

Critical Analysis of Question papers for fifth class Board Examination offered to students with and without visual impairment

Kashif Iqbal*, Sonia Fareed Khan, Ghazala Ishrat

Institute of Special Education, University of the Punjab Lahore, Pakistan

*Corresponding author email address: kashif.iqbal.tsa@gmail.com

ABSTRACT

Education brings positive change in the behaviors of the students. It requires mastery of teaching to achieve the appropriate result. To provide quality education, students with or without visual impairment are facilitated as per their needs to accomplish their academic goals. This becomes the firm reason for educators in both education systems to endeavor their best as per students' cognitive skills. In continuation of the mentioned perspective, students with visual impairment are appeared in board examination at grade level five to achieve the same standards. The main objective of this research was to identify question styles (structured/unstructured) in developed question papers in the subject of Urdu, English, and Mathematics. The researchers collected documents of the last five years from the special education department and school education department Lahore. Document analysis of these past papers was made by the researchers accordingly. Secondly, the comparison was created with the same subject's question papers for regular students as the proposed curriculum is the same by Punjab Text Book Board (PTBB). Comparing both group question papers revealed a significant difference in developed questions based on the cognitive domain. Significant findings of the study showed that there is no proper application of the cognitive domain in both education systems, especially in special education for students with visual impairment. It is strongly recommended that the test system must be improved with refresher training for special education teachers through in-service training programs. Additionally, it is also recommended that they be a conceptual and practical implementation of all six levels of cognitive domains through test development ac for students at colleges and universities who want activities to join special education as a profession.

KEYWORDS

Critical analysis, Students with Visual Impairment, Question papers, Examination, Special education.

JOURNAL INFO

HISTORY: Received: Received: December 18, 2021

Accepted: March 04, 2022

Published: March 14, 2022

INTRODUCTION

Students are the assets of any nation. To make students assets, quality education with lifelong learning from pre-schooling to university level is mandatory for the state to provide. There is a rapid pace in learning and human development for the sake of knowledge which has become the reason for increasing the opportunities for more effective educational practices (Hammond et al., 2019).

The 21st century's skills are the competencies development that includes gathering and expediting concentration to improve instructional quality of teaching (Kim et al., 2019). It requires a commitment by the stakeholder. i.e., government, private sectors (organizations), society, parents, and teachers. Teachers pass through the particular transition of the teaching & learning process in their professional careers (Allen et al., 2020). A critical factor in the debate is the teachers, whose role is dominant to make the child responsible and active participants for the nation. Hence, we can say that the teacher has the primary role to develop a students' personality and build up a nation. All education is funded by the Teacher only. Therefore, humanity with its entire civilization is dependent on a teacher accountable for building up a strong presence with a sparkling future. The teacher with his effective co-cooperation performs his role to make a nation for the country and subsequent generations." Teachers serve in different educational paradigms, including regular education, special education, literacy, and non-formal primary education.

These paradigms have only one destination of making the students an asset to the nation. These set-ups of education direct the students towards achieving life goals with various necessary skills. These skills include personality, social, religious, intellectual, and cognitive skills. Therefore, schools perform their best to develop the firm concepts of students, whether in general education or special education.

Students in general education understand the basic concepts when their teachers comply and implement all six levels of cognitive domains from grade level one. The same is expected from teachers of students with visual impairment in special education.

Students with or without visual impairment benefit from teachers' proficiency in working with and implementing cognitive domains to reach their apex niche in life. However, teachers in both education systems need to work with special skills exceptional education to make the disability an ability. Because the Teaching & learning process in both types of education systems is evaluated through the tool of assessment to improve (Nykowanna, 2019), from a bigger perspective, the



This work is licensed under a [Creative Commons Attribution 3.0 License](https://creativecommons.org/licenses/by/3.0/).

schools are helped with evaluation to analyze the effectiveness and quality of learning and the learning level of students (Tosuncuoglu, 2018). From this perspective, Benjamin Bloom developed a taxonomy with six levels of the cognitive domain in chronological manners for assessment (Ramirez, 2017).

