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Saravtej Singh

Vision

The vision of the National Education Policy 2020 is- to instill among the learners a deep-rooted pride in being Indian, not only in thought, but also in spirit, intellect, and deeds, as well as to develop knowledge, skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen.

Foreword

It gives me immense pleasure to present this publication emerging from Shiksha Samvaad: Pedagogical Best Practices, an academic initiative of the National Progressive Schools' Conference held in conjunction with the NPSC National Conference themed 'VIDYA FOR LIFE: Schools as Centres of Skills and Sensibility'.

At the heart of every meaningful educational transformation lies the teacher, reflective, innovative, and deeply committed to students' growth. Shiksha Samvaad was envisioned as a platform to honour this spirit by bringing classroom voices to the forefront and celebrating practices that translate educational philosophy into lived learning experiences.

We were heartened by the overwhelming response from educators across member schools, with a remarkable number of submissions reflecting thoughtful inquiry, creative pedagogy, and a strong commitment to student-centred learning. The papers featured in this volume represent diverse yet interconnected efforts to make classrooms more inclusive, engaging, skill-oriented, and sensitive to the holistic development of learners.

These contributions go beyond theory; they document real challenges, practical strategies, and measurable impact. They remind us that innovation in education is not confined to policy documents or research institutions, but thrives daily in classrooms where teachers adapt, experiment, and refine their practice for the benefit of their students.

This publication stands as a collective repository of professional wisdom, by the teachers, for teachers. It is our hope that these shared experiences will inspire dialogue, encourage reflective practice, and foster a culture of collaboration across schools.

I extend my heartfelt appreciation to all contributing educators, the review committee, and the organising team who made Shiksha Samvaad a meaningful academic endeavour. May this compilation continue to spark ideas and reaffirm our shared commitment to nurturing schools as centres of both skills and sensibility.

Warm regards,
Mallika Preman
Chairperson
National Progressive Schools' Conference (NPSC)

Principal
Tagore International School
East of Kailash, Delhi

Preface

The Shiksha Samvaad: Pedagogical Best Practices initiative was conceived as a platform to recognise, document, and disseminate effective classroom practices that reflect thoughtful pedagogy, professional rigour, and meaningful impact on student learning. It is with a sense of responsibility and pride that the Reviewing Committee presents this compilation as part of the NPSC National Conference, themed 'VIDYA FOR LIFE: Schools as Centres for Skills, Values and Innovation'.

The response from the teaching community was both encouraging and inspiring. The committee reviewed 150 paper submissions received from educators across NPSC member schools, each reflecting deep engagement with classroom realities and a commitment to continuous improvement in teaching-learning practices.

In reviewing the submissions, the committee adopted clearly defined academic parameters, focusing on clarity of objectives, strength of rationale, soundness of methodology, quality of execution, and evidence of learning outcomes. The papers selected for inclusion in this publication stood out for their coherence, originality, and applicability across diverse school contexts.

What distinguishes this volume is its strong practice-oriented approach. The contributions are grounded in real classroom experiences and demonstrate how pedagogical intent, when combined with reflective practice, can lead to measurable and meaningful outcomes. Collectively, these papers reinforce the idea that teachers are not only practitioners but also practitioners-researchers who continuously shape and refine educational practice.

The Reviewing Committee commends the authors for their academic honesty, clarity of expression, and willingness to share insights for the larger professional community. We are confident that this publication will serve as a valuable resource for educators, school leaders, and teacher educators, and will inspire further dialogue and innovation in pedagogy.

We place on record our appreciation for all contributors and extend our best wishes for the continued success of Shiksha Samvaad as a forum for professional exchange and growth.

Reviewing Committee

Ms Lata Vaidyanathan
Director
Gyan Bharti School

Ms Rachna Pant
Director
Ramjas International School

Ms Sadhana Bhalla
Education Consultant
Honorary Member, NPSC

Dr Sudha Acharya
Principal, ITL Public School
Ex Chairperson, NPSC

Editorial

"न हि ज्ञानेन सदृशं पवित्रमिह विद्यते"
(Indeed, there is nothing as elevating and purifying as knowledge.)

The Editorial Board is honoured to present the Annual Magazine of the National Progressive Schools' Conference (NPSC), released in conjunction with the 53rd NPSC Annual Conference themed "Vidya for Life- Schools as Catalysts for Skills, Values and Innovation." This publication represents a thoughtful curation of ideas, experiences, and reflections that collectively articulate the spirit and vision of the NPSC fraternity.

Anchored in the enduring belief that education must transcend the boundaries of academic instruction, this magazine reaffirms the role of schools as nurturing grounds for intellectual growth, ethical grounding, and creative expression. It mirrors NPSC's sustained commitment to holistic education- education that prepares learners not only to excel in assessments, but to engage with life with discernment, responsibility, and purpose.

The present edition unfolds a rich confluence of scholarly articles, reflective narratives, impactful case studies, and evocative artistic expressions contributed by educators and school leaders from NPSC member schools. Each contribution bears testimony to thoughtful pedagogy, innovative practice, and value-oriented learning. The rendition of art, infused with imagination and sensitivity, adds a lyrical dimension to the magazine, a true reminder to all of us that creativity is both the language and the soul of education.

"शिक्षा जीवनस्य आलोकः"
(Education is the illumination of life.)

We express our deep appreciation to all contributors whose voices, insights, and experiences have enriched these pages. We also acknowledge, with sincere gratitude, the dedication and meticulous efforts of the editorial team and mentors whose guidance and perseverance have shaped this publication with care and clarity.

As this magazine reaches its readers, we hope it serves as a quiet space for reflection, a source of inspiration, and a reaffirmation of our shared commitment to Vidya for Life- education that enlightens the mind, refines the spirit, and empowers learners to walk their paths with wisdom and compassion. Within these pages lies a gallery of colours, forms, and dreams brought to life by our students. Their artwork speaks beyond words, capturing emotion and originality. Linger a while, take it in, and let your heart rejoice.

May we the educators, harness the spirit of being lifelong learners along with our students in this VUCA world of generative AI and digital disruptions.

"सह नाववतु, सह नौ भुनक्तु, सह वीर्यं करवावहै "
(May we both-the teacher and the taught-learn together with great energy, and may our collective efforts be fruitful.)

Regards

Charu Maini
Executive Member NPSC
Principal, DAV Public School,
Sec-49, Gurugram

1

AT R.E.S.T. WITH TEACHING: REFLECTION, EMPATHY AND SUSTAINABILITY AS PEDAGOGICAL IMPERATIVES

Mrs. Ankita Juyal Balooni (PGT English)
Gyan Bharati School, Saket

In the present age of speed and standardization, R.E.S.T. teaching-anchored in **reflection, empathy and sustainability** - champions a slower, more humane pedagogy that awakens students' idealism rather than suppressing it. Youth naturally believe that "the world can be questioned and made more humane," and literature uniquely cultivates this impulse because it embraces ambiguity, plurality and lived experience. Piaget's theory of cognitive development reinforces this, highlighting that children construct understanding through active engagement and reflection on experiences, while Vygotsky's socio-cultural perspective reminds us that learning is inherently social, shaped by dialogue, scaffolding and collaborative meaning-making within the Zone of Proximal Development. By positioning literature as a space where learners can reflect, empathise and imagine alternative futures -interacting with peers, teachers and texts-R.E.S.T. teaching transforms youthful idealism into ethical agency and sustainable awareness, equipping young readers to think critically, feel compassionately and act responsibly in an increasingly complex world.

As Louise Rosenblatt's Reader-Response Theory asserts, "a literary work exists in the transaction between the reader and the text," allowing meaning to emerge through personal engagement rather than fixed conclusions. This openness enables young readers to encounter multiple emotional and moral realities-much like the youth's own evolving worldview. Texts such as "The Portrait of a Lady" (Hornbill) invite empathy across generations, "We're Not Afraid to Die..." foregrounds resilience in crisis, while "Discovering Tut: The Saga Continues" problematises historical certainty itself. Similarly, "Memories of Childhood" (Flamingo) and "On the Face of It" (Vistas) confront learners with questions of identity, dignity and social justice, mirroring their own desire to create a fairer world. John Dewey's belief that "education is not preparation for life; education is life itself" finds resonance here, as literature does not merely inform youth but immerses them in ethical dilemmas and emotional truths. Paulo Freire further reinforces this potential when he argues that education must cultivate conscientização-critical consciousness-through reflection and dialogue. Literature, by refusing absolutes and embracing complexity, equips the youth to imagine, feel and question deeply, thereby transforming their idealism into empathy-driven action and their confidence into responsible agency.

As defined by Moon, J. (2005),

"Reflection is a form of mental processing that we use to fulfil a purpose or to achieve some anticipated outcome. It is applied to gain a better understanding of relatively complicated ideas and is largely based on the reprocessing of knowledge, understanding and, possibly, emotions that we already possess." Reflection then becomes one of the most potent tools in the arsenal of a language teacher. Reflecting on the multiple realities through which childhood may be understood-ranging from Lost Spring, which immerses readers in the lived experiences of rag pickers and bangle makers in the Grade 12 curriculum, and to Father to Son and Childhood in Grade 11-enables learners to contextualise and critically engage with diverse social locations. Such literary engagements foster empathy and an informed awareness of lives situated at the margins of society. Through these texts, marginalised voices acquire a mediated form of agency, articulated through the interpretive capacities of young learners. Moreover, participatory pedagogical practices, such as a youth parliament critically examining the principles and effectiveness of the Right to Education (RTE) Act, can cultivate socially aware individuals who are attuned and responsive to contemporary inequities.

Empathetic teaching practices such as reflective questioning, perspective-taking, dialogic discussion and personal response writing-enable students to connect textual experiences with their own emotional and ethical frameworks. Poems like My Mother at Sixty-Six and A Photograph foster emotional literacy by encouraging reflection on memory, loss and familial relationships, while narratives such as The Enemy and The Rattrap support ethical reasoning by situating empathy within the contexts of conflict and socio-economic vulnerability. This reflective engagement allows students to move beyond the binary moral judgments and develop nuanced ethical reasoning. Satirical texts such as The Tiger King and The Tale of Melon City offer rich opportunities to cultivate critical empathy-an awareness that combines emotional understanding with critical reflection on power, authority and human arrogance. Through collaborative discussions and inquiry-based learning, students can examine how satire exposes the consequences of arbitrary governance, blind obedience and unchecked authority. While The Tiger King foregrounds environmental exploitation and the marginalisation of both human and non-human lives, The Tale of Melon City highlights the absurdity of justice systems devoid of moral reasoning. Such engagements encourage learners to empathise not only with individual suffering, but also with broader social, political and ecological systems shaped by flawed power structures. Similarly, Birth and The Summer of the Beautiful White Horse foreground human dignity, trust and survival, encouraging students to view moral choices within broader social and historical contexts. Activities such as character mapping, alternative endings and reflective dialogue-enable learners to interrogate the sum total of all conditions that shape human behaviour. These approaches help students understand moral fallibility not as individual failure alone, but as a consequence of systemic deprivation, thereby fostering empathy rooted in

social awareness rather than mere sentiment. By modelling empathy through inclusive classroom dialogue and reflective scaffolding, teachers create learning environments where empathy is both experienced and internalised. Such pedagogical approaches align with NEP 2020's vision of education as a means of developing emotionally aware, ethically grounded and socially responsible individuals.

Literature has long functioned as a reflective and critical lens through which human relationships with the natural world are examined and reimagined. By foregrounding themes of ecological interdependence, environmental degradation and ethical responsibility, literary texts enable learners to engage with sustainability not merely as a scientific or economic concern, but as a deeply human and moral one. Within the senior secondary English classroom, literature offers a unique space to cultivate environmental consciousness by combining aesthetic appreciation with critical reflection on humanity's impact on natural systems. Texts such as A Thing of Beauty and The Laburnum Top portray the restorative and regenerative power of nature, encouraging learners to recognise the intrinsic value of biodiversity and ecological balance. The Voice of the Rain promotes an understanding of natural cycles and interdependence, fostering respect for environmental processes essential to sustainable living. Travel narratives such as Journey to the End of the Earth and Silk Road situate sustainability within global and cultural contexts, prompting critical reflection on climate change, human intervention in fragile ecosystems and the need for responsible coexistence with nature. Through reflective discussions, inquiry-based learning, and experiential pedagogies students are encouraged to move beyond aesthetic appreciation towards environmental responsibility and sustainable practices, in keeping with the holistic and future-oriented vision.

Creative digital practices such as reel-making and podcast creation allow students to synthesise literary insights with contemporary modes of expression. Through short reels, learners can visually and narratively interpret themes of sustainability, while podcasts provide a platform for reflective dialogue, research-based discussion and collaborative inquiry. These multi-modal engagements not only deepen textual understanding but also foster critical thinking, communication skills and a sustained commitment to sustainable practices.

To engage Generation Alpha learners effectively, the literature classroom must move beyond traditional, didactic approaches. Students are not passive vessels into whom knowledge can simply be poured; they actively question, challenge and reinterpret the material. Teachers, therefore, need to meet learners at their level, creating spaces that allow them to find their voices and recognise the potency of their own agency, bringing the classroom to life. As digital natives, these learners interact with the world primarily through visual, interactive and multiple forms of communication. The literature classroom must evolve accordingly, integrating creative digital practices that resonate with students' lived experiences while retaining the reflective and ethical depth of

literary study. When thoughtfully implemented, digital tools-such as reel-making, podcast creation and interactive storytelling-can function as powerful pedagogical mediators, enabling learners to cultivate reflection, empathy and sustainability while actively participating in their own learning. These modes encourage reflective interpretation by requiring students to distil complex themes such as emotional vulnerability, moral responsibility and ecological interdependence-into concise, meaningful narratives. In doing so, students are prompted to internalise and reinterpret literary ideas, strengthening both comprehension and self-awareness. In this way, literature, supported by digital pedagogy, continues to serve as a vital space for ethical and sustainable thinking in a rapidly evolving world.

In Dead Poets Society, Mr. Keating's insistence that students "make your lives extraordinary" exemplifies the transformative power of a teacher who encourages agency, critical thinking and self-expression. His encouragement to "seize the day" cultivates not only individuality but also ethical reflection as students learn to question norms, empathise with others and consider the consequences of their actions. Translating this dynamic to the literature classroom for Generation Alpha, educators can foster reflective, socially responsible learners who actively engage with texts and relate them to contemporary challenges, including sustainability. By combining this ethos with creative digital practices, literature classrooms can become spaces where empathy, ethical reasoning and environmental consciousness are nurtured, empowering students to envision and enact a more just and sustainable world.

Mansi Sharma

2

CULTIVATING SKILLS AND SENSIBILITY IN THE SCHOOL ECOSYSTEM

Parul Bansal (TGT Social Science)
Tagore International School, East of Kailash, New Delhi

Abstract

"Pedagogies are not just ways of teaching; they are ways of shaping young minds." In today's world when students can access content for any subject at the click of a finger, what can truly bring them back to the classrooms with a desire to learn and participate, are the effective pedagogies curated specially for them and implemented to enable them to apply their learning in real world contexts. This study investigates how a traditionally dull and textbook-bound classroom can be transformed into a 21st-century, skill-oriented learning environment through the right mix of NEP 2020–aligned pedagogies.

In the study, while one class followed textbook-based instruction, the other engaged in a guided mix of storytelling, guided podcasts, hands-on model-making, peer feedback and arts-integrated simulations. The transformation was visible in the bright eyes, eager hands, and fully immersed minds of the students. Classroom evidence showed increased participation and inquiry. The findings suggest NEP 2020–aligned pedagogies strengthen engagement and real-life connections.

Introduction

"The Battle from Rote to Relevance". Social science often viewed as a boring subject with no real-world application, finds it difficult to create a niche in student's heart and mind alike. This study challenges this norm and demonstrates that even a simple shift in the choice and implementation of pedagogies can transform how students perceive the subject in a different light-one that helps them to develop skills to be contributing members of the society and world at large.When learning becomes recall-driven, students disengage and struggle to connect the subject with real life.

This classroom-based study redesigned how students experienced the same prescribed unit, without changing the syllabus. A planned sequence of pedagogies (storytelling, guided listening, model-making, structured peer feedback and arts-integrated simulation) was implemented in one intact middle-school section, while a comparison section studied the same content through routine instruction. The results were striking: participation rose from 40% to 76%, the number of "how" and "why" questions increased from 16% to 62%, peer feedback nearly doubled, and students generated almost three times as many solution ideas. By examining participation, questioning, peer responses, and life-connections, the study shows how pedagogy shapes engagement and

supports NEP 2020 competencies. The findings suggest that when Social Science is taught as a living discipline, students show stronger voice, deeper discussion, and greater ownership of learning.

2. Purpose and Objectives

2.1 Purpose

To examine whether a structured, sequenced blend of multi-modal pedagogies can shift students' perception of Social Science from a rote subject to a meaningful, life-connected discipline.

2.2 Objectives

The intervention aimed to help students:

- Build inquiry habits—asking "why" and examining causes and consequences.
- Develop civic sense and social awareness through daily issues.
- Strengthen socio-emotional skills—listening, empathy, collaboration, and feedback.

2.3 Research Questions

- How do multi-modal pedagogies influence student engagement, questioning, and connections to real life in Social Science?
- How do these practices support socio-emotional skills like collaboration, feedback, and respectful disagreement?

3. Context and Participants

The study was conducted in two intact middle-school Social Science classrooms (n = 45 students each) while teaching the same unit. Learners varied in engagement—speaking, writing, or creating—while previously both sections had low participation, few questions, and limited peer dialogue. Both sections were at a comparable starting point. The same content was taught over the same time period; one section followed routine textbook-based instruction (comparison), while the other received the sequenced pedagogical intervention described below (intervention).

4. Method and Classroom Approach

4.1 Method

Rather than changing the syllabus, the attempt was to change the experience of learning the syllabus. This study followed a classroom-based action research approach. Observations, student feedback, classroom interactions and reflections were used to understand the impact of the pedagogical strategies. A sequence of interconnected activities was designed so that learning moved from imagination to reality, from past to present, and from individual understanding to social responsibility.

4.2 Tools Used

- Story prompts and narrative frames
- Podcasts and digital prompts
- Eco-friendly materials for models
- Clay for artefacts and simulations
- Peer-feedback prompts for presentations

4.3 Data Collection

- Data were collected using routine classroom sources:
- Student reflections: short written reflections after activities (podcast discussion, simulation).
- Teacher anecdotal notes: informal notes

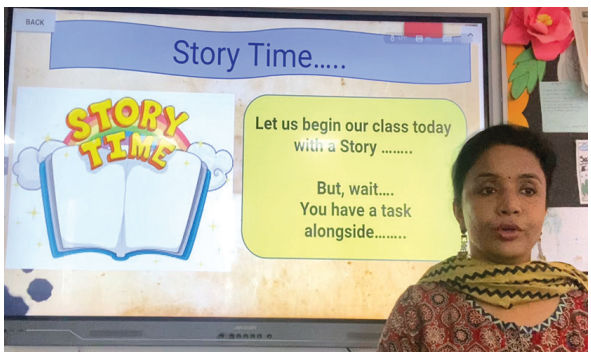
on engagement levels, questions asked, participation and group behaviour

- Student artifacts: models, clay work, presentation outputs, and responses.
- Participation patterns: informal tracking of which students contributed verbally, which contributed through making/organising, and how learners engaged across tasks.

5. Pedagogical Interventions and Teacher Observations

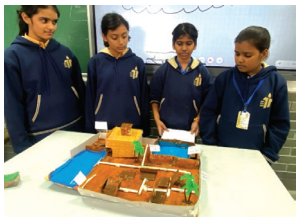
5.1 Storytelling: Turning content into lived experience

Storytelling often thought as a tool to engage primary classes was used as a deliberate hook to help learners step into the Indus Valley Civilization rather than study it from a distance. Instead of starting with features and definitions, students were taken on a guided journey through Indus cities—baked-brick streets, covered drains, homes, trade, and everyday problem-solving. The classroom response changed quickly: participation widened, and quieter students began asking "how" and "why" questions. Storytelling linked abstract ideas like town planning and trade to human needs, shifting talk from right answers to how systems worked and why choices mattered.



5.2 Experiential model-making: From textbook claims to design thinking

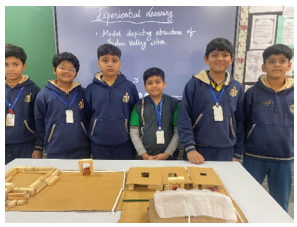
"I hear and I forget, I see and I remember, I do and I understand." This came to life when students built actual models to explore the advanced drainage systems of the Indus Valley. What had seemed simple in the textbook suddenly sparked curiosity—they began asking design-based questions and justifying their choices using cause-and-effect thinking. Model-making became an iterative, hands-on process: early models looked neat but lacked logic. Through peer questioning and testing with water and "waste," groups identified flaws and redesigned their systems. In doing so, students didn't just reproduce information—they experienced, analyzed, and understood the engineering behind ancient urban planning.



5.3 Group presentations: Building respectful dialogue

Group presentations, traditionally used only

for grading, were reinvented to develop essential skills such as effective communication, teamwork, and emotional intelligence. Each group presented, and peers responded using a simple, structured routine: one appreciation and one suggestion for improvement. This approach created a safe space for students to practise skills that can be challenging at this age—listening patiently, disagreeing respectfully, and improving based on feedback—without the learning feeling like a separate "values lesson."

