching Pakistan Studies to develop higher-order thinking skills.
8. Brainstorming was seldom applied by teachers (42%) when teaching Pakistan Studies to develop higher-order thinking skills, while 25% often applied it. The overall mean score ($M = 2.96$, $SD = 1.12$) indicates its infrequent use in instructional practices.
9. Teachers often conducted oral presentations (46%) to teach Pakistan Studies for developing higher order thinking skills, while 1% never conducted them. The overall mean score ($M = 3.98$, $SD = .86$) indicates frequent use of this method (Table 4.7).

Analysis of instructional methods (applying knowledge)

1. Teachers never used computer-assisted instruction (32%) in teaching Pakistan Studies, while 6% always used it. The overall mean score ($M = 2.38$, $SD = 1.23$) suggests infrequent use of this method.
2. Teachers sometimes used the activity method (31%) in teaching Pakistan Studies, while 14% always used it. The overall mean score ($M = 2.98$, $SD = 1.26$) indicates moderate use of this method.

3. Teachers often and sometimes used debates (39%) in teaching Pakistan Studies, while 8% seldom used them. The overall mean score ($M = 3.57$, $SD = .84$) indicates a moderate level of usage.
4. Teachers never used demonstrations (34%) in teaching Pakistan Studies, while 9% always used them. The overall mean score ($M = 2.54$, $SD = 1.36$) indicates infrequent use of this method.
5. Teachers never used the project method (42%) in teaching Pakistan Studies, while only 4% always used it. The overall mean score ($M = 2.24$, $SD = 1.24$) indicates minimal utilization of this approach.
6. Teachers never used problem-based learning (53%) in teaching Pakistan Studies, while only 4% always used it. The overall mean score ($M = 1.99$, $SD = 1.24$) indicates very limited application of this method.
7. Teachers never used real objects (27%) in teaching Pakistan Studies, while only 9% always used them. The overall mean score ($M = 2.60$, $SD = 1.30$) suggests infrequent use of real objects in instruction.
8. Teachers never used graphs (28%) in teaching Pakistan Studies, while only 10% always used them. The overall mean score ($M = 2.55$, $SD = 1.30$) indicates limited integration of graphs in instruction (Table 4.8).

Analysis of instructional methods (reflection on knowledge)

1. Teachers often used the discussion method (50%) in teaching Pakistan Studies, while 4% seldom used it. The overall mean score ($M = 4.12$, $SD = 0.77$) suggests a frequent reliance on discussion-based instruction.
2. Teachers never used group study (42%) in teaching Pakistan Studies, whereas 12% always used it. The overall mean score ($M = 2.53$, $SD = 1.49$) indicates infrequent use of group study as an instructional method.
3. Teachers never used cooperative learning (57%) in teaching Pakistan Studies, whereas 7% always used it. The overall mean score ($M = 2.05$, $SD = 1.35$) indicates minimal use of cooperative learning as an instructional method.
4. Teachers never organized small groups (48%) in teaching Pakistan Studies, whereas only 6% always did. The overall mean score ($M = 2.28$, $SD = 1.38$) suggests infrequent use of small group organization as a teaching strategy.

5. Teachers often used inquiry/investigation (41%) in teaching Pakistan Studies, while only 2% never used it. The overall mean score ($M = 3.67$, $SD = 0.94$) indicates a moderate to frequent use of this approach.
6. Teachers always asked questions (46%) while only 2% seldom or never did. The overall mean score ($M = 4.28$, $SD = 0.83$) suggests frequent use of questioning in teaching Pakistan Studies.
7. Teachers never visited museums (36%), while only 3% always did. The overall mean score ($M = 2.31$, $SD = 1.18$) indicates infrequent use of museum visits in teaching Pakistan Studies.
8. Teachers never used the internet (34%), while only 4% always did. The overall mean score ($M = 2.50$, $SD = 1.26$) indicates limited use of the internet in teaching Pakistan Studies.
9. Teachers sometimes used posters (42%), while only 8% always did. The overall mean score ($M = 3.12$, $SD = 1.03$) indicates a moderate use of posters in teaching Pakistan Studies.
10. Teachers never used PowerPoint presentations (43%), while only 1% always did. The overall mean score ($M = 2.15$, $SD = 1.14$) suggests minimal use of PowerPoint presentations in teaching Pakistan Studies.
11. Teachers often used the assignment method (44%), while only 2% never used it. The overall mean score ($M = 3.70$, $SD = 0.88$) indicates frequent use of this method in teaching Pakistan Studies.
12. Teachers never used documentaries (38%), while only 2% always used them. The overall mean score ($M = 2.32$, $SD = 1.19$) suggests infrequent use of documentaries in teaching Pakistan Studies.
13. Teachers never used interactive whiteboards (31%), while 20% always used them. The overall mean score ($M = 3.05$, $SD = 1.53$) indicates a moderate use of interactive whiteboards in teaching Pakistan Studies.
14. Teachers never used slides (48%), while only 3% always used them. The overall mean score ($M = 2.09$, $SD = 1.20$) suggests minimal use of slides in teaching Pakistan Studies.
15. Teachers never used globes (34%), while only 9% always used them. The overall mean score ($M = 2.54$, $SD = 1.35$) indicates limited use of globes in teaching Pakistan Studies.

16. Teachers never used maps (31%), while only 10% always used them. The overall mean score ($M = 2.71$, $SD = 1.37$) indicates a moderate use of maps in teaching Pakistan Studies.
17. Teachers never arranged study visits (38%), while only 2% always arranged them. The overall mean score ($M = 2.25$, $SD = 1.16$) suggests that study visits were infrequently organized in teaching Pakistan Studies.
18. Teachers never invited resource persons (41%), while only 4% always invited them. The overall mean score ($M = 2.24$, $SD = 1.21$) indicates that inviting resource persons was an infrequent practice in teaching Pakistan Studies.
19. Teachers sometimes organized contests (41%), while 5% always organized them. The overall mean score ($M = 3.12$, $SD = 1.02$) suggests that contests were moderately incorporated into Pakistan Studies instruction.
20. Teachers never used models (38%) in the teaching of Pakistan Studies, while 5% always used them. The overall mean score ($M = 2.46$, $SD = 1.29$) indicates limited use of models in instruction (Table 4.9).

Overall analysis of instructional practices (acquiring, applying and reflection on knowledge)

1. The overall mean for instructional practices related to acquiring knowledge ($M = 3.78$, $SD = 0.55$) reflects a generally consistent application, with moderate variability across these practices (Table 4.10).
2. The overall mean for instructional practices in applying knowledge ($M = 3.00$, $SD = 0.65$) indicates a moderate level of consistency, with moderate variability in application (Table 4.10).
3. The overall mean for instructional practices in reflection on knowledge ($M = 3.39$, $SD = 0.67$) suggests a moderate level of consistency, with moderate variability across these practices (Table 4.10).

Overall analysis of instructional methods (acquiring, applying and reflection on knowledge)

1. The overall mean for instructional methods in acquiring knowledge ($M = 3.70$, $SD = 0.43$) indicates a moderate level of consistency, with relatively low variability across the employed methods (Table 4.11).

2. The overall mean for instructional methods in applying knowledge ($M = 2.60$, $SD = 0.53$) suggests a moderate level of consistency, with moderate variability across the employed methods (Table 4.11).
3. The overall mean for instructional methods in reflection on knowledge ($M = 2.77$, $SD = 0.43$) indicates a moderate level of consistency, with a moderate degree of variability across the applied instructional methods (Table 4.11).

Findings of research objective 4. To explore demographic variables including area, gender and job experience in the context of curriculum objectives, instructional practices and methods at secondary school level.

Findings on Curriculum Objectives

Area-wise Analysis

The mean scores for curriculum objectives in urban ($M = 4.28$) and rural ($M = 4.39$) areas were compared. Levene's Test for homogeneity of variance yielded a p-value of 0.48, indicating no significant difference. Based on the accepted hypothesis $H_{01.1}$, there was no statistically significant difference in perceptions about curriculum objectives between urban and rural teachers (Table 4.12).

Gender-wise Analysis

The mean score for male teachers was 4.22, while female teachers had a slightly higher mean score of 4.43. Levene's Test for homogeneity of variance yielded a p-value of 0.00, indicating a statistically significant difference. As a result, hypothesis $H_{01.2}$ was rejected, confirming a significant difference in perceptions of curriculum objectives between male and female teachers (Table 4.13).

Job Experience-wise Analysis

The mean scores for curriculum objectives varied across job experience levels, with teachers having 6–10 years of experience scoring the highest ($M = 4.16$) and those with 11–15 years scoring the lowest ($M = 3.87$). Levene's Test for homogeneity of variance yielded a p-value of 0.17, indicating no statistically significant difference. Therefore, based on the accepted hypothesis $H_{01.3}$, teachers' perceptions about curriculum objectives do not significantly differ based on job experience (Table 4.14).

Findings of Instructional Practices

Area-wise Analysis

1. Teachers in urban areas reported a mean score of 3.90, while those in rural areas had a slightly higher mean score of 4.01. Levene's Test for homogeneity of variance yielded a statistically significant result ($F(1, 298) = 8.779, p = .003$), leading to the rejection of hypothesis $H_{02.1}$. This indicates a significant difference in the acquisition of knowledge between urban and rural setting
2. Urban participants had a mean score of 3.93, while rural participants reported a slightly lower mean score of 3.87. The homogeneity of variance was not statistically significant ($F(1, 298) = 2.50, p = .11$), leading to the acceptance of hypothesis $H_{02.2}$. This suggests no significant difference in the application of knowledge between urban and rural areas.
3. Both urban and rural participants exhibited identical mean scores of 4.26. The homogeneity of variance was also non-significant ($F(1, 298) = 2.83, p = .09$), leading to the acceptance of hypothesis $H_{02.3}$. This indicates no significant difference in the reflection on knowledge between urban and rural settings (Table 4.15).

These findings highlight the role of geographic location in shaping instructional practices, particularly in the acquisition of knowledge. However, no significant differences were observed in applying or reflecting on knowledge, suggesting consistency in these aspects across urban and rural contexts.

Gender-wise Analysis

1. Male teachers reported a mean score of 3.88, while female teachers had a slightly higher mean score of 4.01. Levene's Test for homogeneity of variance yielded a marginally significant result ($F(1, 298) = 3.78, p = .05$), leading to the acceptance of hypothesis $H_{02.1}$. This indicates no significant difference in perceptions between male and female teachers regarding instructional practices related to acquiring knowledge.
2. Male teachers had a mean score of 3.84, while female teachers reported a slightly higher mean score of 3.96. The homogeneity of variance was not statistically significant ($F(1, 298) = .59, p = .44$), leading to the acceptance of hypothesis $H_{02.2}$. This suggests no significant difference in perceptions between

male and female teachers concerning instructional practices related to applying knowledge.

3. Male teachers reported a mean score of 4.27, while female teachers had an almost identical mean score of 4.26. The homogeneity of variance was also non-significant ($F(1, 298) = .01, p = .91$), leading to the acceptance of hypothesis $H_{02.3}$. This indicates no significant difference in perceptions between male and female teachers regarding instructional practices related to reflection on knowledge (Table 4.16).

These findings suggest that gender does not play a significant role in shaping teachers' instructional practices concerning acquiring, applying, or reflecting on knowledge.

Job Experience-wise Analysis

1. Teachers with less than five years of experience reported a mean score of 3.58, while those with 6–10 years had a slightly higher mean score of 3.95. Levene's Test for homogeneity of variance was not statistically significant ($F(4, 295) = 1.52, p = .19$), leading to the acceptance of hypothesis $H_{02.7}$. This indicates no significant difference in perceptions across different experience levels concerning instructional practices related to acquiring knowledge.
2. Teachers with less than five years of experience had a mean score of 2.91, while those with 6–10 years reported a slightly higher mean score of 3.06. The homogeneity of variance was not statistically significant ($F(4, 295) = 1.99, p = .09$), leading to the acceptance of hypothesis $H_{02.8}$. This suggests no significant difference in perceptions across different experience levels concerning instructional practices related to applying knowledge.
3. Teachers with less than five years of experience reported a mean score of 3.08, while those with 6–10 years had a higher mean score of 3.48. The homogeneity of variance was not statistically significant ($F(4, 295) = 1.74, p = .13$), leading to the acceptance of hypothesis $H_{02.9}$. This indicates no significant difference in perceptions across different experience levels concerning instructional practices related to reflection on knowledge (Table 4.17).

These findings suggest that teachers' years of experience do not significantly influence their instructional practices in acquiring, applying, or reflecting on knowledge.

Findings of Instructional Methods

Area-wise Analysis

1. Urban teachers reported a mean score of 3.83, while rural teachers had a slightly higher mean score of 3.85. Levene's Test for homogeneity of variance was not statistically significant ($F(1, 298) = 0.68, p = .68$), leading to the acceptance of hypothesis $H_{03.1}$. This indicates no significant difference in perceptions between urban and rural teachers regarding instructional methods for acquiring knowledge.
2. Urban teachers reported a mean score of 3.34, while rural teachers had a slightly higher mean score of 3.38. Levene's Test for homogeneity of variance was not statistically significant ($F(1, 298) = 0.69, p = .69$), leading to the acceptance of hypothesis $H_{03.2}$. This suggests no significant difference in perceptions between urban and rural teachers regarding instructional methods for applying knowledge.
3. Urban teachers reported a mean score of 3.36, while rural teachers had a slightly higher mean score of 3.40. Levene's Test for homogeneity of variance was not statistically significant ($F(1, 298) = 0.71, p = .71$), leading to the acceptance of hypothesis $H_{03.3}$. This indicates no significant difference in perceptions between urban and rural teachers regarding instructional methods for reflection on knowledge (Table 4.18).

Gender-wise Analysis

1. Male teachers reported a mean score of 3.81, while female teachers had a slightly higher mean score of 3.86. Levene's Test for homogeneity of variance was not statistically significant ($F(1, 298) = 0.94, p = .94$), leading to the acceptance of hypothesis $H_{03.4}$. This indicates no significant difference in perceptions between male and female teachers regarding instructional methods for acquiring knowledge.
2. Male teachers reported a mean score of 3.25, while female teachers had a slightly higher mean score of 3.46. Levene's Test for homogeneity of variance

was not statistically significant ($F(1, 298) = 0.84, p = .84$), leading to the acceptance of hypothesis $H_{03.5}$. This suggests no significant difference in perceptions between male and female teachers regarding instructional methods for applying knowledge.

3. Male teachers reported a mean score of 3.34, while female teachers had a slightly higher mean score of 3.41. Levene's Test for homogeneity of variance was not statistically significant ($F(1, 298) = 0.72, p = .72$), leading to the acceptance of hypothesis $H_{03.6}$. This indicates no significant difference in perceptions between male and female teachers regarding instructional methods for reflection on knowledge (Table 4.19).

Job experiences wise Analysis

1. Teachers with less than five years of experience reported a mean score of 3.69, while those with 6-10 years had a similar mean score of 3.68. Levene's Test for homogeneity of variance was statistically significant ($F(4, 295) = 2.536, p = .04$). However, as the significance level was below .05, hypothesis $H_{03.7}$ was accepted, suggesting no significant difference in perceptions among teachers with different job experience levels regarding instructional methods for acquiring knowledge.
2. Teachers with less than five years of experience and those with 6-10 years of experience both reported an identical mean score of 2.34. Levene's Test for homogeneity of variance was not statistically significant ($F(4, 295) = .28, p = .89$), leading to the acceptance of hypothesis $H_{03.8}$, indicating no significant difference in perceptions among teachers with different job experience levels concerning instructional methods for applying knowledge.
3. Teachers with less than five years of experience reported a mean score of 2.49, while those with 6-10 years had a slightly higher mean score of 2.62. Levene's Test for homogeneity of variance was not statistically significant ($F(4, 295) = 1.31, p = .26$), leading to the acceptance of hypothesis $H_{03.9}$, indicating no significant difference in perceptions among teachers with different job experience levels concerning instructional methods for reflection on knowledge (Table 4.20).

Findings of research objective No. 05. To analyze five years (2014-2018 Group -1) question papers of Pakistan Studies of secondary level (Grade X) in the context of higher order thinking.

Findings of analysis of 2014 -2018 annual question papers

The analysis of Pakistan Studies annual question papers from 2014 to 2018 revealed a predominant emphasis on lower-order cognitive skills. In the 2014 paper, 56% of the constructed response questions assessed "remembering," while 38% focused on "understanding." Notably, no questions evaluated "applying," "evaluating," or "creating" skills, while only 6% addressed "analyzing." Similarly, the extended response questions did not include any items related to higher-order cognitive skills, emphasizing a consistent focus on recall and basic comprehension (Table 4.21).

The analysis of Pakistan Studies annual question paper (2015) (extended response questions) revealed a predominant focus on lower-order cognitive skills. Notably, 44% of the questions fell under the categories of remembering and understanding, emphasizing recall and comprehension. However, there was a limited representation of applying questions (6%), indicating a lesser focus on practical application. The absence of questions in the analyzing category suggested a potential oversight in assessing skills related to breaking down and examining information. Evaluating questions constitute 6% of the total, while creating questions were absent. In the case of the cognitive levels assessed in a specific set of three constructed response questions, no questions were categorized under "remembering," indicating a lack of straightforward recall-type questions. The majority (67%) fell under "understanding," demonstrating a focus on assessing comprehension and interpretation skills. "Applying" questions were absent in this set. One question, contributing to 33% of the total, is categorized under "analyzing," suggesting an evaluation of students' ability to break down and examine information. Lastly, there were no questions categorized under "evaluating" or "creating." This distribution illustrated a specific emphasis on understanding and analyzing skills in the assessment, indicating potential areas for improvement in the balance of cognitive skill assessment (Table 4.22).

The 2016 question paper showed a similar pattern, with 62.5% of constructed response questions testing "remembering" and 31.25% assessing "understanding." Only 6.25% of questions focused on "analyzing," while none addressed "applying,"

"evaluating," or "creating." In the extended response section, all questions were categorized under "understanding," further reinforcing the emphasis on lower-order skills (Table 4.23).

Annual question paper of Pakistan Studies (2017) (constructed response questions), revealed a predominant emphasis (87.5%) on "remembering" to assess information recall, with a smaller proportion (12.5%) allocated to "understanding" for testing comprehension skills. Remarkably, no questions were categorized under higher cognitive levels ("applying," "analyzing," "evaluating," or "creating"), indicating a potential oversight in evaluating critical thinking and creativity. A more comprehensive approach to question formulation is recommended. In extended response questions 33.33% of questions pertained to "remembering," focusing on information recall, while the majority (66.67%) fell under "understanding" to assess comprehension. No questions were designated under higher order thinking levels, signaling a concentration on foundational knowledge with limited attention to advanced cognitive skills (Table 4.24).

The 2018 question paper revealed a slight shift, with 72.73% of constructed response questions assessing "remembering" and 18.18% focusing on "understanding." Unlike previous years, 9.09% of questions fell under "evaluating," but no questions targeted "applying," "analyzing," or "creating." In the extended response section, 66.67% of questions focused on "analyzing," while 33.33% fell under "understanding." The absence of "applying" and "creating" questions suggests a continued lack of emphasis on problem-solving and creativity (Table 4.25).

Findings of Document Analysis (Distribution of question papers of Pakistan Studies (2014-2018) according to Question Types.

The analysis of Pakistan Studies question papers (2014–2018) revealed the distribution of cognitive levels based on Anderson's Taxonomy. The key findings were:

1. A significant number of constructed and extended response questions assessed factual knowledge at the remember and understand levels, indicating a predominant focus on lower-order thinking skills. 48 questions required factual recall, showing a lack of cognitive challenges

2. Conceptual knowledge was primarily tested at the understand level (38 questions), with minimal application, analysis, evaluation, or creation. Only one question each addressed analyzing and evaluating, highlighting an imbalance in assessing HOT skills.
3. Procedural knowledge was scarcely assessed, with only one question each at the apply and analyze levels. No metacognitive knowledge was assessed, indicating a gap in promoting self-reflection and critical thinking (Table 4.26).

The findings suggested an over-reliance on recall-based questions, with limited inclusion of problem-solving, evaluation and creative tasks.

5.2.2 Phase II: Findings based on Qualitative Data Analysis

Interview Findings

This phase comprised of findings based on analysis of perceptions of teachers regarding other instructional practices, assessment practices and challenges in teaching Pakistan Studies in the context of HOT at secondary school level.

1. Teachers recognized brainstorming, problem-solving, research-based learning, cooperative learning, questioning, and a friendly classroom environment as effective strategies for fostering higher order thinking.
2. Teachers perceived dissatisfaction with current instructional practices as instructional practices remain lecture-based and textbook-centric, with limited engaging activities due to teachers' heavy workload.
3. A lack of professional training and CPD opportunities further hinders the adoption of innovative methods.
4. Teachers suggested incorporating visits to historical places, enhanced use of PowerPoint, group discussions, problem-based learning, computer activities, audio-visual aids, study tours, internet and multimedia tools to enhance instructional practices.
5. Implementation challenges include lack of resources, infrastructure issues, heavy schedule, time constraints, shortage of trained teachers and poor quality of learning.
6. To improve assessment methods, teachers recommended incorporating practical-based exams, project-based questions, and a broader range of

cognitive levels from Revised Bloom's Taxonomy, along with using maps and globes for better conceptual understanding (Table 4.27).

Finding of Research Question 1: How do secondary school teachers perceive and suggest the use of other instructional practices to teach Pakistan Studies, with a focus on promoting higher order thinking?