The six cognitive domains, i.e., knowledge, comprehension, application, analysis, synthesize, and evaluation, are applied from grade level one onward. These six levels are labeled with lower-order thinking and higher-order thinking skills. The teaching-learning process is bonded with performances assessment. Students with or without visual impairment are assessed by recalling bookish knowledge through examinations. The purpose of designing the tests is to evaluate the student's learning or visual impairment in various subjects (i.e., English, Urdu, and Mathematics) at grade level 5 and verify the influence of the particular subjects' learning in their real-life situations.

Therefore, the construction of the test must be probable to explore students' learning with or without visual impairment about finding, using, analyzing, and evaluating new information. Questions' design for evaluation is different from the questions printed in the book. Challenging questions: Higher-ordered thinking instead of lower-order thinking is utilized while developing questions. For these reasons, examinations are the most significant part of students' learning and education. The development of tests and examinations influences the teaching and learning process.

The motive for this study was to analyze the application of cognitive domains by teachers in schools of students with visual impairment and general education. Because cognitive domains with their all six levels are taught at higher education level during the degree programs for special education, therefore, this critical analysis was required to critically analyze the application of cognitive domain in the grade level 5 board examination's paper of students with or without visual impairment by their teachers.

RESEARCH OBJECTIVES

Followings are the research objectives:

1. To determine the coverage of cognitive domains in subjects English, Mathematics, and Urdu at class 5 board examination for students with Visual Impairment.
2. To examine the coverage of cognitive domains in subjects English, Mathematics, and Urdu at class 5 board examination for students without Visual Impairment.

RESEARCH QUESTIONS

Followings are the research questions for the said study:

1. Do class – V board examinations question papers of English, Mathematics, and Urdu are valid concerning six levels of cognitive domains for students with visual impairment?
2. Do class – V board examinations question papers of English, Mathematics, and Urdu are valid concerning six levels of cognitive domains for students without visual impairment?

SIGNIFICANCE OF THE STUDY

- This study would contribute to present knowledge concerning the educational field. This study is relevant to special educationists, teachers, evaluation experts, paper setters, and administrators.
- Present scenario reveals the improper implications of six levels of cognitive domains for students with and without visual impairment, which are supposed to be implemented from grade level one. There is unequal implementation and compromise on learning visually impaired students as these six levels have not been mainly asked.
- Therefore, this study will surely help educators and special educators around the state review the class – V board examination tests about proper implementation of all six levels of cognitive domains. Additionally, imparting appropriate knowledge through effective syllabi would be probable for special educators to deliver explicitly.

LITERATURE REVIEW

PROCESS AND COGNITIVE PROCESS

It is referred to any endeavor or series of works in which producing results are made for something that is being operated. Therefore, in the cognitive process, responses are produced with short-term and long-term memory, representation, and coding, including knowledge, rules, images, external stimuli, or resembling material are considered as contents of mental process. Therefore, covert or overt responses are observed as a result. (John B. Carroll, 1993, P. 10) TAXONOMY OF Benjamin Bloom

In 1956, Benjamin Bloom proposed the Bloom taxonomy system. It was led by the team leading a teacher's group. It was specified Framework for goals with objectives classification of education. (Forehand, 2011). One of the original team members, David Krathwohl, and a student of Bloom's name Lorin Anderson worked to revise the basic cognitive taxonomy in 2000/01.

The term "taxonomy" times "taxonomy" and "classification" conceptualized, and similar levels of complexity are contemplated under the umbrella of Bloom's Taxonomy which makes the thinking classified with the help of ma Ulti-tiere model (Forehandy.M., 2010).

This classification is concerned with understanding academic /thought process classification in teaching and learning. According to Athanassiou (2003), six-level classification systems are related to the taxonomy, in which observed students' behavior is utilized to attain cognitive level achievement. Linked with the last scholar, he said that students' achievement empirical evaluation is processed through its implementation.

According to Giesen (2014), the following are the suitable areas for the application of Bloom's taxonomy:

1. Writing and Revision of objectives of learning.
2. Curriculum planning.
3. Identification of simple to complex skills
4. Alignment and effectiveness of objectives with techniques of assessment and its principles
5. Knowledge incorporation for learning
6. Arrangement and facilitation of questions.

