Innovative Assessment Practices Aligned with India's National Educational Policy-2020

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

The National Education Policy -2020 [1] is the latest education policy of India, which strives to achieve benchmarks in the development of the educational scenario of India leading the students towards achieving the aspirational goals of 21st century education. NEP 2020 advocates for multidisciplinary education, multiple entry-exit and research-based programmes which mandates for a swift transition from traditional methods of assessment to innovative assessment techniques which would be more flexible, comprehensive and competency-based that would ensure a deeper understanding of subject matter than just memorizing facts. It aims to promote critical and higher order thinking and applying their knowledge to real-world situations. The primary objective of the

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article is to throw light on some non-traditional and innovative assessment techniques that align with the vision of NEP 2020. The researchers have employed the content analysis approach to explain these innovative techniques such as- experiential learning, holistic education, present opposite's point of view, plot a family tree, Adaptive Learning Assessment and so on. However, further research may enlighten more such approaches according to the changing scenario in the global context and a comprehensive guide to apply these techniques.

Keywords: Innovative assessment; formative assessment; competency based assessment; NEP 2020.

1. INTRODUCTION

The National Education Policy 2020 mandates for a transformation in how teachers assess student learning at every level of education in India. Assessment of student learning can be defined as "the systematic collection of information about student learning, using the time, knowledge, expertise, and resources available, in order to inform decisions about how to improve learning" [2]. While defining assessment Soliman [3] stated, "Working back from desired learning outcomes, in relation to a unit or subject area, good assessment is designed to assess a broader range of student abilities, e.g. problem solving, critical thinking, effective communication, working in groups, and along with feedback, shapes learning in positive and negative ways, e.g. promotes rote learning or learning in depth".

Assessing student's performance is a two-way window. Teachers can see how much students have learnt and determine how well they have been taught. Good teaching requires constant evaluation; and assessments are a key tool for making sure both students and teachers are on the right track. Rowntree [4] rightly pointed out that "if we wish to discover the truth about an educational system, we must look into its assessment procedures". In line with this vision, NEP 2020 prioritized for some innovative assessment techniques which may be used for continuous assessment of student's learning throughout the academic year.

2. METHODOLOGY

The objective of present article is twofold:

1) To compare the conventional and innovative assessment methods for enhanced student learning and anxiety free learning experience.
2) To explore the application of several innovative assessment methods with

practical approach as supplement to conventional ones and to see what is needed to be done for effective implementation of these innovative assessment methods.

The researchers have employed the content analysis approach to explain the innovative techniques of assessment which are presented in the form of a list.

Types of Assessment: Assessment tasks can be roughly divided into two categories– summative assessments and formative assessments. Summative assessments are usually conducted to measure the efficiency of any instructional programs or services either after completion of academic year or at a pre-decided time/ duration. Summative assessments aim to determine student's level of competency at the end of an instructional period. The majority of educators are acquainted with the conventional methods of assessing students' performance such using mid-term (half-yearly) and final (yearly) exams. These traditional assessments are widely used due to their advantages such as they are inexpensive or cost effective, quick to create and evaluate, and provide a single, quantifiable measure reflecting student learning. These assessments, though efficient are limited in nature. The drawback of this approach is that it merely offers a summative outcome without providing the learner or instructor any constructive criticism or feedback on the actual learning process. The absence of opportunities to practice what they have learned and receive constructive feedback during the learning process hinders students' ability to truly grasp the concepts.

Unlike traditional exams, formative assessments are based on classroom experience and act like checkpoints throughout the learning process. Teachers use frequent check-ins, reviews, observations, interactions, discussions to adapt and modify their teaching-learning methods; give

students real-time feedback and foster a more effective learning process. Formative assessments are used to record learning-in-progress, identify gaps in students' understanding, growing comprehension, clear up misunderstandings and track students' progress toward mastering the concepts before they reach the final (summative) assessment. Formative assessments are frequently administered in several ways including one-minute papers, practice tests/quizzes, informal questions or casual inquiries, and clearest/muddiest point tasks. In formative assessment, students can test their knowledge or practice skills without being pushed by grades.