1. When asked how teachers can develop higher order thinking in students, six teachers emphasized brainstorming, seven preferred questioning and six highlighted research-based learning and problem-solving. Additionally, three teachers stressed the importance of maintaining a friendly classroom environment to foster HOT skills (Table 4.28).
2. When teachers were asked whether they were satisfied with the prevailing instructional practices used for teaching Pakistan Studies, a significant number expressed dissatisfaction. A majority raised concerns about the dominance of the lecture method, with ten teachers highlighting its excessive use. Similarly, eight teachers criticized the textbook-centric approach while nine pointed out that the activities in exercises were often ignored (Table 4.28).
3. When asked whether they had received any training for teaching Pakistan Studies, eleven respondents highlighted insufficient professional training in the subject. Additionally, ten teachers pointed out the limited attention given to Pakistan Studies in Continuous Professional Development (CPD) programs (Table 4.28).
4. When asked about other instructional practices for teaching Pakistan Studies with a focus on higher order thinking at the secondary school level, teachers suggested several instructional practices to improve teaching of Pakistan Studies. Nine teachers suggested organizing visits to historical places, allowing students to connect theoretical knowledge with real-world experiences. Five teachers recommended the use of PowerPoint presentations, while four teachers advocated for computer-based activities to make lessons more interactive. The use of audiovisual (AV) aids was emphasized by ten teachers, reinforcing the importance of multimedia in improving content delivery. Seven teachers supported problem-based learning, and eight teachers suggested the integration of internet resources and multimedia to facilitate a more dynamic learning environment. Furthermore, six teachers recommended cooperative learning as an effective strategy, while eight teachers stressed the role of questioning

techniques in encouraging higher order thinking. Lastly, four teachers emphasized the importance of group discussions to promote student participation and collaborative learning (Table 4.28).

Findings of Research Question 2: How do secondary school teachers perceive and suggest the use of other assessment practices to assess Pakistan studies to foster higher order thinking?

5. When asked to provide at least one suggestion for improving examinations in Pakistan Studies, six teachers advocated for practical-based exams, emphasizing that hands-on assessments would better evaluate students' understanding and application of concepts. Similarly, six teachers recommended incorporating more objective-type questions, while seven teachers emphasized the need for project-based questions to foster creativity and critical thinking. Additionally, six teachers highlighted the importance of integrating maps and globes into assessments to enhance geographical understanding. Seven teachers stressed that exams should cover all levels of Revised Bloom's Taxonomy, ensuring a balanced evaluation of students' cognitive abilities beyond mere recall and comprehension. Another seven teachers suggested placing greater emphasis on formative assessment, allowing for continuous evaluation and improvement rather than relying solely on summative exams. A significant concern was the lack of subject specialists in examination paper setting, which ten teachers viewed as a major issue (Table 4.28).

Finding of Research Question 3: Why do secondary school teachers face challenges in the implementation of instructional and assessment practices aimed at fostering higher order thinking?

6. When teachers were asked about the challenges, they face in implementing instructional and assessment practices for higher order thinking in teaching Pakistan Studies, they identified several factors hindering the effective use of such practices. The most frequently reported issue was the lack of resources, identified by eleven teachers, which limits the availability of modern teaching tools and interactive learning materials. Similarly, ten teachers highlighted that overburdened teachers struggle to implement innovative instructional practices due to excessive workload and administrative responsibilities. Another

significant barrier was the shortage of subject specialists, noted by ten teachers, which affects the quality of content delivery and the integration of advanced teaching methodologies. Furthermore, eight teachers reported lack of funding as a critical issue, restricting access to essential learning resources, training programs, and infrastructure improvements. Seven teachers identified overcrowded classrooms, which limit student-teacher interaction and make personalized instruction challenging. Additionally, seven teachers emphasized the absence of visual aids, making it difficult to engage students effectively. Lastly, nine teachers noted that teachers' disengagement in paper setting prevents assessments from aligning with HOT principles, as exams continue to focus on rote memorization rather than critical thinking and analysis (Table 4.28).

5.2.3 Phase III: Findings based on Triangulation of Results

This phase comprised of findings based on triangulation of results that have triangular analysis of questionnaire, document analysis and interview (quantitative and qualitative data) regarding perceptions of teachers on curriculum objectives, instructional and assessment practices regarding higher order thinking at secondary school level.

Analysis of Triangulation of Results

The mixed-methods analysis confirmed that instructional and assessment practices in Pakistan Studies predominantly focus on lower-order thinking. Quantitative findings revealed that the curriculum does not emphasize observation, creativity, or reflection ($M = 2.48$), and instructional practices are heavily textbook-centered ($M = 4.63$). Problem-based learning ($M = 1.99$) and project-based methods ($M = 2.24$) were rarely utilized.

Qualitative data reinforced these findings, with teachers identifying time constraints, inadequate training, lack of modern teaching tools, infrastructure issues, and insufficient resources as key barriers to implementing higher-order thinking (HOT). They emphasized the need for interactive methods such as PowerPoint presentations, group discussions, multimedia, field trips and inquiry-based learning.

Document analysis of annual question papers (2014–2018) showed a strong emphasis on recall-based questions, with limited application, analysis and creation. Teachers confirmed that the FBISE paper pattern promotes rote memorization rather than critical thinking. They suggested revising the assessment structure by incorporating unseen questions, project-based tasks and skill-based learning approaches. Teachers also recommended a 70:30 ratio for objective type and extended response questions along with subject specialists' involvement in paper setting.

Overall, findings confirmed the need for a shift towards HOT-oriented instructional and assessment practices, integrating modern teaching strategies and reforming the existing examination system to promote analytical and critical thinking skills (Table 4.29).

5.3 Discussion

The study has revealed key findings aligned with the research objectives and questions, concerning instructional and assessment practices with a focus on enhancing students' higher order thinking at secondary level. Using a proportionate stratified random sampling technique, a sample of 300 secondary school teachers was selected. Data were collected through a self-developed questionnaire. SPSS (Statistical Package for Social Sciences) version 21 was utilized for data analysis, employing descriptive and inferential statistics. Document analysis involved examining the annual Pakistan Studies question papers for Grade X over five years (2014-2018). Thematic analysis was applied to analyze responses to interview questions. In line with the sequential explanatory design employed in this study, the integration of quantitative survey data, document analysis results and qualitative interview findings (triangulation) was conducted to provide a comprehensive understanding of the curriculum objectives, instructional practices and challenges associated with teaching Pakistan Studies at secondary level. The joint display facilitated the triangulation of results allowing for a nuanced exploration of the research questions.

5.3.1 Discussion for Quantitative Findings

The quantitative analysis of teachers' perceptions of the Pakistan Studies curriculum objectives revealed that teachers acknowledged its role in fostering patriotism, historical understanding and civic awareness. These findings align with

Masood (2017), who argued that subject specialists find the curriculum objectives reasonable, as they reflect national ideology and cultural values. However, while well-structured, achieving these objectives within the allocated time remains a challenge, particularly in fostering deeper engagement with religious and cultural perspectives. Similarly, Khan (2012) noted that the Pakistan Studies curriculum has the potential to support human aspirations for a rich and diverse cultural understanding, catering to students' social and intellectual development. This reinforces the role of the subject in cultivating civic awareness, helping students understand their rights and responsibilities. The findings also correspond with Ishfaq et al. (2017), who suggested that Pakistan Studies textbooks promote key values such as nationalism, freedom of expression, human dignity, and peace.

Despite these strengths, the study highlighted a critical gap: while the curriculum objectives formally aim to develop higher order thinking skills (HOT), its implementation remains limited to lower-order cognitive skills, primarily remembering and understanding. Teachers reported that instructional practices continue to focus on knowledge transmission rather than fostering critical analysis, problem-solving and independent reflection. This aligns with previous research indicating that curriculum objectives significantly shape instructional and assessment practices (Saido et al., 2017). In the context of the Pakistan Studies curriculum, teachers feel that the curriculum does not adequately promote observation, creativity, analysis and reflection, it may conclude that the curriculum is heavily focused on rote memorization and factual recall. The disagreement among teachers regarding the effectiveness of the Pakistan Studies curriculum in promoting observation, creativity, analysis, and reflection highlights a potential gap between the intended educational outcomes and the actual experiences of students.

The findings indicate that teachers predominantly rely on textbooks and lecture-based methods, limiting opportunities for analysis, evaluation, and creation. This supports previous studies, such as Malik (2012), which found a strong preference for rote learning in Pakistan Studies instruction, resulting in minimal emphasis on critical thinking skills. The emphasis on rote memorization may stem from a misalignment between intended curriculum objectives and practical classroom execution, reinforcing the need for curricular reforms that prioritize higher order cognitive skills. Therefore, the limited focus on higher order thinking in the curriculum may contribute to the

reliance on conventional instructional practices and methods, reinforcing the need for curricular revisions to enhance critical thinking development.

The National Curriculum of Pakistan Studies (2006) includes objectives aimed at fostering higher order thinking skills (HOTS), such as analyzing, evaluating and creating. However, findings indicate that instructional and assessment practices primarily emphasize lower-order cognitive skills (LOTS), such as remembering and understanding. This misalignment between curriculum objectives and actual classroom practices hinders students' ability to develop higher order cognitive skills.

Despite this misalignment, if teachers align their instructional and assessment practices with the curriculum's intended cognitive levels, they can enhance students' engagement and cognitive development (Government of Pakistan, Ministry of Education, 2006). For instance, instructional practices aligned with HOTS include: *Analyze*: Identifying and examining regions rich in mineral resources using a Pakistan map. *Evaluate*: Assessing the environmental and economic impact of mining through cooperative learning activities and *Create*: Developing a strategic plan for sustainable mining through group discussions. Similarly, assessment practices promoting HOTS include *Analyze*: Locating and analyzing the significance of mineral resource regions (e.g., Baluchistan) using a Pakistan map. *Evaluate*: Critically assessing the socio-economic and environmental impact of mining in areas such as Thar or Baluchistan and *Create*: Proposing a sustainable mining plan considering economic benefits and environmental concerns.

By fostering alignment between curriculum objectives, instructional methods, and assessment strategies, teachers can cultivate an environment that enhances students' ability to analyze, evaluate and create knowledge rather than relying solely on rote memorization. This alignment ensures that the curriculum's intended learning outcomes are effectively translated into classroom practice.

The second objective was to investigate the instructional practices used for teaching Pakistan Studies concerning higher order thinking at secondary school level. The objective was evaluated across three constructs of HOT: acquiring, applying and reflection on knowledge. The findings about acquiring knowledge (instructional practices) depicted that most of the teachers often encourage students to share ideas with one another and plan inferential activities. The results are supported by Saido et

al. (2017) who said that students can enhance knowledge by using prior knowledge. Students may employ lower order thinking skills such as exchanging concept. The common approach to acquire knowledge is memorizing basic concepts. Sing et al. (2020) also confirm that questioning strategies for teaching literature to students with advanced capabilities involve higher order thinking.

The analysis of practices for applying knowledge revealed that teachers sometime observe students when they are working individually. Additionally, they sometimes motivate students in activities given in the exercises. Some teachers motivate students to think alternatively. The study findings were consistent with Saido et al. (2017) who highlighted that teachers often rely on limited teaching strategies centered around lower cognitive skills, such as memorizing basic concepts. While this approach improves students' knowledge and comprehension, higher-level strategies, such as problem-solving, collaborative learning and inquiry-based methods, which foster advanced cognitive development were not commonly utilized.

The analysis of reflection on knowledge (instructional practices) showed that although the majority of teachers regularly review students' homework but only 22% of teachers continuously assess students' knowledge by asking open-ended questions and only 9% regularly implement cooperative learning in their classrooms. This highlights a gap between routine assessment practices and the more dynamic methods that encourage higher order thinking, such as cooperative learning and open-ended questioning. These findings align with Miri et al. (2007), who noted gender-based differences in knowledge application and reflection, with male teachers tending to focus on knowledge application while female teachers emphasized reflection. Miri et al. also advocated for fostering an environment where students are encouraged to ask open-ended questions to explore innovative ideas—an approach that seems underutilized in the current study's context. Additionally, the results corroborate Saido et al. (2017), who argued that reflective practices aimed at developing higher cognitive skills are not commonly employed by teachers. This underutilization of reflection-based techniques suggests a broader issue in promoting higher order thinking within classrooms, consistent with Miri et al. (2007) and Saido et al. (2017).

Another study objective aimed to find out the instructional methods employed by Pakistan Studies teachers at the secondary school level with a focus on higher order

thinking. The teachers consistently employ traditional methods during teaching. Mahmood (2010) findings support this study findings who revealed that textbooks serve as the primary teaching learning source of knowledge in Pakistan. Hashmi (2014) also highlighted that teachers often rely on outdated teaching methods, predominantly with the help of lecture-style instruction. Malik (2012) identified the lecture method as the prevailing practice for teaching Pakistan Studies. Ramzan et al. (2011) shared individual experiences, describing Pakistan Studies classes where teachers primarily read lessons and respond to questions, emphasizing the prevalence of lecture-based teaching due to the question-and-answer format of examinations. Iqbal et al. (2017) reiterated that teachers commonly use the lecture method for teaching Pakistan Studies, which aligns with the findings of this study. Masood (2017) reported that Pakistan Studies teachers predominantly apply traditional techniques such as textbook reading and lecturing at the secondary school level. Muhammad and Brett (2017) affirmed that mostly teachers used traditional methods to teach. Additionally, Bala et al. (2017) described that the teaching with the help of lecture method is particularly effective in classrooms with a large number of students.

Masood (2017) findings were aligned with the present study who said that a lack of proper training was cited as a reason for teachers not using demonstration and activity methods leading them to rely on traditional teaching approaches. These results align with a study in the Preliminary Report of the Malaysia Education Blueprint (2013-2025) revealing that many lessons in Malaysian schools did not satisfactorily engage students in constructive thinking. Instead, teachers often depend on lecture and the learning focus tended to be on recalling facts rather than fostering HOT (Malaysia MOE, 2012). This pattern aligns with the broader trend observed by Zohar (2013), where lower-order thinking (LOT) dominates teaching methods and learning outcomes over higher-order thinking (HOT) in various educational contexts.

The results were aligned Hashmi (2011) and Rahman et al. (2011) who reported that the use of discussion method was prevalent in Pakistan Studies teaching. However, the present study contradicts the findings of Masood (2017), who reported that discussion method was not as frequently used as claimed. Additionally, the present study concludes that other teaching methods are used occasionally. These occasional uses are attributed towards a lack of funds, school manager attitudes and resource constraints, as supported by Masood (2017) and Iqbal (2018). The findings align with

Malik (2011), who observed that a shortage of teaching aids results in the underutilization of maps and other audio-visual resources in teaching the subject.

The fourth objective was to explore demographic variables, including area, gender and job experience, in the context of curriculum objectives, instructional practices and methods at secondary school level. The study found no statistically significant difference in curriculum objectives between urban and rural areas, which is consistent with previous research indicating that curriculum objectives are generally uniform across different geographical settings (Smith, Jones, & Brown, 2018). However, concerning the acquisition of knowledge, urban participants scored slightly lower than their rural counterparts, which contradicts prior studies indicating better access to educational resources and opportunities in urban areas (Gill & Sharma, 2019). The unexpected result of urban participants scoring lower in knowledge acquisition was revealed through participant interviews, revealing the involvement of NGOs in rural areas schools. These NGOs provide highly competent teachers who implement innovative teaching methods such as the five-step lesson plan, potentially contributing to the observed disparity. This discrepancy warrants further investigation into the specific factors influencing knowledge acquisition in different settings. The significant difference in curriculum objectives between male and female participants echoes findings from previous research highlighting gender disparities in educational outcomes. However, the absence of significant differences in instructional practices related to acquiring, applying, and reflecting on knowledge suggests a potential area of gender equality in pedagogical approaches, which aligns with recent studies advocating for gender-inclusive teaching practices (Hawley, Perez & McNamara, 2020). Contrary to expectations, the study found no significant differences in instructional practices across different levels of job experience. This contradicts some prior research suggesting that teachers with more experience may employ more effective instructional strategies (Kunter et al., 2013). However, it aligns with recent studies indicating that while experience may influence certain aspects of teaching, it may not necessarily translate into differences in instructional practices related to higher order thinking skills (Chai, Hong, & Teo, 2021). The study findings suggest no significant differences in instructional practices based on job experience, longitudinal studies examining the evolution of teaching practices over educators' careers may offer deeper insights into the impact of experience on instructional approaches (Luftenegger et al., 2016).

Moreover, the discrepancies in knowledge acquisition between urban and rural areas warrant further investigation into contextual factors such as access to technology, socioeconomic status, and teacher quality, which have been shown to influence educational outcomes (Burns, Fitzpatrick & Lavinson, 2016).

The fifth objective of this study aimed to evaluate the Pakistan Studies annual question papers from the previous five years (2014-2018) in terms of higher order thinking at secondary school level. The document analysis was conducted to achieve this objective by assessing the annual question papers using revised Bloom taxonomy. The analysis of the annual question papers from the FBISE (2014-2018) revealed a predominant focus on the lower cognitive domains of remembering and understanding, with minimal emphasis on applying, analyzing, and creating. This tendency aligns with previous studies by Malik and Zaheer (2011; 2012) who highlighted the prevalence of knowledge and comprehension assessment at the secondary level, neglecting higher order thinking skills. The findings highlight a strong emphasis on memorization in teaching, further reinforced by teachers' reliance on traditional paper-setting techniques. Jafri and Arain (2012), Masood (2017), Iqbal (2018), Rind & Malik (2019), and others corroborate these results, emphasizing the imbalance in assessing knowledge over higher order cognitive skills. The study points out a discrepancy between the National Curriculum 2006's objectives and the actual assessment practices, neglecting abilities like application, analysis, synthesis, and creation in question papers. Gull and Saeed (2020) further confirm this gap, noting that questions in Pakistan Studies papers mainly assess knowledge and comprehension, overlooking other cognitive dimensions. The findings suggest a need for aligning assessment practices with curriculum objectives, fostering a more comprehensive evaluation of students' cognitive abilities.

5.3.2 Discussion for Qualitative Findings

The qualitative findings from this study provide an in-depth understanding of teachers' perceptions and experiences regarding instructional and assessment practices related to higher order thinking in Pakistan Studies. This section interprets the themes identified from the interviews and links these findings to existing literature, focusing on the challenges, instructional practices and suggestions for improvement in teaching Pakistan Studies.

Findings from the interviews revealed that teachers identified methods such as brainstorming, questioning, and research-based learning as essential for fostering higher order thinking (HOT). These methods promote critical analysis and problem-solving skills central to HOT. Similar findings were reported by Ramzan et al. (2012), who argued that instructional technology in Pakistan Studies fosters a more comprehensive exploration of the curriculum. This, in turn, enhances creativity, critical thinking, problem-solving, and student independence.

The integration of educational technology was perceived not only as a way to make learning more interactive but also as a significant motivator for students. These findings align with those of Naseer et al. (2020), emphasizing the importance of constructing effective questions to elicit meaningful responses. For example, shifting from a broad question like "Examine the relationships between Pakistan and India" to a more specific one, such as "Explain why Kashmir is a primary source of tension between Pakistan and India," promotes critical thinking. Similarly, replacing a directive question like "Could you explain your arguments to us?" with a more open-ended one, such as "Convey your perspective," encourages thoughtful and reflective responses.

The study emphasizes the need for question papers to include inquiries that explore reasoning and evidence. This approach not only categorizes but also effectively evaluates learners' critical thinking abilities. The findings align with Naseer et al. (2020), who observed that text-based questions in Pakistan Studies textbooks often lacked the complexity needed to inspire reasoning skills. Few questions were aligned with higher-order thinking levels, particularly in relation to analysis. These results underscore the importance of textbook authors integrating critical thinking elements into questions and assignments to better foster students' cognitive development.

As per the teachers' perspectives, students would benefit from facilitated access to the internet, documentaries and multimedia resources. The teachers acknowledged that due to various responsibilities and time constraints to complete the curriculum, they tend to focus on topics assessed in examinations, limiting their ability to apply advanced instructional practices. The finding is supported by Iqbal (2018) who highlighted that students comprehend in a good way with the help of audiovisual resources.

Several respondents emphasized the importance for skill-based learning advocating the integration of group discussions, PowerPoint presentations, multimedia

facilities, the provision of internet access and library books to students. The call for diversifying teaching methods to enhance student interest beyond traditional lectures aligns with Bala et al. (2017) observation that multimedia has become a popular and effective teaching method. The results also resonate with Seman, Yusoff and Embong (2017), revealing that teachers spend a significant portion of their time on non-teaching activities. This situation is further supported by Masood's (2017) assertion that traditional teaching methods prevail, and teachers often lack proper training in employing more interactive methods like demonstrations and activities, especially in subjects like Pakistan Studies. The shortage of subject experts among Pakistan Studies teachers is identified as a hurdle, and the appointment of subject-specific teachers is suggested as a potential solution. Iqbal (2018) noted increased student interest when employing mixed teaching methods, emphasizing the potential benefits of diversifying instructional approaches. The prevalent use of the lecture method in teaching Pakistan Studies is corroborated by the study's findings, consistent with the observations of Ramzan et al. (2012), who noted that despite the availability of various instructional tools, lecturing remains the predominant mode of teaching due to the pressure to cover a vast syllabus before final exams.

The majority of respondents expressed dissatisfaction with the current state of teacher training, emphasizing the lack of quality training and seminars to enhance their teaching abilities. The finding was supported by Siddiqui et al. (2021) who highlighted various challenges in teacher-training in Pakistan including the issues in administration, policy and planning constraints, insufficient funds, teachers' demotivation and unequal deployment of experienced teachers. Respondents recommended that training programs may be designed to incorporate new practices and refresher courses could be organized before the commencement of a new session. Respondents emphasized the need for training programs aligned with new strategies, advocating for refresher courses before the commencement of a new session. This recommendation is consistent with the views of Yen and Halili (2015), who stressed the importance of training teachers on incorporating HOTS into classroom instruction. Teachers believe that such training is crucial to guide students in thinking independently and making their thought processes visible in the classroom. A notable observation from one respondent highlighted the disparity in training focus within the Federal Directorate of Education, Islamabad, where training is predominantly conducted for science subjects, with less attention

given to subjects like Pakistan Studies. Teachers suggested that training programs should be planned bi-annually or annually to address this gap. The study's findings are supported by Siddiqui (2019), underscoring persistent challenges in the Pakistani education system, including difficulties in finding qualified individuals for teaching roles, inadequate provision of essential skills, resource constraints in teacher training institutions, lack of teacher motivation to enhance their skills and an uneven distribution of competent and effective teachers.