Procedural learning is done for achievement, which is an extent of an individual aimed to create understanding, including formal or informal interaction series and a time in which self-study is made for a particular topic or any skill practice. Therefore, learning extent and measuring the achievements is done through the test design, which is contextually focused on measuring the abilities. However, future performance is predicted by aptitude, which can be measured. The future learning process is done through such aptitude with its measurement.

A framework for conceptual change concentrates on knowledge construction in a particular area. It also elaborates that existing knowledge is a reorganization process (Vosniadou et al., 2001). A well-defined mental model series is used by Students in which various phenomena are explained, and these phenomena are changed over time (Murphy et al., 2007). Therefore, these earlier mentioned mental models serve to develop concepts and understand for students undstudents'ng of any topic.

New knowledge is constructed slowly. It includes awareness for the pupil. The pupil relies on past representations of expertise so that the newly construbuiltgde could be bridged like learning by pictures present in manuscripts, experiential learning (Vosniadou et al., 2001).

Important information is enabled through a vision that helps students develop mathematical concepts and understandings (Emerson, Anderson, 2018). Words describe visual phenomena only from numerous basic mathematical concepts.

Vision supports the sighted children to categorize items as per their generally resembling. Therefore, conceptual understandings include large (as more significant), long (into longest), or easy to understand. Relation between objects is seen quickly by sighted students. But in the visual impairment (V.I) phenomenon, children realize these relations only mental or in abstract formation; indeed, looking at only one object at a time is observed by them. According to a study by Hatwell (2003), grasping understanding and orientation regarding directional and spatial concepts is more difficult than students without visual impairment.

Resultantly, fewer experiences are offered to students with visual impairment than sighted students about mathematics that in daily life communication, concepts of mathematics are utilized (Emerson, Anderson, 2018).

Traditionally, researchers have studied that visually impaired students are the students' group regardless of the quality that various conditions can cause visual impairment (Warren, 1994, p.2). Congenital disorders are found in many pupils, and fewer have lost it by acquiring late in life partly or totally.

Significant variables include comorbidity, on-set age, residual sight, and diagnosis by an ophthalmologist, with which development of comprehension about mathematics is influenced. Additionally, important essential to think mathematically include cognitive utility, personal interest, and skills development per class level for all pupils.

BLOOM'S TAXONOMY

Dr. Benjamin Bloom, who was an educational psychologist with other professionals included Max Edward Furst, Englehart, David Krathw,ohl, and Walter Hil,l presented a theory in 1956 regarding up-gradation of the process of teaching and learning between the lower level of learning, i.e., rote learning and higher-level learning, i.e., problem-solving, creativity, analysis, and evaluation. This taxonomy consists of three domains: cognitive, affective, and psychomotor. Mental skills include promoting the teaching & learning process at a level. There is a hindrance in dynamic teaching and learning due to the present system of examination (Chandio et al., 2016).

METHODOLOGY OF THE STUDY

This part of the study deals with the methodology of the study. The main purpose of this study was to critically analyze the question papers for fifth class board examination offered to students with and without visual impairment.

RESEARCH DESIGN

This was qualitative research in which data was obtained through documents and then analyzed.

TOOLS

Actual question papers of English, Mathematics, and Urdu of grade-level V were the foundation for analysis. These question papers were utilized to inquire the following:

- i) Involvement of all six levels of cognitive domains.
- ii) Application of cognitive domains by teachers while teaching to students with and without visual impairment.
- iii) Imparting appropriate knowledge to students with visual impairment regarding six levels of cognitive domains.

DATA ANALYSIS

The data was analyzed through the document analysis technique. These documents were the subject papers of English, Mathematics, and Urdu from grade level 5 of students with and without visual impairment. These papers were taken from the last five years of board examination.

Tables were made on the charts (pictures as an appendix) to differentiate the application on all six levels of the cognitive domain in the papers of board examination of grade level 5 for students with and without visual impairment.

PROCEDURE OF THE STUDY

Subjects including English, Mathematics, and Urdu question of grade-level V between 2014-2019 sess, including the contextual implementation of six levels of cognitive domains, were acquired from Punjab School Education Department, examination section of Special Education department Punjab and teacher's record. Moreover, the paper of the Urdu session 2015 was not available nor in examine nation branch of the special education department Punjab or even in teachers' record. However, the Urdu session 2019 was included to complete the critical analysis of the last five years' board examination, which was available from the examination branch of the special education department Punjab.

