

Critical Thinking-Based Assessment in Indian Schools in the Context of NEP 2020

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Publication Date: 2026/04/06

Abstract: The Indian education system traditionally relied heavily on a rote-learning or memorisation-based approach. Where the expectations from students are to memorise the textbook knowledge and reproduce it during the examinations, this approach did measure students' academic performance, but their analytical ability, problem-solving skills and real-life application capacity were largely ignored. In the 21st century, in a dynamic and knowledge-driven society, this approach is now considered insufficient. In this context, the National Education Policy and NEP 2020 emerge as a transformative framework that emphasises on making education holistic, flexible and competency-based. The core focus of any NEP 2020 is to reform the assessment system where emphasis is not just on “what a student knows, but on how students think”. Critical thinking-based assessment is the most central component of this reform, which aims to develop and assess students' higher-order cognitive skills such as analysis, evaluation, reasoning and creative skills. Thus, this paper adopts a qualitative approach that highlights the challenges that are arising in the implementation of critical thinking-based assessment and the impact it is having on students' learning outcomes.

Keywords: Critical Thinking, NEP 2020, Competency-Based Learning, Assessment Reforms, Indian Education.

How to Cite: Ruby Mahali; Antara Halder; Dr. Ujjwal Kumar Halder (2026) Critical Thinking-Based Assessment in Indian Schools in the Context of NEP 2020. *International Journal of Innovative Science and Research Technology*, 11(3), 3262-3265. <https://doi.org/10.38124/ijisrt/26mar2125>

I. INTRODUCTION

The Indian education system was traditionally an exam-oriented and rote learning-based system, where students' main focus was to memorise the information and reproduce it in examinations. Resultantly, students acquire theoretical knowledge, but they lack independent thinking, problem-solving and decision-making skills. In today's rapidly changing 21st-century world, merely acquiring knowledge is not enough. In the context of globalisation, technological advancement and a dynamic job market, students need skills to understand complex situations, analyse them and develop innovative solutions (OECD, 2018). In this context, “critical thinking” emerged as a core educational objective. The meaning of critical thinking is not just logical thinking; it is a multidimensional cognitive process, where students question the information, try to evaluate the evidence, and, in fact, consider multiple perspectives and also justify the conclusion logically (Paul and Elder, 2008). All this skill makes students active learners instead of passive. By recognising all these needs, the National Education Policy (NEP 20) proposed a transformative shift for the Indian education system. And the major focus of the policy is to reform the assessment system, so that knowledge should not be limited to recalling or memorising information or just measuring the knowledge, instead it should evaluate students' competencies, skills and

critical and logical thinking abilities (Ministry of Education, 2020).

According to NEP 2020, the main purpose of assessment should not only be the “measurement of learning” but also a tool that enhances the learning process. That is why, in the policy, the concept “assessment for learning” is a formative approach, meaning teachers provide ongoing feedback to adjust instruction and improve before final performance, focusing on immediate progress. And “assessment as learning” is a metacognitive approach, which involves students reflecting on their own thinking and learning, taking ownership of their own progress through self-assessment.

The traditional assessment methods, like the rote learning based written exams, are said to be gradually replaced by competency-based assessment. Whereas, the ultimate goal of this transformation is to develop an education system that will not only prepare students for examinations but will also prepare them to deal with real-world challenges (Brookhart, 2010). But to propose changes in policy level is relatively easy, while to implement it at the ground level is a complex process (ASER, 2020). From the implementation perspective, adopting this shift in the Indian schools is a gradual process. NEP 2020 recommends that the redesigned board exams be such that students can test their application

and analysis instead of rote memorisation. Simultaneously, at the classroom level, teachers are encouraged to use innovative pedagogical strategies like inquiry-based learning, collaborative tasks and reflective assessment (NCERT, 2021). However, there are also many challenges in implementing this transformation. The biggest challenge is the adequate training and preparedness of teachers, because moving from traditional teaching methods and adopting critical thinking-based assessment is a significant shift. The factors such as infrastructure limitations, large class sizes, and a lack of assessment standardisation also affect this process (UNESCO, 2021). Nevertheless, the outcomes of this approach are quite positive and promising. Critical thinking-based assessment significantly enhances students' cognitive development, independent learning and decision-making abilities, which prepares students to effectively handle real-world problems and promote life-long learning (Facione, 2015).

Therefore, this study contributes to understanding the ongoing transformation of the Indian school education system and provides valuable insights for future reforms.

➤ *Significance of the Study*

With the passing of time, many changes are being observed in the Indian education system. In today's 21st-century learning environment, factual knowledge alone is not enough for students. In fact, they must be able to apply knowledge to real-life situations. Critical thinking has now become an essential for the development of students to analyse, translate and judge information on their own.