Biggs [5] makes a distinction between the two major types of assessment and believes that formative assessment is crucial for assessing a student's performance and potential while summative evaluation is necessary for certification, strict monitoring and evaluation of efficacy of instruction. Within an educational setting, formative and summative assessments are denoted as "assessment for learning" and "assessment of learning," respectively. A distinct type of assessment is termed a diagnostic assessment which is administered at the introduction of the unit/topic or at the beginning of the course. Data collected through these assessments reveal students' existing knowledge of the subject matter. Diagnostic assessments are like pre-tests (sets of written questions) that gauge what students already know or how they currently think (perspective) about a topic, to be covered in the course. The aim of diagnostic assessments is to get a snapshot of a student's current intellectual, emotional and ideological stance on a topic. Armed with this information, instructors can make informed decisions about how to present the new course content and which teaching approach will be most effective for each student. In some cases, diagnostic assessments are used before and after the instruction by giving students identical pre-tests and post-tests. By comparing the results of pre and post-tests, instructors and students can get a clear picture of learning progress based on the improvement between the two tests. Disciplines like Physics have developed and standardized subject specific diagnostic tests such as- Force Concept Inventory; to help teachers gauge student understanding before diving into new concepts.

Conventional Assessment: Traditional assessments prioritize checking the final product

of education, making sure a course leads to a recognized degree. This degree functions as an external stamp of approval/ validation of a student's qualifications, something valuable to universities, employers and students alike [6]. Students frequently express concerns that assessed essays and closed-book exams feel artificial, irrelevant, confusing or biased. However, despite these criticisms the familiarity and time-saving aspects of these traditional formats of assessments make them more appealing to many students. Conventional assessment techniques may have several challenges including:

a) **Limited Scope:** Traditional assessments focus more on narrow range of skills like memorization and recall and do not capture a student's ability to apply knowledge, solve problems creatively, think critically, communication skills, teamwork which are crucial in real-world settings.

b) **Unfairness:** Traditional assessments often have a "one-size-fits-all" approach. Standardized exams as one of the popular means of conventional assessment fails to accommodate different learning styles, strengths, interests, potentially disadvantaging students who learn differently which can make assessments unfair.

c) **Short-Term Learning:** The focus on rote memorization and "beat the test" can lead to students forgetting information quickly after the assessment is complete. This doesn't promote long-term knowledge retention.

d) **Test Anxiety:** High-pressure exam environments can cause students to feel stressed and anxious, which may lead to underperformance and depict a distorted picture of their true abilities.

e) **Teaching to The Test:** The emphasis on standardized tests can lead teachers to focus on drilling students on specific test formats rather than fostering a deeper understanding of the material.

f) **Limited Feedback Mechanism:** Many traditional/conventional assessments offer limited feedback mechanism on student's strengths and weaknesses, making it difficult for them to identify areas for improvement.

g) **Focus on Quantity Over Quality:** Traditional methods often prioritize information/ units/ topics covered in a

given time rather than the depth of understanding by students. This may motivate students to secure good marks in the examinations without truly grasping the concepts.

h) **Limited Self-Assessment:** Conventional methods may not encourage students to reflect on their own learning process and identify areas for improvement. This limits their ability to become independent and self-directed learners.

i) **Time Commitment:** Some type of assessments, particularly diagnostic assessments can be time consuming and may require special training to administer and score reliably.

j) **Lack of Interaction:** As e-learning has become an unavoidable necessity in today's scenario in case of blended classroom as well as traditional classroom, there may be less face-to-face interaction between students and instructors, which can make it harder to accurately assess each and every student's understanding.