After that, tables were organized to depict six levels of cognitive domains, i.e., knowledge, comprehension, application, analysis, synthesize, and evaluation for students with and without visual impairment in their class – V board examinations of the last five years. All Questions from the previous five years' board examination papers of regular education and special education (visual impairment field only) were analyzed in these tables (pictures pasted as an appendix). Finally, critical analysis was made at the end of the table to show the study's findings.

FINDINGS OF THE STUDY

Followings are the year wise findings of the study

FINDINGS FROM THE SUBJECT "ENGLISH"

In class – V paper English session 2014, the special children have been asked to respond mainly to knowledge, application, analysis, synthesize from cognitive domains. Questions have been developed till on synthesize level. Only two questions were designed from comprehension level. No question was developed for evaluation. However, regular education has been focused on two cognitive domains, including comprehension and application. Only two questions each were focused on knowledge and analysis. Additionally, no question was developed in synthesize and evaluation, which shows the in-equal distribution and inadequate implementation of cognitive domains. An important factor is the implementation of cognitive domains is always from class – I. This analysis indicates that there is no work equally on all levels of the cognitive domain while having exams. It also shows the ineffectiveness of the syllabus. Therefore, appropriate knowledge has not been imparted in special education and regular education.

In class – V paper English session 2015, the students with visual impairment have been asked to respond mainly only knowledge from six levels of cognitive domains. Two questions from comprehension, one from an application that shows less focus on the application of the knowledge, and 2 questions have been asked with synthesize from cognitive domains. No question was developed for analysis and evaluation. However, ular education has been focused mainly on knowledge and its application. LesMoanalysis, synthesize, and evaluation have been concentrated on while asking questions. No question was developed in comprehension. Therefore, in special education, students with visual impairment are not focused on applying the knowledge, while regular education students focus mainly on the application of the knowledge. This depicts the inadequate dissemination of the syllabus.

In class – V paper English session 2016, the children with visual impairment were mainly asked about knowledge and application from cognitive domains. Questions have been developed till only three levels of cognitive domains. Only three questions were developed from the analysis. No question was developed for comprehension, synthesize, and evaluation. However, regular education focuses mainly on knowledge, understanding, and application. Only three questions were focused on synthesizing. Additionally, no question was developed to analyze and evaluate, which shows the in-equal distribution and inadequate implementation of cognitive domains. Students with visual impairment have not been focused on their comprehension skills. However, students without visual impairment have been focused mainly on comprehension. It shows the unequal dissemination of the implementation of cognitive domains for students with visual impairment. Moreover, implementation of all six levels of cognitive domains are focused from class – I. THI analysis shows the fragile implementation of the rest of the levels of cognitive domains. It highlights the syllabus's ineffectiveness.

In class – V paper English session 2017, the special children have been asked to respond mainly to knowledge, comprehension, and application. Only two questions were developed from the synthesize level and one from the evaluation.

No question was developed for analysis. However, in regular education, all levels of cognitive domains have been focused on students without visual impairment. This shows the unequal distribution and inadequate implementation of cognitive domains for students with visual impairment. This analysis shows that there is no work equally on all levels of the cognitive domain while having exams of students with visual impairment. It also shows the ineffectiveness of the syllabus. Therefore, appropriate knowledge has not been imparted to students with visual impairment.

In class – V paper English session 2018, the special children have been asked to respond mainly 1st three levels of cognitive domains, including knowledge, comprehension, and application. These are lower orders of cognitive domains. From higher orders of cognitive domains, it was less focused on synthesize. No question was developed for analysis and evaluation. However, comprehension, application, and research have mainly been asked in regular education. No question was developed in knowledge, synthesize, and evaluation. This analysis depicts the in-equal distribution and inadequate implementation of cognitive domains for students with visual impairment and students without visual impairment. This analysis shows that there is no work equally on all levels of the cognitive domain while having exams, resulting in the syllabus's ineffectiveness. Therefore, appropriate knowledge has not been imparted in special education and regular education.