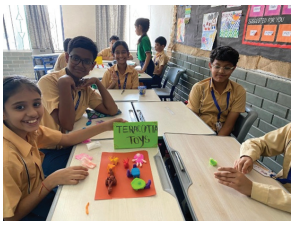


5.4 Podcast: Speaking the language of today's learners

Digital tools, often perceived as distractions, can be used to help 21st-century students feel at home in the classroom. A simulated podcast—"A Day in Flooded Delhi"—was used as a familiar and relatable way to open discussion about a real problem. Students connected it to the Indus Valley drainage systems, explored solutions, and reflected on the importance of civic responsibility. The podcast made history feel immediate and relevant, helping students engage confidently and see themselves as part of the learning experience.

5.5 Art-Integrated Learning: Experiencing Trade Through a Survival Simulation

Students became part of a simulated economy. They were divided into groups—farmers, potters, jewellers, craftsmen, and metal workers—and used clay to create the goods their community "produced." They then exchanged these items to ensure everyone's survival. Through this hands-on activity, trade was no longer just a definition but a lived experience. Students learned why trade began, the concept of bargaining, and societal interdependence.



6. Results (Teacher-Recorded Indicators)

To keep evidence collection practical, five indicators were tracked during the unit. The intervention section showed higher values on all tracked indicators (Table 1).

Table 1. Summary of teacher-recorded indicators

Indicator	Comparison (n=45)	Intervention (n=45)
Students who participated ≥ 1 time	18	34
Total student questions	22	61
"How/Why" questions	7	28
Students who gave peer feedback ≥ 1 time	16	33
Solution ideas proposed	9	26

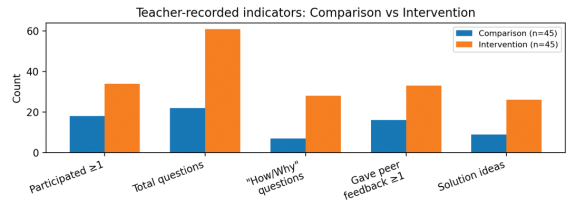


Figure 1. Teacher-recorded indicators (bar chart)

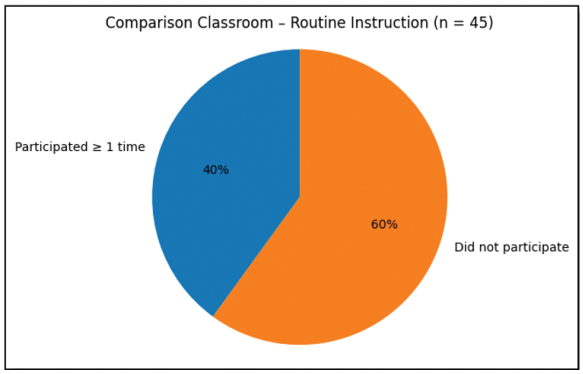


Fig. 2(a) Comparison Classroom (Routine Instruction, n = 45)

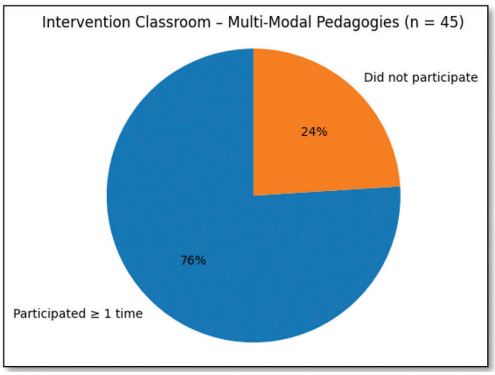


Fig. 2(b) Intervention Classroom (Multi-Modal Pedagogies, n = 45)

7. Discussion: Why This Worked and Alignment with NEP 2020

The outcomes appear linked to sequencing and multi-modality: curiosity was built first, understanding was constructed through making and observation, and classroom culture was strengthened through feedback routines. Students who were less comfortable with long verbal answers could still participate through making, noticing, or structured responses, widening engagement. The approach also mirrors NEP 2020's emphasis on competency-based and experiential learning, art integration, and formative assessment.

8. Limitations

Because intact sections were compared, class-culture differences may have influenced results. The teacher both implemented and recorded observations, and novelty effects are possible.

9. Conclusion

Relevance in Social Science grows when students are invited to think, talk, observe, and build—rather than only recall. A sequenced blend of storytelling, guided digital prompts, experiential making, observation-based learning, and structured peer feedback can widen participation and strengthen student-led dialogue within routine school constraints.

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3

EDUCATING THE MIND, SHAPING THE SENSIBLE HEART

Himani Chugh (PRT)
Holy Child Sr. Sec. School

1. Introduction.

The theme "VIDYA FOR LIFE: Schools as Centres of Skills and Sensibility" emphasizes learning for life rather than solely for grades, examinations or workforce preparation. This paper highlights innovative, reflective and impactful classroom practices that align with NEP 2020, focusing on experiential learning, art integrated learning and inquiry-based pedagogies, interdisciplinary learning, assessment reforms, meaningful use of technology and AI, and inclusive strategies that nurture social-emotional and ethical sensibilities. Through examples from classroom experiences, the paper illustrates how teachers serve as catalysts for holistic development, making learning relevant, joyful and future-ready. The National Education Policy (NEP) will help in transforming schools into ecosystems that nurture not only cognitive growth but also values socio-emotional development, holistic development, life skills and a better citizens.

The theme "VIDYA FOR LIFE" reaffirms the purpose of education as lifelong learning—learning that enables students to navigate human relationships, understand society, solve problems creatively, lead with empathy and contribute meaningfully to families, communities and the nation. This paper examines classroom practices that embody this philosophy and outlines pedagogical strategies that empower teachers as change agents.

As teachers, our role extends beyond curriculum coverage to creating meaningful learning experiences that connect knowledge with real life.

2. Innovative and Impactful Pedagogical Practices

Innovative pedagogy focuses on how students learn rather than what they learn. Some impactful strategies adopted in classrooms include:

2.1 Project-Based and Problem-Based Learning (PBL)

Students engage in real-world problems, fostering critical thinking, creativity and collaboration. For example, a middle school science unit on water conservation can culminate in students conducting neighborhood surveys, analyzing water usage patterns and suggesting solutions. Such projects connect textbook concepts with community issues, enabling civic responsibility and environmental awareness.

During the chapter Air Pollution students investigate local air quality. They will form groups, research sources of pollutants

in their areas, homes will interview family members and propose mitigation strategies like using public transport or planting trees and bring awareness.

2.2 Gamification and Play-Based Pedagogy

For early grades, NEP emphasizes play-based, discovery-oriented learning. Classroom games like letter hunts, math hopscotch and puzzle-based learning enhance engagement, conceptual clarity and motor development. Even in higher grades, gamified activities (such as quiz leagues, escape room formats or badge systems) motivate learners and enable self-paced progress.

2.3 Thinking Routines and Visible Learning

Techniques like Think-Pair-Share, See-Think-Wonder and Claim-Support-Question activate prior knowledge, develop reasoning skills and encourage dialogue. Such strategies give students voice and agency in the classroom. When thinking becomes visible, learning becomes deeper and more lasting.

While doing Solar Eclipse and Lunar eclipse, teacher can show it in the classroom with the help of a ball and light, through this students learn through concrete and visible things.

2.4 Reflective and Metacognitive Practices

Reflection journals, exit tickets and self-assessment sheets help students evaluate their learning processes. Phrases such as "Today I struggled with…", "One thing I want to improve…" or "I discovered that…" cultivate metacognition—an essential life skill for self-regulation and resilience.

3. Classroom Strategies Aligned with NEP 2020

NEP 2020 emphasizes flexibility, learner-centeredness and competency mastery. Classroom strategies aligned with NEP include:

Instead of making students learn through charts let the children make their own graphs and charts like Lesson on Respiration, students analyze pulse rate data before and after mild exercise, constructed graphs and discuss the concept of oxygen demand.

3.1 Multilevel and Modular Teaching

Students in the same grade may be at different learning levels. Modular worksheets, peer tutoring, learning stations and tiered tasks help teachers differentiate without stigmatization. This supports the NEP objective of individualized progress and mastery-based learning.

Worksheets with different level of difficulty, like addition with simple and carry forward with single digits or two digits.

3.2 Integrated Early Childhood Curriculum

In foundational stages, storytelling, music, movement, sensory activities and toy-based pedagogy lay the foundation for literacy, numeracy and socio-emotional skills. For instance, clay modeling activities support fine motor skills while fostering creativity and imagination.

3.3 Indian Knowledge Systems (IKS) and Local Context

NEP encourages integration of local art forms, crafts, traditions and languages into

teaching. Activities like folk storytelling, local history walks, kitchen chemistry experiments or interactions with artisans make learning culturally rooted and meaningful.

4. Experiential, Inquiry-Based & Interdisciplinary Learning

Experiential learning ensures that students learn by doing and reflecting. Inquiry-based learning develops curiosity, questioning skills and scientific temper.

4.1 Experiential Learning in Action

- Science: Students plant seeds, observe germination, collect data and draw conclusions.
- Mathematics: Students measure classroom objects to understand units, perimeter and volume.
- Social Science: Students simulate a mock election to learn democracy and governance.

Such activities promote hands-on understanding and contextual relevance.

4.2 Inquiry as a Way of Learning

Teachers shift from being "information providers" to "learning facilitators." Students frame questions, gather evidence, compare findings and justify conclusions. For example, during a unit on nutrition, students may research dietary habits in their families, identify nutrient gaps and design healthier alternatives.

4.3 Interdisciplinary Connections

Real life is not divided into subjects; hence learning should not be either. Interdisciplinary projects seamlessly integrate subjects:

- A project on climate change blends geography (climate systems), science (greenhouse gases), mathematics (data graphs), language (report writing) and art (poster design).
- A unit on festivals of India connects history, culture, language, music and civic values.

Such interdisciplinary approaches prepare students for holistic thinking and problem-solving.

5. Inclusive and Differentiated Teaching Practices

Inclusive education ensures that every child—regardless of learning needs, background or ability—receives equitable opportunities to succeed.

5.1 Differentiation

Teachers differentiate by:

- Content: Using visual aids, simplified texts, audiobooks.
- Process: Using peer groups, manipulatives, graphic organizers.
- Product: Allowing choice—students may submit a poster, slide deck, essay or model.
- Pace: Offering extra time or extension work based on readiness.

5.2 Universal Design for Learning (UDL)

UDL recommends multiple ways to engage learners, present content and allow expression. Techniques include:

- Choice boards
- Captioned videos
- Tactile materials
- Oral presentations
- Digital tools

5.3 Supporting Diverse Learners

Students with ADHD, dyslexia or ASD benefit from structured routines, movement breaks, visual schedules and sensory corners. Language learners benefit from sentence stems, bilingual resources and buddy systems. Socio-economically diverse classrooms benefit from empathy, sensitivity and resource-sharing.

Inclusive classrooms are not merely supportive; they teach empathy, tolerance and humanity—core sensibilities for life.

6. Assessment Reforms and Feedback for Learning

NEP calls for "assessment for learning" rather than "assessment of learning."

6.1 Formative Assessments

These include quizzes, exit tickets, checklists, rubrics, peer reviews and verbal questioning during lessons. Formative assessment informs teaching and supports timely remediation.

6.2 Competency-Based Assessment

Instead of memorization, students demonstrate competencies such as analyzing, creating, comparing, designing or applying. Performance tasks such as experiments, debates, portfolios and fieldwork enable authentic demonstration of skills.

Feedback Culture Effective feedback is:

- Specific
- Constructive
- Timely
- Actionable

Teachers increasingly use statements like "Next time, try…", "I notice that…", and "You have improved in…" which build growth mindset instead of fear. It is ok to make mistakes, but important part is not to repeat that mistake.

6.4 Student Portfolios and Self-Assessment

Portfolios document progress over time through work samples, reflections and feedback cycles. Self-assessment checklists improve accountability and self-awareness—skills essential for life-long learning.

7. Integration of Technology & AI in Classrooms

Technology is not a replacement for teachers—it is an amplifier of pedagogy.

7.1 Digital Tools for Personalization

Adaptive learning platforms provide differentiated tasks based on learner profiles. Mathematics platforms offer tailored problem sets, while reading platforms adjust text complexity.

7.2 AI for Enhancing Learning AI tools support:

- Instant language translation
- Text-to-speech support
- Automated quizzes and feedback
- Research assistance
- Personalized study paths

AI also empowers students with disabilities through speech recognition, closed captions and immersive simulations.

7.3 Blended Learning Models

Flipped classrooms allow students to learn

content through videos at home and engage in collaborative work in school. Blended learning supports:

- Flexibility
- Collaboration
- Digital literacy
- Independent learning

These are essential life skills for future workplaces and societies.

8. Social-Emotional Learning (SEL), Values & Life Skills Education

Skills without sensibility can be dangerous. NEP emphasizes ethics, empathy, character and well-being.

8.1 SEL Frameworks in the Classroom SEL develops:

- Self-awareness
- Self-regulation
- Social awareness
- Relationship skills
- Responsible decision-making

Circle time, mindfulness, journaling, conflict-resolution exercises and gratitude reflections build emotional strength and compassion.

8.2 Values and Ethics

Through stories, community service, historical narratives and nature-based learning, students develop values such as:

- Respect
- Kindness
- Integrity
- Patriotism
- Responsibility
- Environmental stewardship

8.3 Life Skills for the Real World

Activities incorporate skills such as:

- Financial literacy (budgeting activities)
- Health and nutrition awareness
- Digital citizenship and safety
- Communication and collaboration
- Time and stress management

These extend learning beyond academic spaces into daily living—true to the theme "Vidya for Life".

9. Teacher as Catalyst: Reflective Practice and Professional Growth

Teachers transform classrooms not just through strategies but through reflection, research and continuous professional learning.

Reflective practice involves:

- Reviewing lesson effectiveness
- Adapting based on student feedback
- Engaging in peer observations
- Participating in workshops and PLCs (Professional Learning Communities)

Teachers model lifelong learning, curiosity and ethical conduct—qualities students internalize through observation.

10. Conclusion

School and teachers should help children grow not only as skilled learners, but also as kind and responsible human beings. Students should learn empathy, become responsible humans and how to live with others harmoniously. Thus, teachers play an important role in individuals lives of their students. To make school a meaningful place of learning and make classroom lively, we teachers can do it by integrating innovative pedagogies,

inquiry and experiential learning, technology and AI, assessment reforms, differentiation and socio-emotional learning.

Aligned with NEP 2020, the vision of "VIDYA FOR LIFE" recognizes that education is not confined to textbooks, examinations or career preparation—it is about shaping thoughtful minds, compassionate hearts and resilient spirits. Teachers are at the heart of this transformation, turning schools into centres of both skills and sensibilities, ultimately strengthening society and the nation.

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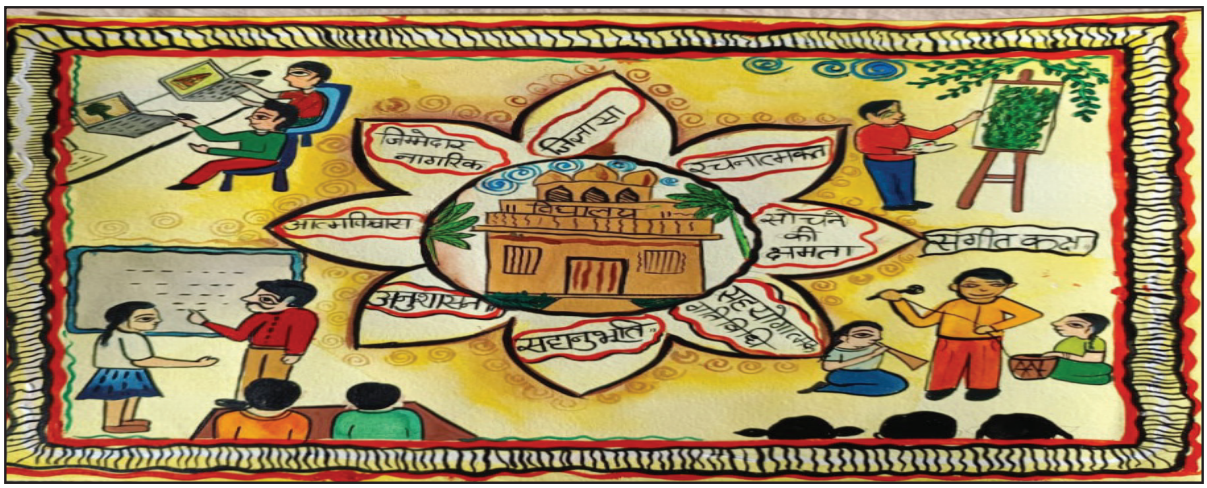


Pehr Jain

4

From Classrooms to Consciousness Inclusive, Experiential, and Ethical Integration of AI, AR, and Digital Media for Skill, Sensibility, and Social Responsibility

Ms. Deepti Chopra (Computer Science Teacher)
Ahlcon International School, Mayur Vihar, Phase-1

Abstract

In today's rapidly evolving digital world, education must go beyond the acquisition of technical skills to nurture ethical thinking, inclusivity, creativity and social responsibility. This paper presents my classroom practices as a Computer Science teacher, where technology is used not as an end, but as a meaningful tool to empower learners. Through the thoughtful integration of Artificial Intelligence (AI), Augmented Reality (AR), digital media, web development, peer learning and structured student feedback, I sought to create an inclusive and experiential learning environment aligned with the vision of NEP 2020.

A key focus of my practice has been ensuring active participation of students with special educational needs through differentiated instruction and assistive technologies. Students engaged in real-world projects such as AI-assisted storytelling, documentaries, SDG-based advocacy videos, AR-enabled concept learning, e-book creation, web pages for climate awareness and peer-led teaching sessions. This paper reflects how such practices transformed the classroom into a space of skills, sensibility and student voice, fully aligned with the NPSC theme "Vidya for Life: Schools as Centres of Skills and Sensibility."

Introduction

As a Computer Science teacher, I strongly believe that education in the 21st century must prepare students not only for careers, but for life. In a world where technology influences how we think, communicate and live, classrooms must evolve into spaces that promote ethical awareness, empathy, creativity, and responsibility.

The National Education Policy 2020 emphasizes experiential learning, inclusivity, interdisciplinary approaches, student engagement and ethical use of technology. Guided by this vision, I consciously redesigned my classroom practices so that students move from being passive users of technology to thoughtful creators who understand its impact on society.

Objective

My objective of this pedagogical initiative extended beyond the acquisition of digital tools to fostering real-world relevance, ethical awareness, and reflective thinking among learners, while promoting collaboration, inclusion, and responsible citizenship through experiential use of technology.

Pedagogical Framework and Alignment with NEP 2020

My classroom practices are rooted in the following principles inspired by NEP 2020:
Learning through experience rather than rote instruction
Inclusion and equity for all learners
Interdisciplinary and inquiry-based learning
Ethical and responsible use of technology
Student voice and continuous reflection

I consciously shifted my role from an instructor to a facilitator, allowing students to explore, question, create and reflect. Technology was used to support thinking, expression and empathy rather than mere task completion.

Inclusive Education: Technology as an Equalizer

Inclusivity formed the foundation of all learning experiences in my classroom. I worked closely with students having special educational needs and ensured that technology became a support system rather than a barrier.

A student with a learning disability created a Teachers' Day greeting card using PowerPoint, expressing creativity through visuals.

A student with regressed speech, nystagmus, and walking imbalance was supported in typing his name on a PowerPoint slide, helping him build confidence and digital familiarity.

A student with ADHD independently created an Excel sheet, demonstrating focus and logical organization in a structured digital task.

These experiences reaffirmed my belief that when learning is personalized and compassionate, every child can succeed.

These inclusive learning experiences are documented in Annexure A (Figures A1 and A2)

Student Leadership and Peer Learning

To foster collaboration and leadership, I encouraged peer learning. Class 8 students conducted guided sessions for Class 6 students on topics such as basic technology skills, digital safety and Artificial Intelligence.

This vertical peer-learning approach:
Improved communication and leadership skills
Built confidence and accountability
Created a supportive learning culture
Students transitioned from learners to facilitators, making learning a shared journey.

Ethical and Responsible Use of Artificial Intelligence

Students explored Artificial Intelligence with a strong ethical lens. Classroom discussions and projects focused on:

Data privacy and bias
Misinformation and ethical boundaries
AI as a support tool, not a replacement for human intelligence
Students created:
Presentations on responsible use of AI
AI-assisted e-storybooks aligned with curriculum chapters
AI-generated videos promoting awareness about Sustainable Development Goals and climate action

These activities developed critical thinking, digital citizenship and ethical awareness.

Student engagement with ethical dimensions of Artificial Intelligence is illustrated in Annexure B (Figures B1 and B2).

Augmented Reality for Experiential Learning

To enhance conceptual understanding, I introduced Augmented Reality tools, particularly while teaching scientific concepts such as the structure of teeth. AR enabled students to visualize internal structures in 3D, transforming abstract ideas into meaningful learning experiences.