Innovative Assessment: Building on McDowell's [7] definition, innovative assessments are those that depart from traditional methods and bring fresh approaches or new ideas; aim to improve how student learning is assessed in classroom or an educational setting. Innovative assessment tools and techniques have the potential to enhance the quality of students' learning process. These methods ensure to meet the needs of individual learners' and provide readily available and comparable data for external stakeholders, such as administrators, educators, parents, and potential employers. NEP 2020 focuses on formative assessments (assessment for learning) to bring in innovative assessment techniques which embrace the progress of student's learning experience by providing continuous constructive feedback to improve. Formative assessment focuses on regular checks of students learning by using quizzes, discussions and projects instead of high-stakes yearly exams. Students delve deeper through active participations in their own learning that require application of knowledge to solve real-world problems. According to McDowell [7], "Students generally think innovative assessments are interesting, worthwhile and help them to learn, but their behaviour is affected considerably by their perception of what the assessment requires or by other factors such as their reasons for being on the course". While some innovative assessment

techniques might not be entirely ground-breaking, they all share a common purpose: to elevate the quality of student learning. These techniques aim to actively engage students in a feedback and adjustment loop that promotes deeper understanding and ongoing improvement.

The main points that are needed to be considered for developing and implementing innovative assessment methods are:

i. Identify the purpose and goals of assessment
ii. Choose assessment methods that match the learning outcomes
iii. Involve students in the assessment process
iv. Use a variety of assessment methods and formats
v. Incorporate technology and digital tools

In line with these views, we present some innovative assessment techniques which can be used in the classroom and can be altered in their applications according to learning objectives and needs of the students.

Self and Peer Assessment: According to Spiller [8], by practicing self-assessment, students are accountable for their own learning, recognizing areas for improvement and creating goals. It helps self-directed learning and critical thinking. Learners critically reflect on their own academic performance in terms of meeting the learning goals and assessment criteria. Students can have better knowledge about their strengths and weaknesses and can develop a sense of motivation. Through peer Assessment, students assess work of their peers based on some pre-defined criteria. By providing feedbacks to peers, they learn from each other, develop communication, gain a different perspective on learning objectives, enhance problem solving skill and self-awareness.

Role-Playing and Simulations: Role-playing and simulations are engaging learning activities that allow participants to apply knowledge in practical scenarios, practice skills and explore concepts in a safe, controlled environment. Raymond [9] mentioned that critical, creative thinking and communication skills are enhanced in children by engaging in such activities.

Use of Adaptive Learning Technology: Digital technologies have changed and continue to

shape the way students interact with learning material, both in traditional and informal education. Adaptive learning methodologies offer an interesting avenue for personalized learning, whereas every individual student is presented with tailormade content, specifically based on the distinct strengths, weaknesses, goals and engagement patterns of the learner. This is intended to consolidate knowledge and ensure that learning progresses at the right time and pace. The growth of online learning, enabled by the availability on the Internet different learning platforms like Massive Open Online Sources (MOOC) and Intelligent Tutoring Systems (ITS) increases the relevance of personalized instructions for students in an adaptive learning environment. Adaptive learning platforms are technology-driven solutions combined with software tailored assessments that curate students learning experience. They adjust pace of learning material, difficulty level based on each student's unique strengths and shortcomings by using artificial intelligence (AI) and data analysis. Cai [10] and Kem [11] mentioned that they are developed to meet individual student needs, providing personalized feedback and promote deeper understanding.

There are increasing interests as well as many challenges in the application of Artificial Intelligence (AI) techniques in educational settings to provide adaptive learning content to learners. Adaptive learning assessment, also known as adaptive testing or computerized adaptive testing (CAT), is a personalized way to evaluate a student's knowledge, skills, and abilities. It uses technology and logic rules to adjust questions and tasks based on a student's responses in real time. This can include changing the type of questions or the difficulty level. For example, if a student answers questions correctly, the difficulty level may increase, but if they struggle, the questions may become easier. Adaptive assessments can also provide feedback to students, such as hints or review materials, without changing the overall sequence of skills. Adaptive assessments can be an effective benchmarking tool to understand a student's progress. They can also help students perform at their best, rather than being penalized for difficulty with standardized testing formats. This can be especially beneficial for students with learning disabilities [12,13]

Online Quizzes and Games: Wang [14] and Cook & Babon [15] pointed out that online quizzes and games can be a fun, engaging way to learn and test children's knowledge at early and middle stages of schooling. They come in a variety of formats to cater interests, needs and demand of all age group students. Interactive assessments in the form of online quizzes and games can be engaging and provide valuable data on student progress.