FINDINGS FROM THE SUBJECT “MATHEMATICS”

In class – V paper Mathematics session 2014, the children with visual impairment have been asked to respond mainly knowledge from cognitive domains. The second central area to be focused on cognition was analyzed. Only 1 question each was developed from comprehension, application, and evaluation. No question was developed for synthesizing. However, regular education has been focused on the first four levels of cognitive domains. No question was developed in synthesize and evaluation. It is adequate to implement the first four levels in regular education, but in special education, except knowledge, there is no such implementation of the remaining levels of cognitive domains. Moreover, Class – I students can focus on implementing all six levels of cognitive domains. Therefore, basic math skills are unproductive, especially for visually impaired students. Additionally, appropriate knowledge has not been imparted to visually impaired students.

In class – V paper Mathematics session 2015, the children with visual impairment have been asked to respond mainly from knowledge, comprehension, application, and analysis from cognitive domains. No question was asked from expertise and evaluation. In regular education, mainly comprehension was focused. Fewer questions have been asked from an application analyze, and only 1 question has been asked in synthesize. No question was developed in synthesize and evaluation. It is necessary to implement all six levels in special education and regular education for smooth learning of students with and without visual impairment. It also shows the improper implementation of the syllabus for students with and without visual impairment.

In class – V paper Mathematics session 2016, the children with visual impairment have been asked to respond mainly to knowledge, comprehension, and application from cognitive domains. Only 2 questions from analysis and one from synthesizing were asked, respectively. No question was developed for evaluation. However, regular education has been focused on five levels of cognitive domains except for knowledge. No questions have been designed for 1st level, i.e. ability. However, the special education class five paper consists of 10 questions of knowledge. Therefore, basic math skills are unproductive about knowledge in regular education. It also shows the focus of knowledge is there for visually impaired students, but the evaluation is not significant from the educator's perspective, which has not been highlighted.

In class – V paper Mathematics session 2017, the children with visual impairment have been asked to respond mainly to comprehension and analysis from cognitive domains. Only 1 question each was developed from knowledge and application. No question was developed for synthesizing and evaluation. The same has been followed in regular education. One question each has been developed for application and evaluation. No questions have been asked in knowledge and synthesize. Focus of the levels of cognitive domain is on comprehension and analysis, representing the unequal distribution of the rest of the levels of cognitive domains. Additionally, basic math skills are unproductive for students with and without visual impairment. Therefore, appropriate knowledge has not been imparted to visually impaired students.

In class – V paper Mathematics session 2018, the children with visual impairment have been asked to respond mainly to comprehension and analyze from cognitive domains. Two questions from the knowledge and three questions from the evaluation have been asked from cognitive domains. Same has been followed in regular education, including comprehension and analyze. One question is from the knowledge, and three questions are from the application. The evaluation also contains one question. No question has been asked in synthesize. Focus of the cognitive domain's levels is on comprehension and analysis, which represents the unequal distribution of the rest of the levels of cognitive domains. Additionally, basic math skills are unproductive for students with and without visual impairment. Therefore, appropriate knowledge has not been imparted to visually impaired students and students without visual impairment.

FINDINGS FROM THE SUBJECT “URDU”

In class – V paper Urdu session 2014, the children with visual impairment have been asked to respond mainly to knowledge and comprehension from six levels of cognitive domains. Questions have been developed from five levels of cognitive domains. Only one question from the application, two from synthesize, and one from the evaluation were developed. No question was developed for analyze. However, in regular education, the first four cognitive domains, including knowledge

and mainly comprehension and application with analysis, have been asked. Additionally, no question was developed for synthesize and evaluation, which shows the in-equal distribution and inadequate implementation of cognitive domains. An important factor is the implementation of cognitive domains is always from class – I. This analysis shows that there is no such focus equally on application, analyze, synthesize and evaluation for students with visual impairment and students without visual impairment. This shows the ineffectiveness of the syllabus for students with visual impairment and students without visual impairment. Therefore, appropriate knowledge has not been imparted in special education and regular education.