Implementation problems, time constraints, inadequate training, overcrowded classrooms, a lack of trained subject teachers, and poor learning quality, as reported by study respondents, align with Kankam, Bordoh, Eshun, Bassaw, and Koranteng's (2014) research. They found that social studies teachers faced challenges in managing assessment techniques effectively due to overcrowded classrooms. The lack of interest among students in Pakistan Studies was attributed to dull teaching methods that rely heavily on bookish knowledge. The lecture method, often preferred over activity-based teaching and discussions, contributed to students' boredom with the subject. Iqbal et al. (2017) and Iqbal (2018) noted students' perceptions that Pakistan Studies is a boring subject, with little variation in the course content from class 9th until graduation. Some students expressed disinterest and the scheduling of Pakistan Studies as the last subject of the day further diminished student engagement. The study concluded that a lack of resources, such as multimedia or audio-visual aids, led teachers to rely on traditional lecture methods. Moreover, the examination paper pattern, which primarily focuses on questions and answers, was identified as a factor driving the use of the lecture method. Teachers felt compelled to prioritize exam preparation over innovative teaching due to this pattern. Iqbal (2018) highlighted that teachers find it challenging to use alternative teaching methods due to resource constraints, further contributing to the perceived boredom in teaching Pakistan Studies.

Respondents emphasized the need for more focus on formative assessment to give corrective feedback, employment of subject specialist as paper setters, training for item analysis of question papers, provision of 70% objective type questions, provision of 30% to project based and use of audiovisual aids in teaching. These recommendations align with Masood's (2017) findings, which indicate that experts agree on the need to revise the assessment process. The existing examination system was criticized for encouraging rote learning, guessing and selective studies, with a

consensus among experts that these practices may be discouraged. Iqbal (2018) noted that students' attitudes toward the subject were affected by the traditional paper pattern used in Pakistan Studies, emphasizing the need for a more contemporary approach that aligns with students' preferences and learning styles.

5.3.3 Discussion on Triangulation of Results

The triangulated findings from quantitative data, qualitative interviews and document analysis provide a comprehensive understanding of the extent to which instructional and assessment practices in Pakistan Studies foster higher order thinking skills (HOTS). The results indicate that while the National Curriculum for Pakistan Studies aims to develop HOTS, its practical implementation in classrooms remains limited. Teachers perceived the curriculum as fostering patriotism, gratitude to Almighty Allah and knowledge of Pakistan's historical, political and constitutional development. However, many teachers believed that the curriculum does not sufficiently encourage critical thinking, analysis, creativity and reflection, which are essential components of HOTS. Qualitative data supported these perceptions, as teachers reported a predominant focus on lower-order thinking skills (LOTS), such as memorization and recall. Regarding instructional practices, quantitative findings indicated that knowledge acquisition was the most frequently employed strategy in classrooms. This was corroborated by qualitative interviews, where teachers admitted to relying on traditional instructional approaches such as lectures and textbook-based teaching. Document analysis reinforced these findings, revealing that examination questions predominantly assessed rote memorization rather than critical thinking or applied learning (Fazal Hayat, Kousar, Badshah, & Gul, 2023).

However, teachers recognized the limitations of their current methods and advocated for more interactive, student-centered approaches, such as integrating multimedia tools, PowerPoint presentations, and field trips to enhance engagement and cognitive development. Similarly, document analysis of Pakistan Studies examination papers (2014–2018) revealed that most questions required factual recall rather than critical analysis or application of knowledge. These findings align with previous research indicating that curricula in Pakistan tend to emphasize rote learning and knowledge reproduction, limiting opportunities for students to engage in deeper cognitive processes. More than half of the participants agreed that the minimal or absent

integration of Bloom's Taxonomy in educational objectives contributes to the promotion of rote learning. A large number of participants also agreed that the emphasis on grades promotes rote learning (Fazal Hayat, et al. 2023).

The misalignment between curriculum objectives, instructional practices, and assessment methods can be attributed to several factors. Studies have indicated that teachers often rely heavily on textbooks and lecture-based instruction, limiting opportunities for student-centered learning (Saido et al., 2017; Shah, Ullah, & Farooq, 2020). Moreover, assessment practices predominantly emphasize recall-based questions, reinforcing surface learning rather than fostering deeper conceptual understanding (Gul, Mahmood, & Hassan, 2019; Ahmad & Iqbal, 2021). This misalignment hinders the development of higher-order thinking skills, which are essential for meaningful learning.

Despite these challenges, the triangulation of results suggests that aligning instructional and assessment methods with curriculum objectives can foster higher-order cognitive skills among students. Research indicates that teachers perceive curriculum objectives as more effective when integrated with active learning strategies such as group discussions, inquiry-based learning, and problem-solving tasks (Saido et al., 2017; Shah et al., 2020). Furthermore, modifying assessment methods to include application-based and analytical questions has been shown to promote deeper learning experiences (Gul et al., 2019; Ahmad & Iqbal, 2021). These findings align with studies emphasizing that assessment frameworks incorporating higher order questions and project-based evaluations significantly enhance students' critical and creative thinking skills (Brookhart, 2010).

The findings highlight the need for curriculum reforms to ensure coherence between curriculum objectives, instructional practices, and assessment methods. Bridging these gaps through teacher training, diversified assessment techniques, and student-centered pedagogies can significantly enhance students' ability to analyze, evaluate, and create knowledge, rather than merely memorizing content (Gul et al., 2020).

The analysis of instructional methods further emphasized the dominance of the lecture method, with minimal utilization of innovative pedagogical approaches. This finding was echoed in interview responses where teachers acknowledged their

dependence on traditional methods due to various structural and logistical constraints, including outdated teaching practices, large class sizes, ineffective timetabling, and a lack of subject specialists (Iqbal, 2019). Document analysis further substantiated these concerns, as examination questions reflected an instructional focus on knowledge recall rather than fostering an environment conducive to active learning and higher-order cognitive engagement. Teachers highlighted the need for blended learning strategies and multimedia resources to bridge the gap between contemporary educational methodologies and current classroom practices.

The discussion on assessment practices underscored the need for substantial reforms in the existing examination system. Qualitative analysis revealed that teachers recommended a shift towards a more balanced approach, proposing that 70% of assessments should be objective-based, while 30% should incorporate project-based evaluations. Additionally, teachers emphasized the need for student presentations as part of the final assessment structure. Document analysis reinforced these concerns, showing that examination papers from 2014 to 2018 predominantly focused on lower-order cognitive skills such as memorization and comprehension, with little emphasis on evaluation or creativity. Research suggests that assessment techniques that incorporate open-ended responses, case studies, and scenario-based questions can significantly enhance students' critical thinking abilities (Brookhart, 2010).

Overall, the convergence of findings across quantitative and qualitative analyses confirms that instructional and assessment practices in Pakistan Studies are predominantly centered on lower-order thinking. The findings highlight the urgent need for curriculum and examination reforms to align instructional and assessment practices with higher-order cognitive skills. Teachers expressed a strong desire for modern instructional strategies, skill-based learning, and diversified assessment approaches that move beyond rote memorization. Addressing these systemic and pedagogical gaps will be critical in fostering a more analytical, evaluative, and creative learning environment for secondary school students studying Pakistan Studies.

5.4 Conclusion

This study explored teachers' perceptions of Pakistan Studies curriculum objectives, instructional practices and methods in the context of higher order thinking. It also examined demographic influences (area, gender and job experience), analyzed annual question papers (2014–2018) and identified instructional and assessment practices along with challenges faced by teachers. Based on the findings, key conclusions were drawn.

The conclusion were divided into three phases: phase I dealt with the quantitative conclusion regarding the perceptions of teachers about the objectives of Pakistan Studies curriculum; instructional practices and instructional methods (acquiring, applying and reflection on knowledge); demographic variables including area, gender and job experience; and document analysis of 2014-2018 annual question papers (conclusion 1-5); phase II dealt with the qualitative conclusion about the perceptions of teachers regarding other instructional and assessment practices and challenges in teaching Pakistan Studies regarding higher order thinking at secondary school level (conclusion 6-8); and phase III showed conclusion drawn on the basis of triangulation of quantitative and qualitative data (conclusion 9).

1. Teachers perceived the Pakistan Studies curriculum as strengthening national identity, deepening historical understanding, and instilling gratitude for independence but noted its limited emphasis on observation, creativity, analysis and reflection. Instructional and assessment practices largely focus on memorization and recall rather than fostering analytical thinking, creativity, and reflection. This misalignment restricts students' ability to critically engage with historical and political concepts. To bridge this gap, instructional and assessment methods must be restructured to integrate HOTS, ensuring that students not only acquire knowledge but also develop the ability to analyze, evaluate, and apply it meaningfully.
2. Instructional practices for acquiring knowledge in Pakistan Studies primarily emphasized basic concept retention, with teachers frequently using pre-assessments, question generation, and problem identification. However, practices related to applying and reflecting on knowledge were less commonly implemented. Teachers provided limited encouragement for alternative thinking

and rarely facilitated hands-on activities or cooperative learning. Similarly, while open-ended assessments were used to some extent.

3. The instructional methods of applying knowledge i.e. computer-assisted instruction; project method; problem-based learning; visit to the museum; use of internet, PowerPoint presentation, documentaries, slides, globe, maps, study visits; and resource people were found to be the least popular among teachers. Despite their importance in fostering critical thinking, analysis and problem-solving skills, these methods were not frequently integrated into instructional practices.
4. Female teachers had higher perception of the objectives of the Pakistan Studies curriculum related to higher order thinking compared to male teachers. Additionally, rural teachers were found to be more inclined towards using instructional practices for acquiring knowledge, highlighting a possible variation in teaching approaches between urban and rural settings. However, when it came to job experience, no significant differences were observed in teachers' perceptions of instructional practices and methods. Both highly experienced and less experienced teachers shared similar views, indicating that experience alone may not be a determining factor in shaping instructional practices.
5. The analysis of Pakistan Studies question papers from 2014 to 2018 revealed a strong emphasis on lower-order cognitive skills. Most questions were designed to assess "remembering" and "understanding," while higher order thinking skills such as "analyzing," "evaluating," and "creating" were rarely included. This reliance on rote memorization hindered students' conceptual understanding and critical thinking development. Only the first three levels of Bloom's Taxonomy were consistently present in these five years of annual question papers.
6. Teachers identified several other instructional practices to enhance higher order thinking in Pakistan Studies, including brainstorming, questioning, research-based learning and problem-solving. They expressed dissatisfaction with the dominance of lecture-based and textbook-centered teaching methods, highlighting a lack of engaging activities. The teachers reported insufficient professional training and limited CPD opportunities for Pakistan Studies. To improve instructional effectiveness, teachers suggested incorporating historical site visits, PowerPoint presentations, computer-based activities, audiovisual

aids, problem-based learning, internet and multimedia integration, cooperative learning and group discussions. These methods can enhance student engagement, promote critical thinking and facilitate deeper understanding.

7. Teachers strongly advocated for urgent reforms in the Pakistan Studies examination system, emphasizing a shift towards formative assessments that provide continuous evaluation and skill development. They recommended incorporating objective-type and project-based questions, along with practical-based exams and the integration of maps and globes to enhance conceptual understanding. Additionally, teachers highlighted the need to ensure that assessments cover all cognitive levels of Revised Bloom's Taxonomy. A major concern was the lack of subject specialists in exam paper setting, leading to recommendations for appointing specialists and providing training in paper setting and item analysis to improve the quality of assessments.
8. Teachers identified multiple challenges in implementing instructional and assessment practices aimed at fostering higher order thinking in Pakistan Studies. The most important issues included heavy workloads, time constraints and overcrowded classrooms, which hinder personalized instruction. A lack of resources, insufficient funding and the absence of visual aids further limit the integration of innovative teaching methods. Additionally, the shortage of subject specialists and trained teachers affects content delivery, while inadequate in-service training restricts professional growth. Teachers also highlighted flaws in the assessment system, particularly the lack of teacher involvement in paper setting, which leads to exams that emphasize rote memorization rather than higher order thinking skills.
9. The results of both quantitative and qualitative data were consistent, highlighting a strong connection between curriculum objectives, instructional practices and assessment methods. The weak emphasis on higher order thinking (HOT) in the Pakistan Studies curriculum was reflected in teachers' instructional and assessment choices, which largely prioritized knowledge recall over analysis and evaluation. Teachers faced challenges such as limited training, time constraints, and reliance on rote memorization. While instructional practices focused on knowledge acquisition, incorporating diverse methods could enhance HOT. Additionally, an analysis of five years of question papers showed a predominant focus on the 'remembering' level.

5.5 Recommendations

The following recommendations were drawn:

1. The Curriculum Wing (Ministry of Education) may conduct a comprehensive review of the Pakistan Studies curriculum to ensure that its objectives genuinely promote higher order thinking skills, moving beyond factual recall to analytical and reflective learning. The Federal Directorate of Education, Islamabad may organize professional development programs, workshops and seminars to equip teachers with effective instructional practices that foster observation, creativity, analysis and reflection in students. Teachers may integrate student-centered approaches such as project-based learning, inquiry-based and critical discussions, interdisciplinary approaches and problem-solving activities to enhance critical thinking skills. Schools may encourage experiential learning through field trips, group projects and community-based assignments that allow students to apply their knowledge in real-world contexts, reinforcing higher order cognitive skills. Additionally, teachers may collaborate in designing lesson plans that incorporate presentations, debates and sports activities, fostering engagement, teamwork and intellectual curiosity. By implementing these measures, the Pakistan Studies curriculum can better align with its intended goals, ensuring that students not only acquire knowledge but also develop essential higher order thinking skills.
2. To enhance instructional practices in Pakistan Studies, teachers may place greater emphasis on applying and reflecting on knowledge. They may facilitate students in conducting hands-on activities, encourage them to explore alternative ways of thinking and incorporate cooperative learning strategies to promote deeper understanding. Additionally, teachers may make greater use of open-ended questions to assess students' analytical and critical thinking abilities. Professional development programs and targeted training sessions can support teachers in integrating these approaches effectively. By implementing these strategies, the teaching of Pakistan Studies can move beyond rote memorization to a more dynamic and engaging learning experience that nurtures higher order thinking.
3. Federal Directorate of Education (FDE), Islamabad, may ensure the provision of adequate resources and professional development opportunities to enable

teachers to implement innovative instructional methods. Schools may be equipped with necessary technological tools, multimedia resources and access to educational excursions to promote higher order thinking. Additionally, teachers may receive training on integrating methods such as computer-assisted instruction, project-based learning, problem-based learning, study visits and interactive learning strategies to enhance the teaching of Pakistan Studies in alignment with higher order thinking skills.

4. The Federal Directorate of Education (FDE) may provide targeted training programs for male teachers to enhance their understanding of curriculum objectives related to higher order thinking. This could help bridge the perception gap and ensure a more uniform approach to teaching Pakistan Studies. Furthermore, Continuous Professional Development (CPD) programs should be introduced for all teachers, regardless of gender, area or job experience. These programs should focus on aligning instructional and assessment practices with higher order thinking objectives, ensuring that all teachers are equipped with the necessary skills to foster critical thinking and deeper learning among students.
5. The Federal Directorate of Education (FDE) and examination boards may revise Pakistan Studies question papers to ensure a balanced representation of cognitive skills across all levels of the Revised Bloom's Taxonomy. Subject specialists may be appropriately assigned by the Federal Board of Intermediate and Secondary Education (FBISE) to design the question papers, with adequate training provided to ensure a comprehensive assessment framework. It is essential that all cognitive levels from Revised Bloom's Taxonomy be reflected in future question papers to promote higher order thinking among students.
6. The Federal Directorate of Education (FDE) and school principals may organize in-house Continuous Professional Development (CPD) programs to equip teachers with innovative instructional strategies such as problem-based learning, multimedia integration and cooperative learning. To support diverse instructional approaches, FDE may allocate funds to provide essential teaching aids, including projectors, maps, globes, multimedia tools and internet access in schools. Additionally, curriculum developers may revise the Pakistan Studies curriculum to incorporate modern instructional practices that promote higher order thinking skills. Furthermore, principals may establish platforms for

teachers to share best practices and experiences, fostering collaborative teaching environments and enhancing instructional effectiveness.

7. The Federal Board of Intermediate and Secondary Education (FBISE) may revise the examination system to incorporate a greater focus on formative assessments, ensuring a balance between objective-type, project-based and practical-based questions that encourage higher order thinking. Adequate weightage may be given to constructed and extended response questions to assess students' analytical and critical thinking skills. Furthermore, subject specialists may be appointed for examination paper setting and training programs on paper setting and item analysis may be introduced to enhance assessment quality. The use of maps, globes and real-world application-based tasks should also be integrated into assessments to strengthen students' geographical and conceptual understanding.
8. The Federal Directorate of Education (FDE) may take steps to address these challenges by appointing subject specialists to improve content delivery and assessment quality. Adequate funding may be allocated to equip schools with essential teaching resources, including visual aids and digital tools. Additionally, comprehensive professional development programs may be introduced to train teachers in modern instructional and assessment practices that promote higher order thinking. Reducing administrative workload and ensuring manageable class sizes can also enhance the effectiveness of teaching and learning. Furthermore, teachers may be actively involved in the paper-setting process to align assessments with higher order thinking principles.
9. The Pakistan Studies curriculum may be revised to emphasize observation, creativity and reflection, ensuring alignment with instructional and assessment practices. FDE and school administrations may offer regular professional development programs focusing on inquiry-based learning, problem-solving, and HOT-based assessment design. Teachers may integrate diverse instructional practices such as group discussions, multimedia and field trips, with schools being equipped with necessary digital tools. FBISE should reform assessment methods by incorporating unseen questions, project-based tasks and a recommended 70:30 ratio of objective-type to extended-response questions. Subject specialists may be involved in paper setting and training in assessment design may be provided. Additionally, policymakers may address barriers like

teacher workload, administrative burdens and inadequate classroom resources to facilitate effective implementation.

5.6 Suggestions

The following suggestions are given as way forward:

1. Conduct a comparative analysis of the implementation of revised Bloom's taxonomy in Pakistan Studies curricula across different educational boards in Pakistan.
2. Investigate the effectiveness of integrating practical-based exams and student presentations as components of the final examination in other subjects and grade levels.
3. Explore the impact of teacher training programs on enhancing instructional practices aligned with higher order thinking in Pakistan Studies.
4. Examine the perceptions and experiences of students regarding the instructional and assessment practices identified in this study.
5. Explore the challenges and opportunities associated with transitioning from traditional assessment methods to more innovative and student-centered approaches in secondary education.

5.7 Limitations

The study has the following limitations:

1. Time and financial constraints limited the depth of data collection and analysis.
2. The COVID-19 pandemic disrupted in-person observations and restricted access to schools and teachers, affecting data collection.
3. Limited availability of recent literature on instructional practices and higher order thinking in Pakistan Studies, which constrained the comparative analysis.

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APPENDIX A**COVER LETTER OF QUESTIONNAIRE**

Dear Respondent,

I am a Ph.D. Scholar at the Department of Educational Sciences, National University of Modern Languages, Islamabad, conducting research on the topic **“Instructional and Assessment Practices in the Perspective of Higher Order Thinking at the Secondary School Level.”** In this regard, I seek your valuable cooperation in completing the questionnaire. I assure you that the information provided will be used solely for research purposes and will remain confidential. Please select the most appropriate response for each statement by ticking the relevant box. Kindly ensure that all statements are marked.

Your participation is highly appreciated.

Thank you.

Tahseen Fatima

Research Scholar

Ph.D. (Education)

Department of Educational Sciences

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APPENDIX B**Topic: Instructional and Assessment Practices in the Perspective of Higher Order Thinking at Secondary School Level.**

Name of school _____

Please tick (✓) in according to your situation.

1. School

Urban _____ Rural _____

2. Gender

Male _____ Female _____

3. Experience (in Years)

5 and less than 5 6 – 10 11 – 15 16 -- 20 Above 20

INSTRUCTIONS: PART 1

Kindly read each statement carefully. There are five options in front of each statement. Tick in one box that is more relevant to you and your situation.

Strongly Agree (SA) =5 Agree (A)=4 Neutral (NR)=3 Disagree (DA) =2
Strongly Disagree (SDA) =1

S.NO	The objective of the curriculum of Pakistan Studies in developing Higher Order Thinking of students is to;	SA 5	A 4	NR 3	DA 2	SDA 1
1.	Inculcate a sense of gratitude to Almighty Allah for blessing us with an independent and sovereign state.					
2.	Encourage traits of observation, creativity, analysis, and reflection in students.					
3.	Acquaint the students with various phases of Pakistani's historical, political, and constitutional developments.					
4.	Emphasize the rights and obligations of the citizens of an independent and sovereign state.					

PART 2: Pakistan Studies Teachers' perceptions of teaching practices used for promoting higher order Thinking.

Kindly read each statement carefully. There are five options in front of each statement. Tick in one box that is more relevant to you and your situation.

Always – 5 Often – 4 Sometimes – 3 Seldom – 2 Never – 1

S.NO	Constructs of HOT	Always 5	Often 4	Sometimes 3	Seldom 2	Never 1
Acquiring Knowledge						
5.	Ask students to exchange their concepts with one another.					
6.	Engage students in inferential activities.					
7.	Encourage students to create their questions.					
8.	Conduct pre-assessment to know about students' prior knowledge.					
9.	Give students many opportunities to identify important learning problems.					
10.	Observe students and ask questions when they engage in group activities.					
Applying Knowledge						
11.	Observe students when they work individually.					
12.	Facilitates students in conducting activities given in the exercises.					
13.	Encourage students to practice an alternative way of thinking.					
Reflection on Knowledge						
14.	Review students' homework copies on regular basis.					
15.	Assess students' knowledge through open-ended questions.					
16.	Prefer to apply cooperative learning approach to the class.					

PART 3: Pakistan Studies Teachers' perceptions of Methods, Techniques, and tools used for teaching to enhance higher order thinking. Kindly read each statement carefully. There are five options in front of each statement. Tick in one box that is more relevant to you and your situation.