Muddiest Point: In this technique students are asked to identify a part/unit of the lesson that they have found most confusing or difficult. Seneviratne & Thenabadu [16] have pointed out that it is one the helpful ways to identify areas where students need more clarification and it can be done anonymously.

Gallery Walk: It is a technique where students create posters or other visual representations of their learning, and then walk around the classroom to view each other's work. It is an innovative form of peer assessment. McCafferty & Beaudry [17] and Namaziandost et al. [18] noted that it may be used as an aid to promote student engagement and assess their understanding of the material.

Round Robin Charts: This strategy allows students working in small groups (4-5) to answer open-ended questions on large charts. The groups pass the charts around, each adding their ideas to a central question before passing it on to the next team. At the end it creates a visually appealing and informative summary of the class's collective understanding which will be discussed among all participants. This exposes students to different viewpoints and encourages them to consider alternative approaches. According to Schleigh [19] it helps students in collaboration and communication, encourages teamwork, provide opportunity to explain ideas clearly to peers. It keeps students actively engaged throughout the learning process. As an innovative formative assessment technique, it provides a snapshot of individual understanding at the beginning (initial ideas) and progress throughout the activity (group refinement and contribution to other sections).

3-Way Summaries: In 3-way summaries, teachers use diverse thought processes and pay close attention to students learning. Learners can work in groups or individually. It is a teaching and learning strategy that involves students summarizing a topic or concept in three different ways, with varying levels of detail. Here is a breakdown of the typical format:

10-15 Words (An extremely concise summary): Capturing the absolute core of any given topic in a single phrase or short sentence.

30-50 Words (A more detailed summary): It expands on the core idea, but remains focused on the key points.

75-100 Words (A comprehensive summary): It fosters a broader understanding of the given topic, including relevant details and supporting information.

Chauhan et al. [20] has mentioned that it helps students develop stronger comprehension and critical thinking skills, enhanced focus and promote deeper understanding of subject matter.

Think-Pair-Share: This is a great example of a formative assessment strategy that's easy for teachers to implement. This quick strategy lets teachers see how well students are understanding the lesson. Students write down their responses to questions posed by the instructor. Following that, students are divided into pairs to chat with a partner about their ideas. Instructors can go around the classroom and hear different conversations. By listening to these discussions, the teacher gains valuable insights. It is simple to use, enables them to obtain important understanding of students' comprehension levels, promote active learning and critical thinking [21].

3–2–1 Countdown: This is an actual assessment of practical and significant learning. When students discover something beneficial, they are likely to apply what they have learned in some new way. The teacher may ask the students to finish the task within a day. They can write it on cards given to them or free to answer verbally. They are requested to respond in three different statements:

  a) 3 things you were unaware before,
  b) 2 things that astonished you about current topic,
  c) 1 thing that you have learnt and eager to start implementing.

The 3-2-1 Countdown is a versatile formative assessment technique that is simple to use; promotes active engagement; caters to different learning styles by prompting recall, analysis, and application; and provides valuable insights into student understanding. Zainurrehman etal applied this 3-2-1 approach in assessment of

short English texts and found this strategy to be useful.

Classroom Polls: Polls offer a quick and accurate way for students to participate in classroom activities. This is especially helpful for those who might be hesitant to speak up "shy" in class. Additionally, classroom polls can be conducted by using mobile devices, making them a convenient tool for real-time checks on student understanding. Classroom polls can be a powerful assessment technique for educators, offering several advantages such as- increased participation, scope to ask a wide range of questions, allows quick and easy data collection, can make learning more engaging and interactive. It can enhance students permeance in mathematics [22].

Admit and Exit Tickets: Admit tickets are short, written responses that students do in beginning of the class. Students can answer questions concerning their homework or the previous day's class in admit tickets. Exit tickets, a simple yet effective tool for formative assessment, are small pieces/ short slips of paper-cards filled by students as they exit the classroom for the day. Students are asked to articulate their understanding of the day's key concept, learning objective or main idea behind the lesson taught that day. Admit and exit tickets can be used to assess students' understanding of the material, to identify areas where students need more help, and to gauge students' interest in the topic [23].