In the Indian context, where an exam-oriented system has been dominant. NEP 2020 provides an evidence-based understanding of how assessment reforms can improve education quality. This also helps teachers to adopt new pedagogical strategies. Overall, the NEP 2020 vision is the students' holistic development and learner-centred education, which artificial intelligence cannot surpass human intelligence.

II. REVIEW OF THE LITERATURE

Ajay et al. (2023) analysed the impact of NEP 2020, especially on the critical thinking and problem-solving skills of students. The study is based on secondary data and explains that NEP 2020 shifts rote learning and promotes holistic, student-centred, and multidisciplinary learning. Emphasis is given on creativity, logical reasoning and application-based learning. Using teaching methods like discussions, projects and case studies. The paper also highlighted that a full assessment of the policy's real impact is premature due to ongoing implementation and the need for proper training and resources.

Bachtiar (2024) highlighted that it is important to develop students' critical thinking skills in an online learning environment, but there are a lot of challenges in it. Issues such as lack of immediate feedback, low interaction and improper use of technology affect learning. The role of the teacher is crucial here; they have to design engaging and interactive

activities, and strategies such as discussion forums, problem-based learning and peer review improve critical thinking. Overall, effective planning and innovative pedagogy successfully enhance critical thinking in online learning.

Baidya and Baskey (2025) explained that the main focus of modern education is not only on academic, but also on the holistic development of the student. Life skills such as decision making, communication and problem solving are very important. NEP promotes that, instead of rote learning, critical thinking and conceptual understanding are important. Keeping in mind the needs of 21st-century skills and Gen Z students, the overall aim of education is to make balanced, confident and responsible individuals.

Anna et al. (2025) reveals that in higher education, it is important to assess critical thinking, but also there are challenges. In research, the AI tool ChatGPT and a human evaluator have been compared. The results showed that AI generally gives lenient marks, but both have a similar ranking pattern. Human feedback is deeper and more critical, while AI is descriptive and positive. But AI cannot replace human evaluators; it can serve as a supportive tool.

Banu (2025) explained that in the 21st century, skills demand like problem-solving and creativity are in increasing demand. But a lot of system still focuses on fact recall or memorisation of information. Findings also suggest that around 60% of the curriculum only focuses on factual memory, where only 15% is analytical tasks, and 10% is limited to project-based learning. Challenges are also seen in teachers' level, where 35% teachers are confident in learning critical thinking, and around 28% are given proper reflective teaching training. The fact that time constraints and an exam-oriented system are seen as huge barriers. So, it is important to redesign the curriculum where interdisciplinary learning, proper teacher training and an assessment system, including performance-based tasks, is the overall focus to reduce rote learning and make it a learner-centred and reflective approach where students can adopt it and can be future-ready.

Das (2026) pointed out that though NEP 2020 creates a flexible, student-centred education system by integrating traditional and modern pedagogy, there are also implementation challenges, such as infrastructure, digital divide, and a teacher training barrier, which hinder the implementation process.

Vasumathi and Kumar (2025) explained that NEP 2020 have bought a major paradigm shift in the Indian education system. Where the focus is shifted from rote learning to holistic student-centred and skill-based learning, this policy gives importance to multi-disciplinary education, critical thinking, creativity, and real-life application. It also gave importance to inclusive and equitable education so that every student can get equal opportunities. Learning in their mother tongue and technology integration are the key features, however challenges during implementation are seen, but with the right execution, NEP 2020 can make India a strong, innovative and globally competitive knowledge society.

These studies collectively highlight the NEP's 2020 vision to reform the Indian education system through critical thinking-based assessment, so the students can be future-ready to deal with real-life problems in the competitive environment.

➤ *Objectives of the Study*

- To examine the idea and relevance of critical thinking-based assessment in schools under NEP 2020.
- To comprehend critical thinking-based assessment after the implementation of NEP 2020.
- To evaluate the impact of critical thinking-based assessment on students' learning outcomes.

III. RESEARCH METHODOLOGY

This study adopts a conceptual, analytical, and literature-based research design. The information has been collected from various research papers, government reports, websites, policy documents, etc., to explain how critical thinking-based assessment helps students to think critically and logically to succeed in an unknown future.