Always – 5 Often – 4 Sometimes – 3 Seldom – 2 Never – 1

S.NO	Constructs of HOT	Always 5	Often 4	Sometimes 3	Seldom 2	Never 1
Acquiring knowledge Through						
17.	Lecture Method					
18.	interactive Lecture					
19.	Lecture +diagrams					
20.	Lecture + photos					
21.	Lecture + charts					
22.	Lecture + multimedia					
23.	Textbook Method					
24.	Brainstorming					
25.	Oral presentation					
Applying knowledge Through						
26.	Computer-assisted instruction					
27.	Activity Method					
28.	Debates					
29.	Demonstration					
30.	Project Method					
31.	Problem-based learning					
32.	Use of real objects					
33.	Graphs					

Reflection on Knowledge Through						
34.	Discussion Method					
35.	Group Study					
36.	Cooperative learning					
37.	Organize small groups					
38.	Inquiry/investigation					
39.	Ask questions during teaching					
40.	Visits to Museum					
41.	Use of Internet					
42.	Use of posters					
43.	PowerPoint presentation					
44.	Use of Assignment Method					
45.	Use of Documentaries					
46.	Use of interactive whiteboard.					
47.	Use of Slides					
48.	Use of Globbs					
49.	Use of Maps					
50.	Study visits					
51.	Resource people					
52.	Organizing Contests					
53.	Use of Models					

APPENDIX C

Certificate of Translation of Questionnaire in Urdu Language

سرٹیفکیٹ

میں نے، مسز تحسین فاطمہ (رجسٹریشن نمبر 696/PhD/Edu/F17) کے پی۔ایچ۔ڈی، تھیسز (Thesis) کا سوالنامہ بعنوان: سکینڈری سکول کے درجہ پر، ہائیر آرڈر سوچ پیدا کرنے کیلئے انسٹرکشنل اور اسسمنٹ پریکٹسز کا بغور جائزہ لیا ہے تصدیق کی جاتی ہے کہ سوالنامہ اردو زبان کا صحیح ترجمان ہے۔ جو گرائمر، لفظی اور دیگر تمام قسم کی غلطیوں سے مبرا ہے۔ لہذا اس سوالنامہ کو تسلی بخش قرار دیا جاتا ہے۔

R. Rohi
ROOBINA ROHI
S.S.T
ISLAMABAD MODEL COLLEGE
FOR GIRLS 1-9/1 ISLAMABAD

حصہ اول:

چراغیت۔ ہر اکرم ہر ایک بیان کو غور سے پڑھیں۔ ہر بیان کے سامنے پانچ اختیارات ہیں۔ ایک خانہ میں (✓) کا نشان لکھیں جو آپ اور آپ کی صورت حال سے زیادہ مطابقت رکھتا ہو۔
kindly read each statement carefully. There are five options in front of each statement. Tick in one box that is more relevant to you & your situation.

Strongly agree= 5, Agree= 4, Neutral= 3, Disagree 2, Strongly Disagree= 1.

سیر نمبر Sr.No	ظہار، دھماکات میں پائیدار آواز سونے کو بڑھانے کے سوائے سے مطابقت پاکستان کے نصاب کا مقصد یہ ہے کہ Objective of the curriculum of Pakistan Studies in developing Higher Order thinking of students is to	پہلی طرح نہیں Strongly Disagree (SDA) 1	نہیں Disagree (DA) 2	نیر جاندار Neutral (NR) 3	مستحق ہوں Agree (A) 4	پہلی طرح نہیں Strongly Agree (SA) 5
1	ایک آزاد اور خود مختار ریاست کے لئے پ انہ تعالیٰ کے شکر گزار ہوں Inculcate a sense of gratitude to Almighty Allah for blessing us with an independent and sovereign state.					
2	ظہار، میں مشاہدہ و تحقیقی صلاحیت، تجزیہ اور محاکمہ کی صلاحیت کی توسل فرمائی کریں۔ Encourage traits of observation, creativity, analysis and reflection in students.					
3	ظہار کہ پاکستانی تاریخ، سیاست اور آئینی شرائط کے مختلف مراحل سے واقفیت کرائے۔ Acquaint the students with various phases of Pakistan's historical, political, and constitutional developments.					
4	ایک آزاد اور خود مختار ریاست کے شہریوں کے حقوق و فرائض سے آگاہی دے گا۔ Lay emphasis on the rights and obligation of the citizens of an independent and sovereign state.					

حصہ دوم

مطالعہ پاکستان پڑھانے والے اساتذہ کا ہائر آرڈر سوچ کو بڑھانے کے حوالے سے تدریسی حکمت عملی اپنانے کیلئے اظہارِ خیال۔

Pakistan Studies Teacher's perception of teaching strategies used for promoting Higher order thinking.

براہ کرم ہر ایک بیان کو غور سے پڑھیں۔ ہر بیان کے سامنے پانچ اختیارات ہیں۔ ایک خانے میں (✓) نشان لگائیں جو آپ اور آپ کی صورت حال سے زیادہ مطابقت رکھتا ہو۔

Kindly read each statement carefully. There are five options in front of each statement. Tick in one box that is more relevant to you & your situation.

Always -5 Often-4. Sometimes-3, Seldom-2, Never-1

سیریل نمبر Sr.No	علم حاصل کرنا Acquiring Knowledge	ہمیشہ Always 5	اکثر Often 4	کبھی کبھی Sometime 3	شاذ و نادر Seldom 2	کبھی نہیں Never 1
5	میں طلباء سے کہتا/ کہتی ہوں کہ وہ ایک دوسرے کے ساتھ تصورات کی وضاحت کریں۔ I ask students to exchange their concepts with one another.					
6	میں طلباء/ طالبات کو نتیجہ خیز سرگرمیوں میں مصروف رکھتا/ رکھتی ہوں۔ I engage students in inferential activities.					
7	میں طلباء کی خود سے سوالات بنانے کی صلاحیت کی حوصلہ افزائی کرتی/ کرتا ہوں۔ I encourage students to create their questions.					
8	میں اس بات کا تعین کرنے کیلئے پہلے سے تشخیص کرتا/ کرتی ہوں، کہ طالب علم کو پہلے سے کیا معلوم ہے۔ I conduct a pre-assessment to know about students prior knowledge.					
9	میں طلباء کو اہم دشواریوں کی نشان دہی کرنے کے لیے بہت سے مواقع دیتی/ دیتا ہوں۔ I give students many opportunities to identify important learning problems.					
10	میں طلباء کا مشاہدہ کرتا/ کرتی ہوں اور سوالات پوچھتا/ پوچھتی ہوں جب وہ گروپس میں کام کرتے ہیں۔ I observe students and ask question when they engage in group activities.					

علم کا اطلاق Applying Knowledge

11	میں طلباء کا مشاہدہ کرتا/ کرتی ہوں، جب وہ انفرادی طور پر کام کرتے ہیں۔ I observe students when they work individually.					
12	میں طلباء کو مشقوں میں دی گئی سرگرمیوں کو کرنے کی حوصلہ افزائی کرتی/ کرتا ہوں۔ I facilitate students in conducting activities given in the exercises.					
13	میں طلباء کی حوصلہ افزائی کرتا/ کرتی ہوں کہ وہ سوچنے کے متبادل طریقہ پر عمل کریں۔ I encourage students to practice an alternative way of thinknig.					

علم کی حکمتی Reflection on Knowledge

					میں طلباء کے ہوم ورک کی کاپیوں کا باقاعدگی سے جائزہ لیتا رہتا ہوں I review students home work copies on regular bases.	14
					میں جب طلباء کو جانچتی ہوں تو میں ایسے ٹیسٹ دیتا رہتی ہوں جس میں طلباء (open-ended) جواب دیں۔ I assess students' knowledge through open-ended questions.	15
					میں کلاس میں کوآپریٹو لرننگ اپروچ کو لاگو کرنے کو ترجیح دیتا رہتی ہوں۔ I prefer to apply co-operative learning approach to the class.	16

حصہ سوم:

ہائیر آرڈر سوچ کو بڑھانے کے لئے استعمال ہونے والے تدریسی طریقوں، تکنیکس اور ٹولز کے بارے میں مطالعہ پاکستان پڑھانے والے ٹیچرز کے خیالات۔

Part3:- Pakistan Studies teacher's perception of method, techniques and tools used for teaching to enhance Higher order thinkings.

براہ کرم ہر ایک بیان کو غور سے پڑھیں۔ ہر بیان کے سامنے پانچ اختیارات ہیں۔ ایک خانے میں (✓) نشان لگائیں جو آپ آپ کی صورتحال سے زیادہ مطابقت رکھتا ہو۔

kindly read each statement carefully. There are five options in front of each statement. Tick in one box that is more relevant to you and your situation.

1۔ علم حاصل کرنے کے ذریعے

بہت کم Never 1	کچھ کم Seldom 2	کبھی کبھی Sometime 3	اکثر Often 4	بیشمار Always 5	1۔ علم حاصل کرنے کے ذریعے Acquiring knowledge through	سریں جبر
					ٹیچر۔ lecture	17
					Interactive lecture	18
					ٹیچر + ڈیاگرام۔ lecture+ diagraph	19
					ٹیچر + فوٹو۔ lectur + photos	20
					ٹیچر + چارٹ۔ lecture + Chart	21
					ٹیچر + ملٹی میڈیا پراجیکٹر۔ lectur + Multimedia projector	22
					Text - book Method درسی کتب کا طریقہ	23
					Brainstorming طلباء کی ذہنی مادی	24
					Oral-presentation زبانی پیشکش	25

2۔ علم کے اطلاقی کے ذریعے Applying Knowledge through

					Coputer-assisted instructions. کمپیوٹر سے تعاون یافتہ ہدایت	26
					Activity Method سرگرمی کا طریقہ	27
					Debates۔ مباحثہ	28
					Demonstration۔ مظاہرہ	29
					Project Method۔ پروجیکٹ کا طریقہ	30
					problem-based learning مسئلہ پر مبنی سیکھنے کا عمل	31
					Use of real objects۔ حقیقی اشیاء کا استعمال	32
					Graphs۔ گرافس	33

3۔ علوم کی عکاسی کے ذریعے Reflection on Knowledge through.

					بحث کا طریقہ. Discussion Method.	34
					گروپ اسٹڈی. Group Study.	35
					تعاون سے سیکھنا. Co- operative learning.	36
					چھوٹے گروہوں کو منظم کرنا. Organize small groups.	37
					تحقیقات/ تفتیش. Inquiry/ Investigation.	38
					درس کے دوران سوالات پوچھنا. Ask question during teaching.	39
					میزیم کا دورہ Meseum. Visit to Meseum.	40
					انٹرنیٹ کا استعمال. Use of internet.	41
					پوسٹروں کا استعمال. use of posters.	42
					پاور پوائنٹ پر پریزنٹیشن. Power Point presentation.	43
					تفویض طریقہ کا استعمال. use of assignement method.	44
					دستاویزی فلموں کا استعمال. Use of documentaries.	45
					انٹرا ایکٹو وائٹ بورڈ کا استعمال. Use of interactive white-board.	46
					سلائیڈز کا استعمال. Use of slides.	47
					گلوب کا استعمال. Use of Globos .	48
					نقشہ جات کا استعمال. Use of Maps.	49
					مطالعائی دورے. Study Visits.	50
					ماہرین کی مدد لینا. Resource people.	51
					مقابلوں کا انعقاد. Organizing contests.	52
					ماڈلز کا استعمال. Use of models.	53

APPENDIX E (a)**List of Experts Committee for Validation of Questionnaire**

S.NO	NAME OF EXPERTS	DESIGNATION
1.	Dr. Allah Rekha Saghir	Professor (Retd) HOD Allama Iqbal Open University, Islamabad.
2.	Dr. Shazia Zamir	Assistant Professor, National University of Modern Languages, Islamabad.
3.	Dr. Qurat-tul-ain	Assistant Professor, National University of Modern Languages, Islamabad.
4.	Dr. Farkhanda Tabassum	Assistant Professor, National University of Modern Languages, Islamabad.

APPENDIX E (b)

Certificates of Validity of Questionnaire

Expert:1



CERTIFICATE OF VALIDITY

Instructional and Assessment Practices in the Perspective of Higher Order Thinking at Secondary School Level

By: Ms. Tahseen Fatima

P.h.D Scholar, Faculty of Social Sciences, National University of Modern Languages, H-9, Islamabad, Pakistan.

It is to certify that the questionnaire developed by Tahseen Fatima research scholar PhD Education, towards her thesis has been assessed and find it to have been designed adequately for the assessment of instructional and assessment Practices in the perspective of higher order thinking at Secondary School Level.

It is considered that the research instrument, developed for the above titled research is according to the objectives of the research. It assures adequate construct and content validity according to the purpose of the research, and can be used for data collection by the researcher with fair amount of confidence.

Name Dr. Allah Rakha Seghin

Designation Professor (Retd) / MOD

Institute Allama Iqbal Open Univ. Islamabad

Signature Ausaf

Expert:2**CERTIFICATE OF VALIDITY****Instructional and Assessment Practices in the Perspective of Higher Order Thinking at Secondary School Level**

By: Ms. Tahseen Fatima

P.h D Scholar, Faculty of Social Sciences, National University of Modern Languages, H-9, Islamabad, Pakistan.

It is to certify that the questionnaire developed by Tahseen Fatima research scholar PhD Education, towards her thesis has been assessed and find it to have been designed adequately for the assessment of instructional and assessment Practices in the perspective of higher order thinking at Secondary School Level.

It is considered that the research instrument, developed for the above titled research is according to the objectives of the research. It assures adequate construct and content validity according to the purpose of the research, and can be used for data collection by the researcher with fair amount of confidence.

Name Dr. Khazir Jamil

Designation Assistant Professor

Institute NUML

Signature [Signature]

Expert 3



CERTIFICATE OF VALIDITY

Instructional and Assessment Practices in the Perspective of Higher Order Thinking at Secondary School Level

By: Ms. Tahseen Fatima

P.h D Scholar, Faculty of Social Sciences, National University of Modern Languages, H-9, Islamabad, Pakistan.

It is to certify that the questionnaire developed by Tahseen Fatima research scholar PhD Education, towards her thesis has been assessed and find it to have been designed adequately for the assessment of instructional and assessment Practices in the perspective of higher order thinking at Secondary School Level.

It is considered that the research instrument, developed for the above titled research is according to the objectives of the research. It assures adequate construct and content validity according to the purpose of the research, and can be used for data collection by the researcher with fair amount of confidence.

Name

Dr. Quratul-Ain

Designation

Assistant Professor

Institute

NUML

Signature

[Signature]

Expert 4



CERTIFICATE OF VALIDITY

Instructional and Assessment Practices in the Perspective of Higher Order Thinking at Secondary School Level

By: Ms. Tahseen Fatima

P.h D Scholar, Faculty of Social Sciences, National University of Modern Languages, H-9, Islamabad, Pakistan.

It is to certify that the questionnaire developed by Tahseen Fatima research scholar PhD Education, towards her thesis has been assessed and find it to have been designed adequately for the assessment of instructional and assessment Practices in the perspective of higher order thinking at Secondary School Level.

It is considered that the research instrument, developed for the above titled research is according to the objectives of the research. It assures adequate construct and content validity according to the purpose of the research, and can be used for data collection by the researcher with fair amount of confidence.

Name Dr. Farichanda Tabassum

Designation Assistant Prof

Institute NUML

Signature Farichanda

APPENDIX F

ANNUAL QUESTION PAPERS OF PAKISTAN**STUDIES 2014 TO 2018****ANNUAL QUESTION PAPER PAKISTAN STUDIES 2014****PAKISTAN STUDIES SSC-II**

Time allowed: 2:40 Hours

Total Marks Sections B a

NOTE: Answer any twelve parts from Section 'B' and any two questions from Section 'C' on the provided answer book. Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly.

SECTION – B (Marks 36)

Q. 2 Answer any TWELVE parts. The answer to each part should not exceed 3 to 4 lines. (12)

- What is meant by Ideology?
- What are the fundamentals of an Islamic constitution according to Allama Iqbal (RA)?
- When and Where did the Jinnah Gandhi Talks / Correspondence take place?
- Which year was Shah Wali Ullah (RA) born? Also write the name of his father.
- How many refugees migrated to Pakistan as a result of the partition of India? Where were they?
- Write a short note on the System of Basic Democracies.
- What per cent of the total land of South Asia is occupied by Pakistan?
- What is the average height of the Shiwalik Range hills?
- What does ADBP stand for?
- Write a short note on the Sugar Industry in Pakistan.
- Write a short note on the Grand Trunk Road (G.T. Road)?
- What are GRP and GNP?
- Name any three most prominent calligraphists of Pakistan.
- Who were Taan Sen and Amir Khusro (RA)?
- Define Formal and Informal Education.
- What did the Quaid-i-Azam (RA) advise the civil and military officers on 11th October, 1947 A.C.

SECTION – C (Marks 24)

Note: Attempt any TWO questions. All questions carry equal marks.

(2 x 1)

- Q. 3 Write down the Fourteen Points of the Quaid-i-Azam (RA).
- Q. 4 Describe the temperature zones of Pakistan.
- Q. 5 Write a comprehensive note on the importance of Urdu as the basis of national unity.

حصہ دوم (مکمل نمبر 36)

(12x3=36)

ال نمبر 2: مندرجہ ذیل میں سے بارہ (12) اجزاء کے تین سے چار سطور پر مشتمل جواب دیجیے:

- نظریہ کیا مراد ہے؟ (ii) علامہ اقبالؒ کے مطابق اسلامی آئین کے بنیادی اصول کیا ہیں؟
- جناحؒ کا جمعی مذاکرہ اور خط و کتابت کب اور کہاں ہوئے؟ (iv) شاد ولی اللہ رحمت اللہ علیہ کس سال پیدا ہوئے؟ ان کے والد کا نام بھی لکھیں۔
- ہندوستان کی تقسیم کے نتیجے میں کتنے مہاجرین ترقیب سکونت کر کے پاکستان آئے اور کہاں آئے؟
- بنیادی جمہوریت کے نظام (بی ڈی سسٹم) پر مختصر نوٹ لکھیے۔ (vii) پاکستان جنوبی ایشیا کی سر زمین کے کھل کھننے کی صدر قیہ کا احاطہ کرتا ہے؟
- شاؤمک کی پہاڑیوں کی اوسط بلندی کیا ہے؟ (ix) ADBP کس کا مخفف ہے؟
- پاکستان میں شکر سازی کی صنعت پر مختصر نوٹ لکھیے۔ (xi) جی ٹی روڈ پر مختصر نوٹ لکھیے۔
- GRP اور GNP کیا ہیں؟ (xiii) پاکستان کے کوئی تین مشہور خطاطوں کے نام لکھیں۔
- جان سین اور امیر خسروؒ کون تھے؟ (xv) رگی اور غیر رگی تعلیم کی تعریف کریں۔
- 11 اکتوبر 1947 کو قائد اعظمؒ نے سول اور ملٹری افسران کو کیا نصیحت کی؟ (xvi)

حصہ سوم (مکمل نمبر 24)

(2x12=24)

(کوئی سے دو سوال حل کیجیے۔ تمام سوالوں کے نمبر برابر ہیں۔)

- ال نمبر 3: قائد اعظمؒ سے چودہ نکات لکھیے۔ سوال نمبر 3: پاکستان کے دوسرے حرات کے نقطے بیان کریں۔
- ال نمبر 5: پاکستان میں قومی اتحاد کی بنیادی حیثیت سے اردو کی اہمیت پر چار نوٹ تحریر کیجیے۔

ANNUAL QUESTION PAPER PAKISTAN STUDIES 2015



PAKISTAN STUDIES SSC–II

Time allowed: 2:40 Hours

Total Marks Sections B and C

NOTE:-Answer any twelve parts from Section 'B' and any two questions from Section 'C' on the supplied answer book. Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly.

SECTION – B (Marks 36)

Q. 2 Attempt any TWELVE parts. The answer to each part should not exceed 3 to 4 lines. (12 : 36)

- (i) Define ideology.
- (ii) Who was the head of the boundary commission? When was his Award announced?
- (iii) What percentage of the total populated Land Should consist of Forests and Why?
- (iv) What is the Land Stretch of Pakistan? How much total land of south Asia is occupied by Pakistan?
- (v) Write down the names of the canals of River Ravi.
- (vi) What are the major uses of Natural Gas?
- (vii) Define Infrastructure.
- (viii) What is meant by the term migration also write the different kinds of migration?
- (ix) What are the important Industries which make use of Gypsum?
- (x) What are Abdur Rehman Chughtai and Ustad Allah Buksh famous for?
- (xi) Write down the names of theologians and sufis who adopted Punjabi for expression of their thoughts in poetry and prose.
- (xii) Define Textbook.
- (xiii) Define Culture.
- (xiv) What is meant by egalitarianism?
- (xv) Give a brief account of Mountbatten's role in the partition of India.
- (xvi) Which body of persons elected the president under the 1962 constitution of Pakistan?

SECTION – C (Marks 24)

Note: Attempt any TWO questions. All questions carry equal marks. (2 x 12)

- Q. 3** Explain Pakistan Ideology in the Islamic perspective.
- Q. 4** What is the importance of Industrial development for Pakistan? Discuss elaborately.
- Q. 5** Describe the events leading to the dismemberment of Pakistan. Explain the Indian role in this regard.