One-Minute Papers: One-minute papers are short, written responses that students complete at the end of a class session. Students can work individually or form groups for this assessment. Students are instructed to write their points or observations in a piece of paper. Typical questions posed by teachers and students centre around:

  a) Main point/idea of the discussion,
  b) Most interesting/thought provoking concept,
  c) Questions raised by student but not answered by the teacher and viz a viz,
  d) Most confusing/ difficult point of discussion,
  e) What are the questions might appear on upcoming test etc.

This is quick approach to find out whether students have understood the concept or not. It can be used to assess students' understanding

of the material, to identify areas where students need more help, and to get feedback on the lesson [24]. As an innovative formative assessment strategy one minute paper can eradicate scopes of failure in the classroom.

Plot a Family Tree: Instead of a traditional test, students may be requested to fill in a family tree to illustrate the links and interconnections amongst persons. Students can demonstrate their understanding of relationships and connections within a subject by creating a family tree. This could involve mapping connections between characters in a book, historical figures in an event, or even the gods and goddesses of mythology. By building this tree, students demonstrate their grasp of relationships and how things are linked. The detail applications of family tree in several disciplines are mentioned below:

Literature: Teachers can ask the students to plot the relationships between characters in a novel, play or story. It can be used to reveal power dynamics, family structures, friendships, rivalries and character motivations.

History: Students may map the connections between key figures of any historical events. It may include political leaders, military commanders, inventors, artists, social reformers or any important personalities.

Science: Students may be asked to illustrate the relationships between different species in an ecosystem, food chain or web, evolutionary branches of a specific organism etc.

Social Studies: Teacher can instruct students to trace the development of any political system, economic theory or social movement and find out the key figures who influenced its origin and development, how different ideas are connected.

Teachers can use different types of family tree based on the context and demand of the lesson such as- digital family tree, inverted family tree, themed family tree and so on. Plotting family tree can be used to visualizes relationships, promotes critical thinking, enhances understanding, foster creativity and originality. Queensland curriculum and Assessment Authority has included this assessment method in their assessment manual (Queensland curriculum)

Create an Infographic: Infographics are visually compelling representations of information, data

or knowledge. It may be a combination of think charts, icons, illustrations and clear text working together to tell a story. Infographics take the most crucial data and make it easy to understand and remember [25]. Students who are able to explain a concept with a visual aid are undoubtedly showing that they grasp it well. Infographics are a powerful tool to transform assessment from a chore to a creative exploration of knowledge by utilising concept breakdown, data visualization, comparative analysis, visual clarity, content accuracy and information hierarchy. It boosts engagement, sharpens critical thinking, unlocks communication skills, empowers self-assessment and so on.

Crafting a How-To Manual: Techers require a deeper level of understanding in order to teach any concept to the students. The How-To Manual is an innovative assessment technique which transforms students into teachers, deepening their understanding and showcasing their learning in a fresh way. Here students create a step-by-step guide (how to manual) explaining a process, procedure or new concept/idea. For instance, how to carry out an experiment in the laboratory, how to answer a math problem, or how to annotate a short tale. Here are some potential applications of how-to manual in different disciplines:

English: Students can make a step-by-step manual on how to annotate a text effectively or how to craft a compelling character analysis.

Science: Students can be asked to create a manual on conducting a scientific experiment or understanding a process (example, photosynthesis).

Mathematics: Here students may be requested to develop a step-by-step breakdown of solving quadratic equations or mastering geometric proofs.

History: Teachers can instruct students to create a guide on researching a historical figure or analysing primary sources.

The how-to manual has several benefits such as -deeper understanding, communication skills, critical thinking, boosts creativity, promote clarity and organization skills. By doing this teacher get a new window of students' understanding in a fresh and engaging way (Instructables.com).