This approach improved engagement, retention and curiosity, especially among visual learners.

The use of Augmented Reality to support experiential learning is shown in Annexure C (Figure C1).

Digital Creativity and Interdisciplinary Learning

Students actively participated in creative digital projects that integrated technology with art, culture, and social awareness. These included:

Posters on all Sustainable Development Goals
Presentations on national and international festivals
Logo designing for Tiger Day and environmental campaigns
E-posters on Sardar Vallabhbhai Patel for Unity Day
Digital rangoli designs using Sketchpad and PowerPoint
Animated educational videos using Adobe tools
Festive videos on Canva for Christmas and New Year
These activities promoted creativity, cultural appreciation, and interdisciplinary learning.

Web Development and Digital Literacy

Students explored basic coding and web development by creating:

A webpage on Artificial Intelligence and Robotics explaining applications, advantages, limitations and FAQs
An HTML and JavaScript-based webpage on climate awareness
QR codes linking digital learning resources
These tasks strengthened problem-solving skills and digital confidence.

Student-Led Media Advocacy

Documentary: "Nature Speaks"

Students created a documentary titled Nature Speaks, highlighting how land, animals, and water resources are affected by environmental imbalance caused by human actions. The project encouraged research, ethical storytelling, teamwork and environmental sensitivity.

Global SDG Advocacy: "From Seeds to Forest"

Students also created a video for the Purple Umbrella Festival titled From Seeds to Forest – Empowering Youth for Global Change. The video symbolically conveyed how small actions can grow into collective movements for sustainability, reinforcing youth leadership and global citizenship.

Student-Designed "TechBuddy / AI Buddy" Brochure: Learning AI with Empathy and Social Purpose

As part of experiential learning, a student independently designed a three-panel digital brochure titled "Tech Buddy", presenting AI as a friendly, ethical, and supportive digital companion. The brochure clearly identified the target audience, including students, creators, professionals, gamers and notably senior citizens, reflecting the learner's understanding of AI as a tool for inclusive and intergenerational support.

A dedicated panel, "Tech Buddy for Senior Citizens," focused on digital safety and confidence-building. The student highlighted real-life concerns such as WhatsApp scams, UPI payment security, phishing alerts and fear of pressing the wrong button, and positioned AI as a defence shield rather than a threat. This demonstrated a mature grasp of responsible AI use, cyber safety, and ethical awareness, especially for vulnerable users.

Student Voice through Feedback

To make learning learner centric, I collected student feedback through Google Forms. Students reflected on:

What they already knew

What they wished to learn

What they enjoyed most in computer classes

This feedback helped me refine my teaching and empowered students by giving them ownership of their learning journey.

Evidence of student creativity and learner feedback is provided in Annexure D (Figures D1 and D2).

Student Achievement and Social Impact

Students created bilingual e-books (English and Hindi) on topics such as Indian Heritage to simplify learning for peers. The Tech Buddy brochure encouraged peer and intergenerational support, including helping senior citizens use technology.

Students also participated in interschool competitions and won prizes, bringing recognition to the school and boosting their confidence.

Reflection and Outcomes

Through these practices, I observed:

Increased engagement and creativity

Ethical awareness in technology use

Greater inclusion and confidence among special-needs students

Strong collaboration and leadership skills

A sense of responsibility toward society and the environment

Students began to see technology as a meaningful tool for learning and positive change.

Conclusion

This pedagogical journey reaffirmed my belief that when technology is integrated with inclusivity, ethics, and experiential learning, classrooms transform into vibrant ecosystems of growth. By empowering students to explore AI, AR, digital media, collaboration, and reflective practices, learners moved beyond consumption to purposeful creation, as evidenced through initiatives such as the student-designed TechBuddy brochure that promoted digital

safety and intergenerational support.

Such experiences enabled schools to truly become centres of skills and sensibility, where technology served not merely as a tool but as a medium for empathy, responsibility, and social awareness. This is Vidya for Life—an education that nurtures not only competent learners, but compassionate, responsible, and globally aware citizens.

Annexures

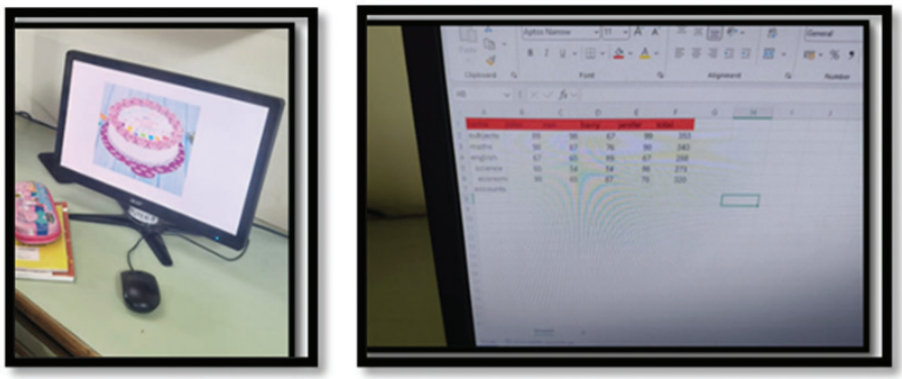
From Classrooms to Consciousness

Ms. Deepti Chopra

Inclusive, Experiential, and Ethical Integration of AI, AR,
and Digital Media for Skill, Sensibility, and Social Responsibility

Annexure A: Inclusive Education & Special Needs Integration Figure A1:

Figure A1:



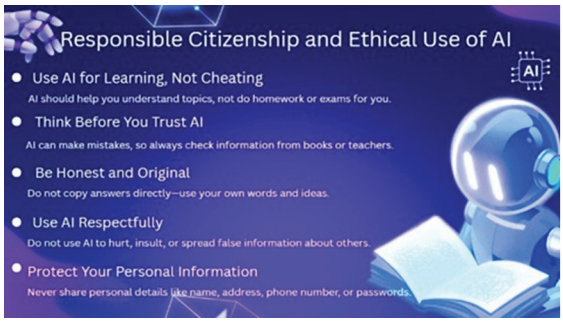
Student with learning disability creating a digital greeting card using PowerPoint as part of inclusive classroom practice.

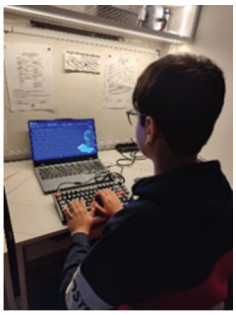
Figure A2:

Student with special needs engaging in foundational digital literacy by typing numbers and his name using presentation software.

Annexure B: AI and Ethical Digital Learning Figure B1

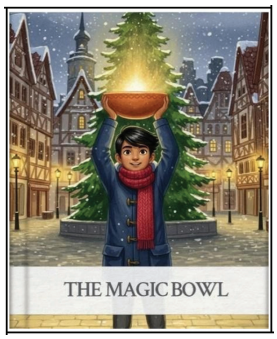
Figure B1



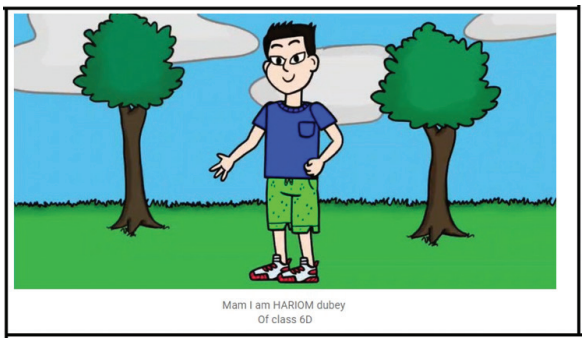


Student presentation highlighting ethical and responsible use of Artificial Intelligence in daily life.

Figure B2



AI-generated e-storybook

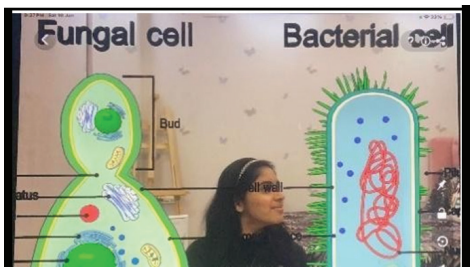


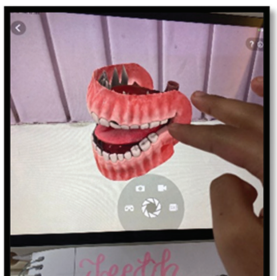
SDG awareness video screenshot

AI-assisted digital storytelling created by students to promote awareness on Sustainable Development Goals.

Annexure C: Augmented Reality for Experiential Learning

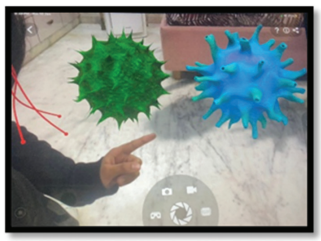
Figure C1





AR-based learning (teeth structure, comparison between a fungal cell and a bacterial cell / 3D model)

Use of Augmented Reality to help students visualize and understand complex scientific concepts through immersive learning.

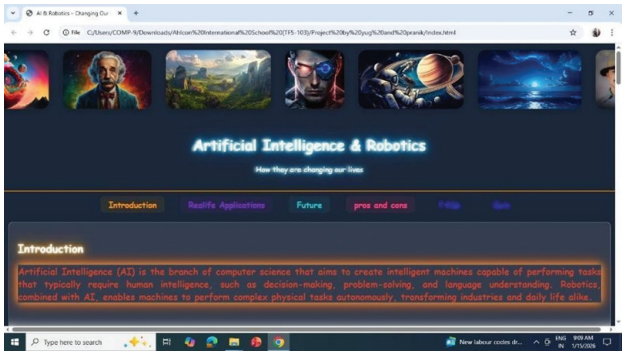


Annexure D: Digital Creativity & Student Voice

Figure D1

Digital Poster

Student-designed digital poster created to promote environmental awareness and wildlife conservation.



Webpage

Student-Created HTML Page on Artificial Intelligence and Robotics

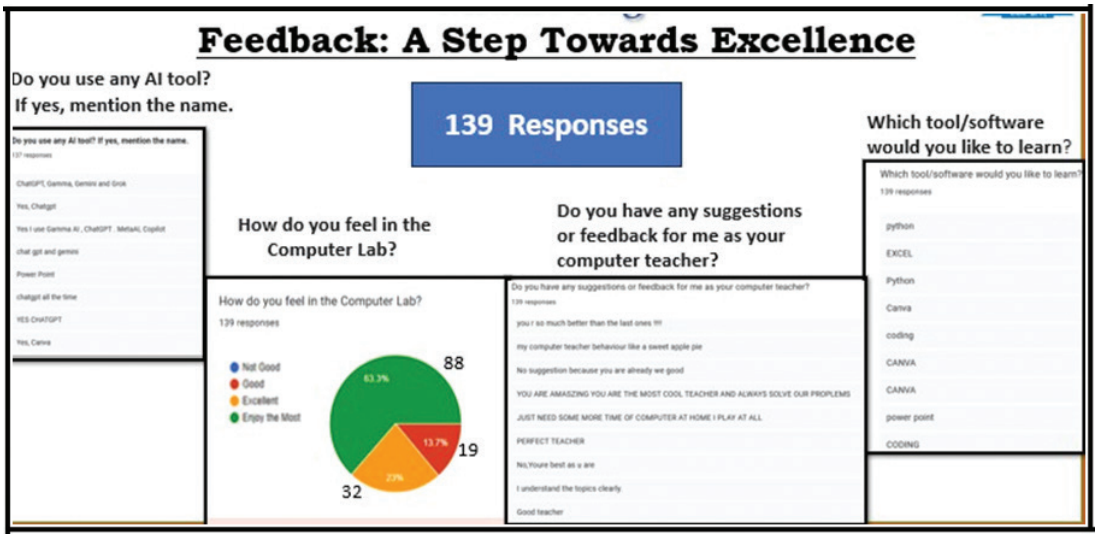
Student-designed "TechBuddy" brochure

The brochure illustrates the use of AI as a supportive digital companion for senior citizens, focusing on cyber safety, scam awareness, and secure digital practices.

The "Nature Speaks" documentary

The "Nature Speaks" documentary captures students' perspectives on environmental responsibility, using technology as a medium for awareness and expression.

Figure D2



Google Form- Students' feedback

Student feedback collected through Google Forms reflecting learning preferences, interests, and engagement in computer classes.

5

RETHINKING TEACHING FOR DEEPER LEARNING

Ritu Chakraborty (TGT English)
Bal Bharati Public School, Manesar

Velocitopolis - The Formula Smart City

(A science cum student's mental wellbeing project where science, serenity and language exist in urban design)

Innovative and Impactful Pedagogical Practices

The Formula Smart City project was envisioned as a transformative educational initiative that combined science, creativity and mental well-being. The objective of this pedagogical practice was to design an innovative city that would help the senior students memorise the formulas, which is very time-efficient and reduce their mental load. By embedding formulas from Physics, Chemistry and Biology into the design of a futuristic smart city, students were encouraged to move beyond rote memorization and engage in meaningful, applied learning.

This paper presents the concept, design and potential benefits of the Formula Smart City, focusing on a student's mental well-being and providing an overview of the city.

Students were encouraged to work in groups, enjoyably, to promote peer learning and creativity and comprehend their understanding of the concepts of Physics, Chemistry and Biology, with the help of Art & English, in the form of a project. The concept of a "Smart City" is referred to as urban areas that have used digital technology to incorporate formulas into infrastructure & utilities.

The project work demonstrated that when pedagogy is innovative, students not only learn better but also develop resilience, adaptability and pride in their work.

Classroom Strategies Aligned with NEP 2020

The National Education Policy (NEP) 2020 emphasizes holistic development, mental well-being, and experiential learning. The Formula Smart City project aligned seamlessly with these goals:

- **Holistic Development:** Students were engaged in interdisciplinary tasks that integrated science, art and language.
- **Mental Well-being:** The project reduced stress by transforming formula memorization into a logical, creative process.
- **Collaborative Learning:** Group work promoted peer learning and social skills.
- **Flexibility:** Students were reminded that mistakes were part of the learning journey, fostering resilience.

By prioritizing student voice and choice, the project reflected NEP 2020's vision of learner-centric education.

Experiential, Inquiry-Based, and Interdisciplinary Learning

The Formula Smart City was not just a theoretical exercise but an experiential project where students designed, built and presented models.

- **Experiential Learning:** Students physically constructed models, applying scientific formulas to real-world contexts.
- **Inquiry-Based Learning:** They asked questions like "How can formulas be embedded into infrastructure?" and sought creative solutions.
- **Interdisciplinary Learning:** Physics, Chemistry, and Biology were integrated with English and Art, demonstrating the interconnectedness of knowledge. The integration of English language activities with scientific inquiry fostered interdisciplinary dialogue. Students learnt to articulate complex scientific ideas in accessible language, enhancing their ability to communicate across disciplines. This skill is vital for future academic and professional success, as it bridges gaps between technical experts and broader audiences. As an English teacher, prose pieces about overcoming stress were integrated, linking academic and emotional growth. To promote self-reflection, imaginative writing, critical thinking, emotional expression and expressive writing skills, students were encouraged-
- To write a journal on 'My Learning Journey', about their experiences of working on the Formula Smart City project.
- Compose a short story about a futuristic city where science and creativity coexist.
- A poem expressing the emotions of overcoming academic stress through collaboration, inspired by the themes of innovation, mental well-being and urban life.
- They researched on scientific formulas or concepts used in the project and wrote a report explaining its real-world applications. This activity integrated research skills, technical writing and language clarity.
- While preparing the project, students took up role-play as city planners, scientists or community members discussing challenges and solutions for the smart city. Later, they delivered their presentations which fostered their articulation skills and critical listening in debating on how technology and AI can enhance education.
- They were introduced to key scientific and urban planning vocabulary that supported their language acquisition and contextual understanding.
- This approach allowed students to see science not as isolated subjects but as tools for solving real-world problems.

Inclusive and Differentiated Teaching Practices

Initially, some students expressed reluctance, citing difficulties in design, time management, or relevance to English. Inclusive strategies ensured that every student could contribute:

- **Differentiated Roles:** Students who were less confident in design contributed through writing, research or presentation.
- **Open-Door Policy:** Concerns were heard and addressed, fostering psychological safety.
- **Encouragement of Mistakes:** Students were reassured that errors were part of growth.

- **Teamwork Guidance:** Conflict resolution strategies were taught, ensuring inclusivity regardless of their strengths, to participate meaningfully.

  By envisioning a smart city that addressed social, technological and environmental challenges, students developed a sense of global citizenship. They consider ethical questions related to technology use, data privacy and equitable access to resources. This dimension nurtured responsible decision-making and empathy for diverse communities, aligning with the values of inclusive education.

Assessment Reforms and Feedback for Learning

Assessment in the Formula Smart City project moved beyond traditional exams:

- **Formative Assessment:** Continuous feedback was provided during the project.
- **Peer Assessment:** Students evaluated each other's contributions, promoting accountability. They exchanged drafts of written work for constructive feedback, enhancing editing and collaboration skills.
- **Self-Reflection:** Learners reflected on their growth, challenges and achievements.
- **Holistic Evaluation:** Success was measured not only by the final model but also by teamwork, creativity and problem-solving.

This reformative approach emphasized learning as a process rather than a product.

Meaningful Integration of Technology and AI in Classrooms

Technology played a crucial role in the project:

- **Digital Tools:** The very idea of embedding formulas into infrastructure reflected the integration of digital technology into learning. Display boards were used to visualize formulas.
- **AI Integration:** AI-supported simulations helped students understand complex scientific concepts. By leveraging technology, the project prepared students for the digital future while reducing academic stress.

Social Emotional Learning (SEL)

SEL was embedded into every stage, ensuring students developed emotional intelligence alongside academic knowledge.

- It encouraged empathy and collaboration.
- Built resilience through overcoming challenges.
- Promoted pride and confidence in accomplishments.
- Taught conflict resolution and teamwork skills.

Values and Life Skills Education- The Formula Smart City project was a platform for instilling values and life skills:

- **Creativity and Innovation:** Students learned to think outside the box.
- **Problem-Solving:** Real-world challenges were addressed through scientific and artistic solutions.
- **Communication:** Presentations and reports enhanced language skills.
- **Mental Well-being Emphasis:** The project demonstrated that innovative pedagogy can reduce anxiety and promote joy in learning. It fostered Global Citizenship and Ethical Awareness
- **Visionary Impact:** The Formula Smart City framework can be adapted for other subjects

and levels. With refinement, this model could revolutionize education by making knowledge accessible, logical and engaging.

Conclusion

The Formula Smart City project exemplifies how innovative pedagogy, aligned with NEP 2020, can transform education. This holistic approach emphasised on interdisciplinary, experiential and learner-centric education, preparing students not only academically but also emotionally and socially for future challenges.

An important dimension of the project is its potential to raise awareness about environmental issues. By designing a smart city, students explored concepts such as renewable energy, waste management and green spaces. Integrating environmental science with creative design helps students appreciate the interconnectedness of ecological health and human well-being. It stands as a testament to the power of education that prioritizes both knowledge and well-being, offering a scalable framework for holistic student development.

This project supported multimodal learning by engaging students through various modes—visual (design and models), kinesthetic (building and hands-on activities), auditory (discussions and presentations), and linguistic (writing and reporting). This diversity catered to different learning styles, making the educational experience inclusive and effective. For example, students who excelled in verbal expression could contribute through storytelling or presentations, while those with spatial skills could focus on model construction.

To further support mental well-being, the project could incorporate mindfulness practices such as guided reflections, breathing exercises, or brief meditation sessions before or after project activities. These techniques helped students manage stress, improve focus and cultivate emotional regulation, complementing the SEL components embedded in the project.

Engaging parents and the wider community can amplify the project's impact. Organizing exhibitions, open houses, or digital showcases can further allow students to present their work to diverse audiences, reinforcing their communication skills and confidence. Community feedback can provide valuable perspectives and encourage lifelong learning.

The project's framework is adaptable to various educational contexts and age groups. For junior students, simplified models and concepts can be used, while advanced learners can tackle more complex scientific and ethical issues. This flexibility ensures that the Formula Smart City remains relevant and impactful across different settings.

Student engagement, academic achievement and well-being indicators—can inform refinements. Collecting qualitative and quantitative data may help facilitators tailor the approach to meet evolving needs and maximize benefits. These additional elements enrich the Formula Smart City project, making it a comprehensive educational model that not only imparts knowledge but also nurtures essential skills and values for the 21st century. By embedding these insights, the project can serve as a beacon of pedagogical innovation and holistic student development.

6

Classroom Pedagogy Through a Teacher's Lens

Priya Garg (PGT History)
Modern School, Vasant Vihar, New Delhi

Introduction

As a school teacher, teaching grades (IX-XII), I have often experienced the distance between curriculum expectations and everyday classroom realities. In my experience at Modern School, this gap becomes most visible when carefully designed syllabi meet classrooms filled with adolescents who think, question, and learn in ways shaped by their social and cultural environments. Shiksha Samvaad offers a meaningful platform to reduce this gap by encouraging teachers to share pedagogical practices that are authentic, reflective, and grounded in lived classroom experience. In modern schools, while infrastructure, digital access, and resources may be available, challenges such as syllabus pressure, examination anxiety, uneven learning levels, and limited instructional time continue to shape classroom dynamics. These realities demand pedagogical approaches that are practical, adaptable, and student-centred.