مطالعہ پاکستان (لازمی)۔ ایس ایس سی-II

وقت: 2:40 گھنٹے

کل نمبر حصہ دوم اور سوم: 60

نوٹ: حصہ دوم اور سوم کے سوالات کے جوابات طبعی سے میاں کی جہاں کاپی پر تحریر کیجیے۔ حصہ دوم میں سے بارہ (12) اجزاء اور حصہ سوم میں سے کوئی سے دو (2) سوالات کے جوابات تحریر کیجیے۔ ایکسٹرا شیٹ (Sheet-B) طلب کرنے سے میاں کی جائے گی۔ آپ کے جوابات صاف اور واضح ہونے چاہئیں۔

حصہ دوم (کل نمبر 36)

سوال نمبر ۲: مندرجہ ذیل میں سے بارہ (12) اجزاء کے تین سے چار سطور پر مشتمل جواب دیجیے:

(12x3=36)

- (i) نظریہ کی تعریف کریں۔
- (ii) حد بندی کمیشن کا سربراہ کون تھا؟ اس کمیشن کے فیصلہ (ایوارڈ) کا اعلان کب کیا گیا؟
- (iii) کسی ملک کا کتنا رقبہ جنگلات پر مشتمل ہونا چاہیے اور کیوں؟
- (iv) عالمی نقشے پر با اعتبار عرض بلد و طول بلد پاکستان کی پوزیشن بیان کریں نیز جنوبی ایشیا کے کتنے حصے پر پاکستان کا قبضہ ہے؟
- (v) دریائے رادی سے نکلنے والی نہروں کے نام لکھیں۔
- (vi) قدرتی گیس کے اہم ترین استعمال کیا ہیں؟
- (vii) انفراسٹرکچر کا کیا مطلب ہے؟
- (viii) ہجرت یا نقل مکانی کی اصطلاح سے کیا مراد ہے؟ نیز اس کی اقسام بیان کریں۔
- (ix) وہ کون سی اہم صنعتیں ہیں جو پسماندہ کاشتکاری میں لاتی ہیں؟
- (x) عبدالرحمن چغتائی اور استاد اللہ بخش کیوں مشہور ہیں؟
- (xi) پنجابی زبان کے صوفی شعراء اور نثر لکھنے والوں کے نام تحریر کریں۔
- (xii) ٹیکسٹ بک سے کیا مراد ہے؟
- (xiii) کلچر کی تعریف کیجیے۔
- (xiv) متصفیات معاشرہ سے کیا مراد ہے؟
- (xv) ہندوستان کی تقسیم میں مونت بٹن (Mountbatten) کے کردار کا مختصر جائزہ لیجیے۔
- (xvi) 1962ء کے آئین کے تحت صدر پاکستان کا انتخاب کون سا ادارہ کرتا تھا؟

حصہ سوم (کل نمبر 24)

(2x12=24)

(کوئی سے دو سوال حل کیجیے۔ تمام سوالوں کے نمبر برابر ہیں۔)

- سوال نمبر ۳: اسلامی عقائد کے تناظر میں نظریہ پاکستان کی توضیح کیجیے۔
- سوال نمبر ۴: پاکستان کے لیے صنعتی ترقی کی کیا اہمیت ہے؟ وضاحت سے بیان کیجیے۔
- سوال نمبر ۵: پاکستان ٹوٹنے سے پہلے کیا واقعات ہوئے؟ اس سلسلے میں بھارت کا کیا کردار تھا؟

ANNUAL QUESTION PAPER PAKISTAN STUDIES 2016



PAKISTAN STUDIES SSC-II

Time allowed: 2:40 Hours

Total Marks Sections B and C

NOTE:-Answer any twelve parts from Section 'B' and any two questions from Section 'C' on the separ provided answer book. Use supplementary answer sheet i.e. Sheet-B if required. Write your ans neatly and legibly.

SECTION – B (Marks 36)

Q. 2 Attempt any TWELVE parts. The answer to each part should not exceed 3 to 4 lines. (12 x 3=

- (i) What are the two cardinal principles of Islamic Ideology?
- (ii) Who was the Chief Architect of Lucknow pact? What was his title and who gave him the title?
- (iii) Who was the head of Boundary Commission and when was his award announced?
- (iv) Who was the viceroy of India at the time of partition of Bengal? When and why was this partition annulled?
- (v) Name the three organs of Government.
- (vi) What is the land stretch of Pakistan on the world map?
- (vii) Differentiate between Rabi and Kharif crops grown in Pakistan.
- (viii) What do the following stand for?
CHASHNUP , OGDC, CNG
- (ix) Differentiate between Perennial, non-Perennial and flood canals.
- (x) Enumerate three major advantages of electronic means of trading.
- (xi) Enumerate the major means of transportation used in Pakistan.
- (xii) What are the causes of explosive growth rate in Pakistan?
- (xiii) What is meant by Demography?
- (xiv) Name famous non-Muslim festivals celebrated in Pakistan.
- (xv) Enlist four tiers our education system was based upon before the implementation of 1979 educatic policy.
- (xvi) What are the basic principles of an Islamic Welfare state?

SECTION – C (Marks 24)

Note: Attempt any TWO questions. All questions carry equal marks.

(2 x 12 = ;

- Q. 3 Give a detailed account of the role of the Quaid-e-Azam as the first Governor General of Pakistan.
- Q. 4 Describe the Salient features and Islamic provisions of 1973 constitution of Pakistan.
- Q. 5 Describe the physical features of Pakistan.

مطالعہ پاکستان (لازمی)۔ ایس ایس سی-II

کُل نمبر حصہ دوم اور سوم: 60

2 گھنٹے

دوم اور سوم کے سوالات کے جوابات علیحدہ سے مہیا کی گئی جوابی کاپی پر تحریر کیجیے۔ حصہ دوم میں سے بارہ (12) اجزاء اور حصہ سوم میں سے کوئی سے (1) سوالات کے جوابات تحریر کیجیے۔ ایکٹرا شیٹ (Sheet-B) طلب کرنے پر مہیا کی جائے گی۔ آپ کے جوابات صاف اور واضح ہونے چاہئیں۔

حصہ دوم (کُل نمبر 36)

(12x3=36)

درج ذیل میں سے بارہ (12) اجزاء کے تین سے چار سطور پر مشتمل جواب دیجیے:

- (1) اسلامی نظریہ کے دوسرے اصول بیان کیجیے۔
- (2) میثاق لکھنؤ کے ممبر اعلیٰ کون تھے، اس کا رونا پر نہیں کیا خطاب دیا گیا اور یہ خطاب کس نے دیا؟
- (3) حد بندی کمیشن کا سربراہ کون تھا، اس کمیشن کے فیصلہ (ایوارڈ) کا اعلان کب کیا گیا؟
- (4) تقسیم بنگال کے وقت ہندوستان کا وائسرائے کون تھا، تقسیم کو کب اور کیوں منسوخ کیا گیا؟
- (5) حکومت کے تین شعبے کون کون سے ہیں؟
- (6) عالمی نقشہ پر پاکستان کی پوزیشن بیان کیجیے۔
- (7) پاکستان میں آگے والی فصلیں، فصل ربیع اور فصل خریف میں فرق واضح کریں۔
- (8) مندرجہ ذیل کس کے مخفف ہیں
- (9) CNG, OGDC, CHASHNUP
- (10) دوامی، غیر دوامی اور سیلابی نہروں میں فرق واضح کریں۔
- (11) کاروبار کے ایکٹرا ایک ذرائع کے استعمال کے تین بڑے فوائد بیان کیجیے۔
- (12) پاکستان میں استعمال کیے جانے والے ٹرانسپورٹ کے بڑے ذرائع کون کون سے ہیں؟
- (13) پاکستان میں اضافہ آبادی کے دھماکہ خیز شرح کے کیا اسباب ہیں؟
- (14) ڈیموگرافی سے کیا مراد ہے؟
- (15) پاکستان میں منائے جانے والے غیر مسلم تہوار کون سے ہیں؟
- (16) ہمارے تعلیمی نظام کے ان چار مدارج کا ذکر کیجیے جو 1979ء سے پہلے رائج تھے؟
- (17) اسلامی فلاحتی ریاست کے بنیادی اصول بیان کیجیے۔

حصہ سوم (کُل نمبر 24)

(2x12=24)

(کوئی سے دو سوال حل کیجیے۔ تمام سوالوں کے نمبر برابر ہیں۔)

- (1) پاکستان کے پہلے گورنر جنرل کی حیثیت سے قائد اعظم محمد علی جناح کا کردار بیان کیجیے۔
- (2) 1973ء کے آئین کی اہم دفعات اور اسلامی خصوصیات بیان کیجیے۔
- (3) پاکستان کے طبعی خدو خال بیان کیجیے۔

ANNUAL QUESTION PAPER PAKISTAN STUDIES 2017



PAKISTAN STUDIES SSC-II

Time allowed: 2:40 Hours

Total Marks Sections B and C: 60

NOTE:-Answer any twelve parts from Section 'B' and any two questions from Section 'C' on the separate provided answer book. Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly.

SECTION – B (Marks 36)

Q. 2 Attempt any TWELVE parts. The answer to each part should not exceed 3 to 4 lines. (12 x 3 = 36)

- (i) Define a text book.
- (ii) What are GNP and GRP?
- (iii) Write a short note on Pakistan National Shipping Corporation.
- (iv) What is 'Live stock'?
- (v) What is the ultimate end of a state?
- (vi) Write down three important points of 1962 constitution.
- (vii) List any six achievements of the Quaid-e-Azam as Governor General of Pakistan.
- (viii) Define 'Democracy'.
- (ix) Highlight three salient features of the Objectives Resolution.
- (x) List the factors affecting environment.
- (xi) Define 'Education'.
- (xii) Name three Calligraphic artists who acquired fame in this field.
- (xiii) When and why was 'PASSCO' established?
- (xiv) Write names of any six physical regions of Pakistan.
- (xv) What is 'Ijtihad'?
- (xvi) Write the aims and objectives of the Muslim League.

SECTION – C (Marks 24)

Note: Attempt any TWO questions. All questions carry equal marks. (2 x 12 = 24)

- Q. 3** What is Culture? Explain in detail the importance of National language of Pakistan for the achievement of National Unity.
- Q. 4** Define environment. Which factors affect environment? Also suggest measures for the prevention of environmental pollution.
- Q. 5** Define Ideology of Pakistan. Write a comprehensive note on Aligarh Movement and the services of Sir Syed Ahmad Khan (R.A).

مطالعہ پاکستان (لازمی)۔ ایس ایس سی-II

کل نمبر حصہ دوم اور سوم: 60
 دم اور سوم کے سوالات کے جوابات علیحدہ سے میا کی گئی جوابی کاپی پر تحریر کیجیے۔ حصہ دوم میں سے بارہ (12) اجزاء اور حصہ سوم میں سے کوئی سے (1) سوالات کے جوابات تحریر کیجیے۔ ایکسٹرا شیٹ (Sheet-B) طلب کرنے پر میا کی جائے گی۔ آپ کے جوابات صاف اور واضح ہونے چاہئیں۔

حصہ دوم (کل نمبر 36)

چوڑیل میں سے بارہ (12) اجزاء کے تین سے چار سطور پر مشتمل جواب دیجیے: (12x3=36)

ٹیکسٹ بک سے کیا مراد ہے؟

GRP اور GNP سے کیا مراد ہے؟

پاکستان نیشنل شیڈنگ کارپوریشن پر مختصر نوٹ لکھیے۔

ایونیٹاٹک سے کیا مراد ہے؟

ریاست کا اصلی ترین نصب العین کیا ہے؟

1962ء کے آئین کی کوئی سے تین اہم نکات تحریر کریں۔

قائد اعظم کی گورنر جنرل کی حیثیت سے کوئی سی چھ اہم کامیا بیاں تحریر کیجیے۔

جمہوریت سے کیا مراد ہے؟

قرارداد وقت صد کے تین بنیادی نکات تحریر کیجیے۔

ماحول پر اثر انداز ہونے والے عوامل تحریر کیجیے۔

تعلیم کی تعریف کیجیے۔

تین ایسے مشہور مصوروں کے نام لکھیں جنہوں نے مصورانہ خطاطی کی وجہ سے شہرت پائی۔

پاکستان کا ادارہ کب اور کیوں قائم کیا گیا؟

پاکستان کے چھ طبعی خطوں کے نام لکھیے۔

اجتناب سے کیا مراد ہے؟

مسلم لیگ کے اغراض و مقاصد لکھیے۔

حصہ سوم (کل نمبر 24)

(کوئی سے دو سوال حل کیجیے۔ تمام سوالوں کے نمبر برابر ہیں۔) (2x12=24)

گلچر سے کیا مراد ہے؟ پاکستان میں قومی اتحاد کے حصول کے لیے قومی زبان کی اہمیت کی وضاحت کیجیے۔

ماحول سے کیا مراد ہے؟ ماحول کو آلودہ کرنے والے عوامل کون سے ہیں؟ ماحولیاتی آلودگی سے بچاؤ کے لیے اقدامات تجویز کریں۔

نظریہ پاکستان کی تعریف کیجیے۔ تحریک علی گڑھ اور سرسید احمد خان کی خدمات تفصیل سے بیان کیجیے۔

ANNUAL QUESTION PAPER PAKISTAN STUDIES 2018



PAKISTAN STUDIES SSC-II

(Revised Syllabus)

18

Time allowed: 2:15 Hours

Total Marks Sections B and C: 40

NOTE:- Answer any eight parts from Section 'B' and any two questions from Section 'C' on the separately provided answer book. Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly.

SECTION - B (Marks 36)

Q. 2 Briefly answer any EIGHT parts from the following:

(8 x 3= 24)

- Why is 1973 AD constitution called the 'Federal Constitution'?
- Write two duties of the Union Council.
- Write down brief introduction of Bhutan.
- When and by which two countries was the 'Indus Water Treaty' signed?
- What is meant by 'Durand Line'?
- Enlist the names of six cities of Pakistan where dry-ports are established.
- Write the definition of 'Economic Progress' as given by Prof. Arthur Lewis.
- What is meant by 'Small Industry'?
- Which are the major games of Pakistan?
- Who was Hiba Khatoon?
- What is the total number of government hospitals and dispensaries in Pakistan?

SECTION - C (Marks 16)

Note: Answer any TWO questions from the following in detail.

(8 x 2 = 16)

- Explain the nuclear programme of Pakistan.
- Analyse the relations between Pakistan and India.
- Explain the sources from which electricity is obtained in Pakistan?

حصہ دوم (کل نمبر 24)

(8x3=24)

سوال نمبر ۲: مندرجہ ذیل میں سے آٹھ (8) اجزاء کے مختصر جواب دیجیے:

- 1973ء کے آئین کو 'وفاقی آئین' کیوں کہا جاتا ہے؟
- یونین کونسل کے دو فرض تحریر کریں۔
- بھوٹان کا تعارف مختصر بیان کریں۔
- 'سندھ طاس معاہدہ' کب اور کن دو ممالک کے درمیان ہوا؟
- ڈیورٹ لائن سے کیا مراد ہے؟
- پاکستان کے چھ ایسے شہروں کے نام لکھیں جہاں خشک گودیاں قائم ہیں۔
- پروفیسر آرتھر لیویس کی بیان کردہ 'معاشی ترقی' کی تعریف کریں۔
- 'چھوٹی صنعت' سے کیا مراد ہے؟
- پاکستان کے اہم کھیل کون سے ہیں؟
- حبیبہ خاتون کون تھیں؟
- پاکستان میں گورنمنٹ ہسپتال اور ڈسپنسریوں کی کل تعداد کتنی ہے؟

حصہ سوم (کل نمبر 16)

(2x8=16)

(کوئی سے دو سوال حل کیجیے۔ تمام سوالوں کے نمبر برابر ہیں۔)

- پاکستان کے جوہری پروگرام کی وضاحت کریں۔
- پاکستان اور بھارت کے تعلقات کا جائزہ لیں۔
- پاکستان میں بجلی کن ذرائع سے حاصل کی جاتی ہے؟ وضاحت کریں۔

APPENDIX G

Cognitive Process Dimension of Anderson's Taxonomy and its Subcategories used in the Analysis.

Categories	Features	Skills
Remembering	Retrieving relevant knowledge from long-term memory	Remember, define, list, tabulate, use appropriately
Understanding	It includes the process of constructing meaning from instructional messages, including oral, written and graphic communication.	Interpreting, exemplifying, classifying, summarizing, inferring, comparing and explaining
Applying	Applying or using a method/procedure in a given situation, applying knowledge in a new situation	Choose, classify, demonstrate, dramatize, practice, use, experiment, interpret, calculate, operate, solve, employ, make a sketch, restructure, construct
Analyzing	Breaking material into its constituents or parts	Order, compare, contrast, explain, critique, differentiate, distinguish, question, test, achieve
Evaluating	It is making a decision/making a judgment based on criteria and standards. Evaluating, which was the last category in the old version, is in the fifth category in the new version	Assess, rank, discuss, defend, conclude, judge, select, support, take action, value, infer, express view
Creating	It involves forming a new product or idea by using parts. It is putting parts together to form a unique product.	Plan, combine, assemble, construct, create, produce, execute, design, form, formulate, develop.

APPENDIX H**Codebook for Analyzing Question Papers using the Revised Bloom's Taxonomy****1. Remember:**

Definition: Questions that assess students' ability to recall factual information.

Examples: Define the term... List the main features of... Identify...

Coding Rule: Code questions as "Remember" if they require simple recall or recognition of facts, terms, or concepts.

2. Understand:

Definition: Questions that assess students' understanding of information and concepts.

Examples: Summarize... Explain the meaning of... Describe how...

Coding Rule: Code questions as "Understand" if they require understanding of information by organizing, comparing, translating, interpreting, or extrapolating.

3. Apply:

Definition: Questions that assess students' ability to apply knowledge or concepts to new situations.

Examples: Solve... Demonstrate... Apply the concept of... to...

Coding Rule: Code questions as "Apply" if they require using acquired knowledge in new and practical ways.

4. Analyze:

Definition: Questions that assess students' ability to analyze information by breaking it down into parts and understanding relationships.

Examples: Analyze the causes of... Compare and contrast... Identify patterns in...

Coding Rule: Code questions as "Analyze" if they require examining information, identifying patterns, and drawing conclusions.

5. Evaluate: Definition: Questions that assess students' ability to evaluate information or arguments based on criteria and standards.

Examples: Assess the validity of... Critique... Evaluate the effectiveness of...

Coding Rule: Code questions as "Evaluate" if they require making judgments based on criteria and standards.

6. Create:

Definition: Questions that assess students' ability to generate new ideas, products, or solutions.

Examples: Invent... Design... Develop...

Coding Rule: Code questions as "Create" if they require producing original or innovative work based on knowledge and understanding.

APPENDIX I**Interview Protocol Matrix**

Interview protocol matrix for study on Instructional and Assessment practices in the perspective of higher order thinking

	Back ground	Research Questions		
		1. How do secondary school teachers perceive and suggest other instructional practices to teach Pakistan Studies with a focus on promoting higher order thinking?	2. How do secondary school teachers perceive and suggest the use of other assessment practices to assess Pakistan Studies to foster higher order thinking?	3. Why do secondary school teachers face challenges in the implementation of instructional and assessment practices aimed at fostering higher order thinking?
Interview question 1	+		+	
Interview question 2		+	+	
Interview question 3			+	
Interview question 4		+	+	
Interview question 5			+	
Interview question 6			+	+

APPENDIX J**LETTER OF INVITATION TO TEACHERS**

THESIS TITLE: “Instructional and Assessment practices in the perspective of higher order thinking at secondary level”

Dear Teachers,

As a PhD scholar at the Education department of the National University of Modern Languages in Islamabad, I am conducting a research study. I invite you to participate in this study by completing a questionnaire and participating in a one-time interview lasting approximately thirty minutes. The interviews will be audio-recorded with your permission and transcribed accurately.

Your responses will be kept confidential, and your anonymity will be maintained by using pseudonyms. Participation is voluntary and you may withdraw at any stage without consequence. If you choose to participate, please sign the accompanying consent form. If not, thank you for considering.

For further information or concerns, please contact me or the principal supervisor. Your support is greatly appreciated.

Sincerely,

Tahseen Fatima

PhD Scholar

National University of Modern Languages, Islamabad, Pakistan.

APPENDIX K**INTERVIEW GUIDE**

Topic: Instructional and Assessment Practices in the perspective of Higher Order Thinking at Secondary Level

Date_____

Time_____

School_____

Interviewer_____

Interviewee_____

Demographic Survey

Area Urban Rural

Gender Male Female

Age

Job Experience

Academic
qualification

Professional
qualification

APPENDIX L

INTERVIEW QUESTIONS

1. اساتذہ علماء میں اعلیٰ تعلیم و تربیت کی سوچ کو کس طرح ترقی دے سکتے ہیں؟
How can the teachers develop higher order thinking in students?

2. کیا آپ مطالعہ پاکستان کی تدریس میں استعمال ہونے والے موجودہ تدریسی طریقوں سے مطمئن ہیں؟
Are you satisfy with the prevailing instructional practices used in teaching of Pakistan Studies?

3. کیا آپ نے مطالعہ پاکستان کے مضمون کو پڑھانے کے لیے کوئی تربیت حاصل کی؟
Did you get any training for teaching the subject of Pakistan Studies?

4. ثانوی اسکول کی سطح پر اعلیٰ تعلیم کے سوچ کے تناظر میں مطالعہ پاکستان کو پڑھانے کے لیے کون سی دوسری تدریسی حکمت عملی کا استعمال کیا جاسکتا ہے؟
what other instructional strategies can be applied to teach Pakistan Studies in the perspective of higher order thinking at secondary school level?

5. ہائر آرڈر سوچ کے تناظر میں تدریسی طریقوں کے نفاذ میں اساتذہ کو کیا مسائل درپیش ہیں؟
What are the issues teachers are facing in the implimentation of instructional practices in the perspective of higher order thinking?

6. مطالعہ پاکستان کے مضمون کے امتحان کو بہتر کرنے کے لیے کم از کم ایک مشورہ دیں؟
Give atleast one suggestion to improve the examination in the subject of Pakistan Studies?

APPENDIX M (a)

UNIVERSITY SUPPORT LETTER



National University of Modern Languages
Sector H-9, P.O. Shaigan, Islamabad
Tel : 092-051-9265100-09 Fax: 092-051-9265076
Email: info@numl.edu.pk
Web: www.numl.edu.pk

Ref. No. ML-1-3/2020-EdU

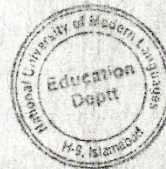
TO WHOM IT MAY CONCERN

Date: 05-11-2020

Subject:- Permission for Data Collection

It is certified that Ms. Tahseen Fatima, Ph.D Scholar, department of Education, National University of Modern Languages Islamabad, intends to collect data from your prestigious institutes for research purpose. Her topic of research is: Instructional and Assessment Practices in the perspective of Higher Order thinking at Secondary School Level.

Kindly allow her to collect data from Secondary and Higher Secondary Schools (Urban, Rural Boys, Girls) under the Jurisdiction of Federal Directorate of Education, Islamabad.