In class – V paper Urdu session 2016, the students with visual impairment have been asked mainly knowledge, comprehension, and application from a lower order of cognitive domains. Only one question has been developed from synthesize level. No question was developed for analyze and evaluation. However, in regular education, mainly knowledge and synthesize have been asked. Only three questions each were focused on comprehension and application. Additionally, one question has been developed for analyze. No question was developed in the evaluation. This analysis shows the appropriate implementation of cognitive domains for students with visual impairment till the first three levels of cognitive domains but also depicts improper implementation of analyze, synthesize, and evaluation. Students without visual impairment benefit from knowledge in lower-order cognitive domains and from synthesizing in higher-order cognitive domains. It shows unequal distribution and implementation of cognitive domains among students with visual impairment and students without visual impairment. It depicts the ineffectiveness of the syllabus for students with visual impairment.

In class – V paper Urdu session 2017, the special children have been asked to respond mainly to knowledge, comprehension, analysis, synthesize, and evaluation from cognitive domains. No question was developed for the application. However, in regular education, it has been focused equally on all levels of cognitive domains, which first three domains have been focused more as compared to the next three levels of cognitive domains, which shows the proper learning of regular students. An important factor is the implementation of cognitive domains is always from class – I. This analysis shows that there is no work equally on all levels of the cognitive domain while having exams for students with visual impairment. It also shows the ineffectiveness of the syllabus. Therefore, appropriate knowledge has not been imparted to students with visual impairment.

In class – V paper Urdu session 2018, the students with visual impairment have been asked to respond mainly from five levels of cognitive domains, including knowledge, comprehension, analysis, synthesize, and evaluation. No question was developed for the application. However, in regular education, the same five levels of cognitive domains have been asked to respond except synthesize. There is no execution of the application in the exam of students with visual impairment, which shows inadequate implementation and ineffectiveness of the syllabus. This analysis shows that there is no work equally on all levels of the cognitive domain while having exams. Therefore, appropriate knowledge has not been imparted in special education and regular education.

In class – V paper Urdu session 2019, the children with visual impairment have been asked mainly for comprehension and synthesize. No question was developed for knowledge, application, analyze, and evaluation. However, proper implementation of the first three cognitive domains can be observed in regular education. One question is from synthesize and evaluation. No question has been asked from analyze. This analysis shows no such equal implementation of all six levels of cognitive domains for students with visual impairment, which depicts the inefficiency of the teachers and ineffectiveness of the syllabus.

DISCUSSION

Teachers of visually impaired students or students without visual impairment are using various teaching strategies to make their students knowledgeable. This is important for the teachers to apply the necessary skills they learn during their own special education degree program. A student's learning or the student's achievement is profoundly influenced by teachers (Bardach, Klassen, 2019). The study has highlighted in finding for subjects English & Urdu that there is no work equally on all levels of cognitive domain while having exams. It also shows the ineffectiveness of the syllabus. The finding for subjects Mathematics reveals an application of the first four levels of the cognitive domain. Therefore, appropriate knowledge has not been imparted in both special in general education papers. Still, exc knowledge, there is no use of the remaining five levels of the cognitive domain. This comparison depicts the serious indication of the fragile mathematical concept of students with visual impairment in special education. Students with visual impairment have major academic performance: instructional strategies, motivation to learn, physical environment, external support, information, and communication technology, and English language communication (Suraweera et al., 2022).

Therefore, the findings of this study have shown a rare use of all cognitive domains in both systems of education. Teachers of both methods of education are required to apply cognitive domains. However, in this study, a reasonable point is the application of level one knowledge from the cognitive domain in both education systems, which is quite encouraging for students with and without visual impairment. But still, there is ample requirement to apply all levels of cognitive domain while teaching to students with or without visual impairment.

CONCLUSION

To conclude the discussion, an analysis of questions papers of Punjab Education Department and Special Education Department (class-V visual impairment field only) was made for:

1. Implementation of six levels of cognitive domains for students' learning either with or without visual impairment.
2. Effectiveness of questions papers board examinations for students with and without visual impairment with respect to six levels of cognitive domains.
1. There is an in-equal and inadequate distribution of cognitive domains for students with and without visual impairment with regard to their class – V board examination.
2. Students with visual impairment are deprived of the application of knowledge and its comprehension compared to the students from regular education.
3. There is no implementation of evaluation from six levels of cognitive domains in class – V final board examination.
4. Basic math skills are not imparted to students with visual impairment.
5. Appropriate knowledge is not being imparted to students with visual impairment compared to students without visual impairment.