Over the years, I have come to understand that effective pedagogy does not require dramatic changes or additional resources. Instead, it depends on how teachers frame questions, connect content to familiar contexts, listen carefully to students, and reflect on learning outcomes. This paper shares pedagogical practices I have implemented in Grades IX and X, primarily in humanities classrooms. These practices focus on learner engagement, conceptual understanding, formative assessment, student voice, and reflection. The intention is to humanise pedagogy by recognising students as thinking individuals whose learning is influenced by the world they inhabit beyond textbooks.

Shifting Focus from Teaching to Learning

Early in my teaching journey, I believed that effective teaching meant clear explanations and timely syllabus completion. Classroom experience gradually taught me that clarity of explanation does not always lead to depth of understanding. Shifting focus from teaching to learning required observing student responses rather than measuring my own performance.

In learner-centred classrooms, students speak more, question ideas, and feel safe making mistakes. My role shifted from content expert to facilitator. While teaching the French Revolution in Grade IX, instead of narrating events, I divided students into groups representing peasants, clergy, and nobility. Students were encouraged to express their concerns and demands as if they were characters in a story. To help them

visualise social inequality, references were made to familiar film scenes depicting class divide, which immediately sparked discussion.

One student later reflected, "When we discussed history as different groups instead of just listening, it felt like we were part of the lesson. I remembered the chapter better because I understood how people felt, not just what happened." Participation increased, and written responses showed improved analysis.

Teaching for Conceptual Understanding

Students in Grades IX and X often rely on memorisation, which becomes evident during application-based questions. As a history teacher working with adolescents, I noticed that students could reproduce textbook answers but struggled to explain ideas in their own words. To address this, I began planning lessons around core concepts rather than textbook headings.

While teaching nationalism, I focused on ideas of identity and belonging before introducing historical movements. Students discussed how identity is portrayed in films, advertisements, and digital media, where emotions, symbols, and narratives are used to create a sense of belonging. These discussions provided a familiar entry point into abstract ideas.

A Grade X student shared, "Earlier I used to memorise answers, but when we talked about ideas first, the chapter made more sense. I didn't have to mug up everything before the test." This approach reduced rote learning and strengthened conceptual clarity.

Using Real-Life and Media Contexts

Learning becomes meaningful when students connect concepts to lived experiences. I consciously began linking lessons to current events, school situations, and popular media that students already engage with. These references were used subtly to support understanding, not to replace academic content.

In Grade X History, while teaching power-sharing, students analysed leadership roles by comparing them with characters from familiar web series. They discussed decision-making, accountability, and public perception. Similarly, advertisements were used to explore persuasive techniques and representation while discussing mass movements and propaganda.

A student remarked, "Connecting topics to things we see in shows or ads makes learning easier. It feels like we are learning for understanding, not only for exams." Such discussions made abstract ideas relatable and memorable.

Assessment as a Tool for Learning

Initially, assessment in my classroom was limited to periodic tests. I realised that delayed feedback often failed to address misconceptions effectively. I began using assessment during lessons through oral questioning, short reflections, and exit slips.

At the end of lessons, students wrote one concept they understood and one question they still had. Occasionally, students were asked to relate concepts to a scene, slogan, or storyline they remembered, which revealed depth of understanding.

A Grade X student reflected, "Exit questions helped me realise what I didn't understand immediately. It was better than finding out only after the test." Assessment gradually became part of learning rather than a source of anxiety.

Encouraging Student Voice

Allowing students to express opinions without fear transformed classroom dynamics. In humanities classrooms, interpretation and reasoning matter as much as factual accuracy. I encouraged students to justify answers instead of searching for model responses.

In Grade X English, students were allowed to choose examples from films or series while analysing themes. Participation increased, particularly among quieter students.

One student shared, "When we were allowed to share our opinions, I felt more confident. Even if the answer was not perfect, explaining it helped me learn." Student voice strengthened engagement and ownership of learning.

Collaborative Learning

Group work initially felt chaotic and time-consuming. However, with structure, it became effective. Assigning clear roles ensured focus and accountability.

In Grade X, students worked on case-based questions in groups, sometimes drawing parallels with storylines they were familiar with. Peer explanations improved clarity, communication skills, and mutual respect.

Purposeful Use of Technology

Technology in modern classrooms can be distracting if used without purpose. I learned to use digital resources selectively. Short clips, visuals, or timelines helped set context, but learning occurred through discussion and reflection that followed. Technology supported interaction rather than replacing it.

Differentiation and Inclusion

Even in modern classrooms, learning levels vary. I designed tasks with varying complexity. Some students focused on structuring responses, while others analysed perspectives using contemporary examples. This ensured inclusion and built confidence across learning levels.

Reflection and Metacognition

Student reflection proved transformative. After assessments, students wrote brief reflections on preparation strategies, mistakes, and improvements.

A Grade IX student noted, "Writing reflections after tests helped me understand my mistakes. I stopped feeling scared of marks and started focusing on improvement." Reflection shifted attention from scores to growth.

Teacher Reflection and Collaboration

Pedagogical growth deepened through regular reflection and collaboration with colleagues. Sharing classroom experiences, including the use of media and real-life examples, helped refine strategies and maintain academic balance. Teaching became a collective learning process.

Reflective Teacher Quote

"When I connected concepts to what students already watch, listen to, and talk about, learning became more meaningful. The classroom felt alive, thoughtful, and human."

Conclusion

Shiksha Samvaad encourages teachers to value authentic classroom practices. From my experience, effective pedagogy is reflective, responsive, and deeply human. Learner-centred teaching, conceptual clarity, formative assessment, collaboration, and reflection are achievable within everyday classrooms. When pedagogy acknowledges students' cultural worlds while maintaining academic rigour, learning becomes engaging and lasting. Such practices prepare students not only for examinations, but also for thoughtful participation beyond school.

Lavanya Pandey

7

From Curriculum to Character: Integrating Social-Emotional Learning in Indian School Classrooms

Yashaushwani Bakshi (School Counsellor)
Holy Child Sr. Sec. School, Tagore Garden

Abstract

This paper presents a systems-integrated approach to social-emotional learning developed through a decade of school psychology practice. Rather than treating holistic development as aspirational rhetoric, this work demonstrates how integrating Bronfenbrenner's Ecological Systems Theory with Bloom's tri-domain taxonomy creates measurable improvements in student well-being while reducing remedial counselling needs. Two primary interventions are highlighted: (1) age-based grouping in early years to address relative age effects, and (2) tri-domain lesson planning that embeds affective and psychomotor outcomes alongside cognitive domain. Findings indicate that preventive, systemic integration of social-emotional learning into daily instruction is both achievable and essential.

Keywords

Social-emotional learning, holistic development, affective education, developmental readiness, systems integration, relative age effect

Introduction

"Had you not been there, I would not have become who I am today". When a student shares these words, they reveal something profound about educational impact. This statement, heard multiple times across a decade of school psychology practice, was never about a single counselling session or crisis intervention. It is a reflection of cumulative experiences across multiple support systems, including classroom instruction that acknowledged emotional states, peer networks that observed withdrawal, parent education that developed comprehension, and institutional structures that normalized mental health as integral to learning.

Schools are envisioned by the National Education Policy 2020 as "centres of skills and sensibility," but holistic development is often fragmented; one period emphasizes education, another emphasizes academic instruction, and counselling for "problems" is separated from daily learning. Genuine holistic development necessitates the simultaneous and systematic integration of instructional design, ecological awareness, and developmental psychology across cognitive, affective, and psychomotor domains. Drawing from ten years of practice-based evidence in school psychology, this work presents two interconnected interventions that operationalize theoretical frameworks into practical application.

Making Holistic Development Operational

One could refer to holistic development as a "clitché"- a term so overused that it has lost its

practical significance. The Ecological Systems Theory proposed by Bronfenbrenner (1979) provides the framework for genuine integration of a child. Students live in a nested system that includes microsystem (classroom, family), the mesosystem (homeschool connections), the exosystem (institutional policies), and the macrosystem (cultural values). True holistic development takes place only when these systems align to support growth across all domains concurrently rather than sequentially.

The Bloom's taxonomies have been in the educational settings since a long time inculcating the cognitive (1956), affective (Krathwohl, Bloom & Masia, 1964), and psychomotor (Simpson, 1972) domains. However, lesson planning usually only considers cognitive outcomes only when evaluating learning objectives. This division is predicated on the idea that physical activity and emotional control occur apart from instruction. A child's development is considered holistic only when it incorporates contextual and social areas too as proposed by Vygotsky's Zone of Proximal Development (1978) which highlights the need for scaffolding cognitively but also what they can manage emotionally and physically.

The four interrelated and integrated elements form the foundation of the integration model implemented that are described in this study:

1. **Developmental Readiness**: In order to foster inclusivity, grouping and instruction should be in line with the developmental milestones before eventually combining these sections.
2. **Instructional Integration:** Including affective and psychomotor learning outcomes along with cognitive objectives in each lesson.
3. **Environmental Scaffolding:** Establishing institutional frameworks, parent education programs and orientations, and peer support to normalize social-emotional development as essential academic work.
4. **Mental Health Initiatives:** Incorporating daily affirmations for self-efficacy, open mics (circle times) for vulnerability sharing, and yearly self-care kits (such as stress balls, journaling, and meditation) to normalize emotional tools.

Methodology: Two interrelated interventions were designed and examined: first, a classroom organisation model that grouped students according to relative age within the academic cohort to enhance developmental sensitivity; and second, the use of differentiated teaching methodologies to support varied learning and emotional readiness levels within these groups.

Intervention One: Developmental Equity through Age-Based Grouping

A concerning pattern emerged from an analysis of school nursery-level performance data: Students born between January and March relatively performed lower compared to April-June born peers in the same classroom. Before completing their first year of formal education, these younger students were referred for remedial support and labelled as "slow learners".

In educational psychology, this "relative age effect" has been extensively studied (Bedard & Dhuey, 2006; Cobley et al., 2009). Although

they are assessed using the same criteria, children born shortly before the academic year cutoff dates are developmentally younger than those born shortly after. Cognitive, motor, and social differences can be quite noticeable in twelve-month-old nursery classrooms. This results in a systematic disadvantage based solely on the timing of birth, which is an uncontrollable factor.

Design 1- Restructuring Nursery Sections: A four-year longitudinal intervention was performed that restructured nursery sections based on developmental readiness grouping" rather than random distribution. This intervention also aligns with inclusive education norms as it targeted developmental readiness rather than ability, disability, or socioeconomic status, and yielded equity-focused outcomes like reduced learning difficulties.

The school adopted the following plan for Nursery classes of academic sessions 2021 to 2025 with changing class sections with respective cohorts every year:

- Section A: April-June births
- Section B: July-September births
- Section C: October-December births
- Section D: January-March births

Teacher training concentrated on adapting instructional pace, activity duration, and scaffolding intensity according to developmental stage as well as differentiating between learning disabilities and developmental readiness.

Intervention Two: Tri-Domain Lesson Planning and Affective Integration

Traditional lesson plans focus almost exclusively on cognitive outcomes: "Students will identify, analyze, evaluate, create..." These objectives address only one dimension of learning. Bloom's affective domain (Krathwohl, Bloom & Masia, 1964) describes five levels of emotional engagement: receiving (awareness), responding (participation), valuing (commitment), organization (integrating values), and characterization (acting consistently with values).

Design 2- The Redrafted Lesson Plan: Four years ago, the lesson planning template was restructured to mandate multi-domain outcomes for every lesson, with differentiated experiential learning strategies for students across ability levels. The revised template included not just generic learning outcomes but rather specific segments to inculcate cognitive, emotional, psychomotor and 21st century skill domains as presented in Figure 1.

A) Learning Outcomes Framework: To incorporate all domains of Bloom's taxonomy.
B) Experiential Learning Strategies: The template employed Kolb's experiential learning cycle with differentiated approaches for student from each category of ability and helps in designing relevant differentiated instruction.

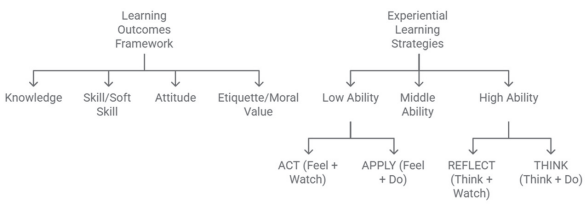


Fig 1: Learning Outcomes and Experiential Learning Strategies

Results

Intervention 1: Before sections were rearranged for Grade 1, cohorts were monitored for four years (from nursery to kindergarten). The findings suggested that in the academic domain; there were no discernible variations from previous sections reading, numeracy, and motor skills baseline assessments from Grade 1. When Grade 1 sections were mixed, the teachers reported no significant academic gaps between the two cohorts as they had been addressed at the pre-primary stage itself. The Grade 5 longitudinal tracking showed noteworthy results of reduced learning difficulties and effectiveness of remedial support provided by teachers that additionally filled the developmental gaps and led to lower need for intensive intervention in upper primary.

In addition to this, the students also exhibited higher sense of confidence and higher academic selfconcept compared to previous instances of students who were labelled as low achievers but in fact, had only developmental milestone differences. Parents also noted that individual differentiation plan increased their children's confidence and abilities.

Differentiated methodologies allow educators to accommodate developmental diversity in a manner consistent with contemporary educational frameworks such as NEP 2020. A five-year-old being told that they are "behind" does not hear "developmentally young"- they hear "not good enough." That message becomes the lens through which they view themselves for years. Protecting self-concept in foundational school years may be as important as any academic skill taught.

Intervention 2: This framework made explicit what excellent teachers intuitively do; teaching the whole child while ensuring consistency across classrooms and providing structured support for remedial measures when needed.

Traditional differentiation addresses academic readiness through varied text complexity or problem difficulty. Tri-domain differentiation recognizes that students also have different emotional and physical readiness levels.

Affective differentiation acknowledges that some students need explicit permission to feel emotions during learning, others need structured frameworks for expression (sentence starters, emotion wheels), some need privacy before sharing, and others need public validation.

Psychomotor differentiation recognizes that some students learn best through movement, some need physical activity to regulate attention, some feel vulnerable during physical activities and need lowstakes options, and others excel physically but struggle academically and need movement-based success.

When lesson plans explicitly address these variations, teachers stop viewing emotional or physical needs as disruptions and start seeing them as legitimate learning variables requiring intentional planning. When affective outcomes are integrated into daily instruction, students learn emotion regulation as part of classroom routine. Teachers notice early signs and provide

in-the-moment support.

The school counsellor consults with teachers rather than extracting students from class. This decrease does not indicate fewer student problems. Rather, problems are being addressed developmentally and preventively rather than remedially. Anxiety about exams, sadness over social rejection, frustration with difficult material; these are now handled within the instructional environment where they belong. Referrals that do occur now represent genuinely complex cases requiring specialized intervention: trauma, family crisis, diagnosable mental health conditions. The shift elevates every teacher's role as a facilitator of social-emotional development rather than diminishing the counsellor's specialized function.

Beyond classroom-level integration, several school-wide initiatives have created the environmental scaffolding for systemic change along with these two interventions as given in the Figure 2.

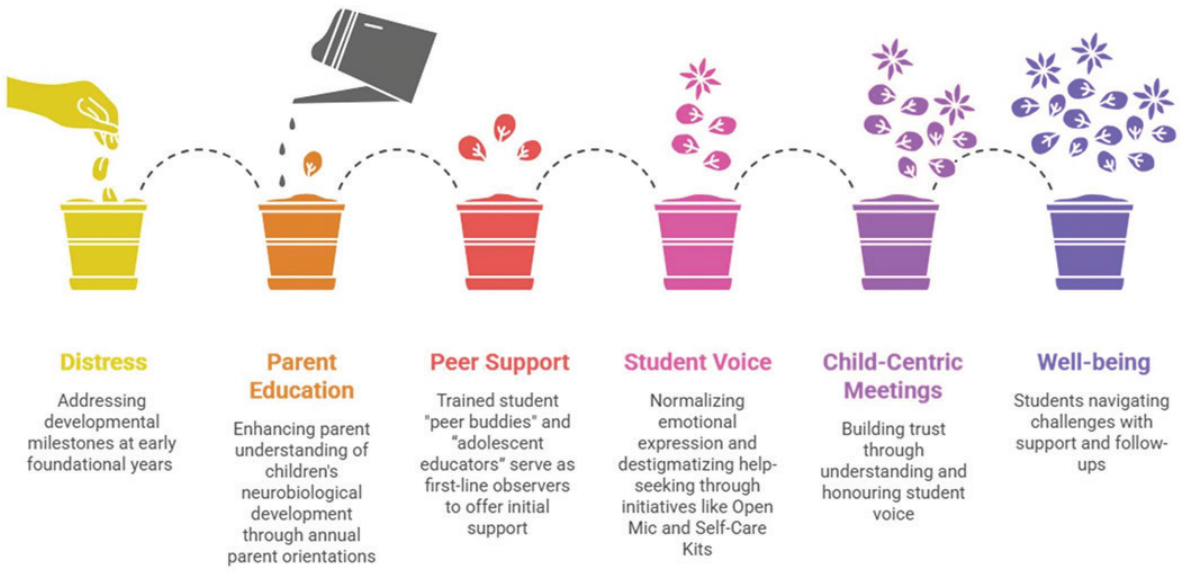


Fig 2: Adolescent Mental Health Support Strategies

These structures operationalize and incorporated Bronfenbrenner's mesosystem i.e. the connections between microsystems. When home and school align in their understanding of development and their respect for the student as an active agent, the scaffolding becomes robust.

Discussion

Educational research rightly demands measurable outcomes: attendance rates, behavioural referrals, academic performance, survey data. These quantify impact and justify resources. But the truest measure of social-emotional learning success transcends rubrics.

Research on protective factors in adolescent mental health (Luthar & Cicchetti, 2000; Rutter, 1987) identifies critical elements: connectedness with caring adults, self-efficacy, meaning-making ability, social support networks, and

institutional safety. The systems-integrated approach addresses all five simultaneously.

Two key findings emerge from practice-based evidence:

1. Developmental grouping in early years prevents the systematic disadvantaging of younger students, protecting self-concept during foundational school years when academic identity forms.
2. Tri-domain lesson planning with affective integration reduces remedial counselling needs while building students' capacity for emotional regulation, self-awareness, and resilience as part of daily learning.

Holistic development transforms from aspirational rhetoric to operational reality when schools systematically integrate developmental psychology with instructional design across cognitive, affective, and psychomotor domains.

Policy recommendations may include professional development for teachers in affective pedagogy, tridomain lesson design and school evaluation frameworks including well-being metrics alongside academic indicators

Conclusion

Schools as "centres of skills and sensibility" become reality when every lesson addresses the thinking, feeling, moving child; when developmental stages guide grouping and instruction; when parents understand what their children are navigating; when peers are trained to notice and support and when the entire system declares daily to every child: "We see you wholly. You belong here."

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8

From Support to Belonging: Leading Inclusive & Differentiated Practices in the Foundation Stage

Pooja Shandilya (Headmistress Foundation Stage)
Ahlcon International School

Abstract

This paper reflects on a leadership-guided journey at Ahlcon International School to nurture inclusive and differentiated classroom practices in the Foundational Stage (Nursery to Grade II), in alignment with NEP 2020 and the National Curriculum Framework for the Foundational Stage (NCFFS). As Headmistress of the Foundational Stage, under the able guidance of my Principal, Mr. Sanjay Yadav, I led a gradual shift away from isolated or remedial support structures towards classroom practices that recognize every child's right to participation, dignity, and growth. Assessment was intentionally reimagined as a continuous, observation-led process—used not to label children, but to understand them more deeply and respond more thoughtfully.

Drawing on sustained classroom observations of over 700+ learners, the paper shares how early identification, flexible instructional planning, and close collaboration among teachers, counsellors, and parents created responsive pathways for children with diverse learning profiles. These included learners requiring additional support as well as those demonstrating advanced readiness. Grounded in the principles of NEP 2020 and NCFFS, the paper frames inclusion not as a standalone intervention, but I feel as a leadership responsibility—where structured support, over time, gives way to a lived sense of belonging within everyday classroom life.

Keywords

NEP 2020; NCFFS; Foundational Stage; Inclusion; Differentiated Teaching; Observation-based assessment; Leadership in Early Education.

1. Introduction: Rethinking Support and Belonging

In the early years, learning differences often surface quietly—through hesitation in speech, difficulty sustaining attention, limited peer interaction, or challenges in fine-motor skills.

As a Foundation Stage leader, I observed that while some children were receiving additional support, this did not always translate into active participation or a sense of belonging within the classroom. Despite sincere efforts such as extra worksheets, pull-out sessions, or increased adult supervision, some learners continued to remain on the margins of classroom engagement.

At the same time, children who demonstrated advanced language, creativity, or problem-solving skills were not always

sufficiently challenged within shared learning experiences. This gap prompted a shift in thinking. Inclusion could not be addressed by adding layers of support or enrichment alone; it required a redesign of everyday classroom practices so that participation and challenge became natural for all learners from Nursery to Grade II.