Mari D
05/11/2020
Dr Mariam Din
A/Head
Department of Education

To,

The Director Schools (Female)
Federal Directorate of Education,
Islamabad

APPENDIX M (b)

Permission for Data collection from FDE, Islamabad



No. F.17-685/87-SST(W)FDE
Government of Pakistan
Federal Directorate of Education

Islamabad the 25th November, 2020

The Principal
Islamabad Model College for Girls
I-9/1, Islamabad.

Subject: **DATA COLLECTION FOR Ph.D. RESEARCH**

I am directed to refer to the National University of Modern Languages (NUML), Islamabad's letter No. ML.1-3/2020-Edu dated 05.11.2020 issued by Dr. Mariam Din, A/Head, Department of Education, NUML, Islamabad on the subject cited above and to say that Federal Directorate of Education, Islamabad allow **Mrs. Tahseen Fatima** student of **Ph.D** for collection of data for her research on **"Instructional and Assessment Practices in the perspective of Higher order thinking at Secondary School Level"** from the following educational institutions working under FDE, Islamabad.

S#	Name of Institution	S#	Name of Institution
1	IMCG I-9/1	2	IMCB I-10/1
3	IMSG (VI-X) I-8/1	4	IMSB (VI-X) I-10/2
5	IMCG Tarnol	6	IMCB Tarnol
7	IMSG (I-X) Jhangi Syedan	8	IMSB (VI-X) Shah Allah Ditta

2. She will collect the data subject to the following conditions:
 - The instructional work of the institution will not suffer.
 - There will be no financial implication at the part of Federal Directorate of Education, Islamabad/Government of Pakistan.
 - It is pertinent that the responsibility for security and other damage caused to the building during the said activity shall rest with NUML, Islamabad.
3. The Permission may be withdrawn subsequently if so required administratively or in case the conditions mentioned herein are not fulfilled.
4. This is issued with the approval of Director (Schools) Federal Directorate of Education, Islamabad.

(Ali Azhar)
Assistant Director (S/F)

Copy to:

- Dr. Mariam Din, A/Head, Department of Education, NUML, Islamabad
- The AEO(s) Concerned
- ✓ The Person Concerned.
- The APS to Director (Schools) FDE, Islamabad
- Personal File.

(Ali Azhar)
Assistant Director (S/F)

APPENDIX N

Approval of PHD Thesis Topic and Supervisor



NATIONAL UNIVERSITY OF MODERN LANGUAGES
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF EDUCATION

ML.1-4/2019/Edu

Dated: 26-02-2019

To: **Tahseen Fatima,**
696-PhD/Edu/F17

Subject: **APPROVAL OF PHD THESIS TOPIC AND SUPERVISOR**

1. Reference to Letter No. ML.1-2/2019-Edu dated 11-02-2019, the Higher Authority has approved your topic and supervisor on the recommendation of Faculty Board of Studies vide its meeting held on 5th Dec 2018.

i. Supervisor's Name & Designation

Dr. Hukam Dad Malik,
Associate Professor, Department of Education
NUML, Islamabad.

ii. Co-Supervisor's Name & Designation

Dr. Aisha Bibi,
Assistant Professor, Department of Education
NUML, Islamabad

iii. Topic of Thesis

Instructional and Assessment Practices in the Perspective of Higher Order Thinking at Secondary School Level

2. You may carry out research on the given topic under the guidance of your Supervisor/s and submit the thesis for further evaluation within the stipulated time. It is to inform you that your Thesis & Published Research Article should be submitted within prescribed period by Sept 2022 positively for further necessary action please.

3. As per policy of NUML, all MPhil/PhD theses are to be run through Turnitin by QEC of NUML before being sent for evaluation. The university shall not take any responsibility for high similarity resulting due to thesis prior run by any other individual.

4. Thesis is to be prepared strictly on NUML's format that can be taken from MPhil & PhD Coordinator, Department of Education.

Telephone No: 051-9265100-110 Ext: 2090

E-mail: mdin@numl.edu.pk

Dr. Hukam Dad Malik
Head,
Department of Education

Cc to:

Dr. Hukam Dad Malik (Supervisor)

Dr. Aisha Bibi (Co-Supervisor)

✓ Individual Concerned.

APPENDIX O

LIST OF SECONDARY SCHOOLS (Visited)

S. No.	School Names	Level
BOYS SECONDARY SCHOOLS (URBAN)		
1.	Islamabad Model College for Boys, G-10/4.	SSC/HSSC
2.	Islamabad Model School for Boys (VI-X), G-11/2.	SSC
3.	AHS, Islamabad Model College for Boys, G-9/4.	SSC/HSSC
4.	Islamabad Model College for Boys, Street No. 17, I-10/1.	SSC/HSSC
5.	Islamabad Model College for Boys, I-8/3.	SSC/HSSC
6.	Islamabad Model School for Boys(I-X), I-14/3.	SSC
7.	Islamabad Model School for Boys (VI-X) I-10/2.	SSC
8.	Islamabad Model School for Boys (VI-X) No. 2, I-9/4.	SSC
9.	Islamabad Model School for Boys (VI-X) No. 1, I-9/4.	SSC
10.	Islamabad Model School for Boys (VI-X), F-8/3.	SSC
11.	Islamabad Model School for Boys (VI-X), F-6/2.	SSC
12.	Islamabad Model School for Boys (VI-X), I-8/4.	SSC
13.	Islamabad Model College for Boys, G-9/4.	SSC
14.	IMSB, (VI-X) G-6/4, Islamabad	SSC
15.	IMSB, G-10/3, Islamabad	SSC
GIRLS SECONDARY SCHOOLS (URBAN)		
1.	Islamabad College for Girls, F-6/2.	SSC/HSSC
2.	Islamabad Model School for Girls (VI-X), F-7/2.	SSC
3.	Islamabad Model College for Girls, F-7/4.	SSC/HSSC
4.	Islamabad Model College for Girls, F-8/1.	SSC/HSSC
5.	Islamabad Model College for Girls, F-11/3.	SSC/HSSC
6.	Islamabad Model School for Girls (VI-X), G-6/2.	SSC
7.	Islamabad Model School for Girls (VI-X), G-6/1-3.	SSC
8.	Islamabad Model College for Girls, G-6/1-4.	SSC/HSSC
9.	Islamabad Model School for Girls (VI-X), G-7/1.	SSC
10.	Islamabad Model School for Girls (VI-X), I-10/4.	SSC
11.	Islamabad Model School for Girls (VI-X), G-8/2.	SSC

12.	Islamabad Model College for Girls, G-8/4.	SSC/HSSC
13.	Islamabad Model School for Girls, G-9/1.	SSC
14.	Islamabad Model School for Girls (VI-X), G-9/4.	SSC
15.	Islamabad Model College for Girls, I-10/4.	HSSC
16.	Islamabad Model College for Girls, G-10/2.	SSC/HSSC
17.	Islamabad Model School for Girls (VI-X), I-8/1.	SSC
18.	Islamabad Model School for Girls (VI-X), St. 10, G-11/1	SSC
19.	IMCG I-8/3	SSC/HSSC
BOYS SECONDARY SCHOOLS (RURAL)		
1.	IMSB, (VI-X) Rawal Dam	SSC
2.	IMCB Check Shazad	SSC/HSSC
3.	IMSB Kuri	SSC
4.	IMSB (I-X) Saidpur	SSC
5.	IMSB I-X Noor Pur Shahan	SSC
6.	Adnan Arshad Shaheed Model College for Boys, Bara Kau.	SSC/HSSC
7.	Islamabad Model College for Boys, Chak Shehzad.	SSC/HSSC
8.	IMSB (I-X) Malot	SSC
9.	IMSB Rawal Town (FA)	SSC
10.	Islamabad Model School for Boys (VI-X), Sangani.	SSC
11.	Islamabad Model College for Boys (VI-X), Sangani.	SSC
12.	Islamabad Model School for Boys (VI-X), Jhang Syedan.	SSC
13.	Islamabad Model School for Boys (VI-X), Golra.	SSC
14.	Islamabad Model School for Boys (VI-X), Shah Allah Ditta.	SSC
15.	IMCB (I-XII) Tarnol	SSC/HSSC
16.	IMSB, (I-X) D-17	SSC
17.	IMSB, Badia Qadir Bushk	SSC
18.	IMCB (I-XII) Near Chirah Chowk, Letterer Road, Nilore.	SSC/HSSC
19.	Model School for Boys(I-X), Thanda Pani.	SSC
20.	Islamabad Model School for Boys (VI-X), Chirrah.	SSC
21.	IMCB, Jabba Taili	SSC/HSSC
22.	IMSB, Khanna Dak	SSC
23.	IMSB, Ali Pur	SSC

24.	Islamabad Model College for Boys, Thanda Pani.	SSC
25.	Islamabad Model College for Boys, Nilore.	SSC/HSSC
26.	Islamabad Model school for Boys Kot Hathial.	SSC
27.	IMCB, Rawat	SSC/HSSC
28.	IMSB, (I-X) Dhoke Gangal	SSC
29.	IMCB (I-X) Mohra Nigal	SSC/HSSC
30.	IMCB, Korang Town	SSC/HSSC
31.	Islamabad Model College for Boys, Punjgran.	SSC/HSSC
32.	Islamabad Model College for Boys, Herdogher.	SSC/HSSC
33.	Islamabad Model School for Boys (I-X), Pind Begwal.	SSC
34.	IMCB (I-XII) Near Chirah Chowk, Letterer Road, Nilore.	SSC/HSSC
35.	Model School for Boys(I-X), Thanda Pani.	SSC
36.	Islamabad Model School for Boys (VI-X), Chirrah.	SSC
GIRLS SECONDARY SCHOOLS (RURAL)		
1.	IMSG, (I-X) Malot (FA)	SSC
1.	IMSG (I-X) Saidpur (FA)	SSC
2.	IMCG, Kot Hathial (FA)	SSC/HSSC
3.	IMCG Margala Town (FA)	SSC/HSSC
4.	IMCG Rawal Town (FA)	SSC/HSSC
5.	IMCG University colony (FA)	SSC/HSSC
6.	IMCG Malpur (FA)	SSC/HSSC
7.	IMCG NHC (FA)	SSC/HSSC
8.	IMSG (I-X) Noor Pur Shahan	SSC
9.	IMSG (I-X) NHC	SSC
10.	IMSG Kuri (I-X)	SSC
11.	IMCG, Nilore	SSC/HSSC
12.	IMSG, Jabba Tailli	SSC
13.	IMSG, New Shakrial	SSC
14.	Islamabad Model College for Girls, Tarlai.	SSC/HSSC
15.	IMSG, Ali Pur	SSC
16.	Islamabad Model College for Girls, Thanda Pani.	SSC/HSSC
17.	Islamabad Model College for Girls, Kot Hattial.	SSC

18.	Islamabad Model College for Girls, Kot Hathial.	SSC/HSSC
19.	Islamabad Model College for Girls, Golra.	SSC/HSSC
20.	Islamabad Model School for Girls (I-X), Sangjani.	SSC
21.	Islamabad Model School for Girls (I-X), Jhangi Syedan.	SSC
22.	Islamabad Model College for Girls, Shah Allah Ditta	SSC/HSSC
23.	IMCG (I-X) Tarnol	SSC/HSSC
24.	IMSG, (I-X) D-17	SSC
25.	IMCG, Rawat	SSC/HSSC
26.	IMSG, (I-X) Dhoke Gangal	SSC
27.	IMCG (I-X) Mohra Nigal	SSC/HSSC
28.	IMCG, Korang Town	SSC/HSSC
29.	Islamabad Model College for Girls, Punjgran.	SSC/HSSC
30.	Islamabad Model College for Girls, Herdogher.	SSC/HSSC
31.	Islamabad Model School for Girls (I-X), Pind Begwal.	SSC/HSSC
32.	Islamabad Model College for Girls, Chirah.	SSC/HSSC
33.	IMSG (I-X) Badia Qadir Bukhsh	SSC

APPENDIX P

Table 1: Krejcie and Morgan Table

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

APPENDIX Q

Alignment of objectives, findings, conclusion and recommendations

S.no	Objectives	Findings	Conclusions	Recommendations
1.	To determine teachers' perception towards the objectives of the curriculum of Pakistan Studies in the perspective of higher order thinking at the secondary level.	1. Teachers strongly agreed (68%) and agreed (32%) with the objective that curriculum of Pakistan Studies inculcate a sense of gratitude to Almighty ALLAH for blessing us with an independent and sovereign state (M=4.69; SD=.46). 2. Teachers disagreed (47%) and strongly disagreed (14%) with the objective that curriculum of Pakistan Studies encourages traits of observations, creativity, analysis and reflection in students. 5% strongly agreed, 16% agreed and 18% were neutral (M=2.48; SD=1.02). 3. Teachers agreed (51%) and strongly agreed (41%) that curriculum of Pakistan Studies acquaint the students with various phases of Pakistan historical, political and constitutional developments. 3% disagree and 5% were neutral (M=4.36; SD=.62). 4. Teacher agreed (49%) and strongly agreed (39%) that curriculum of Pakistan Studies emphasize the rights and obligations of the citizens of an independent and sovereign state. 2% strongly disagreed and 10% were neutral (M=4.25; SD=.73). The overall mean score for all objectives was 3.93 indicating a generally positive perception. SD= 1.60 suggests moderate variability in teachers' responses. These findings underscore both the strengths and areas for potential improvement in the perceived objectives of the Pakistan Studies curriculum.	1. Teachers perceived the Pakistan Studies curriculum as strengthening national identity, deepening historical understanding, and instilling gratitude for independence but noted its limited emphasis on observation, creativity, analysis and reflection. Instructional and assessment practices largely focus on memorization and recall rather than fostering analytical thinking, creativity, and reflection. This misalignment restricts students' ability to critically engage with historical and political concepts. To bridge this gap, instructional and assessment methods must be restructured to integrate HOTS, ensuring that students not only acquire knowledge but also develop the ability to analyze, evaluate, and apply it meaningfully.	1. The Curriculum Wing (Ministry of Education) may conduct a comprehensive review of the Pakistan Studies curriculum to ensure that its objectives genuinely promote higher order thinking skills, moving beyond factual recall to analytical and reflective learning. The Federal Directorate of Education, Islamabad may organize professional development programs, workshops and seminars to equip teachers with effective instructional practices that foster observation, creativity, analysis and reflection in students. Teachers may integrate student-centered approaches such as project-based learning, inquiry-based and critical discussions, interdisciplinary approaches and problem-solving activities to enhance critical thinking skills. Schools may encourage experiential learning through field trips, group projects and community-based assignments that allow students to apply their knowledge in real-world contexts, reinforcing higher order cognitive skills. Additionally, teachers may collaborate in designing lesson plans that incorporate presentations, debates and sports activities, fostering engagement, teamwork and intellectual curiosity. By implementing these measures, the Pakistan Studies curriculum can better align with its intended goals, ensuring that students not only acquire knowledge but also develop essential higher order thinking skills.
2.	To investigate the instructional practices used for teaching Pakistan studies concerning higher order thinking at secondary school level.	Findings of analysis of instructional practices used for Acquiring knowledge 1. Teachers sometimes ask students to exchange their concepts with one another (36%), teachers often apply (28%), always do (21%) and negate the	2. Instructional practices for acquiring knowledge in Pakistan Studies primarily emphasized basic concept retention,	2. To enhance instructional practices in Pakistan Studies, teachers may place greater emphasis on applying and reflecting on knowledge. They may facilitate students in conducting

statement (7%) (M=3.48, SD=1.12).

2. Teachers often engage them in inferential activities (31%), sometimes do (24%), always engage them (19%), seldom apply (19%) and never engage them (7%) (M=3.436 SD=1.19).

3. Teachers often encourage students to create their questions (46%), always encourage (35%) and sometimes encourage (19%) (M=4.16, SD=.71).

4. Teachers often conduct pre-assessments to understand students' prior knowledge (48%), always conduct (28%), sometimes do (20%) and seldom apply (4%) (M=3.99, SD=.79).

5. Teachers often give many opportunities to identify important learning problems (42%), always provide (28%), sometimes apply (21%) seldom use (8%) and never give (1%) (M=3.89, SD=.93).

6. Teachers often observe students and ask questions during group activities (42%), always observe (26%), sometimes observe and ask (22%), seldom observe (8%) and never observe and ask (2%) (M=3.82, SD=.99).

The overall mean for instructional practices of acquiring knowledge is 3.78, reflecting a generally consistent application. The standard deviation (0.55) indicates a moderate level of variability across these practices.

Findings of analysis of instructional practices used for applying knowledge.

1. Teachers seldom observe students when working individually (44%), sometime observe (22%), always observe (21%), often observe (9%) and never observe (4%) (M=3.01, SD=1.23).

2. Teachers sometime facilitate students in conducting activities given in the exercises (53%), often facilitate (20%), seldom facilitate (19%), never facilitate (5%) and always facilitate (3%) (M=2.97, SD=.82).

3. Teachers seldom encourage students to practice an alternative way of thinking (38%), often encourage (20%), sometime encourage (19%), always encourage (14%) and never encourage (9%) (M=2.91, SD=1.22).

with teachers frequently using pre-assessments, question generation, and problem identification. However, practices related to applying and reflecting on knowledge were less commonly implemented. Teachers provided limited encouragement for alternative thinking and rarely facilitated hands-on activities or cooperative learning. Similarly, while open-ended assessments were used to some extent.

hands-on activities, encourage them to explore alternative ways of thinking and incorporate cooperative learning strategies to promote deeper understanding. Additionally, teachers may make greater use of open-ended questions to assess students' analytical and critical thinking abilities. Professional development programs and targeted training sessions can support teachers in integrating these approaches effectively. By implementing these strategies, the teaching of Pakistan Studies can move beyond rote memorization to a more dynamic and engaging learning experience that nurtures higher order thinking.

The overall mean for instructional practices in applying knowledge is 3.00 indicating a moderate level of consistency and the standard deviation (0.65) suggests moderate variability across the applied practices.

Finding of analysis of instructional practices used for reflection on knowledge:

1. Teachers always review students' homework copies on regular basis (40%), often review (39%), seldom review (15%) and sometime review (7%) (M=4.03, SD=1.02).

2. Teachers often assess students' knowledge through open-ended questions (28%), seldom assess (25%), always assess (22%), sometime assess (18%) and never assess (7%) (M=3.33, SD=1.25).

3. Teachers seldom prefer to apply a cooperative learning approach to the class ((41%), sometime prefer (26%), often prefer (17%), always prefer (9%) and never prefer (7%) (M=2.81, SD=1.09).

The overall mean for instructional practices in reflection on knowledge was 3.39, indicating a moderate level of consistency. The standard deviation (0.67) suggests moderate variability across the employed practices

3. To find out instructional methods used for teaching Pakistan studies concerning higher order thinking at the secondary school level.

Finding of analysis of the instructional methods (acquiring knowledge)

1. Teachers always (61%) used lecture method to teach Pakistan Studies to develop HOT, often use (35%), sometime use (3%) and seldom use (1%) (M=4.55, SD=.62).

2. Teachers often (47%) used interactive lecture to teach Pakistan Studies to develop HOT, always use (34%), sometime use (17%) and seldom use (2%) (M=4.13, SD=.76).

3. Teachers often (42%) used lecture and diagrams to teach Pakistan Studies to develop HOT, always use (29%), sometime use (21%) seldom use (7%) and never use (1%) (M=3.91, SD=.92).

4. Teachers often (38%) used lecture and photos to teach Pakistan Studies to develop HOT, sometime use (30%), always use (18%), seldom use

The Methods of applying knowledge i.e. computer-assisted instruction; project method; problem-based learning; visit to the museum; use of internet, PowerPoint presentations, documentaries, slides, globs, maps, study visits; and resource people were found to be the least popular among teachers. These methods were important to develop higher order thinking but teachers were not frequently using them.

3. Federal Directorate of Education (FDE), Islamabad, may ensure the provision of adequate resources and professional development opportunities to enable teachers to implement innovative instructional methods. Schools may be equipped with necessary technological tools, multimedia resources and access to educational excursions to promote higher order thinking. Additionally, teachers may receive training on integrating methods such as computer-assisted instruction, project-based learning, problem-based learning, study visits and interactive learning strategies to enhance the teaching of Pakistan Studies in alignment with higher order thinking skills.

(8%) and never use (6%)
($M=3.54$, $SD=1.05$).

5. Teachers often (40%) used lecture and charts to teach Pakistan Studies to develop HOT, sometime use (33%), always use (14%), seldom use (8%) and never use (5%)
($M=3.51$, $SD=1.00$).

6. Teachers never (46%) used lecture and multimedia to teach Pakistan Studies to develop HOT, sometime use (26%), seldom use (13%), often use (12%) and always use (3%)
($M=2.14$, $SD=1.20$).

7. Teachers always (63%) used textbook method to teach Pakistan Studies to develop HOT, and often use (37%)
($M=4.63$, $SD=.48$).

8. Teachers seldom (42%) apply brainstorming to teach Pakistan Studies to develop HOT, often apply (25%), sometime apply (18%) always apply (11%) and never apply (4%) ($M=2.96$, $SD=1.12$).

9. Teachers often (46%) conduct oral presentation to teach Pakistan Studies to develop HOT, always conduct (29%), sometime conduct (20%), seldom conduct (4%) and never conduct (1%) ($M=3.98$, $SD=.86$).

The overall mean for instructional methods of acquiring knowledge was 3.70 indicating a moderate level of consistency. The standard deviation (.43) indicates relatively low variability across the employed methods.

Finding of analysis of instructional methods (applying knowledge)

1. Teachers never (32%) used Computer-assisted instruction in the teaching of Pakistan Studies, seldom used (25%), sometime used (23%), often used (14%) and always use (6%) ($M=2.38$, $SD=1.23$).

2. Teachers sometime (31%) used activity method in the teaching of Pakistan Studies, often use (21%), seldom and never use (17%) and always use (14%)
($M=2.98$, $SD=1.26$).

3. Teacher often and sometime (39%) used debates in the teaching of Pakistan Studies, always use (14%) and seldom use (8%) ($M=3.57$, $SD=.84$).

4. Teachers never (34%) used demonstration in the teaching of Pakistan Studies, sometime use (22%), often use (19%), seldom use (16%) and always use (9%) (M=2.54, SD=1.36).