Present Opposite Points of View: Traditional assessment techniques frequently focus on a single "correct" answer. But the real world is full of nuance and debate. In order to prepare the students future ready teachers have to concentrate on the "power of duality" and make the students understand that other person's point of view is crucial to draw a balanced judgement in life. That's why presenting opposite points of view becomes a powerful and innovative assessment technique. Using this method, educators can ask students to present what they know about the main points made by supporters and opponents of a contemporary issue, such as whether or not stem cell research should be restricted, whether Government should revise reservation policy or not, whether athletes should be permitted to use performance-enhancing substances, whether we should shift our focus on agro-based industries or not etc. Teachers should insist that students provide data and facts to strengthen their arguments. By participation in such innovative assessment students will seek for deeper analysis of complex issues, empathy building, refined arguments, fair representation, refuting arguments, respectful tone [26].

Write a Persuasive Letter: Persuasive Letter is an innovative assessment method which includes peer reviews, reflective self-assessments and project-based evaluations. Project-based assessments will provide students with an opportunity to demonstrate their abilities in more realistic settings, providing a precise representation of their competences. This method measures their technical proficiency as well as their capacity for collaboration, adaptation and problem-solving. Peer reviews will promote a cooperative learning atmosphere where students share knowledge and learn from other's viewpoints and how they accomplished the given tasks. This feedback mechanism promotes continuous enhancement in students learning. Students will be empowered to take charge of their own learning and development through reflective self-assessments. Teachers can encourage self-motivation and lifelong learning by encouraging students to reflect on their experiences and develop unique goals. Through self-reflection, individuals can better comprehend their strengths and weaknesses, which promotes a growth mentality. By implementing this cutting-edge assessment technique into practice, individuals will be more engaged and their abilities can be assessed from a more comprehensive perspective. Stapleton et al. [27] conducted a study with 125 students who wrote persuasive essays which were evaluated for argumentive elements and quality of reasoning and found out inadequacies in the quality of reasoning.

Rubrics: A key component of effective formative assessment is the use of rubrics. They encourage students to take charge of their own learning and alleviate educators of the burden of arbitrary grading. As a result, a learning environment evolves that encourages students to embrace studying as well as acquiring knowledge. Rubrics pave the way to a transparent, equitable, and student-cantered approach to education by streamlining the "how" of learning. When implemented properly, rubrics can:

a) Give students timely, useful feedback; and
b) Promote critical thinking and self-evaluation.
c) Explain to pupils what is expected of them;
d) Demonstrate the necessary abilities for each work;
e) Promote equitable and uniform grading;
f) Creative Extension Projects

There are two main approaches to grading student work by using rubrics: holistic and analytic. Holistic rubrics are simpler and focused on one overall achievement level. Teachers can use it for a quick and general overview of overall achievement of a student on a simple task. Analytic rubrics are more detailed, breaking down the assessment into multiple criteria. Stevens and Levi [28] have mentioned that educators can use it when they want to provide detailed feedback on specific skills or knowledge areas within a more complex learning objective.

Quick Projects: Quick projects as a dynamic approach of assessment, offer more than just assessments for students' learning. This method aligns with higher-order levels of Bloom's Taxonomy, encouraging analysis, synthesis, and evaluation. Incorporating them into regular classrooms can provide more engaging learning experiences by engaging pupils in practical/hands-on activities that demonstrate their understanding and skills. It has the potentiality to cater to diverse learning styles, fostering critical thinking and problem-solving skills, showcase creativity, develop critical thinking. It may transform students' assessment from a one-dimensional test to a multifaceted learning experience by providing opportunity to showcase students' skills, abilities and make them future ready.

Concept Maps: Traditional assessments often focus on rote learning, leaving a blind spot on how students learn new concepts, connect and understand different concepts. Concept maps emerge as an innovative tool to bridge the gap by offering a visual representation of a student's knowledge and thought processes. Links are used to connect the concepts and illustrate their relationships. Concept maps are a great tool for giving teachers a formative assessment of what their pupils have learned and what they did not comprehend when they are exposed to new content. Concept maps provide a unique and innovative way to assess student learning. They offer a window to a student's ability to think critically, organize information and establish meaningful connections between concepts [29]. By embracing concept maps, educators can move beyond rote memorization and gain a richer understanding of their students' thought processes by providing collaborative learning and deeper engagement.