2. Context and Objectives

Ahlcon International School is a CBSE-affiliated K–12 institution in New Delhi catering to a diverse and heterogeneous group of learners. Within the Foundational Stage, classroom observations revealed that while most children progressed through shared learning experiences, a significant number requireddifferentiated support at various points in the year. Learning differences commonly emerged in language development, participation, emotional regulation, and early literacy. Simultaneously, some learners demonstrated heightened curiosity or advanced readiness requiring thoughtful extension rather than acceleration.

These variations were not always adequately captured through existing assessment practices. Teachers sought clearer guidance on responding to diverse needs within mainstream classrooms, while parents looked for meaningful indicators of overall growth.

In response, I identified four practice-oriented objectives:

1. Embed inclusive and differentiated practices within everyday classroom teaching aligned with NEP 2020 and NCFFS.
2. Design classroom experiences that provide multiple, developmentally appropriate pathways for participation while maintaining shared learning goals.
3. Strengthen observation-based assessment by documenting small but significant developmental shifts across academic, social, and emotional domains.
4. Ensuring documentation remained purposeful and child-centered, supporting instruction without disrupting classroom engagement.

3. Observation-Led Practice Before Labels

- Classroom practices shifted from early categorization to systematic, observation-led understanding, allowing developmental needs to surface over time.
- Teachers documented patterns of learning and behavior within natural contexts, tracking change across weeks rather than relying on isolated snapshots.
- Observations focused on language, interaction, attention, emotional regulation, motor readiness, curiosity, and participation.
- These insights revealed subtle developmental progress and guided instructional adjustments and collaborative planning.
- The approach reflects the NCFFS emphasis on continuous, descriptive assessment and NEP 2020's child-centred, developmentally appropriate evaluation.

4. Differentiation as Everyday Pedagogy

- Differentiation was embedded as everyday pedagogy, not as a separate or remedial intervention.

- Instruction was adapted across access, process, and expression using multisensory strategies, flexible grouping, and responsive pacing.
- Learners needing support engaged in oral language, phonemic awareness, and motor-readiness experiences, while advanced learners were extended through open-ended tasks and leadership roles.
- These practices promoted sustained engagement and participation, contributing to inclusive, developmentally responsive classrooms.

5. Inclusive Classroom Experiences

Children requiring additional support remained part of shared learning experiences. Circle-time routines incorporated visual prompts and predictable structures; story sessions used repetition and discussion; and role-play, music, and movement supported emotional regulation. Open-ended tasks allowed confident learners to extend ideas creatively without separation from peers.

Where additional adult support was present, the focus remained on scaffolding independence rather than replacing teacher interaction.

6. Collaboration and Parent Partnership

Inclusive practice was sustained through collaboration among teachers, the school counsellor, and families. Observation-based feedback shared with parents focused on growth and emerging skills rather than deficits, fostering trust and continuity between home and school.

7. Making Growth Visible: Observation-Based Growth & It's Tracking

To ensure that inclusive practices translated into meaningful outcomes, progress was documented through observation-based growth records maintained across the academic year (2024–25). Teachers recorded initial observations, mid-year shifts, and emerging end-of-year patterns across key developmental domains.

Sample Observation-Based Growth Indicators (Aggregated Data)

Focus Area	Initial Observation	Mid-Year Shift	End-Year Pattern
Oral language	Non-verbal / single-word responses	Short phrases with adult prompts	Independent verbal participation (with motivation and support)
Group participation	Avoidance or passive presence	Partial engagement in group tasks	Active participation with peers
Phonemic awareness	Difficulty identifying sounds	Sound recognition with visual cues	Independent sound–letter linkage
Writing readiness	Reluctance or motor difficulty	Guided letter formation	Emerging independent writing (occasional support required)

Across learners, approximately one-third demonstrated significant shifts across multiple domains, a larger proportion showed steady progress, and a smaller group required sustained support. Importantly, every child demonstrated movement—academic, social, emotional, or behavioural—reinforcing the value of sustained observation and responsive practice.

8. Moving Forward (2026–2028)

Two-Year Roadmap: Strengthening Inclusive Practice in the Foundational Stage

Year 1: Building Shared Understanding and Practice

- Strengthen observation-led assessment through common frameworks and calibration sessions, ensuring consistency and depth in documenting children's learning.
- Sensitize teachers to diverse learning needs and special educational needs through case-based discussions, guided workshops, and reflective dialogue that build empathy, clarity, and confidence.
- Embed responsive differentiation within daily classroom practice using multisensory strategies, flexible grouping, and varied modes of expression aligned with NCFFS competencies.
- Refine documentation practices to remain purposeful, child-centred, and directly connected to instructional decision-making rather than compliance.
- Formalize collaborative planning structures among teachers, counsellors, and leadership to support early identification and responsive planning without premature labelling.
- Strengthening parent partnerships by building shared understanding of developmental diversity and observation-based assessment.
- Year 2: Deepening Inclusion and Ensuring Sustainability
- Deepen teacher expertise in inclusive education, focusing on understanding individual learning profiles, reasonable accommodations, and strength-based planning for children with special needs.
- Embed student agency and participation, ensuring that children with diverse needs of experience voice, choice, and leadership within age-appropriate classroom contexts.
- Develop teacher-mentors and leadership pathways to sustain inclusive practices and support peer learning across the Foundational Stage.
- Implement reflective leadership cycles to review classroom practices, learner engagement, and inclusion indicators aligned with NEP 2020 and NCFFS.
- Document and share inclusive practices through reflective narratives and case examples, strengthening institutional learning and continuity.
- Evaluate impact holistically, focusing on engagement, confidence, participation, and a growing sense of belonging for all learners.

9. Leadership Decisions Supporting Inclusion

The sustainability of inclusive practice was shaped through intentional, collaborative leadership decisions. Observation was embedded as a

continuous, descriptive, and rigorous assessment practice in line with NEP 2020, protected spaces were created for professional reflection, and documentation was consciously kept purposeful rather than performative. These decisions were enacted alongside teachers, strengthening trust in professional judgement and fostering shared ownership. As a result, inclusion moved beyond compliance to become an embedded practice within everyday classroom life.

Conclusion

Within the Foundation Stage spanning Nursery to Grade II and serving over 700+ learners, inclusion must be carefully designed, consistently nurtured, and collaboratively led. Through sustained observation, responsive differentiation, and reflective dialogue, classrooms gradually evolved into spaces where children's strengths and needs were recognized with sensitivity and intent. This journey demonstrates that when leadership focuses on creating conditions of trust, clarity, and professional agency, support systems naturally transform into a culture of belonging. Aligned with the vision of NEP 2020 and the NCFFS, this paper offers a grounded account of inclusive practice—illustrating how leadership, enacted in partnership with teachers, can meaningfully reshape everyday classroom realities in the early years.

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Aditya Verma

9

Innovative and Impactful Pedagogical Practices in Senior Secondary Economics: A Competency-Based Classroom Model Aligned with NEP-2020 and NCF-SE-2023

Puneet Duggal (Vice Principal)
Ahlcon International School, Mayur Vihar

Abstract

India's National Education Policy (NEP) 2020 and the National Curriculum Framework for School Education (NCF-SE) 2023 mandate a shift from content-heavy, examination-driven instruction to competency-based, experiential and inquiry-oriented learning. Economics, as a discipline linking analytical reasoning with real-world decision-making, depends on pedagogies that enable learners to construct meaning rather than reproduce information. This paper presents an academic case study of classroom-implemented practices in Grades XI and XII Economics—experiential learning, gamification, case-based learning, project-based learning, inquiry-based learning, storytelling pedagogy, flipped and blended learning, peer teaching and collaborative learning. Drawing on classroom evidence, learner artefacts and assessment outcomes, the study examines how these strategies enhanced conceptual understanding, economic reasoning, learner engagement and academic performance. A Class XII cohort average of 89.8% suggests that competency-aligned pedagogical innovation can strengthen both learning quality and examination readiness.

1. Introduction

Economics at the senior secondary level demands numerical and graphical proficiency as well as the ability to interpret behaviour, institutions and policy choices. Yet, classroom practice has often privileged memorisation of definitions and procedural problem-solving over economic reasoning and application. As a result, learners may complete routine calculations but struggle to analyse unfamiliar real-world situations.

NEP-2020 and NCF-SE-2023 call for a transformation by foregrounding competencies such as critical thinking, inquiry, data interpretation, ethical judgement and problem-solving. For Economics, this implies shifting from "answer-first" to "reason-first" learning where students interpret evidence, explain assumptions and justify conclusions. This paper reports on a two-year pedagogical intervention integrating innovative learning strategies across Microeconomics, Macroeconomics and Indian Economic Development to strengthen both learning and measurable outcomes.

2. Research Context and Methodology

The study was conducted in Grades XI and XII Economics at Ahlcon International School.

Learners represented a range of achievement levels, including students who found marginal analysis, policy tools, and data interpretation challenging.

A classroom-based action research design was used. Innovations were embedded within routine teaching and refined through reflection. Evidence included classroom observation notes, student worksheets/ simulations/projects, reflective responses, unit tests, board-aligned practice papers and end-of-year results. The research examined: • How innovative practices influence conceptual understanding and economic reasoning. • How pedagogy-driven learning relates to academic achievement.

Across interventions, planning followed an alignment routine: (a) identify the competency focus (reasoning, quantitative literacy, interpretation, decision-making, collaboration), (b) specify learning outcomes (explain, apply, interpret), and (c) integrate assessment evidence (short checks, rubrics, caselets and board-style responses).

3. Experiential Learning in the Chapter "Production"

Production theory and the Law of Variable Proportions were taught through experiential simulation. Student groups functioned as "firms," used fixed and variable inputs to produce a tangible output in timed rounds, recorded total product and calculated marginal product. Learners compared group results and discussed why outputs differed (coordination, division of labour, fixed-input constraints).

Learning Outcomes • Improved accuracy in identifying production stages in unfamiliar datasets. • Better conceptual coherence in interpreting TP/MP graphs. • Clearer explanations of why marginal productivity changes. These outcomes align with Kolb's (1984) view that learning grounded in experience improves retention and transfer.

4. Gamification in Cost Analysis

Cost concepts were taught through a gamified firm-simulation where teams made output decisions under changing cost conditions. Points were awarded for correct calculations and, critically, for justifying decisions using cost logic (MC, AC, AVC). Post-game consolidation required teams to write short explanations linking MC movements to AC behaviour and to recommend output decisions under a cost shock.

Learning Outcomes • Reduced errors in MC and AC calculations. • Stronger understanding of the MC–AC relationship and short-run decision logic. • Noticeable improvement in board-style explanatory writing. Gamification shifted cost from computation to decision-making, consistent with Deterding et al. (2011).

5. Case-Based Learning in Money and Banking

In Macroeconomics, students analysed cases on commercial banking, credit creation and monetary policy. Balance-sheet extracts and policy prompts were used to structure discussion from comprehension to evaluation. Students practised evidence-linked writing by citing

figures from the case before drawing conclusions about liquidity, inflation and growth impacts.

Learning Outcomes • Stronger conceptual links between monetary tools and macro outcomes. • More analytical, less descriptive answers with clearer cause–effect chains. • Greater financial literacy and policy awareness. Case pedagogy supports transfer from theory to practice (Herreid, 2007).

6. Project-Based Learning in Government Budget

Students designed sector-specific budgets, researched revenue/expenditure priorities and justified fiscal choices. A Youth Parliament–style debate (MUN-like simulation) required groups to defend allocations using opportunity cost, equity and welfare arguments. The project culminated in a brief policy note supported by tables/graphs, assessed using a rubric (reasoning, data use, coherence).

Learning Outcomes • Sustained analytical thinking and stronger justification of fiscal trade-offs. • Improved understanding of deficit, subsidies, taxation and public expenditure in application questions. • Enhanced communication and data interpretation. PBL fostered ownership and real-world relevance (Thomas, 2000).

7. Inquiry-Based Learning in Employment

Employment and unemployment were taught through inquiry using labour data, curated media sources and socio-economic trends. Students framed questions, proposed explanations and evaluated policy responses (skills, public works, jobless growth). Structured discussion helped learners separate opinion from evidence.

Learning Outcomes • Improved ability to interpret employment trends and statistics. • Written responses showing causal reasoning rather than rote recall. • Stronger linkage between concepts and contemporary labour realities.

8. Storytelling in Profit Maximisation

Story-based pedagogy was used to teach the MC–MR principle of profit maximisation. Narrative logic helped students internalise why production expands when marginal gain exceeds marginal sacrifice and stops when the relationship reverses. Short follow-up tasks required learners to locate equilibrium and justify it in economic terms.

Learning Outcomes • Fewer misconceptions between revenue and profit. • Better application of MC–MR to unfamiliar contexts. • More coherent conceptual explanations. Narrative supports meaning-making in abstract disciplines (Bruner, 1996).

9. Flipped, Blended, Peer and Collaborative Learning

Pre-class resources freed classroom time for discussion and problem-solving, while digital tools supported visualisation of curves and equilibria. Peer teaching was used to compare alternate approaches (TR–TC vs MC–MR) and to critique sample answers using success criteria.

Learning Outcomes • Greater confidence in analytical dialogue and improved academic

vocabulary. • Measurable gains among average/ struggling learners through peer scaffolding. • Classroom talk shifting from "what is the answer?" to "why is this the answer?" These outcomes reflect social learning principles (Vygotsky, 1978) and NCF-SE's emphasis on learner agency.

10. Assessment Integration and Academic Achievement

Assessment was integrated deliberately: exit tickets, one-minute papers, peer feedback with rubrics, and short caselets provided formative evidence; unit tests and board-style papers included data interpretation, case analysis and structured long answers aligned to learning outcomes. This ensured innovations remained rigorous and exam-relevant.

The framework coincided with improved performance. The Class XII Economics average of 89.8% reflected not only high scores but stronger handling of higher-order and case-based questions. Classroom evidence also indicated reduced reliance on memorised templates and increased capacity to justify responses using economic reasoning.

11. Findings and Discussion

Across chapters, the most consistent change was in the quality of student thinking made visible through talk and writing. In pre-intervention baseline checks, many responses were definition-led and ended with a formula or diagram. After the interventions, a larger proportion of learners began answers by interpreting the prompt, selecting relevant evidence (a table value, a curve movement, a policy tool), and then justifying a conclusion. This shift was particularly evident in case-study and data-based items where students moved from "stating" to "explaining."

The pedagogies also improved classroom participation. Gamified rounds and simulations created low-stakes entry points for hesitant learners, while peer teaching normalised doubt and correction. In reflective feedback, students reported that activities made Economics "easier to remember" because they understood the logic behind results. Importantly, the approach balanced engagement with rigour by requiring written consolidation after activities—briefs, short answers, and structured paragraphs—thereby strengthening board readiness.

12. Inclusivity and Differentiation

The framework incorporated multiple pathways for demonstrating understanding. For example, production simulations and storytelling supported learners who needed concrete anchors, while inquiry and projects challenged high achievers through open-ended analysis. Group roles (data recorder, presenter, verifier) ensured meaningful participation. Short formative checks provided timely support to students who needed additional practice with numeracy and graph interpretation, without delaying the progress of the whole class.

13. Limitations and Future Directions

As a practitioner-based case study, findings are contextual and not derived from controlled comparisons. Future work may include a pre–post concept inventory, common assessment tasks across sections, and systematic coding of student writing for reasoning indicators.

Nonetheless, the evidence suggests that when pedagogy, competencies and assessment are intentionally aligned, innovative methods can improve both depth of learning and examination performance.

Conclusion

The case study indicates that competency-aligned, innovative pedagogy can transform senior secondary Economics into a process of inquiry, reasoning and application. When learners experience, investigate, simulate and reflect, conceptual understanding deepens and achievement improves. Aligning pedagogy with NEP-2020 and NCF-SE-2023 offers a practical pathway for meaningful learning and academic excellence within the spirit of Shiksha Samvad.

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10

Ethical Integration of Generative AI to Enhance Process Writing and Critical Thinking in CBSE Class XI–XII English Classrooms

Ms. Sandhya Gupta (PGT English)
DLF Public School, Sector-2, Rajendra Nagar, Sahibabad

Introduction

As a CBSE English teacher for over two decades now, I have witnessed persistent challenges in senior secondary writing instruction: students' dependence on memorized model answers, anxiety around extended composition, and revision viewed as punishment rather than growth. The writing process often collapses into a single hurried attempt, producing formulaic essays lacking depth and authentic voice.

When ChatGPT emerged in late 2022, students began using it secretively for homework, prompting CBSE to ban it in board examinations as an unfair means. Yet NEP 2020 explicitly calls for technology integration, digital literacy, and critical thinking. This contradiction presented both challenge and opportunity.

Could generative AI be integrated ethically within classrooms—not replacing student thinking but enhancing the writing process? This paper documents a year-long intervention with 80 Class XI–XII students, demonstrating how controlled, teacher-mediated AI use develops writing competencies and critical thinking while respecting CBSE examination integrity. This practice embodies NPSC's vision of schools as centres of skills and sensibility by equipping students with technical capabilities and the ethical judgment necessary to navigate an AI-saturated world.

Pedagogical Context and Rationale

Research shows adolescents struggle with idea generation, coherent organization, sustaining focus, and meaningful revision. In my classroom, these manifested as formulaic essays, superficial engagement, and resistance to rewriting. Many students equated success with reproducing guidebook answers rather than developing original arguments.

The process writing approach—emphasizing prewriting, drafting, feedback, and revision—effectively improves writing quality and confidence. However, teachers cannot provide immediate, individualized feedback to 40 students across multiple drafts, and students lacking timely input often abandon revision.

International studies show AI-supported feedback can enhance writing organization and efficiency when used as a drafting aid. However, without guidance, students use AI opportunistically, undermining learning through plagiarism and cognitive disengagement. The challenge was harnessing AI's benefits while cultivating the critical thinking and ethical awareness NEP 2020 demands.

The Three-Strand Pedagogical Framework

Strand One: Co-Creating Transparent Usage Norms

I established clear usage guidelines through collaborative discussion:

- AI permitted only after students produce initial human-drafted outlines and rough drafts
- AI used for idea expansion, reorganization, refinement, and feedback—not answer generation
- All AI-influenced portions must be annotated with justifications
- Graded assignments require AI-use declarations similar to citations
- AI strictly prohibited in tests and examinations per CBSE regulations

These norms were displayed prominently and revisited regularly. Students signed commitments, creating collective ownership of ethical practice.

Strand Two: AI-Supported Essay Writing Cycle

Students completed 800–1000-word essays on relevant themes: social media and mental health, climate responsibility, examination pressure, gender equity, and digital privacy. Each followed a five-step cycle:

Step 1: Human-Only Pre-writing and Initial Drafting

Students brainstormed using mind maps, then wrote outlines and rough drafts entirely without AI, ensuring original thinking remained foundational.

Step 2: Teacher-Guided AI Interaction

Using shared school devices, students engaged AI through specific metacognitive prompts:

- "Identify counterarguments I haven't addressed"
- "Reorganize these paragraphs for better flow and explain why"
- "Point out unclear or repetitive sentences"
- "Evaluate whether my introduction establishes my position effectively"

This positioned AI as a feedback provider, not content creator.

Step 3: Critical Annotation and Reflection

Students marked all AI-influenced changes with explanatory notes: "accepted for clarity," "rejected—culturally inappropriate," "modified to match my voice," "disagreed with AI's logic." This maintained authentic authorship while developing critical evaluation skills.

Step 4: Human Feedback and Peer Review

I provided targeted feedback on argument quality, evidence, and voice—aspects AI cannot evaluate. Students then engaged in structured peer review.

Step 5: Portfolio Development

Students compiled all drafts, annotations, and reflections into portfolios, aligning with NEP 2020's competency-based continuous assessment.

Strand Three: Critiquing AI-Generated Sample Texts

I asked AI to generate CBSE-style responses at varying quality levels. Student groups applied CBSE rubrics to evaluate these across content, organization, language, and accuracy.

They identified generic phrasing, weak evidence, cultural inappropriateness (AI defaulted to Western contexts), factual inaccuracies, and logical gaps. Groups then revised the responses, discovering substantial human intervention was required to meet standards. This demystified AI, revealing it as a tool producing drafts requiring human judgment rather than finished products. Students developed critical AI literacy—recognizing the technology's capabilities and limitations.

Observable Impact and Learning Outcomes

Enhanced Writing Quality

Students demonstrated clearer thesis statements, logical sequencing, effective transitions, and sophisticated counterargument handling. By the third cycle, many required less AI scaffolding, having internalized organizational principles.

Transformed Revision Culture

Students began viewing revision as normal practice. AI's immediate feedback lowered emotional barriers to rewriting. Producing multiple substantive drafts became expected, fundamentally shifting classroom culture.

Metacognitive and Critical Thinking Growth

The annotation requirement generated rich discourse. Students distinguished between fluent language and strong argumentation, commented on AI's "confident but wrong" responses, and developed frameworks for evaluating suggestions based on audience, cultural context, and logical coherence. These skills transferred to evaluating peer work and published texts.

Reduced Anxiety, Increased Confidence

Students previously avoiding extended writing felt less intimidated. AI provided low-stakes feedback without social anxiety. However, they learned that AI smoothness required scrutiny—polished language could mask weak thinking.