5. Teachers never (42%) used project method in the teaching of Pakistan Studies, sometime use (26%), seldom use (15%), often use (13%) and always use (4%) (M=2.24, SD=1.24).

6. Teacher never (53%) used problem-based learning in the teaching of Pakistan Studies, sometime use (18%), seldom use (14%), often use (11%) and always use (4%) (M=1.99, SD=1.24).

7. Teachers never (27%) used real objects in the teaching of Pakistan Studies, sometime use (23%), seldom use (22%) often use (19%) and always use (9%) (M=2.60, SD=1.30).

8. Teachers never (28%) use graphs in the teaching of Pakistan Studies, sometime use (27%), seldom use (21%), often use (14%) and always use (10%) (M=2.55, SD=1.30).

The overall mean for instructional methods in applying knowledge is 2.60 indicating a moderate level of consistency and the standard deviation (0.53) suggests moderate variability across the employed methods.

Finding of analysis of instructional methods (reflection on knowledge)

1. Teacher often (50%) used discussion method in the teaching of Pakistan Studies, always use (32%), sometime use (14%) and seldom use (4%) (M=4.12, SD=.77).

2. Teachers never (42%) used group study in the teaching of Pakistan Studies, often use (20%), sometime use (19%), always use (12%) and seldom use (7%) (M=2.53, SD=1.49).

3. Teachers never (57%) used cooperative learning in the teaching of Pakistan Studies, sometime use (17%); often use (12%); and always and seldom (7%) (M=2.05, SD= 1.35).

4. Teachers never (48%) organize small groups in the teaching of Pakistan Studies, often and sometime organize (19%); seldom organize (8%); and always organize (6%) (M=2.28, SD= 1.38).

5. Teachers often (41%) use inquiry/investigation in the teaching of Pakistan Studies, sometime use (32%), always use (19%), seldom use (6%) and never use (2%) ($M=3.67$, $SD=.94$).

6. Teachers always (46%) ask questions in the teaching of Pakistan Studies, often ask (40%); sometime ask (10%); and seldom and never ask (2%) ($M=4.28$, $SD=.83$).

7. Teachers never (36%) visited to the museum in the teaching of Pakistan Studies, sometime visit (30%), seldom visit (17%), often visit (14%) and always visit (3%) ($M=2.31$, $SD=1.18$).

8. Teachers never (34%) use internet in the teaching of Pakistan Studies, sometime use (30%), often use (22%), seldom use (10%) and always use (4%) ($M=2.50$ ($SD=1.26$)).

9. Teachers sometime (42%) use posters in the teaching of Pakistan Studies, often use (26%); seldom use (14%); and always and never use (8%) ($M=3.12$, $SD=1.03$).

10. Teachers never (43%) used PowerPoint presentation in the teaching of Pakistan Studies, sometime use (29%), seldom use (14%), often use (13%) and always use (1%) ($M=2.15$, $SD=1.14$).

11. Teachers often (44%) used assignment method in the teaching of Pakistan Studies, sometime use (30%), always use (18%), seldom use (6%) and never use (2%) ($M=3.70$, $SD=.88$).

12. Teachers never (38%) used documentaries in the teaching of Pakistan Studies, sometime use (29%), often use (16%), seldom use (15%) and always use (2%) ($M=2.32$, $SD=1.19$).

13. Teachers never (31%) used interactive whiteboard in the teaching of Pakistan Studies, often use (30%), always use (20%), sometime use (15%), and seldom use (4%) ($M=3.05$, $SD=1.53$).

14. Teachers never (48%) used slides in the teaching of Pakistan Studies, sometime use (25%), often use (11%), seldom use (13%) and always use (3%) ($M=2.09$, $SD=1.20$).

15. Teachers never (34%) used globes in the teaching of Pakistan Studies, sometime use (25%), often use (19%), seldom use (13%) and always use (9%) (M=2.54, SD=1.35).

16. Teachers never (31%) used maps in the teaching of Pakistan Studies, sometime use (24%), often use (23%), seldom use (12%) and always use (10%) (M=2.71, SD=1.37).

17. Teacher never (38%) arranged study visits in the teaching of Pakistan Studies, sometime arrange (30%), seldom arrange (17%), often arrange (13%) and always arrange (2%) (M=2.25, SD=1.16).

18. Teacher never (41%) invited resource people in the teaching of Pakistan Studies, sometime invite (30%), seldom invite (14%), often invite (11%) and always invite (4%) (M=2.24, SD=1.21).

19. Teachers sometime (41%), organized contests in the teaching of Pakistan Studies, often organize (33%), never organize (11%), seldom organize (10%) and always organize (5%) (M=3.12, SD=1.02).

20. Teachers never (38%) used models in the teaching of Pakistan Studies, sometime use (26%), often use (20%), seldom use (11%) and always use (5%) (M=2.46, SD=1.29).

The overall mean for instructional methods in reflection on knowledge is 2.77 indicating a moderate level of consistency. The standard deviation (0.43) suggests a moderate degree of variability across the applied instructional methods.

4. To explore demographic variables including area, gender and job experience in the context of curriculum objectives, instructional practices and methods at secondary school level.

Finding of analysis of curriculum objectives (area-wise)

The mean scores of curriculum objectives were compared between urban and rural areas. Urban areas had a mean score of 4.28 while rural areas had a mean score of 4.39. Levene's Test for homogeneity of variance yielded a p-value of .48 indicating no significant difference between urban and rural areas. Therefore, based on the accepted hypothesis $H_{01.1}$, there is no statistically significant difference in the perceptions about curriculum objectives between urban and rural areas.

4. Female teachers had higher perception of the objectives of the Pakistan Studies curriculum related to higher order thinking compared to male teachers. Additionally, rural teachers were found to be more inclined towards using instructional practices for acquiring knowledge, highlighting a possible variation in teaching

4. The Federal Directorate of Education (FDE) may provide targeted training programs for male teachers to enhance their understanding of curriculum objectives related to higher order thinking. This could help bridge the perception gap and ensure a more uniform approach to teaching Pakistan Studies. Furthermore, Continuous Professional Development (CPD) programs should be introduced for all teachers, regardless of

approaches between urban and rural settings. However, when it came to job experience, no significant differences were observed in teachers' perceptions of instructional practices and methods. Both highly experienced and less experienced teachers shared similar views, indicating that experience alone may not be a determining factor in shaping instructional practices.

gender, area or job experience. These programs should focus on aligning instructional and assessment practices with higher order thinking objectives, ensuring that all teachers are equipped with the necessary skills to foster critical thinking and deeper learning among students.

Finding of analysis of curriculum objectives (gender-wise)

The mean scores of curriculum objectives were compared between male and female. Male had a mean score of 4.22 while female had a slightly higher mean score of 4.43. Levene's Test for homogeneity of variance yielded a p-value of .00 indicating a significant difference in male and female teachers. Therefore, based on the rejected hypothesis $H_{01.2}$, there is a statistically significant difference in the perceptions about curriculum objectives between male and female teachers.

Finding of analysis of curriculum objectives (job-experience wise)

The mean scores for curriculum objectives were compared based on different levels of job experience. Job experience (6-10 years) had a highest mean score of 4.16 while the teachers having 11-16 years of job experience had a lowest mean score (3.87). Levene's Test for homogeneity of variance yielded a p-value of .17 indicating no significant difference in teachers' perceptions. Therefore, based on the accepted hypothesis $H_{01.3}$ signifying no statistically significant difference in the perceptions about curriculum objectives based on participants' years of teaching experience.

Finding of analysis of instructional practices (area-wise)

1. In the domain of acquiring knowledge, participants from

urban areas reported a mean score of 3.90, while those from rural areas had a slightly higher mean score of 4.01. Levene's Test for homogeneity of variance yielded a statistically significant result ($F(1-298) = 8.779$, $p=.003$), leading to the rejection of hypothesis $H_{02.1}$, indicating a significant difference in the acquisition of knowledge between urban and rural settings. 2. Conversely, concerning the application of knowledge, urban participants had a mean score of 3.93, while rural participants reported a slightly lower mean score of 3.87. The homogeneity of variance was not statistically significant ($F(1-298) = 2.502$, $p = .11$), leading to the acceptance of hypothesis $H_{02.2}$, suggesting no significant difference in the application of knowledge between urban and rural areas.

3. In the domain of reflection on knowledge, both urban and rural participants exhibited identical mean scores of 4.26. The homogeneity of variance was also non-significant ($F(1-298) = 2.834$, $p = .09$), leading to the acceptance of hypothesis $H_{02.3}$, indicating no significant difference in the reflection on knowledge between urban and rural settings.

Finding of analysis of instructional practices (gender-wise)

1. For acquiring knowledge, male teachers reported a mean score of 3.88, while female teachers reported a slightly higher mean score of 4.01. The Levene's Test for homogeneity of variance yielded a marginally significant result ($F(1-298) = 3.78$, $p = .05$), leading to the acceptance of hypothesis $H_{02.1}$, indicating no significant difference in perceptions between male and female teachers regarding the instructional practices related to acquiring knowledge.

2. Regarding the application of knowledge, male teachers had a mean score of 3.84, whereas female teachers reported a slightly higher mean score of 3.96. The homogeneity of variance was not statistically significant ($F(1-298) = 0.59$, $p = .44$), leading to the acceptance of hypothesis $H_{02.2}$ suggesting no significant difference in perceptions between male and female teachers concerning the instructional practices related to applying knowledge.

3. In the domain of reflection on knowledge, male teachers reported a mean score of 4.27, while female teachers had an almost identical mean score of 4.26. The homogeneity of variance was not statistically significant ($F(1-298) = .01, p = .91$), leading to the acceptance of hypothesis $H_{02.3}$, indicating no significant difference in perceptions between male and female teachers regarding the instructional practices related to reflection on knowledge.

Finding of analysis of instructional practices (job-experience wise)

1. For acquiring knowledge, teachers with less than 5 years of experience reported a mean score of 3.58, while those with 6-10 years had a slightly higher mean score of 3.95. The homogeneity of variance test was not statistically significant ($F(4-295) = 1.52, p = .19$), leading to the acceptance of hypothesis $H_{02.7}$, indicating no significant difference in perceptions across different experience levels concerning acquiring knowledge.

2. Regarding the application of knowledge, teachers with less than 5 years of experience reported a mean score of 2.91, while those with 6-10 years had a slightly higher mean score of 3.06. The homogeneity of variance was not statistically significant ($F(4-295) = 1.99, p = .09$), leading to the acceptance of hypothesis $H_{02.8}$, suggesting no significant difference in perceptions across different experience levels concerning applying knowledge.

3. In terms of reflection on knowledge, teachers with less than 5 years of experience reported a mean score of 3.08, while those with 6-10 years had a higher mean score of 3.48. The homogeneity of variance was not statistically significant ($F(4-295) = 1.74, p = .13$), leading to the acceptance of hypothesis $H_{02.9}$, indicating no significant difference in perceptions across different experience levels concerning reflection on knowledge.

Finding of analysis of methods (area-wise)

1. For acquiring knowledge, urban teachers reported a mean score of 3.83, while rural teachers had a slightly lower mean score of 3.85. The homogeneity of variance test was

not statistically significant (Levene's Test $F(1-298) = .68$, $p = .68$), leading to the acceptance of hypothesis $H_{03.1}$, indicating no significant difference in perceptions between urban and rural areas concerning acquiring knowledge.

2.Regarding the application of knowledge, urban teachers reported a mean score of 3.34, while rural teachers had a slightly higher mean score of 3.38. The homogeneity of variance was not statistically significant (Levene's Test $F(1-298) = .69$, $p = .69$), leading to the acceptance of hypothesis $H_{03.2}$, suggesting no significant difference in perceptions between urban and rural areas concerning applying knowledge.

3.In terms of reflection on knowledge, urban teachers reported a mean score of 3.36, while rural teachers had a slightly higher mean score of 3.40. The homogeneity of variance was not statistically significant (Levene's Test $F(1-298) = .71$, $p = .71$), leading to the acceptance of hypothesis $H_{03.3}$, indicating no significant difference in perceptions between urban and rural areas concerning reflection on knowledge.

Finding of analysis of methods (gender- wise)

1.For acquiring knowledge, male teachers reported a mean score of 3.81, while female teachers had a slightly higher mean score of 3.86. The homogeneity of variance test was not statistically significant (Levene's Test $F(1-298) = .94$, $p = .94$), leading to the acceptance of hypothesis $H_{03.4}$, indicating no significant difference in perceptions between male and female teachers concerning acquiring knowledge.

2.Regarding the application of knowledge, male teachers reported a mean score of 3.25, while female teachers had a slightly higher mean score of 3.46. The homogeneity of variance was not statistically significant (Levene's Test $F(1-298) = .84$, $p = .84$), leading to the acceptance of hypothesis $H_{03.5}$, suggesting no significant difference in perceptions between male and female teachers concerning applying knowledge.

3.In terms of reflection on knowledge, male teachers reported a mean score of 3.34,

while female teachers had a slightly higher mean score of 3.41. The homogeneity of variance was not statistically significant (Levene's Test $F(1-298) = .72, p = .72$), leading to the acceptance of hypothesis $H_{03.6}$, indicating no significant difference in perceptions between male and female teachers concerning reflection on knowledge.

Finding of analysis of methods (job- experience wise)

1. For acquiring knowledge, teachers with less than 5 years of experience reported a mean score of 3.69, while those with 6-10 years had a similar mean score of 3.68. The homogeneity of variance test was statistically significant (Levene's Test $F(4-295) = 2.536, p = .04$), but the significance level was below .05, indicating acceptance of hypothesis $H_{03.7}$, suggesting no significant difference in perceptions among teachers with different job experience levels concerning acquiring knowledge.

2. Regarding the application of knowledge, teachers with less than 5 years of experience reported a mean score of 2.34, and those with 6-10 years had an identical mean score of 2.34. The homogeneity of variance was not statistically significant (Levene's Test $F(4-295) = .28, p = .89$), leading to the acceptance of hypothesis $H_{03.8}$, indicating no significant difference in perceptions among teachers with different job experience levels concerning applying knowledge.

3. In terms of reflection on knowledge, teachers with less than 5 years of experience reported a mean score of 2.49, while those with 6-10 years had a slightly higher mean score of 2.62. The homogeneity of variance was not statistically significant (Levene's Test $F(4-295) = 1.31, p = .26$), leading to the acceptance of hypothesis $H_{03.9}$, indicating no significant difference in perceptions among teachers with different job experience levels concerning reflection on knowledge.

5. To analyze five years (2014-2018 Group -1) question papers of Pakistan Studies of secondary level (Grade X) in the context of higher order thinking.

Findings of analysis of 2014 - 2018 annual question papers

1. The analysis of 2014 annual question paper for Pakistan Studies, reveals a predominant emphasis on lower-order cognitive skills. The analysis illustrates 56% of questions in the remembering category and

5. The analysis of Pakistan Studies question papers from 2014 to 2018 revealed a strong emphasis on lower-order cognitive skills. Most questions were designed to assess

5. The Federal Directorate of Education (FDE) and examination boards may revise Pakistan Studies question papers to ensure a balanced representation of cognitive skills across all levels of the Revised Bloom's Taxonomy. Subject specialists may be

38% in understanding, with no questions assessing applying, evaluating, or creating skills. the inclusion of 6% analyzing questions suggests a modest effort in integrating such skills, emphasizing the need for a more balanced approach to assessing cognitive levels. similar to the constructed response questions, there were no (0%) extended response questions in the Pakistan studies (2014) paper related to applying, evaluating and creating categories. this emphasizes a consistent emphasis on lower-order cognitive skills and calls for a more holistic approach to examination paper design.

"remembering" and "understanding," while higher order thinking skills such as "analyzing," "evaluating," and "creating" were rarely included. This reliance on rote memorization hindered students' conceptual understanding and critical thinking development. Only the first three levels of Bloom's Taxonomy were consistently present in these five years of annual question papers.

appropriately assigned by the Federal Board of Intermediate and Secondary Education (FBISE) to design the question papers, with adequate training provided to ensure a comprehensive assessment framework. It is essential that all cognitive levels from Revised Bloom's Taxonomy be reflected in future question papers to promote higher order thinking among students.

Findings of analysis of 2015 annual question paper for Pakistan Studies (extended response questions) revealed a predominant focus on lower-order cognitive skills. Notably, 44% of the questions fall under the categories of remembering and understanding, emphasizing recall and comprehension. however, there is a limited representation of applying questions (6%), indicating a lesser focus on practical application. the absence of questions in the analyzing category suggests a potential oversight in assessing skills related to breaking down and examining information. evaluating questions constitute 6% of the total, assessing judgment and value assessment, while creating questions is absent. this cumulative distribution underscores an opportunity to enhance the assessment's balance by incorporating more questions that stimulate higher order cognitive skills. in the case of the cognitive levels assessed in a specific set of three constructed response questions, no questions are categorized under "remembering," indicating a lack of straightforward recall-type questions. the majority (67%) fall under "understanding," demonstrating a focus on assessing comprehension and interpretation skills. "applying" questions are absent in this set. one question, contributing to 33% of the total, is categorized under "analyzing," suggesting an evaluation of students' ability to break down and examine information. lastly, there are no questions categorized under "evaluating" or "creating." this distribution illustrates a specific emphasis on understanding and

analyzing skills in the assessment, indicating potential areas for improvement in the balance of cognitive skill assessment.

Findings of analysis of annual question paper of Pakistan Studies (2016).

The majority of questions, 62.5%, fall under the "remembering" category, emphasizing factual recall, particularly in constructed response questions. The "understanding" category constitutes 31.25%, of assessing comprehension skills. Surprisingly, the "applying" category lacks representation, suggesting a gap in evaluating the practical application. a single question in the "analyzing" category makes up 6.25%, while no questions are categorized under "evaluating" or "creating." This distribution underscores a prevalent focus on lower-order cognitive skills, indicating potential areas for diversification in assessing thinking abilities. In Extended response questions, a distinct cognitive focus is observed. All three questions are exclusively categorized under the "understanding" level, constituting 100% of the total questions. this concentrated emphasis on "understanding" suggests a deliberate intention to assess students' comprehension and interpretation skills.

Findings of analysis of annual question paper of Pakistan Studies (2017)

(constructed response questions), revealed a predominant emphasis (87.5%) on "remembering" to assess information recall, with a smaller proportion (12.5%) allocated to "understanding" for testing comprehension skills. Remarkably, no questions are categorized under higher cognitive levels ("applying," "analyzing," "evaluating," or "creating"), indicating a potential oversight in evaluating critical thinking and creativity. A more comprehensive approach to question formulation is recommended. In (extended response questions), 33.33% of questions pertain to "remembering," focusing on information recall, while the majority (66.67%) fall under "understanding" to assess comprehension. strikingly, no questions are designated under higher order thinking levels, signaling a concentration on foundational knowledge with

limited attention to advanced cognitive skills.

Findings of analysis of 2018 annual question paper of Pakistan Studies

In 2018 annual question paper of Pakistan Studies (constructed response questions), the majority of questions (72.73%) focused on remembering, emphasizing factual recall, while 18.18% are geared towards understanding and assessing comprehension. Notably, no questions delved into applying, analyzing or creating. However, 9.09% involve evaluating and emphasizing critical judgment. This distribution unveiled the examination's emphasis on specific cognitive skills in evaluating students' understanding and application of Pakistan studies content. In the Extended response questions section, there were no questions categorized under remembering and evaluating. A significant emphasis (66.67%) on the analyzing level suggested a focus on critical examination, while 33.33% fall under understanding, indicating an emphasis on comprehension. The exclusion of questions in applying and creating reflects a deliberate choice in assessing particular cognitive skills. This distribution highlights the examination's emphasis on analytical thinking and understanding within the context of Pakistan Studies.

Findings of Document Analysis (Distribution of question papers of Pakistan Studies (2014-2018) according to Question Types.

1. A significant number of constructed and extended response questions assessed factual knowledge at the remember and understand levels, indicating a predominant focus on lower-order thinking skills. 48 questions required factual recall, showing a lack of cognitive challenges
2. Conceptual knowledge was primarily tested at the understand level (38 questions), with minimal application, analysis, evaluation, or creation. Only one question each addressed analyzing and evaluating, highlighting an imbalance in assessing HOT skills.
3. Procedural knowledge was scarcely assessed, with only one question each at the apply and analyze levels. No metacognitive knowledge was assessed, indicating a gap in

promoting self-reflection and critical thinking.

Phase II: Findings based on qualitative data analysis

1. **Research question 1:**
How do secondary school teachers perceive and suggest the use of other instructional practices to teach Pakistan Studies, with a focus on promoting higher order thinking?
 1. When asked how teachers can develop higher order thinking in students, six teachers emphasized brainstorming, seven preferred questioning and six highlighted research-based learning and problem-solving. Additionally, three teachers stressed the importance of maintaining a friendly classroom environment to foster HOT skills.
 2. A majority raised concerns about the dominance of the lecture method, with ten teachers highlighting its excessive use. Similarly, eight teachers criticized the textbook-centric approach while nine pointed out that the activities in exercises were often ignored.
 3. When asked whether they had received any training for teaching Pakistan Studies, eleven respondents highlighted
 4. Teacher s identified several other instructional practices to enhance higher order thinking in Pakistan Studies, including brainstorming, questioning, research-based learning and cooperative learning. They expressed dissatisfaction with the dominance of lecture-based and textbook-centered teaching methods, highlighting a lack of engaging activities. The teachers reported insufficient professional training and limited CPD opportunities for Pakistan Studies. To improve instructional effectiveness, teachers suggested incorporating historical site visits, PowerPoint presentations, computer-based activities, audiovisual aids, problem-based learning, internet and multimedia integration, cooperative learning and group discussions. These methods can enhance student engagement, promote critical thinking and facilitate deeper understanding.
 5. The Federal Directorate of Education (FDE) and school principals may organize in-house Continuous Professional Development (CPD) programs to equip teachers with innovative instructional strategies such as problem-based learning, multimedia integration and cooperative learning. To support diverse instructional approaches, FDE may allocate funds to provide essential teaching aids, including projectors, maps, globes, multimedia tools and internet access in schools. Additionally, curriculum developers may revise the Pakistan Studies curriculum to incorporate modern instructional practices that promote higher order thinking skills. Furthermore, principals may establish platforms for teachers to share best practices and experiences, fostering collaborative teaching environments and enhancing instructional effectiveness.

insufficient professional training in the subject. Additionally, ten teachers pointed out the limited attention given to Pakistan Studies in Continuous Professional Development (CPD) programs.