Concept Tests: Concept inventory offers a refreshing alternative assessment technique [30]. Concept test is a quick and innovative assessment tool to take the pulse of student understanding throughout the learning process. Concept tests are concise, typically consisting of a few multiple-choice questions intended to assess student's understanding of a certain concept. They improve students' understanding of basic ideas and are useful in highlighting common misconceptions that students have about fundamental concepts of different subjects. Concept tests offer a valuable tool for innovative assessment by providing real-time feedback, promoting active learning. They empower instructors to adjust their teaching and students to take ownership of their learning process. This shift from a high-stakes exam mentality to a continuous feedback loop fosters a more dynamic and effective learning environment.

E-Portfolio: E-portfolios are innovative assessment tools that offer a comprehensive and dynamic approach to assess student ongoing learning [31]. It compiles a learner's work over time, showcasing their progress, achievements and reflections. These digital collections contain text, images, videos, animations and other multimedia elements which offer a wide range of skills and knowledge to be assessed. It promotes deep learning and self-reflection.

One of the primary strengths of e-portfolios used in academic set up is their capacity to capture ongoing learning process (including development of primary cognitive abilities in children such as - critical thinking, problem-solving and creativity skills) in a holistic manner. E-portfolios are particularly effective in promoting self-directed learning and metacognition. Additionally, e-portfolios facilitate personalized learning experiences, as students can tailor their portfolios to highlight their unique skills and interests. It can enhance communication and feedback between students and educators. Teachers can provide ongoing, formative feedback on portfolio entries, guiding students in their learning journey and helping them improve their work over time. This continuous interaction supports a more interactive and engaging learning environment.

Podcast or V-blogs: Podcasts and v-blogs (video blogs) emerge as innovative alternatives of the traditional assessment technique by catering diverse learning styles and fostering a deeper engagement in classroom activities. These interactive formats assess knowledge and develop critical skills gradually. Podcasts and v-blogs push students to become clear and concise communicators [32] while scripting, recording and editing their presentations. These platforms provide a canvas for students to express knowledge in creative ways. This creative freedom allows students to connect with the material on a personal level, fostering a deeper understanding that goes beyond rote memorization. Creating podcasts and v-blogs can be a collaborative endeavour, promoting teamwork. The collaborative process allows students to learn from each other's strengths and perspectives, leading to a richer understanding of the subject matter. Overall, podcasts and v-blogs offer a promising avenue for innovative and engaging assessment. By embracing these tools, educators can create a more inclusive learning environment.

NEP 2020 and Innovative Assessment: To propagate some innovative assessment strategy in Indian education system, NEP 2020 sought for holistic education and experiential learning approaches.

Holistic education is an educational philosophy that goes beyond simply teaching and learning of academic subjects. It aims to holistic development of a child by addressing their intellectual, emotional, social, kinesthetic/physical and spiritual needs. Holistic education emphasizes understanding each

student's unique strengths, weaknesses and learning styles [33-36]. Here subjects are not taught in isolation, connections are made between several disciplines, to reflect the real world where knowledge is integrated. In holistic education, learning happens not just within classrooms but also through interaction with the community and collaboration with peers. NEP 2020 pointed out that "Assessments of educational approaches in undergraduate education that integrate the humanities and arts with STEM have consistently showed positive learning outcomes, including increased creativity and innovation, critical thinking and higher-order thinking capacities, problem-solving abilities, teamwork, communication skills, more in-depth learning and mastery of curricula across fields, increases in social and moral awareness etc, besides general engagement and enjoyment of learning. Research is also improved and enhanced through a **holistic education approach** ([1], pp 36)." Holistic education encourages students to question, analyse, and think creatively to solve problems and develop new ideas. Some key principles of holistic education are critical thinking, social and emotional learning, creativity, character building and experiential learning.