Addressing Challenges and Ethical Concerns

Academic Integrity

Initially, 15% attempted submitting largely AI-generated work. Individual conferences comparing submitted work to annotated drafts and in-class samples addressed this. Random AI-free writing tasks provided comparison baselines, making inappropriate use detectable.

Preventing Over-Reliance

The annotation requirement and critical evaluation tasks prevented uncritical acceptance, developing productive engagement rather than dependent use.

Ensuring Equity

All substantive AI interactions occurred during class using shared devices, maintaining equity while preventing over-reliance.

Teaching Digital Citizenship

Explicit lessons on data privacy, terms of service, and ethical technology use aligned with NEP 2020's digital citizenship emphasis, developing the "sensibility" dimension of NPSC's theme.

Practical Recommendations

Position AI as Scaffold, Not Substitute: Require human drafts first, use AI for refinement, demand transparent annotation to preserve authorship and develop critical thinking.

Embed Within Process Writing: Multi-draft approaches combining AI and human feedback align with NEP 2020's competency-based assessment while teaching that quality writing emerges through revision.

Cultivate Critical AI Literacy: Use AI-generated texts as critique objects. Teach students to identify logical gaps, recognize biases, and distinguish fluency from substance—essential life skills transferable to media literacy.

Maintain Examination Integrity: Be clear that CBSE's prohibition is non-negotiable. Classroom use develops internalized skills applicable in exam contexts.

Address Equity Proactively: Provide school-based access to democratize AI literacy rather than allowing it to become a privilege marker.

Conclusion

This intervention demonstrates that thoughtfully designed AI use can enhance writing instruction and critical thinking without compromising examination integrity or student authorship. Success requires careful scaffolding, explicit norms, substantial teacher involvement, and commitment to maintaining human agency at learning's centre.

The question is not whether students will use AI—they already do—but whether educators will guide that use toward intellectual growth and ethical practice. By bringing AI into classrooms under clear frameworks, we honour NEP 2020's technology mandate and CBSE's integrity standards while developing the critical literacy, ethical judgment, and adaptive thinking students need for an AI-saturated world.

This practice exemplifies NPSC's vision of schools as centres of skills and sensibility: equipping students with technical competencies while nurturing the critical judgment, ethical awareness, and human agency ensuring technology serves learning rather than replacing it. We prepare students not merely for examinations, but genuinely for life.

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11

Amplifying Student Voice through AI: An Inclusive Classroom Practice

Dr. Chandni Agarwal (PGT Computer Science)
Maharaja Agrasen Model School, Pitampura, Delhi

Context and Rationale

In today's classrooms, students are surrounded by fast-moving digital content, yet learning. practices often remain heavily text-based. This creates barriers for many learners-particularly auditory learners, visually impaired students, and those who struggle with reading or language processing. As envisioned in the National Education Policy (NEP) 2020, classrooms must move towards inclusive, experiential, and technology-enabled learning that values multiple modes of expression.

Recognizing this need, I introduced AI-powered voice tools, specifically ElevenLabs, into classroom practice to make learning more accessible, expressive, and student-centred. The objective was not to replace teaching, but to amplify student voice, support differentiated learning, and encourage meaningful engagement through narration, storytelling, and podcasting. What began as a support tool for teachers gradually evolved into a powerful medium for student expression, creativity, and advocacy, allowing learners to use their own voices to explore academic concepts and real-world issues.

Description of the Pedagogical Practice

The practice was implemented over a period of four months with students from Grades 9. and 10. Teachers initially modelled the use of voice AI by converting lesson scripts into short narrated audios using ElevenLabs for text-to-speech generation, including poetry readings, concept explanations, and school announcements. These voice-supported lessons enabled students to revisit content at their own pace and particularly supported learners who benefited from auditory reinforcement.

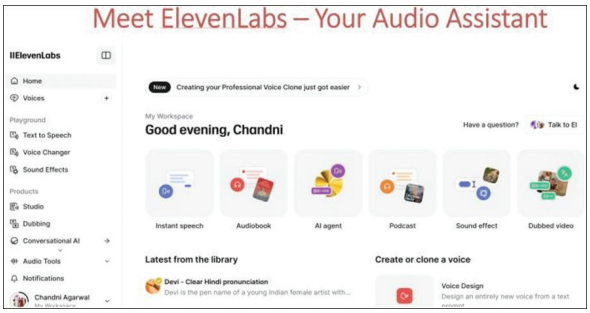


Figure 1 : ElevenLabs AI voice interface used for classroom narration and lesson scripting

Alongside classroom use, I conducted a live national webinar titled "AI Tools for Teachers" on the official NCERT YouTube channel as part of Capacity Building Programmes (CBP). The session demonstrated practical classroom applications of voice AI and was later integrated into the DIKSHA platform, enabling teachers across the country to explore similar practices.

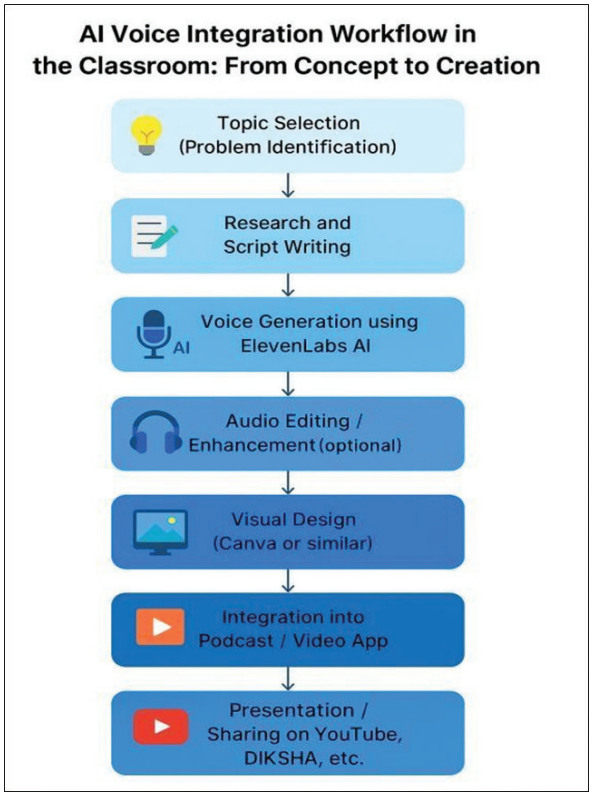


Figure 2: Voice-based learning workflow adopted for classroom and student projects

The same practice was also presented at CBSE STEM-DLD workshops and was selected as one of the best papers.

As students gained confidence, the initiative transitioned into a student-led model. Learners assumed roles such as scriptwriters, narrators, editors, and content curators, using ElevenLabs-generated voice outputs as a creative and assistive medium. They were guided on ethical Al use, voice-data responsibility, and respectful storytelling.

Two major voice-based learning outputs informed and shaped this pedagogical practice: **Brain Rot**- a national-level award-winning educational podcast conceptualised and produced by the author, addressing digital overuse, emotional fatigue, and teen mental health. The podcast received recognition as the Best Audio Podcast at the NCERT Audio Video Festival 2025 and was used as a pedagogical reference model in the classroom to initiate student dialogue, analysis, and voice-based learning.

Meno Care a voice-narrated awareness video developed by students to address menopause and women's health, a topic rarely discussed in school settings. The project encouraged empathy, gender sensitivity, and health awareness through student voice.

Impact on Student Learning and Engagement

The integration of voice Al tools led to visible and sustained improvements in classroom engagement and learning behaviour. Teachers observed improved listening comprehension, clearer pronunciation, and better retention of concepts-especially among auditory learners and students who were previously hesitant to participate.

Students reported increased confidence when hearing their own scripts narrated clearly and professionally. Self-paced listening enabled repeated revision, helping learners grasp complex ideas more effectively. Informal assessments and classroom observations indicated higher voluntary participation, improved collaboration, and deeper engagement with content.

Beyond academic outcomes, the classroom engagements fostered emotional expression and empathy. Brain Rot served as

a reflective listening model for discussions on mental health and digital balance while MenoCare opened respectful dialogue on women's health among mixed-gender groups.

Overall, the classroom environment shifted from teacher-led instruction to a collaborative co-creation space, where students felt heard, valued, and empowered.

Case Snapshots: Giving Voice to Every Learner

To better understand the impact of voice-enabled learning, a few classroom moments are worth highlighting.

One student from Grade 9, who rarely volunteered to read aloud due to low confidence in pronunciation, chose to script a short reflective segment inspired by the Brain Rot podcast. Hearing their own words narrated clearly through Al helped them focus on meaning rather than fear of error. Over time, the student began contributing more actively to group discussions, stating that "my ideas feel clearer when I hear them first."

In another instance, during the MenoCare project, a group of students-initially hesitant to discuss women's health-used voice narration to distance personal discomfort from the topic. The narrated format enabled thoughtful, respectful storytelling, and the group later reflected that voice narration helped them approach sensitive themes with empathy and confidence.

A visually challenged student shared that having access to narrated lesson content allowed independent revision without relying on peers or repeated explanations-this autonomy significantly improved their engagement and sense of inclusion within the classroom.

These small yet meaningful moments illustrate how voice-based tools did more than enhance content delivery-they created space for confidence, creativity, and participation, ensuring that every learner had a way to be heard.

Inclusivity, Values, and STEM Integration

This practice strongly supported inclusive education by offering alternative modes of expression: students who were shy, hesitant speakers, or struggling readers found confidence through scripting and narration. Voice Al functioned as an assistive tool, enabling equitable participation without stigma.

The practice was intentionally designed as a STEM-integrated learning experience, where Al technology supported inquiry-based exploration, engineering-style planning of content workflows, and ethical communication of real-world issues through structured voice narration.

From a STEM perspective, the initiative integrated:

- Science through health, mental well-being, and biology-related themes.
- Technology through authentic, real-world use of Al tools
- Engineering thinking through planning, sequencing, and content production

- Mathematical and logical reasoning through scripting structure and workflow design

Equally important were the values embedded-digital ethics, empathy, collaboration, and responsible Al use-closely aligning with NEP 2020's emphasis on holistic education.

Reflections and Way Forward

Initial challenges included limited familiarity with voice Al, uneven access to devices, and constraints of free tool versions. These were addressed through peer support, flexible timelines, and shared digital resources. The experience highlighted that students engage more deeply when learning is personalised, expressive, and purposeful.

Moving forward, the initiative can be strengthened by introducing multilingual voice options, expanding into additional subjects, and mentoring more teachers to adopt similar classroom practices.

Conclusion

This classroom practice demonstrates how simple and ethical use of Al tools can transform learning into an inclusive, expressive, and future-ready experience. By empowering students to script, narrate, and publish their own ideas, the initiative amplified student voice, strengthened engagement, and nurtured empathy. Aligned with the vision of NEP 2020, this low-cost and scalable model offers a meaningful pathway for schools to integrate Al responsibly ensuring that every learner's voice is heard, valued, and amplified.

Shivika Bose

12

Fostering a Culture of Peace: Innovative Approaches to Conflict Resolution in Schools

Heemal Handoo Bhat (Executive Member, NPSC & Principal)
Hansraj Model School, Punjabi Bagh, New Delhi

School culture- undoubtedly, a significant foundation of society-its miniature version that reflects growth, perceptions apprehensions, and above all a vital unit where aspirations and missions take shape. In the wide spectrum of school systems, we distinctively work upon life skills, values, ethics, 21st-century skillset, technology integration, and what not and what all, based on the ever-changing social needs. In today's times, conflict resolution has become a major concern for schools. As educators, we are responsible for nurturing an ethos of peace, harmony, inclusivity, and cooperation. Unresolved concerns never allow a fruitful learning environment and hinder students' personal growth. This article is an attempt to explore Restorative Justice as a transformative approach towards conflict resolution in schools, to create a comprehensive framework for progressive mindset.

Need for Restorative Justice

Gone are the days when corporal punishment was a part of the school system. Leading a child to a situation where disengagement, resentment, rebellious approach and behavioural issues begin taking prime seats is no less than disruptive punishment. Restorative Justice brings forth a transformative approach that shifts the focus from punishment to restoration, from disruption to healing, from disengagement to accountability and from rebellion to bonding Inculcating the need of open dialogue, healthy conversation, constructivism, compassion and strengthening relations become the very basis of restorative justice

Understanding Restorative Justice

Restorative justice is a framework that prioritizes learners in their tender years of growth focusing upon repairing harm rather than giving it room through punishment. Engaging in meaningful discussions, reflecting upon one's actions, and collaboratively seeking solutions become its core principles.

> *"The core principles of Restorative justice can reach everyone as an acronym RACE, i.e. Reparing Harm, Accountability, Community Involvement and Engaging Purposefully".*

Allow the RACE for Restorative Justice to be away from running after unachievable goals based on peer pressures.

Implementing Restorative Justice in Schools

An effective and impactful implementation of

restorative justice in schools is possible only if we can integrate it in our school culture and also design structured programmes that promote dialogue, reaching out, curbing problems, and building trust. Some key practices for Restorative Justice include:

1. Restorative Spaces

Restorative spaces provide a defined and designated arena for students, teachers, and other stakeholders to discuss conflicts, share perspectives, and build understanding. The school holds an added responsibility of ensuring that every voice is heard, every opinion is respected and every conflict is resolved. Active engagement of all the stakeholders is the key to the success of Restorative Spaces as collaborative discussions provide long-term solutions.

2. Peer Facilitators

Well-designed peer facilitation initiatives encourage peers to resolve minor disputes among their classmates under the supervision and guidance of teachers. Apart from this regular practice, it is necessary to train students as peer facilitators so that they can be instrumental in designing strategies for resolving conflicts, developing a problem-solving mindset, and inculcating the habit of active listening. Peer facilitators also help break barriers and foster a culture of open discussions where students do not hesitate to share their experiences and perspectives.

3. Restorative Conferences

In cases of serious misconduct, restorative conferences bring together students, educators, and sometimes families to openly discuss the harm caused. These conferences encourage accountability while focusing on healing and reintegration rather than punishment.

4. Meditation

Meditation is a therapy that needs no introduction. It has become a regular feature of every school curriculum. Highly recommended to bring peace, calmness, and serenity, meditation also works on every learner's demeanour giving permanent results. Schools are advised to set up meditation rooms where students can go and rejuvenate emotionally, mentally, and physically by channeling their energies on the right path.

"The best part about meditation is that it equally works on physical, emotional and spiritual quotient giving room to self-awareness, self-regulation and empathy".

Benefits of Restorative Justice in Schools

1. Reducing Punishments in the form of Suspension and Rustication

Restorative Justice is being extensively accepted to reduce suspensions and expulsions, leading to improved student retention and academic performance. This has also helped students in building self-esteem and confidence on their decisions. Addressing conflicts constructively and timely can definitely help schools to build a positive rapport with the parents. Most importantly, it prevents students from feeling alienated or disconnected from their education.

2. Fostering Emotional Intelligence and Empathy

Through restorative conversations, students

develop emotional intelligence, learning how to manage their emotions and empathize with others. This emotional growth helps in conflict resolution beyond the school environment, preparing students for future interpersonal relationships.

3. Strengthening School Bonding and Community Relationships

A restorative culture fosters strong relationships among students, teachers, and administrators, creating a sense of belonging and mutual respect. It promotes open communication, preventing minor disagreements from escalating into major conflicts.

4. Empowering Students and Encouraging Responsibility

Restorative Justice encourages students to take ownership of their actions and participate in solutions. Instead of viewing discipline as a punishment, students see it as an opportunity for growth and positive change.

The Role of Educators and School Leaders

Principals, teachers, and school counsellors play a crucial role in embedding restorative practices within the school culture. The schools must provide professional development training to ensure educators are equipped with all the latest developments in their fields. This builds the trust of the students in the school system and encourages them to approach the school and open their hearts. Modeling restorative practices by using respectful dialogue and conflict resolution strategies should become a part and parcel of every teacher's personality. They may be given specialized training on this but it is important that the aura of the educators must reflect a positive and promising outlook. Engaging parents and communities to extend the principles of restoration beyond school walls gives impetus to the growth-oriented school structure.

Restorative justice represents a transformative approach to school discipline, fostering a culture of respect, empathy, and accountability. By shifting from punitive measures to constructive conflict resolution, schools can create an inclusive and supportive environment where students feel valued and empowered. While challenges exist, its long-term benefits—including reduced disciplinary incidents, stronger relationships, and enhanced emotional intelligence—make it a compelling strategy for building harmonious and resilient school communities.

13

The Architecture of the Modern Learner: Integrating SEL, Values, and Life Skills

Ms. Pooja Yadav (PGT English, Supervisory Head - XI & XII)
DAV Public School, Uppal's Southend, Sec-49, Gurugram

Introduction: Beyond the Academic Horizon

The ability of students to memorize facts and to be under the pressure of standardized testing was the primary measure of global educational standards for many years. On the other hand, the "industrial" method of education is becoming obsolete as the world of students who are more than just cognitive data and less than all these virtues is coming in. Emotional resilience, ethical clarity, and social agility are the main characteristics.

In order to make the students ready for the future, a shift in education is needed. A transition from conventional technical teaching to one where SEL, Values, and Life Skills form the basis of the curriculum being a holistic approach. These three pillars are the "human" side of learning- the characteristics that enable a person to blossom not only as a professional but as a human being.

1. Deconstructing Social-Emotional Learning (SEL)

The Social-Emotional Learning is the skeleton of the human mind. It is how we learn to deal with our feelings and communicate with others at the same time.

The Five Pillars of SEL

1. **Self-Awareness:** The Internal Mirror Self-awareness is the ability to recognize and reflect on one's emotions and thoughts accurately. It means being honest with oneself to a considerable degree to know one's advantages and limitations. A person with a great self-awareness is very sensitive to their feelings and knows exactly how those feelings might affect their actions during a hard-up exam or even during a dispute at the playground.
2. **Self-Management:** The Steering Wheel When a pupil is fully aware of their feelings, they must acquire the skill of control over them. Self-regulation encompasses controlling one's impulses, managing stress, and self-discipline. It is the step between experiencing an emotion and expressing it through action.
3. **Social Awareness:** The Lens of Empathy This skill set is all about seeing things from another person's point of view. This quality involves taking the position of others across the lines of gender, age, and even cultures. Social awareness is a factor that gives rise to a feeling of acceptance and reduces the chances of victimization and ostracism.

4. **Relationship Skills:** The Bridge-Building Tools Life's success is almost never a matter of one person only. Relationship skills include effective communication, good listening, and cooperating with a group. Moreover, it contains the most important skill of all, which is, conflict resolution—learning to differ without being unkind and offensive.
5. **Responsible Decision-Making:** The Compass This refers to the ability to make positive choices regarding one's behaviour and social relations, which are in accordance with ethical principles, safety issues, and societal norms.

2. Values Education: The Moral Compass of Character

While SEL offers the necessary abilities to deal with the world, Values Education shows the reason behind it. It is the deliberate development of a moral and ethical structure. A solid value system is indispensable as even the most socially adept person may lack the integrity required for a positive contribution to society. Developing the Ethical Mindset Values education is nothing but an invitation. It does not mean students are forced to take in a particular set of values; rather it is an invitation for them to discover the universal principles that are considered the basis for human civilization throughout the ages:

- **Integrity and Honesty:** In times of "post-truth" and digital misinformation, it is even more critical to teaching the students the values of truthfulness and accountability.
- **Empathy and Compassion:** These values bridge "social awareness" with "social action." It is going from seeing someone in pain to being affected and wanting to help them.
- **Respect for Diversity:** The world is becoming a global village and the ability to appreciate differences- whether they are religious, cultural, or ideological— is the key to social peace.
- **Environmental Stewardship:** The planet's stewardship must be part of modern values education, acknowledging that our individual choices have a direct bearing on the collective future. Through the teaching of these values, the schools make sure that the students will be equipped with a "moral compass" that will help them resist peer pressure and the temptation of unethical shortcuts in their future careers.

3. Life Skills: Practical Competencies for a Complex World

In case the SEL would be the engine and the Values would be the compass, then Life Skills would be the vehicle. Life skills education is a process that gives students the functional and practical tools needed to cope with both the logistical and psychological challenges of daily life.

Essential Life Skills for the 21st Century

- **Critical and Creative Thinking:** The information explosion requires students to learn how to separate the truths from the lies. To do so, they need to apply critical thinking which facilitates the objective analysis of data, and on the other hand, they

- need to use creative thinking to come up with innovations and find rare solutions to "wicked" problems.
- **Resilience and Adaptability:** The only thing that is certain in the modern world is the change. Resilience is the "psychological muscle" that will enable a student to recover from a bad grade or getting rejected by someone. On the other hand, adaptability will assure that they will be successful in jobs that don't even exist yet.
- **Financial Literacy and Digital Citizenship:** Among the skills for life, one will also find that life skills cover practical modern needs, such as personal finance management and safe and ethical use of the internet.
- **Effective Communication:** This broad aspect of speaking includes the "soft art" of persuading, negotiating, and also the ability to read and interpret non-verbal cues.

4. The Interconnected Web: A Holistic Synergy

The key to the effectiveness of this educational model rests on the interdependence of the three areas. They are not separate; rather, they are an intricately connected web of growth.