4. When asked about other instructional practices for teaching Pakistan Studies with a focus on higher order thinking at the secondary school level, teachers suggested several instructional practices to improve teaching of Pakistan Studies. Nine teachers suggested organizing visits to historical places, allowing students to connect theoretical knowledge with real-world experiences. Five teachers recommended the use of PowerPoint presentations, while four teachers advocated for computer-based activities to make lessons more interactive. The use of audiovisual (AV) aids was emphasized by ten teachers, reinforcing the importance of multimedia in improving content delivery. Seven teachers supported problem-based learning, and eight teachers suggested the integration of internet resources and multimedia to facilitate a more dynamic learning environment. Furthermore, six teachers recommended cooperative learning as an effective strategy, while eight teachers stressed the role of questioning techniques in encouraging higher order thinking. Lastly, four teachers emphasized the importance of group discussions to promote student participation and collaborative learning.

Research question 2:
How do secondary school teachers perceive and suggest the use of other assessment practices to assess Pakistan studies to foster higher order thinking?

5. When asked to provide at least one suggestion for improving examinations in Pakistan Studies, six teachers advocated for practical-based exams, emphasizing that hands-on assessments would better evaluate students' understanding and application of concepts. Similarly, six teachers recommended incorporating more objective-type questions, while seven teachers emphasized the need for project-based questions to foster creativity and critical thinking. Additionally, six teachers highlighted the importance of integrating maps and globes into assessments to enhance geographical understanding. Seven teachers stressed that exams should cover all levels of Revised Bloom's Taxonomy, ensuring a balanced evaluation of students' cognitive abilities beyond mere recall and comprehension. Another seven

7. Teachers strongly advocated for urgent reforms in the Pakistan Studies examination system, emphasizing a shift towards formative assessments that provide continuous evaluation and skill development. They recommended incorporating objective-type and project-based questions, along with practical-based exams and the integration of maps and globes to enhance conceptual understanding. Additionally, teachers highlighted the need to ensure that

7. The Federal Board of Intermediate and Secondary Education (FBISE) may revise the examination system to incorporate a greater focus on formative assessments, ensuring a balance between objective-type, project-based and practical-based questions that encourage higher order thinking. Adequate weightage may be given to constructed and extended response questions to assess students' analytical and critical thinking skills. Furthermore, subject specialists may be appointed for examination paper setting and training programs on paper setting and item analysis may be introduced to enhance

	teachers suggested placing greater emphasis on formative assessment, allowing for continuous evaluation and improvement rather than relying solely on summative exams. A significant concern was the lack of subject specialists in examination paper setting, which ten teachers viewed as a major issue.	assessments cover all cognitive levels of Revised Bloom's Taxonomy. A major concern was the lack of subject specialists in exam paper setting, leading to recommendations for appointing specialists and providing training in paper setting and item analysis to improve the quality of assessments.	assessment quality. The use of maps, globes and real-world application-based tasks should also be integrated into assessments to strengthen students' geographical and conceptual understanding.
Research question 3: Why do secondary school teachers face challenges in the implementation of instructional and assessment practices aimed at fostering higher order thinking?	6. When teachers were asked about the challenges, they face in implementing instructional and assessment practices for higher order thinking in teaching Pakistan Studies, they identified several factors hindering the effective use of such practices. The most frequently reported issue was the lack of resources, which limits the availability of modern teaching tools and interactive learning materials. Similarly, ten teachers highlighted that overburdened teachers struggle to implement innovative instructional practices due to excessive workload and administrative responsibilities. Another significant barrier was the shortage of subject specialists, noted by ten teachers, which affects the quality of content delivery and the integration of advanced teaching methodologies. Furthermore, eight teachers reported lack of funding as a critical issue, restricting access to essential learning resources, training programs, and infrastructure improvements. Seven teachers identified overcrowded classrooms, which limit student-teacher interaction and make personalized instruction challenging. Additionally, seven teachers emphasized the absence of visual aids, making it difficult to engage students effectively. Lastly, nine teachers noted that teachers' disengagement in paper setting prevents assessments from aligning with HOT principles, as exams continue to focus on rote memorization rather than critical thinking and analysis.	8. Teachers identified multiple challenges in implementing instructional and assessment practices aimed at fostering higher order thinking in Pakistan Studies. The most important issues included heavy workloads, time constraints and overcrowded classrooms, which hinder personalized instruction. A lack of resources, insufficient funding and the absence of visual aids further limit the integration of innovative teaching methods. Additionally, the shortage of subject specialists and trained teachers affects content delivery, while inadequate in-service training restricts professional growth. Teachers also highlighted flaws in the assessment system, particularly the lack of teacher involvement in paper setting, which leads to exams that emphasize rote memorization rather than higher order thinking skills.	8. The Federal Directorate of Education (FDE) may take steps to address these challenges by appointing subject specialists to improve content delivery and assessment quality. Adequate funding may be allocated to equip schools with essential teaching resources, including visual aids and digital tools. Additionally, comprehensive professional development programs may be introduced to train teachers in modern instructional and assessment practices that promote higher order thinking. Reducing administrative workload and ensuring manageable class sizes can also enhance the effectiveness of teaching and learning. Furthermore, teachers may be actively involved in the paper-setting process to align assessments with higher order thinking principles.
Findings based on Triangulation of Results The mixed-methods analysis confirmed that instructional and assessment practices in Pakistan	9. The results of both quantitative and qualitative data were consistent, highlighting a strong connection	9. The Pakistan Studies curriculum may be revised to emphasize observation, creativity and reflection, ensuring alignment with	

Studies predominantly focus on lower-order thinking. Quantitative findings revealed that the curriculum does not emphasize observation, creativity, or reflection ($M = 2.48$), and instructional practices are heavily textbook-centered ($M = 4.63$). Problem-based learning ($M = 1.99$) and project-based methods ($M = 2.24$) were rarely utilized.

Qualitative data reinforced these findings, with teachers identifying time constraints, inadequate training, lack of modern teaching tools, infrastructure issues, and insufficient resources as key barriers to implementing higher-order thinking (HOT). They emphasized the need for interactive methods such as PowerPoint presentations, group discussions, multimedia, field trips and inquiry-based learning. Document analysis of annual question papers (2014–2018) showed a strong emphasis on recall-based questions, with limited application, analysis and creation. Teachers confirmed that the FBISE paper pattern promotes rote memorization rather than critical thinking. They suggested revising the assessment structure by incorporating unseen questions, project-based tasks and skill-based learning approaches. Teachers also recommended a 70:30 ratio for objective type and extended response questions along with subject specialists' involvement in paper setting.

between curriculum objectives, instructional practices and assessment methods. The weak emphasis on higher order thinking (HOT) in the Pakistan Studies curriculum was reflected in teachers' instructional and assessment choices, which largely prioritized knowledge recall over analysis and evaluation.

Teachers faced challenges such as limited training, time constraints, and reliance on rote memorization. While instructional practices focused on knowledge acquisition, incorporating diverse methods could enhance HOT. Additionally, an analysis of five years of question papers showed a predominant focus on the 'remembering' level.

instructional and assessment practices. FDE and school administrations may offer regular professional development programs focusing on inquiry-based learning, problem-solving, and HOT-based assessment design. Teachers may integrate diverse instructional practices such as group discussions, multimedia and field trips, with schools being equipped with necessary digital tools. FBISE should reform assessment methods by incorporating unseen questions, project-based tasks and a recommended 70:30 ratio of objective-type to extended-response questions. Subject specialists may be involved in paper setting and training in assessment design may be provided. Additionally, policymakers may address barriers like teacher workload, administrative burdens and inadequate classroom resources to facilitate effective implementation.

APPENDIX R

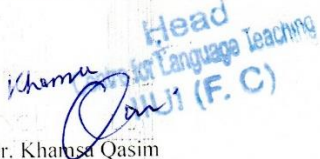
INTERNATIONAL ISLAMIC UNIVERSITY ISLAMABAD

DEPARTMENT OF ENGLISH (FLL)

Date: 02-09-2024

PROOF READING CERTIFICATE

It is to certify that the PhD thesis of Mrs Tahseen Fatima, (Registration No 696-PhD/Edu-F17) entitled "Instructional and Assessment Practices in the Perspective of Higher-Order Thinking at Secondary School Level" fulfills the basic requirements of English Language. This thesis has been found satisfactory and error free.


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APPENDIX S

Taxonomy Mapping Tables

Revised Bloom's Taxonomy Categorization and Thematic Analysis

Analysis of 2014 question paper:

Q. no	Question Text	Cognitive Process	Knowledge Type	Theme
1	What is meant by ideology?	Understand	Conceptual	Conceptual Understanding
2	What are the fundamentals of an Islamic constitution according to Allama Iqbal (RA)?	Understand	Conceptual	Islamic Governance
3	When and where did the Jinnah Gandhi Talks/Correspondence take place?	Remember	Factual	Historical Diplomacy
4	Which year was Shah Wali Ullah (RA) born? Also, write the name of his father.	Remember	Factual	Historical Biography
5	How many refugees migrated to Pakistan as a result of the partition of India? Where were they settled?	Apply, Remember	Factual, Procedural	Impact of Historical Events
6	Write a short note on the System of Basic Democracies.	Understand, Create	Conceptual	Political Systems
7	What percent of the total land of South Asia is occupied by Pakistan?	Analyze	Conceptual	Geographical Distribution
8	What is the average height of the Shivalik Range hills?	Remember	Factual	Geographical Features
9	What does ADBP stand for?	Remember	Factual	Acronyms
10	Write a short note on the Sugar Industry in Pakistan.	Understand, Apply	Conceptual, Procedural	Economic Sector
11	Write a short note on the Grand Trunk Road (G.T. Road)?	Understand	Conceptual	Historical Infrastructure
12	What are GRP and GNP?	Remember	Factual	Economic Indicators
13	Name any three most prominent calligraphists of Pakistan.	Remember	Factual	Art and Culture
3	When and where did the Jinnah Gandhi Talks/Correspondence take place?	Remember	Factual	Historical Diplomacy
14	Who were Taan Sen and Amir Khusro (RA)?	Remember	Factual	Historical Figures

15	Define Formal and Informal Education.	Understand	Conceptual	Educational Systems
16	What did the Quaid-e-Azam (RA) advise the civil and military officers on 11th October 1947 AD?	Remember	Factual	Leadership Guidance
Extended Response Questions				
1	Explain Pakistan ideology in the Islamic perspective.	Understanding	-	Ideological Foundations of Pakistan
2	What is the importance of industrial development for Pakistan. Describe laboratory?	Analyzing, Understanding	-	Economic Significance of Industrial Development, Description of Laboratory
3	Describe the events leading to the dismemberment of Pakistan.	Understanding	-	Historical Analysis of Pakistan's Dismemberment
	Explain the Indian role in this regard.	-		Indian Involvement in Pakistan's Dismemberment

Analysis of Annual question paper 2015

Q. No	Question Text	Cognitive Process	Knowledge Type	Theme
1	Define ideology.	Remembering	Conceptual	Grasping the fundamental concept of ideology.
2	Who was the head of the boundary commission? When was his Award announced?	Remembering	Factual	Recalling factual details about the Boundary Commission and its head.
3	What percentage of the total populated land should consist of forests and why?	Evaluating	Procedural	Assessing the importance and procedural aspects of maintaining a specific percentage of forested land.
4	What is the land stretch of Pakistan? How much total land of South Asia is occupied by Pakistan? Write down the names of the canals of River Ravi.	Remembering	Factual, Conceptual	Recollecting facts about Pakistan's geography, analyzing its land stretch, and detailing specifics about River Ravi canals.
5	What are the major uses of natural gas?	Applying	Procedural	Applying knowledge about natural gas to understand its major uses.
6	Define infrastructure.	Understanding	Conceptual	Grasping the conceptual understanding of infrastructure.
7	What is meant by the term migration? Also, write the different kinds of migration?	Understanding	Conceptual, Procedural	Understanding migration and creating knowledge about its different types.

8	What are the important industries which make use of gypsum?	Understanding	Factual	Recognizing and understanding industries utilizing gypsum.
9	What are the important industries which make use of gypsum?	Remembering	Factual	Recalling factual details about industries utilizing gypsum.
10	What is Abdur Rehman Chughtai and Ustad Allah Buksh famous for?	Remembering	Factual	Recalling facts about the fame of individuals.
11	Write down the names of the theologians and sufis who adopted Punjabi for the expression of their thoughts in poetry and prose.	Remembering	Factual	Recollecting facts about Punjabi literature figures.
12	Define textbook.	Understanding	Conceptual	Grasping the conceptual understanding of a textbook.
13	Define culture.	Understanding	Conceptual	Grasping the conceptual understanding of culture.
14	What is meant by egalitarianism?	Understanding	Conceptual	Grasping the conceptual understanding of egalitarianism.
15	Give a brief account of Mountbatten's role in the partition of India.	Understanding	Factual	Understanding Mountbatten's role during the partition.
16	Which body of persons elected the president under the 1962 constitution of Pakistan?	Remembering	Factual	Recalling facts about the election process under the 1962 constitution.

Extended Response Questions

1	Explain Pakistan Ideology in the Islamic perspective.	Understanding	Conceptual	Explaining and creating knowledge about Pakistan's ideology within an Islamic perspective.
2	What is the importance of industrial development for Pakistan? Discuss elaborately.	Analyzing	Conceptual, Procedural	Analyzing and creating knowledge about the significance of industrial development in Pakistan.
3	Describe the events leading to the dismemberment of Pakistan. Explain the Indian role in this regard.	Understanding	Factual, Conceptual	Describing events and explaining the role of India in the dismemberment of Pakistan.

Analysis of Annual question paper 2016

Q. No	Question Text	Cognitive Process	Knowledge Type	Theme
1	What are the two cardinal principles of Islamic Ideology?	Remembering	Factual	Recalling and stating the fundamental principles of Islamic Ideology.
2	Who was the Chief Architect of the Lucknow Pact? What was his title, and who gave him the title?	Remembering, Understanding	Factual, Conceptual	Recalling the Chief Architect of the Lucknow Pact, understanding his title, and recognizing the source of the title.
3	Who was the head of the Boundary Commission, and when was his award announced?	Remembering	Factual	Recalling the head of the Boundary Commission and the timing of the award announcement.
4	Who was the Viceroy of India at the time of the partition of Bengal? When and why was this partition annulled?	Remembering, Understanding	Factual, Conceptual	Recalling the Viceroy, understanding the timing, and recognizing the reason for the annulment of the partition.
5	Name the three organs of Government.	Remembering	Factual	Recalling and stating the three organs of government.
6	What is the land stretch of Pakistan on the world map?	Remembering	Factual	Recalling and providing the land stretch of Pakistan on the world map.
7	Differentiate between Rabi and Kharif crops grown in Pakistan.	Understanding	Conceptual	Understanding and explaining the differences between Rabi and Kharif crops in Pakistan.

8	What do the following stand for? CHASHNUP, OGDC, CNG.	Remembering	Factual	Recalling and providing the full forms of CHASHNUP, OGDC, and CNG.
9	Differentiate between Perennial, non-Perennial, and flood canals.	Understanding	Conceptual	Understanding and explaining the differences between Perennial, non-Perennial, and flood canals.
10	Enumerate three major advantages of electronic means of trading. Enumerate the major means of transportation used in Pakistan.	Remembering, Understanding	Factual, Conceptual	Recalling and stating advantages of electronic trading, understanding and listing major means of transportation in Pakistan.
11	What are the causes of the explosive growth rate in Pakistan?	Analyzing	Conceptual	Analyzing and explaining the causes of the explosive growth rate in Pakistan.
12	What is meant by Demography?	Understanding	Conceptual	Grasping and explaining the conceptual understanding of Demography.
13	Name famous non-Muslim festivals celebrated in Pakistan.	Remembering	Factual	Recalling and listing non-Muslim festivals celebrated in Pakistan.
14	Enlist four tiers our education system was based upon before the implementation of the 1979 education policy.	Remembering	Factual	Recalling and listing the four tiers of the education system before the 1979 education policy.
15	What are the basic principles of an Islamic Welfare state?	Understanding	Conceptual	Understanding and creating knowledge about the basic

16	Enumerate the major means of transportation used in Pakistan?	Understanding	Factual	principles of an Islamic Welfare state. Transportation in Pakistan.
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Extended Response Questions

1	Give a detailed account of the role of the Quaid-e-Azam as the first Governor General of Pakistan.	Understanding	Factual, Conceptual	Understanding and analyzing the detailed account of the Quaid-e-Azam's role as the first Governor General.
2	Describe the salient features and Islamic provisions of the 1973 constitution of Pakistan.	Understanding	Conceptual	Understanding and creating knowledge about the salient features and Islamic provisions of the 1973 constitution of Pakistan.
3	Describe the physical features of Pakistan.	Understanding	Factual	Describing the physical features of Pakistan.

Revised Bloom's Taxonomy Categorization and Thematic Analysis of 2017 question paper:

Q. No	Question Text	Cognitive Process	Knowledge Type	Theme
1	Define a textbook.	Remembering	Factual	Recalling the definition of a textbook.
2	What are GNP and GRP?	Remembering	Factual	Recalling the meanings of GNP and GRP.
3	Write a short note on Pakistan National Shipping Corporation.	Understanding	Conceptual	Understanding and providing information about the Pakistan National Shipping Corporation.
4	What is 'Livestock'?	Remembering	Factual	Recalling the definition of 'Livestock.'
5	What is the ultimate end of a state?	Understanding	Conceptual	Understanding the ultimate purpose or end of a state.
6	Write down three important points of the 1962 constitution.	Remembering	Factual	Recalling three important points from the 1962 constitution.
7	List any six achievements of the Quaid-e-Azam as Governor-General of Pakistan.	Remembering	Factual	Recalling and listing six achievements of Quaid-e-Azam as Governor-General.
8	Define Democracy.	Remembering	Factual	Recalling the definition of democracy.
9	Highlight three salient features of the Objectives Resolution.	Remembering	Factual	Recalling and highlighting three features of the Objectives Resolution.
10	List the factors affecting the environment.	Remembering	Factual	Recalling and listing factors affecting the environment.
11	Define Education.	Remembering	Factual	Recalling the definition of education.
12	Name three Calligraphic artists who acquired fame in this field.	Remembering	Factual	Recalling and naming three famous Calligraphic artists.
13	When and why was 'PASSCO' established?	Remembering	Factual	Recalling the establishment date and purpose of 'PASSCO.'
14	Write names of any six physical regions of Pakistan.	Remembering	Factual	Recalling and listing six physical regions of Pakistan.
15	What is "Ijtihad"?	Remembering	Factual	Recalling the meaning of "Ijtihad."

16	Write the aims and objectives of the Muslim League.	Remembering	Factual	Recalling and listing the aims and objectives of the Muslim League.
Extended Response Questions				
1	Define Culture. Explain in detail the importance of the National language of Pakistan for the achievement of National Unity.	Understanding	Conceptual	Understanding the definition of culture and analyzing the importance of the national language for national unity.
2	Define environment. Which factors affect the environment? Also, suggest measures for the prevention of environmental pollution.	Remembering, Understanding	Factual, Conceptual	Recalling the definition of the environment, understanding factors affecting it, and suggesting preventive measures for pollution.
3	Define the Ideology of Pakistan. Write a comprehensive note on the Aligarh Movement and the services of Sir Syed Ahmad Khan.	Understanding	Conceptual	Understanding the definition of the Ideology of Pakistan and creating knowledge about the Aligarh Movement and Sir Syed Ahmad Khan's services.

Revised Bloom's Taxonomy Categorization and Thematic Analysis of 2018 question paper:

Q. No	Question Text	Cognitive Process	Knowledge Type	Theme
1	Why is the 1973 AD constitution calling the Federal Constitution?	Understanding	Conceptual	Understanding the reason behind calling the 1973 AD constitution the Federal Constitution.
2	Write two duties of the Union Council.	Remembering	Factual	Recalling and listing two duties of the Union Council.
3	Write down a brief introduction of Bhutan.	Remembering	Factual	Recalling and providing a brief introduction to Bhutan.
4	When and by which two countries was the 'Indus Water Treaty' signed? What is meant by 'Durand Line'?	Remembering, Understanding	Factual, Conceptual	Recalling the signing countries of the Indus Water Treaty, understanding the meaning of the 'Durand Line.'
5	Enlist the names of six cities of Pakistan where dry-ports are established.	Remembering	Factual	Recalling and listing six cities in Pakistan where dry-ports are established.
6	Write the definition of "Economic Progress" as given by Prof. Arthur Lewis. What is meant by "Small Industry"?	Remembering, Understanding	Factual, Conceptual	Recalling the definition of Economic Progress, understanding the meaning of "Small Industry."
7	Which are the major games of Pakistan?	Remembering	Factual	Recalling and listing major games in Pakistan.
8	Who was Hiba Khatoon?	Remembering	Factual	Recalling information about Hiba Khatoon.
9	What is the total number of government hospitals and dispensaries in Pakistan?	Remembering	Factual	Recalling the total number of government hospitals and dispensaries in Pakistan.
10	Write the definition of "Economic Progress" as given by Prof. Arthur Lewis.	Understanding	Conceptual	Understanding the definition of "Economic Progress" as given by Prof. Arthur Lewis.
11	What is meant by "Small Industry"?	Understanding	Factual	Understanding the meaning of "Small Industry."

Extended Response Questions:

1	Explain the nuclear program of Pakistan.	Understanding	Conceptual	Understanding and analyzing the nuclear program of Pakistan.
2	Analyze the relations between Pakistan and India.	Analyzing	Conceptual	Analyzing the relations between Pakistan and India.
3	Explain the sources from which electricity is obtained in Pakistan?	Analyzing	Conceptual	Understanding and analyzing the sources of electricity in Pakistan.