IV. ANALYSIS

➤ *Idea And Relevance of Critical Thinking-Based Assessment in Schools Under NEP 2020*

Critical thinking-based assessment represents an important shift in the Indian education system, where emphasis is being placed on a student's higher-order thinking skills, shifting from traditional rote learning. The main focus of this approach is not limited to knowledge recall but also measures students' logical reasoning, analytical ability, problem-solving, and decision-making skills. This type of assessment actively engages students by including "why and how" type of questions, case studies and real-life application-based problems, which allow students to practically apply their understanding and this assessment approach transforms learners from passive to active thinkers (Facione, 2011). Historically, the Indian education system was mainly exam-oriented and marks-driven, with little emphasis on conceptual clarity and creativity. But in the 21st century, students need to have skills such as critical thinking, innovation and adaptability (OECD, 2018). This approach promotes deep learning where students do not simply memorise information but instead understand and apply it to real-life contexts (Black and Wiliam, 2009). In this context, the National Education Policy 2020 has given a central position to critical thinking-based assessment. The policy emphasises that the assessment system needs to be competency-based and application-oriented, where higher-order thinking skills (HOTS) are prioritised, and initiatives like PARAKH have been introduced under the NEP 2020, which aims to transform assessment standards. To ensure holistic development of students through promoting formative assessment, experiential learning and inquiry-based approaches (Ministry of Education, 2020). The changing needs of the labour market and the popularity of artificial intelligence and globalisation mean that students require more than rote memorisation to succeed in an unknown future. Critical and logical reasoning,

metacognition, teamwork, and problem-solving can be listed by the leading organisation as essential abilities for both social and economic well-being (World Economic Forum, 2023; OECD, 2022).

➤ *To Comprehend Critical Thinking-Based Assessment after the Implementation of NEP 2020*

The Indian education system is gradually shifting from rote learning to critical thinking. Now the assessment methods include competency-based questions, case studies, project works and open-ended questions where students' ability and conceptual clarity are measured (NCERT, 2021). But even with the progressive reforms, there is still a huge loophole in the method used to teach critical thinking to students and even greater deficits in the way do it, in the developing parts of the world. Even the curriculum documents tend to be unspecific and fail to provide details on the dimensions of teaching the skills and assessment when they discuss thinking skills (Tikly et al., 2022).

The infrastructure constraints, large classroom sizes and standardised testing system also slow down this transformation (Kumar and Prakash, 2021). Despite this, after NEP 2020, boards like CBSE have increased the percentage of competency-based questions in their question paper patterns, which is considered a positive step. And through this, the long-term impact of this shift could make Indian students more innovative, independent and critical thinkers according to global standards (CBSE 2022).

➤ *To Evaluate the Impact of Critical Thinking-Based Assessment on Students' Learning Outcomes*

Critical thinking-based assessment is considered to have a significant impact on students' learning outcomes because it motivates students to actively think. Students' conceptual understanding is strengthened when they analyse, synthesise and evaluate their own knowledge (Brookhart, 2010). This approach helps students understand not just "what" but also the "why" and "how", which also improves their long-term retention (Halpern, 2014).

Critical thinking-based assessment enhances students' cognitive and metacognitive skills. When students are given open-ended questions, project-based tasks or problem-solving activities, they reflect on their own learning process and learn from their mistakes. This promotes self-regulated learning, which is considered the most important factor in academic achievement (Zimmerman, 2002). Additionally, such assessment encourages collaborative learning where students consider diverse perspectives through discussion and debates, which develops communication and reasoning skills in them. Critical thinking-oriented classrooms are also more engaging and have higher motivational levels, due to which the learning process becomes interactive and meaningful (Facione, 2011). To promote creativity and adaptability in students' strategies, such as brainstorming, mind mapping, cross-disciplinary learning and role-playing are essential. This approach provides students with an opportunity to explore numerous perspectives, develop innovative ideas and apply knowledge across multiple disciplines. Integrating these approaches into the curriculum encourages students to

expand their thinking beyond traditional methods and provides answers to real-world problems in an environment where multifaceted inquiry is essential (Sangeetha,2025). Nevertheless, when this approach is systematically implemented, critical thinking-based assessment improves students' academic performance. And also, this approach is essential for modern education skill development and prepares the students for life-oriented learning, not just exam-oriented (Paul and Elder, 2006).

V. CONCLUSION

If viewed at a deeper level, the critical thinking-based assessment outlined in the National Educational Policy 2020 transcends its role as a mere evaluative tool, representing a paradigm shift in mindset and an acknowledgement of the significance of 21st-century competencies globally.

Educational systems remain entrenched in content-heavy curricula and exam-centric pedagogical approaches. This paper elucidates how such methods constrain student learning, impede higher-order cognitive processes, and inadequately prepare learners for real-world challenges. To address this disparity, systemic reforms across various educational levels are imperative. Curriculum redesign should integrate outcomes that foster critical thinking and inquiry-based learning across disciplines. Concurrently, it is essential to equip educators with the necessary skills and resources through high-quality pre-service training and ongoing professional development, emphasising reflective pedagogy as a key component of this training. Evaluation systems must shift their focus from limited recall testing to a broader assessment of analytical, synthetic, and innovative capabilities.

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