Domain	Focus	Outcome
SEL	Emotional Intelligence	Internal Balance
Values	Ethical Framework	Character Strength
Life Skills	Practical Ability	Real-world Competency

In the event of a tough decision, the student's Values guide them to what is right, the SEL supports and reduces the anxiety of the situation, and the Life Skills help them to convey their decision and solve any resulting problems. This threat of development creates a resilient, high-functioning adult.

5. The Role of the School and the Educator

Incorporating these ideas necessitates a transition from “the lecture” to “the experience”. Schools have to be the environments that support the development of character.

Strategies for Implementation

1. **Implicit vs. Explicit Curriculum:** The schools that have separate times for SEL are benefiting from the least effective implicit integration. This means basic discussions during a history class about the morality of a past war (Values) or the discussion of teamwork (SEL) while working on a group science project as a real-life scenario are all examples of implicit curriculum and are the most effective modes of integration.
2. **Restorative Justice Practices:** Traditional punitive discipline is being gradually replaced in schools by "restorative circles," where students are helped to grasp the consequences of their deeds and to restore relations.
3. **Teacher as a Role Model:** A teacher's conduct is the "hidden curriculum." When a teacher recognizes a mistake, is very understanding with a student who has difficulty, or when he/she does a classroom interruption with authoritative calmness, he/she is imparting SEL through the most effective way than any textbook could.

4. **The Essential Partnership:** School and Home The growth of a child is a continuous process that takes place over the whole day. If a pupil learns about kindness in school and at the same time sees fights or intolerance at home, the teaching is wasted.

- **The School's Role:** To share with parents tools and organize workshops on how to support SEL and values at home with the help of school resources.
- **The Parent's Role:** To foster a space where feelings are recognized and where errors are regarded as chances for learning and not as occasions for shame.
- **Consistency:** When the terms of "growth mindset" and "emotional regulation" are the same in both places, the child's growth is speeded up.

7. The Long-Term Benefits: ROI of the Soul

Allocating resources to these skills gives a high "return on investment" for the individual as well as society:

- **Academic Gains:** There are reports from organizations like CASEL confirming that pupils participating in SEL programs are receiving an average of 11-percentile-point hike in academic performance.
- **Mental Health:** By instructing coping mechanisms and self-awareness, schools can become proactive in the fight against the increasing numbers of anxiety and depression cases among young people.
- **Workplace Readiness:** Global CEOs regularly rank "emotional intelligence," "collaboration," and "problem-solving" as the most preferred qualities in new recruits—outdoing even technical expertise.

8. Navigating the Challenges

Moving forward with implementation is not free from difficulties. However, many systems find themselves still greatly affected by:

- **High-Stakes Testing:** The emphasis on excelling at exams usually takes a big part out of the time allocated for the development of the so-called "soft skills".
- **Lack of Training:** A significant number of teachers consider themselves unprepared for the emotional intricacies of their pupils.
- **Measurement Difficulty:** It is easy to score a math exam, but what is the method to "score" affection or uprightness? It demands shifting towards qualitative assessments and portfolio-based.

Conclusion: Ready for the Life Test

The priority of the education system should not be to bring up students who know how to get through school, but to raise adults who can easily handle life situations. The integration of Social-Emotional Learning, Values, and Life Skills into the educational systems would not only lead to the improvement of test scores but also help secure the future of our society. We are raising human beings in a world that is increasingly dominated by technology. We are providing them with the armour to overcome challenges, the compass to navigate through the fog of ethics, and the heart to empathize with the person next to them. This is what education is all about.

14

Multilingual Education: A Pedagogical Approach to Inclusive and Global Learning

Ritu Sharma (PGT English)
ITL Public School, Delhi

Abstract

Multilingualism in education is a powerful pedagogical approach that leverages language as a cognitive, cultural and social resource. NEP 2020 champions multilingualism by advocating mother tongue/local language as the medium of instruction up to Grade 5 (preferably Grade 8), promoting India's rich linguistic diversity, fostering cognitive benefits, cultural roots, and global readiness through adaptable, technologically-aided learning and quality resource creation. This paper studies the impact of integrating multilingualism, along with multiculturalism, in schools and how it can bring a tectonic shift in the academic performance and overall mindset of all stakeholders. This study shows how respect for pluralism and multiculturalism result in classrooms which are visibly happier, because they are inclusive and less prone to conflicts. A mixed research methodology has been used in this study, to arrive at this conclusion, a method that is both quantitative and qualitative.

Keywords

Multilingualism, Pedagogy, Plurilingual, Diversity, Inclusion, Sustainable Development, Global Citizenship

Introduction

The NEP 2020 recognises language as a powerful tool that strengthens communication, cognition, and cultural understanding, promoting an inclusive and enriched educational experience. Language enables individuals to comprehend, analyse, and connect with the community. Multilingual proficiency enhances communication, expands cognitive abilities, and fosters cultural awareness and expression key competencies of socially aware global citizens. Learning multiple languages enriches children intellectually and culturally, strengthens identity, and nurtures respect for diverse cultures. A multilingual India is thus better educated, nationally integrated, and globally prepared. A diverse classroom can be greatly instrumental in grooming global citizens who are at the same time rooted in their own culture. Cultural identities like language, religion, ethnicity, do pose significant threat to cohesion and teambuilding, but if handled with care, can be instrumental in nurturing humanistic skills. The rich cultural heritage of our country embraces a confluence of diverse languages, cuisine, attires, traditions, customs and beliefs. The plural Indian society with people speaking multifarious languages has harmoniously co-existed since centuries. A commitment to multilingualism and multiculturalism can promote, both socio-emotional and cognitive capacities at the individual level as well as cultural unity at the local, regional and national

levels. This paper highlights the socio-emotional quotient as well as the cognitive aspect.

Objectives

This paper aims to study Multilingualism as a pedagogical tool in developing competencies essential for holistic development of learners. It also highlights the advantages of being aware of multiple languages and cultures and how it helps build an inclusive, happy and less conflict prone classrooms.

Research Methodology The research methodology used is mixed, both quantitative and qualitative. For quantitative research, a structured questionnaire was used to collect data and for qualitative research, the opinion of important stakeholders in education were studied. Case study of students' academic performance and behavioural attributes of students at ITL Public School, a reputed school in Delhi has also been studied. The questionnaire served as a primary source of information whereas for secondary data, several articles relating to multilingualism were referred to.

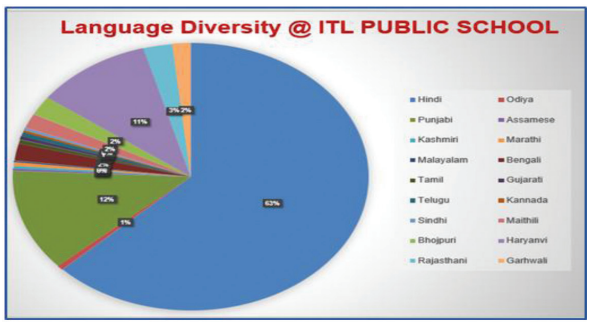
Area of Study- The study was limited to ITL Public School, a reputed school in Delhi, due to time constraints. Since most of the Public schools follow similar pedagogy, this method seemed reliable. The sample size of the respondents for the structured questionnaire that was framed comprised of all students, parents and teachers from Classes I-XIL

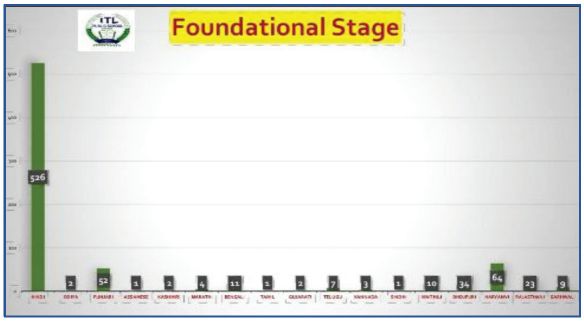
Review of Literature- Research on multilingualism has expanded significantly in recent years, examining its cognitive, social, educational, and policy dimensions. Jasone Cenoz provides a comprehensive and lucid overview of multilingualism by exploring its definitions, scope, and varied perspectives across neurolinguistics, psycholinguistics, linguistics, education, sociolinguistics, and language policy. She contrasts monolingual and holistic approaches, highlighting recent theories that view languages as fluid and interconnected rather than separate systems. Her work firmly establishes multilingualism as a valuable resource, though it primarily emphasises scientific and cognitive aspects. Dr. Lid King, in his study on multilingualism and global education, makes a crucial distinction between multilingualism (societal language diversity) and plurilingualism (an individual's linguistic repertoire). This distinction is especially relevant in the Indian context and in debates such as the Three Language Policy. He analyses the role of English as a global lingua franca, trends in multilingual education, and challenges such as linguistic hegemony. Citing a 2009 Indian poll, he underscores the aspirational value of English while advocating systemic policy changes. Gugulethu Jemaine Nyathi links multilingualism to global citizenship, emphasising intercultural understanding and peace. Jessica Chandra's study on multilingualism in India highlights linguistic diversity, code-switching, and the role of English, reinforcing the importance of multilingual competence in a globalised world.

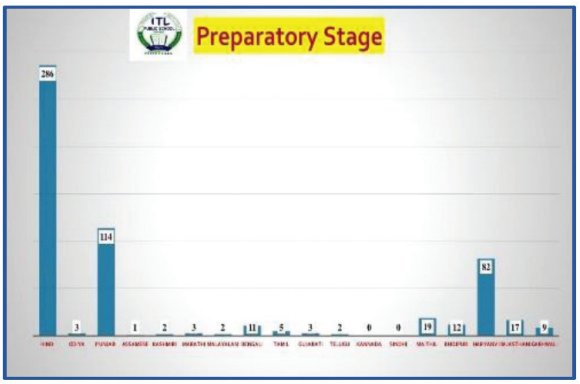
Backdrop of the Case Study- To examine the impact of integrating multiple languages and cultures to foster Socio-Emotional Learning (SEL), ITL Public School, New Delhi implemented a structured Multilingual Education Programme aligned with the vision of NEP 2020. The school adopted a flexible Three

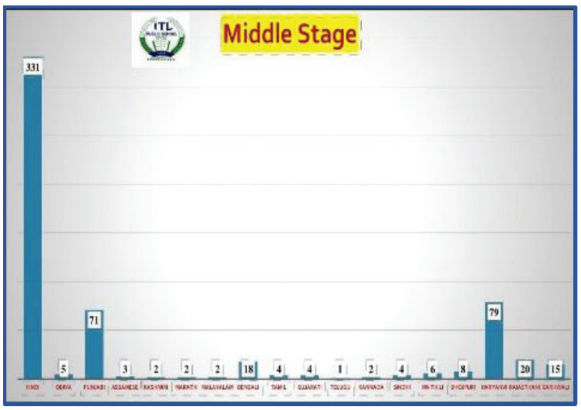
Language Formula, offering students choices among English, Hindi, Sanskrit (classical language), and foreign languages such as French and German, along with regional language exposure at the Middle Stage. Workshops in Indian Sign Language were also conducted to promote empathy, inclusivity, and sensitivity towards diverse abilities. The study adopted a mixed-method research design, using structured questionnaires to test the hypothesis and open-ended interviews with school administrators to examine policy decisions and long-term impact.

Language Mapping at ITL Public School- A Multilingualism Implementation Committee was formed in the month of March 2025 for the implementation of Multilingualism as per NEP and NCF. A language Mapping Questionnaire was prepared and shared through Google Form to collect data on Mother tongue of Students, Teachers and Parents. As part of the Language Mapping initiative, an analysis was conducted at ITL Public School to understand the linguistic diversity among students. An orientation meeting was held for all teachers student council body, Peer Educators, PTA body members and Conservancy Staff also.









Data Analysis- Findings at the Foundational stage indicated that approximately 74% of the parents answered Hindi as the most spoken language. Similar findings were seen at other stages. Apart from Hindi, Punjabi and Haryanvi were also widely spoken languages in the school. This is reflective of Delhi's location and its strong cultural and historical tics with Haryana and Punjab. These languages are commonly used in households, local communities, and public interactions. Rajasthani ranked second in prevalence, owing to migration from Rajasthan for work, business, and education. Families from Rajasthan have retained their linguistic roots while integrating into Delhi's culture. The third most spoken language is Bhojpuri, commonly used by families from Eastern Uttar Pradesh and Bihar who have moved to Delhi in search of livelihood opportunities. This is followed by Bengali, spoken by students from communities with established roots in areas like Chittaranjan Park. Other regional and scheduled languages such as Tamil, Telugu, Gujarati, Malayalam, Marathi, Odia, Kannada, Assamese, and Urdu are also represented in smaller numbers, reflecting Delhi's rich multilingual character. Implementation of The Three Language Formula, as an NEP mandate was implemented successfully in class VI VIII, where the Indian regional language were taken from four different parts of India as per availability of resources in the school ecosystem. Third language has been designated as R3 in NCF, SE 2023 as per which two periods are allotted per week. Students were offered one regional language as per their choice.

- Punjabi & Himachali (North)
- Telugu & Kannada (South)
- Assamese & Bengali (East)
- Marathi (West)

As a part of the implementation for Session 2025-26, the 22 Scheduled languages were divided over a period of 10 months. An interdisciplinary approach was adopted so that all the subject teachers could orient the students about the particular language and the associated state. Beginning with Utkal Diwas, the first language that teachers focused on was Odia. From teaching basic communication skills to its demography, politics, industries, minerals, flora & Fauna, heritage, culture, cuisine, etc., everything was covered. Multimodal assessment tools like Debate, Dance Drama, Quiz, Cultural performance, Weave a Story (Folk Lores), Sustainable Fashion-Ramp Walk in Regional Attire, Calligraphy in different languages, Vocabulary Games, Short video, song composition, Scrap Books, Tableau, Masterchef@ITL, and so on were adopted along with traditional methods of assessment. Parents were important partners in the implementation of this project.

Parental language Goal:

- English for access to global knowledge & career opportunities,
- Hindi as required for government competitive examination
- Regional language for better cultural connectedness
- Foreign language for global prospects

Challenges in implementation-

- Fear of diluting English as a language of learning.
- Concern over academic performance due to

learning multiple languages simultaneously
- Anxiety about increased workload for children
- Pressure of evaluation and hence a burden on the child.

Teachers concern-

- Curricular integration and time management
- design and evaluation of multimodal assessment
- resource availability and standardization
- learner diversity and differentiated instruction
- professional preparedness and capacity building

Solution

- Address assessment concerns of parents clearly
- Smooth, structured and seamless integration of the approach in the curriculum.
- Build teacher confidence through training
- Start small and gradual
- Avoid forcing full implementation all at once.
- Small wins build trust and comfort.
- Emphasise that teachers don't need to know all languages
- Leverage technology tools
- Align multilingualism education with curriculum goals.
- Share evidence and success stories.
- Meticulous planning, rehashing the time table, no extra burden of lesson plan and integration of the multidisciplinary approach in the subject

Impact and Preparatory Stage	approximately 27%. Improved language & speech development.	understanding own emotions, values and strengths.	of Multiculturalism	of conflict, name calling, bad mouthing.
Middle and Secondary Stage	Enhanced by approximately 33%. Strengthened problem solving skills.	Regulating emotions, thoughts and behaviours effectively. Reduced feeling of isolation.	Marked increase in mutual respect, tolerance and acceptance.	20% reduction in the identity based bullying cases that were reported in last academic year. Stronger sense of belongingness for cultural minorities.

Conclusion

This paper clearly establishes that a pedagogical approach to language diversity can transform multilingualism from a challenge to an asset. By weaving multiple languages into the fabric of education, schools nurture confident communicators, critical thinkers, and culturally grounded global citizens. Multilingual education, therefore, is not just about learning languages- it is about learning through languages, for a more inclusive and enlightened society. Though there are several challenges, especially resource constraints and rigid mindset of certain stakeholders, it is clearly outweighed by the

multiple advantages of proper implementation of this policy. If we want our students to develop 21 century skills and want our schools to be future ready, then this approach is imperative- whatever the hurdles.

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Niyati Mansharamani

15

Transforming Math Education

Ms. Shaifali Bhatt (Headmistress Senior School)
DPS Sector 45, Gurgaon

Introduction

Mathematics education is undergoing a paradigm shift, moving beyond rote memorization to focus on conceptual understanding and application. At DPS Sector 45 Gurgaon, we empower students to "mathematise" their thinking, making math meaningful and enjoyable. Our approach integrates the Concrete-Representational-Abstract (CRA) method with Social-Emotional Learning (SEL) and Life Skills Education, fostering holistic development. We foster a culture of participation, openness and learning from mistakes, equipping students with critical thinking and problem-solving skills.

This paper highlights how DPS Sector 45, Gurgaon is transforming into a hub of skills and sensibility using Math as a catalyst.

Empowering Skills Through Mathematics

We believe in fostering skills in mathematics education by embracing experiential and activity-based learning as envisioned by NEP 2020. A wide range ge of activities enabled students to visualize mathematical concepts, apply them to real-world problems and build their understanding. We provide hands-on math experiences, like in each classroom, we have a protractor drawn at the entrance door. This interactive setup engages students with angles, making abstract concepts tangible and fun. It sparks curiosity, connects math to real life, and turns learning into a daily, experiential routine.

A few examples of the activities conducted across grades 6-10:

Cooking Without Fire

Best example of interdisciplinary learning. It integrated Mathematics (measurements, ratios, proportions, fractions), Science (composition of ingredients and food safety), Language (Recipe writing), Art (Food presentation) and Social Science (Cultural foods, traditions, geography of ingredients).

Costume Designing Using Math Concepts

Math Couture- a fashion show was organized

to apply math concepts like geometry, measurement, patterns and symmetry in a creative way developing design skills.

Model Making (Jantar Mantar, Konark Sun Temple)

By making models of the Sun Wheel of Konark Temple and Jantar Mantar, students not only understood mathematical concepts like geometry, symmetry and patterns but also appreciated the cultural significance of these monuments and connected math to real-world architecture and history.

Art-Integrated Learning Activities

Showcased Indian culture using math concepts like Venn diagrams, sets, functions, permutations and inequalities.

Use of Manipulatives Strengthened Their Conceptual Understanding

- Geoboards: Spatial reasoning and geometry.
- Combination of solid objects: Visualizing surface area & volume word problems.
- Probability board with 52 cards: to make probability tangible.
- Model of Pythagoras theorem: helped students grasp the concept visually.
- Model of a cylinder formed from a rectangular sheet where the rectangle's width becomes the cylinder's height and its length becomes the circumference of the circular base. This transformation in geometry helped students to visualize 2D shapes making 3D forms.

Technology integration

Leveraging Al and technology to provide self-paced learning experiences really helped students to grasp complex math concepts. Use of DESMOS and GEOGEBRA proved beneficial for students to explore mathematical axioms, polygon properties and linear equations, deepening understanding. Interactive graphs helped students grasp abstract concepts, fostering a more engaging and effective learning experience in Mathematics.

Pisquad-The Mathematics Club

PI SQUAD Club, played a pivotal role in nurturing curiosity, creativity, and critical thinking by presenting mathematics as an engaging and meaningful discipline.

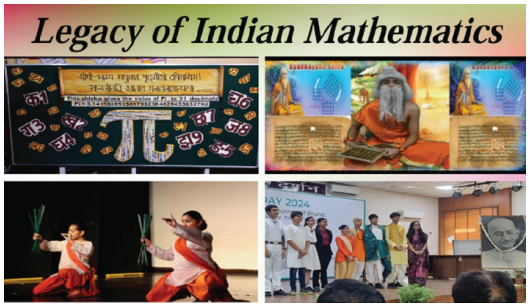
Throughout the academic session, Pi Squad conducted inter-house quizzes, enrichment workshops, and hands-on learning activities. Math Club students created a clinometer using a protractor, straw, string, and a weight to measure the height of a wall. By calculating the angle of elevation and distance from the wall, they applied concepts of trigonometry to determine the wall's height.

Innovative initiatives such as Desmos-based designs, role plays, Vedic Mathematics workshops, and AIL-integrated projects helped students connect mathematical concepts with real-life applications and creativity, thereby strengthening conceptual understanding, confidence, collaboration, and problem-solving skills across all grade levels.

Fostering Sensibility and Global Collaboration: Celebrating Math

Every year, the Pi-Squad, Mathematics club of DPS Sec 45, Gurgaon hosts Mathletics on 22nd July (22/7) to mark pi-approximation day.

We host Mathletics, the annual Mathematics fest, to share innovative math practices and foster global collaboration. This empowers students to take ownership and showcase skills. Life Skills like critical thinking, problem-solving and collaboration are seamlessly integrated through real-world applications and group projects.



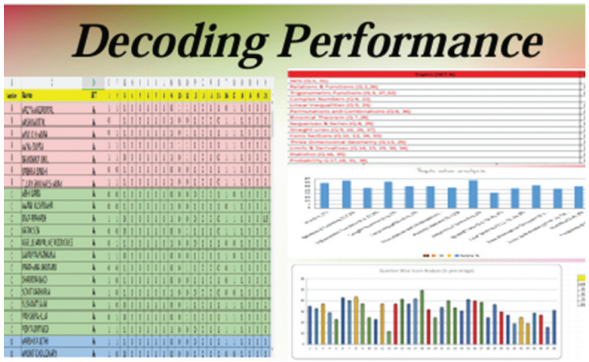
Example: This year the theme was 'Journey of the Indian Currency'. It involved students across grades 1-12, helped them discover how math is woven into India's culture, from ancient trade to digital transactions. It showcased math's real-life applications and promoted smart financial decisions.