RECOMMENDATIONS

There are five recommendations which I would suggest here:

1. Test system must be improved with refresher training for special education teachers by in-service training programs.
2. There should be a conceptual and practical implementation of all six cognitive domains levels through test development activities for students at colleges and universities who want to join special education as a profession.
3. Teachers of visually impaired students should have a comprehensive understanding, especially for students with visual impairment, to comprehend their learning process. They could be frequently asked those questions that could represent all six levels of cognitive domains.
4. Questions related to analyzed, synthesized, and evaluation must be included equally as a part of higher-order thinking skills for visually impaired students.
5. Research-based critical analysis should be made annually for question papers of class-V examination for students with and without visual impairment for smooth learning of students in regular and special education.

CREDIT AUTHOR STATEMENT

Kashif Iqbal: Conceptualization, Methodology, Data Analysis, Visualization. **Sonia Fareed khan:** Data collection, Writing- Original draft preparation, Validation. **Ghazala Ishrat:** Investigation, Writing- Reviewing and Editing.

COMPLIANCE WITH ETHICAL STANDARDS

It is declared that all authors don't have any conflict of interest. Furthermore, informed consent was obtained from all participants included in the study.

REFERENCES

- Allen, J., Rowan, L., & Singh, P. (2020). Teaching and teacher education in the time of COVID-19. *Asia-Pacific Journal of Teacher Education*, 48(3), 233-236.
- Bardach, L., & Klassen, R. M. (2020). Smart teachers, successful students? A systematic review of the literature on teachers' cognitive abilities and teacher effectiveness. *Educational Research Review*, 30, 100312.
- Chandio, M. T., Pandhiani, S. M., & Iqbal, R. (2016). Bloom's taxonomy: Improving assessment and teaching-learning process. *Journal of Education and Educational Development*, 3(2).
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, 24(2), 97-140.
- Emerson, R. W., Anderson, D. (2018). What mathematical images are in a typical mathematics textbook? Implications for students with visual impairments. *Journal of Visual Impairment & Blindness*, 112(1), 20-32.
- Forehand, M. (2011). Bloom's Taxonomy-Emerging Perspective on Learning, Teaching and Technology.
- Hatwell, Y. (2003). Manual exploratory procedures in children. *Touching for knowing: Cognitive psychology of haptic manual perception*, 53, and 67.
- Kim, S., Raza, M., & Seidman, E. (2019). Improving 21st-century teaching skills: The key to effective 21st-century learners. *Research in Comparative and International Education*, 14(1), 99-117.
- Murphy, P. K., Alexander, P. A., Greene, J. A., & Edwards, M. N. (2007). Epistemological threads in the fabric of conceptual change research.
- Ramirez, T. V. (2017). On pedagogy of personality assessment: Application of Bloom's taxonomy of educational objectives. *Journal of personality assessment*, 99(2), 146-152.
- Sivaraman, S. I., & Krishna, D. (2015). Blooms taxonomy–application in exam papers assessment. *Chemical Engineering (VITU)*, 12(12), 32.

Sloan, N. (2019). Teacher Professional Development and the Seven 21st Century Survival Skills: A Program Evaluation.
Suraweera, T., Bandara, S., Wickramarachchi, C., Dewage, N., Gunawardana, T., Nanayakkara, N., ... & Jayathilaka, R. (2022). Academic Success Of Persons With Visual Impairment And Blindness In The Tertiary Sector: Explanatory Model. *European Journal of Special Education Research*, 8(1).
Tosuncuoglu, I. (2018). Importance of Assessment in ELT. *Journal of Education and Training Studies*, 6(9), 163-167.
Vosniadou, S., Ioannides C., Dimitrakopoulou A, Papademetriou E. (2001). *Designing learning environments to promote conceptual change in science. Learn Instruct*, 11, 381-419.

APPENDIX
Tables of Cognitive Domains Application in the Papers of Grade – 5