The main moto behind experiential learning is that students learn best by doing, engaging in hands-on activities, projects, and real-world problem-solving. Students develop essential life skills such as communication, teamwork, empathy and self-regulation when they are exposed to experiential learning at very early stage of their academic journey. It fosters values like responsibility, compassion and ethical decision-making. Students develop a deeper understanding of subjects by making connections and applying knowledge in real-world contexts. It enhances a more engaging and motivating learning environment, catering to diverse learning styles. By experiential learning set up, students develop not just academic skills but also social, emotional, and critical thinking skills necessary for success in life [37-40]. It equips students with the skills and knowledge needed to thrive in a complex and ever-changing world. To navigate the new landscape and explore some innovative techniques, NEP 2020 advocates for experiential learning by stating, "The assessment tools (including assessment "as", "of" and "for" learning) must also be aligned with the learning outcomes, capabilities and dispositions as specified for each subject of a given class……..To achieve this, in all stages,

experiential learning must be adopted, including arts integrated and sports integrated education, storytelling-based pedagogy, among others, as standard pedagogy within each subject, with explorations of relations among different subjects (pp 12)". Further, the policy says that "The aim of assessment in the culture of our schooling system will shift from one that is summative and primarily tests rote memorization skills to one that is more regular and formative, is more competency-based, promotes learning and development for our students, and tests higher-order skills, such as analysis, critical thinking, and conceptual clarity. The primary purpose of assessment will indeed be for learning; it will help the teacher and student, and the entire schooling system, continuously revise teaching-learning processes to optimize learning and development for all students. This will be the underlying principle for assessment at all levels of education." ([1], pp17).

NEP2020 also recommends that the progress card of all students for school-based assessment, which is communicated by schools to parents, will be completely redesigned by States/UTs under guidance from the proposed National Assessment Centre, NCERT, and SCERTs which would be communicated to the guardians or parents of the students in regular Parent-Teacher Meetings. It further says that" the progress card will be a holistic, 360-degree, multidimensional report that reflects the progress as well as the uniqueness of each learner in the cognitive, affective, and psychomotor domains. It will include self-assessment and peer assessment, and progress of the child in project-based and inquiry-based learning, quizzes, role plays, group work, portfolios, etc., along with teacher assessment." ([1], pp 17).

NEP 2020 also mentions the possibility of using AI-based software for tracking the growth of the students through their school years based on learning data and interactive questionnaires for parents, students, and teachers, in order to provide students with valuable information on their strengths, areas of interest, and needed areas of focus, and to thereby help them make optimal career choices ([1], pp 18).

In a bold step, NEP2020 advocates for the establishment of "National Assessment Centre, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development), as a standard-setting body under MHRD that fulfils the basic objectives of setting

norms, standards, and guidelines for student assessment and evaluation for all recognized school boards of India, guiding the State Achievement Survey (SAS) and undertaking the National Achievement Survey (NAS), monitoring achievement of learning outcomes in the country, and encouraging and helping school boards to shift their assessment patterns towards meeting the skill requirements of the 21st century in consonance with the stated objectives of this Policy. This Centre will also advise school boards regarding new assessment patterns and latest researches, promote collaborations between school boards [41-43]. It will also become an instrument for the sharing of best practices among school boards, and for ensuring equivalence of academic standards among learners across all school board." ([1], pp 19).

3. SCOPE FOR FUTURE RESEARCH

Future researches on innovative assessment techniques can be done by several stakeholders at different levels. Such teachers and educators can plan for action researches on different innovative assessments to find out which can lead to better result in terms students' understanding and engagement. Scholars can go for experimental researches taking on two or more innovative assessment approaches to find out the effectiveness of the approaches among different age group students. Academicians can opt for cause-effect studies by exploring to what extent student's performance have enriched by practicing innovative assessment strategies in both short term and longitudinal set up.

4. CONCLUSION

The National Education Policy (NEP) 2020 emphasizes a shift towards a more holistic and competency-based assessment approach to assess student's learning at all level. Present article explored the limitations of conventional assessment techniques and highlighted the potential of innovative methods that align with the policy's vision. The alternative assessments can provide a more comprehensive picture of student learning, promote critical thinking, creativity, analytical and logical reasoning, problem-solving skills and cultivate lifelong learners who are well-equipped for the challenges of the 21st century. By embracing innovative assessment strategies, we can move towards a more student-centric and outcome-oriented education system that fosters a love of learning and empowers all students to thrive for excellence. The effective implementation of innovative assessment techniques requires careful planning, professional development for educators and a supportive environment.

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Author(s) hereby declares that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

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