Likewise, every year we celebrate National Mathematics Day too on 22nd December to commemorate the birth centenary of the famous mathematician Srinivasa Ramanujan. This year the event was organized to offer students a deeper understanding on his life and accomplishments. Students of the Junior Wing participated enthusiastically in activities such as 'Find the Next Number' and 'Geometric Doodling' along with an exploration of 'Ramanujan's Magic Square'. Students of the Middle and Senior Wings participated in intellectually enriching activities, including 'Mathematics Bingo' based on Ramanujan's Magic Square and the creation of visually appealing designs through Fibonacci

Art. These activities effectively integrated mathematical concepts with creativity and logical thinking.

Assessment Reforms

To drive assessment reforms, diagnosing weak areas is key. We've crafted a custom method using graphical + tabular formats to assess both the Individual student performance and the Class performance (question-wise). This helped us in identifying struggling students (topic-wise) and to plan targeted interventions. Teachers then use the assessment data to identify students' weaknesses, then reteach those concepts, leading to significant score improvements in subsequent assessments. They design and make use of critical thinking assessments using thought provoking questions that require processing and reasoning, not just recalling information to challenge students.



Diverse Learning Approaches

Apart from using visual aids, math manipulatives and technology, students were exposed to graphic novels, which made math more accessible and provided them with an opportunity to discover its utility in the real world.

A graphic novel, "Talking Vegetables," introduced them to a world of 2D and 3D shapes.

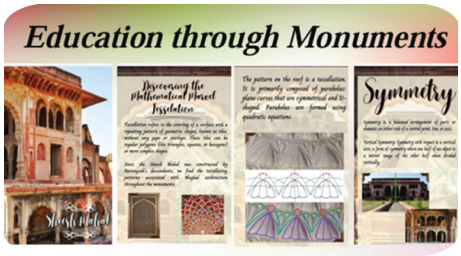
Pottery manuals, used alongside pottery classes, brought the art of pottery to life and served as a platform to integrate different subjects.

Additionally, the creation of puppets helped students create math-based stories to make problems more engaging.

Math Meets Heritage

Under the project, Education through Monuments, students visited monuments like Sheesh Mahal, Jhajjar Baoli Ghaus Ali Shah, Farrukhnagar and Tomb of French Etinne, Mohyal Colony Sec 40, Gurgaon.

Students explored that these three monuments weave a rich tapestry of history and architectural brilliance. For eg. Sheesh Mahal, a captivating marvel, embodies mathematical precision and symmetrical grandeur. As an interdisciplinary effort, our approach fostered holistic learning, connecting diverse fields of study to enrich the understanding of these historical monuments.



Celebrating Wellness with Mathematics

Mathematics is a strong contributor to all four pillars of wellness. Mathematical activities integrated with yoga-based postures supported physical wellness by improving focus and balance, while dance and theatre promoted social wellness by encouraging collaboration and expression. Concepts such as data handling and tracking one's carbon footprints helped students understand environmental wellness. Thus, mathematics meaningfully supported students' holistic well-being.

Incorporating 'Head, Heart and Hands'

Bagless days observed in Junior and Middle school are effectively being utilized to conduct various skill-based activities through real-world challenges. Hands-on tasks like AQI data analysis, Diwali Mela budget planning and voter turnout calculations fostered creativity, critical thinking and sustainability. Students applied math concepts while embracing eco-friendly practices. Incorporating 'head, heart, and hands' Bagless days got students involved physically (hand), emotionally (heart), and mentally (head) in real-world math challenges.

Teaching Insights Session

As a regular practice aimed at strengthening collaborative learning and promoting innovative teaching practices, knowledge-sharing sessions for faculty members are conducted on a regular basis. The sessions focus on the effective use of mathematical models, digital resources, and pedagogical strategies to enhance classroom instruction.

Drawing upon insights gained from various professional development workshops, faculty members engage in team-building discussions and collaborative brainstorming to identify practical ways to embed these tools into the existing curriculum.

This practice enriches teaching methodologies and fosters a culture of collaboration and continuous professional growth among mathematics educators, ultimately contributing to a more engaging and student-centered learning environment.

Testimonials

Conclusion

By adopting this holistic approach, schools can transform into centres of skills and sensibility, empowering students to excel in math and beyond.

16

Are We Teaching for Life? Redefining the Purpose of School

Shyam Bahadur Singh (PGT Geography)
Sunbeam English School, Bhagwanpur, Varanasi

The Syllabus is Just the Starting Line: Bringing 'Vidya for Life' to the Classroom.

We have all felt the shift. The days where a school's success was measured solely by completed syllabi and board percentages are fading. Today, the expectation is heavier, yet more beautiful: schools are becoming spaces where children learn how to think, how to feel, and how to act responsibly in the real world.

For us as teachers, this transition is both exhilarating and exhausting. It demands that we stop teaching on autopilot. It asks us to walk into our classrooms every day and look at our practice—our students, our methods, and our own intentions—with fresh, awake eyes.

Moving Beyond the Textbook

This is where the concept of "Vidya for Life: Schools as Centres of Skills and Sensibility" stops being a theme and starts feeling like a vocation. It invites us to step away from the rigid constraints of textbook-driven teaching and move toward something messier but more real: learning that helps students navigate life, make hard choices, and understand their own emotions.

In practical terms, this means we stop teaching in a vacuum. We plan lessons that bridge the gap between a concept on a page and the world outside the window. When a child sees why a lesson matters to their family, their community, or their own future, you can see the change in their eyes. The learning stops being temporary memorization; it becomes a permanent part of who they are.

The Classroom as a Living Laboratory

This brings us to the heart of "Shiksha Samvaad." We often think of "best practices" as complex strategies developed by experts, but the truth is, our classrooms are living laboratories. Every day, we are conducting experiments.

Maybe it was a new way of asking a question that sparked a debate, or a grouping strategy that finally made the shy kids speak up. Perhaps it was a project that took a direction we didn't expect. These aren't just incidents; they are valuable professional learning. The themes we hear about—innovative pedagogy, NEP 2020, experiential learning, inclusion—these aren't just abstract buzzwords for a conference. They are showing up in our lesson plans, our rubrics, and the quiet conversations we share with students after the bell rings.

NEP 2020: A Policy with a Pulse

We talk about NEP 2020 often, usually in the context of compliance or curriculum changes.

But the real test of the policy isn't in a document; it is in how it transforms a single period on an ordinary Tuesday afternoon.

When we design tasks that force students to observe, inquire, collaborate, and reflect, we are living the spirit of NEP 2020. We don't need to announce it. It happens in the small, quiet rebellions against rote learning—shifting five marks from memory to application, giving a student the freedom to choose their project topic, or asking a child to teach a concept to a peer. These are the moments that build confidence. Over time, these small shifts create a culture where we value understanding far more than memorization.

The Courage to be Inclusive

Every class is a mosaic. We have students who learn at different speeds, come from vastly different backgrounds, and carry heavy stories in their backpacks. The focus on inclusive and differentiated instruction isn't just a teaching strategy; it is an acknowledgment of humanity. We know intuitively that one method cannot reach every child.

Sometimes, inclusion isn't a complex pedagogical technique. Sometimes, it is simply adjusting an instruction, offering a different resource, or giving a struggling student a little extra time and a smile. These small acts tell a child: "You belong here." When students feel safe, respected, and understood, the walls come down, and that is when real learning begins.

Finding Our Voice

Ultimately, "Shiksha Samvaad" is more than a formal conference segment; it is a microphone for us. It is a space where teachers can speak in their own authentic voices about what actually works in the trenches of education.

There is a unique power in writing these experiences down. It isn't just about recognition or a certificate. It is about affirming that our daily efforts matter beyond the four walls of our classrooms. It turns our individual struggles and victories into shared professional wisdom. And that, perhaps more than anything else, is the true meaning of "Vidya for Life."

Kartikey

17

Best Pedagogical Practices For English Adopted

Rachana Takshak (HOD English)
Delhi Public School, Sector-45, Gurugram

Education is Not the Filling of a Pail, But the Lighting of a Fire

The 2020 National Education Policy (NEP) marks a significant step forward for India, shifting from content-based learning to focus on potential and skills-based learning. It encourages various ways to learn and show understanding that go beyond traditional assessments. The policy views schools as active learning environments where students gain knowledge and also develop critical thinking, creativity, values, and practical skills for the 21st century. At its core, NEP 2020 places the learner at the centre of education, understanding that real learning occurs when students are engaged, curious, and emotionally involved.

NEP 2020 promotes a shift away from rote learning towards meaningful, skill-based education that prepares students for real-life challenges. We have made this shift in our classrooms by embracing student-centred pedagogical models that foster active learning and deeper understanding. Traditional lecture-based instruction has been replaced with more interactive techniques, including project-based learning, group activities, flipped classrooms, and peer discussions. These methods empower students, making them feel in control of their learning, which boosts their confidence and independence.

Innovative and Impactful Pedagogical Practices

Departmental Meetings (DMs) play a crucial role in this transformation. These meetings serve as platforms for professional development and collaboration. During DMs, teachers regularly discuss, reflect on, and refine their teaching practices, sharing experiences and strategies while aligning with the goals of NEP 2020. Collaborative planning during DMs, along with engaging activities, builds a positive professional culture, encourages creative thinking, and strengthens teamwork among educators. This ongoing cooperation ensures consistency in teaching while allowing the flexibility to meet diverse student needs.

Learning objectives are clearly defined, and lessons are often designed around real-world situations. This approach helps students relate school learning to their own lives. Insights gained from teacher collaboration during DMs continuously shape classroom practices, leading to better lesson designs, more meaningful assessments, and inclusive strategies. This method consistently boosts conceptual understanding while developing

problem-solving skills and independent thinking. By emphasising inquiry, exploration, and reflection, teaching has transformed into a dynamic process rather than a simple transfer of knowledge.

Classroom Strategies Aligned with NEP 2020

In response to NEP 2020, classroom practices, particularly in English, have been thoughtfully reimagined. Classrooms have evolved from mere venues for information delivery to lively environments where language is experienced, questioned, and reflected upon. Our teaching methods are inclusive, hands-on, and future-oriented, allowing each learner to progress at their own pace and express themselves confidently.

This paper highlights innovative teaching practices in English that align with the key principles of NEP 2020. To engage students, we use creative strategies that focus on them.

Dramatising lessons is a common approach to build expressive skills, comprehension, and emotional connections with texts. By acting out scenes from literature, students develop confidence, improve voice modulation, enhance body language, and gain a deeper understanding of characters and themes.

We explore poetry through art integration and movement, enabling students to react to poems with drawings, colours, and even simple dance. This strategy allows learners to interpret poetic themes and emotions creatively, making poetry both accessible and enjoyable. To promote critical thinking and confident communication, we frequently hold brainstorming sessions and discussions on debatable topics. These sessions encourage students to express their viewpoints, listen to different perspectives, and construct logical arguments. Creativity is further fostered through activities like writing alternative endings to stories, where students can reimagine narratives beyond the textbook. This not only hones writing skills but also nurtures originality, problem-solving abilities, and ownership of learning.

Experiential, Inquiry-Based, and Interdisciplinary Learning

We believe experiential learning is central to meaningful education. In our classrooms, we align with NEP 2020 by moving beyond textbook learning. We engage students in hands-on, inquiry-based experiences, encouraging them to ask questions, explore issues, and draw conclusions through observation, discussion, and research. For example, we assign inquiry based tasks such as case studies, debates, simulations, and research projects that fuel their curiosity and critical thinking.

We also incorporate interdisciplinary learning into our lessons because it breaks down strict subject boundaries. When teaching language, we integrate it with history, environmental studies, and social sciences through thematic projects. This approach helps students view knowledge as a connected whole instead of fragmented subjects. For instance, we had a project where students collaborated to create a short skit about a global issue. This experience allowed them to apply skills from different areas. Such integration fosters a well-

rounded understanding and encourages students to develop analytical skills, creativity, and a deeper appreciation for learning. Recognising India's multilingual context, we encourage bilingual presentations of idioms, proverbs, and debates to strengthen understanding while promoting multilingual skills. Students learn to appreciate linguistic diversity and to transfer knowledge across languages, boosting both confidence and comprehension.

Inclusive and Differentiated Teaching Practices

Inclusivity is a central element of NEP 2020, emphasising fairness, access, and respect for diversity among learners. We implement inclusive and differentiated teaching methods to ensure every student feels valued. Acknowledging this diversity, we design lessons that offer different ways for students to participate, allowing them to work at their own pace and use their strengths.

We take straightforward steps like providing support when needed, allowing students to select tasks, and offering assignments in various formats—writing, speaking, drawing, or digital work. We pay special attention to students needing extra help while encouraging advanced learners to take on more challenging tasks. We support visual learning by having students create comic strips based on themes, prose, or poems from the syllabus. This strategy helps students simplify complex ideas, sequence events, and visually express interpretations, making learning inclusive for all.

Assessment Reforms and Feedback for Learning

Assessment methods have undergone significant changes due to the focus of NEP 2020 on formative and competency-based evaluation. The emphasis has moved from high-stakes testing to ongoing assessment that promotes learning and growth. Formative assessments like reflective journals, portfolios, peer reviews, and self-assessments provide valuable insights into students' progress and areas for improvement.

Timely, constructive feedback is vital in this process. Instead of just giving grades, we use feedback as a tool for improvement, encourage reflection, and build student confidence. We share rubrics in advance to ensure clear expectations. This approach alleviates exam anxiety and fosters a growth mindset, enabling students to view assessments as an integral part of the learning journey rather than a source of stress.

Meaningful Integration of Technology and AI in Classrooms

When used thoughtfully, technology serves as a powerful tool for learning. In line with NEP 2020, we integrate digital tools and AI-based resources meaningfully to improve engagement, accessibility, and personalisation. Blended learning models combine face-to-face instruction with digital platforms, allowing students to revisit concepts, access additional resources, and learn at their own pace.

We introduce AI tools responsibly to support research, provide personalised feedback, and encourage creativity, while also

promoting digital literacy and ethical awareness. Technology is seen not as a substitute for teachers but as a support system that enhances the teaching and learning process. By guiding students to use digital resources critically and responsibly, classrooms prepare learners for a technology-driven future while keeping the human element that is essential to education.

Social-Emotional Learning, Values, and Life Skills Education

Aligned with the vision of NEP 2020, Social-emotional learning, values and life skills education together form the core of holistic education. They enable learners to understand and manage emotions, develop empathy, build healthy relationships, and make responsible, ethical decisions. NEP 2020 emphasises that emotional well-being and moral values are essential for effective learning, creativity, and critical thinking. When integrated into classroom practices, these dimensions help learners develop resilience, self-confidence, respect for diversity, and a strong ethical foundation.

In our classroom, we start the day with morning circle discussions where students share how they're feeling. It's amazing how this simple practice sets a tone of empathy and respect for each other. We also do peer-feedback sessions where students learn to appreciate each other's strengths and offer kind words of encouragement. Group projects are another effective way for students to learn collaboratively and take responsibility for their actions.

We also encourage our students to reflect on their thoughts and feelings through journaling. We discuss real-life scenarios and dilemmas, which help them see how values like honesty,

fairness, and kindness play out in everyday life. As their teachers, we try to model these values ourselves because we believe kids learn best by observing us.

By focusing on SEL and value education, we are not just teaching academics; we are helping our students become emotionally intelligent, compassionate, and responsible individuals who will make a positive impact on society.

Conclusion

Implementing NEP 2020 in classroom practices requires a fundamental rethinking of teaching and learning. Through creative and student-centred pedagogies, experiential and interdisciplinary learning, inclusive strategies, meaningful assessment, thoughtful use of technology, and a strong focus on social-emotional development, classrooms truly reflect the policy's holistic vision. Teachers become not just conveyors of knowledge but facilitators, mentors, and co-learners who guide students toward lifelong learning.

As schools evolve into centres of skills, values, and well-being, these teaching practices help make education relevant, engaging, and transformative. Aligning classroom experiences with the goals of NEP 2020 enables learners to become thoughtful, responsible, and future-ready individuals capable of making meaningful contributions to society and the world.

18

कविता से जीवन तक (कक्षा सातवीं में 'सरिता' कविता के माध्यम से अनुभवात्मक, सहयोगात्मक एवं मूल्यपरक अधिगम)

Manisha Verma (TGT Hindi)
New Era Public School Mayapuri

NPSC शिक्षा संवाद शिक्षकों को कक्षा में अपनाई जा रही प्रभावी, नवाचारी एवं अनुभवात्मक शिक्षण पद्धतियों को साझा करने का मंच प्रदान करता है। इन्हीं पद्धतियों को ध्यान में रखकर कक्षा में अध्यापन कार्य कराया जाता है। उदाहरण स्वरुप कक्षा सातवीं में कवि गोपाल सिंह 'नेपाली' द्वारा रचित कविता सरिता का अध्यापन कराया गया। यह प्रपत्र अध्यापन के दौरान अपनाई गई एक प्रभावी, अनुभवात्मक एवं सहयोगात्मक शिक्षण पद्धति को प्रस्तुत करता है।

यह गतिविधि शैक्षणिक सत्र 2025–26 में कक्षा सातवीं में एक नियमित कक्षा के दौरान आयोजित की गई। यह गतिविधि राष्ट्रीय शिक्षा नीति 2020 के उद्देश्यों के अनुरूप है, जिसमें छात्र–केंद्रित, खोजपरक, समूह आधारित तथा मूल्यपरक अधिगम पर विशेष बल दिया गया है। यह शिक्षण अभ्यास कक्षा में नियमित रूप से अपनाई जाने वाली पद्धति का उदाहरण है और इस प्रकार शिक्षा संवाद तथा छम्ब्द 2020 की भावना को प्रभावी रूप से साकार करता है।

भूमिका

कविता केवल शब्दों का संयोजन नहीं होती, बल्कि वह जीवन, प्रकृति और मानवीय संवेदनाओं की अभिव्यक्ति होती है। 'सरिता' कविता के माध्यम से नदियों के महत्व, उनकी उपयोगिता तथा उनसे जुड़े मानवीय सरोकारों को विद्यार्थियों तक पहुँचाने का प्रयास किया गया। इस उद्देश्य से कविता को केवल पाठ्यवस्तु तक सीमित न रखते हुए उसे जीवन से जोड़ने वाली गतिविधियों का आयोजन किया गया।

गतिविधि की योजना एवं क्रियान्वयन

सर्वप्रथम कक्षा में 'सरिता' कविता का सस्वर पाठ कराया गया तथा विद्यार्थियों को उसका भावार्थ समझाया गया। कविता 'सरिता' के शब्दार्थ, विलोम शब्द एवं पर्यायवाची शब्द भी कराए गए, जिससे छात्रों की शब्द–सम्पदा में वृद्धि हुई।

तत्पश्चात् विद्यार्थियों को पाँच समूहों में विभाजित कर विषय से संबंधित विभिन्न गतिविधियाँ सौंपी गई।

1. कल्पनात्मक लेखन "यदि नदियाँ न होतीं तो..."

इस गतिविधि के माध्यम से छात्रों ने नदियों के अभाव में जीवन की कठिनाइयों की कल्पना की, जिससे उनमें पर्यावरण के प्रति संवेदनशीलता विकसित हुई। इसके साथ ही छात्रों ने स्वयं कविता लेखन का प्रयास भी किया, जिससे उनकी सृजनात्मकता, कल्पनाशीलता एवं भावात्मक अभिव्यक्ति को प्रोत्साहन मिला।

2. प्रमुख भारतीय नदियों पर चर्चा

गंगा, यमुना, सतलुज एवं सरयू नदियों के उद्गम, महत्व और सांस्कृतिक भूमिका पर समूह चर्चा करवाई गई। इस गतिविधि के माध्यम से विद्यार्थियों ने कविता को भौगोलिक एवं सामाजिक संदर्भों से

जोड़ते हुए बहुविषयक अधिगम का अनुभव प्राप्त किया।

3. नदियों से संबंधित प्रश्नोत्तरी

ज्ञानवर्धन हेतु रोचक प्रश्नोत्तरी का आयोजन किया गया, जिससे छात्रों की सहभागिता बढ़ी तथा उनके पूर्व ज्ञान का मूल्यांकन भी हुआ। इस गतिविधि ने सीखने की प्रक्रिया को आनंददायक बनाया।

4. अन्य कवियों की नदी विषयक कविताएँ

छात्रों ने अन्य कवियों दवारा रचित नदियों से संबंधित कविताओं का चयन कर उनका संक्षिप्त परिचय प्रस्तुत किया। इसके साथ ही विद्यार्थियों ने स्वयं नदी विषय पर कविता निर्माण का प्रयास भी किया। इस गतिविधि से विद्यार्थियों की साहित्यिक अभिरुचि, रचनात्मकता तथा काव्यात्मक अभिव्यक्ति को प्रोत्साहन मिला।

5. जल प्रदूषण एवं जल संरक्षण पर चर्चा

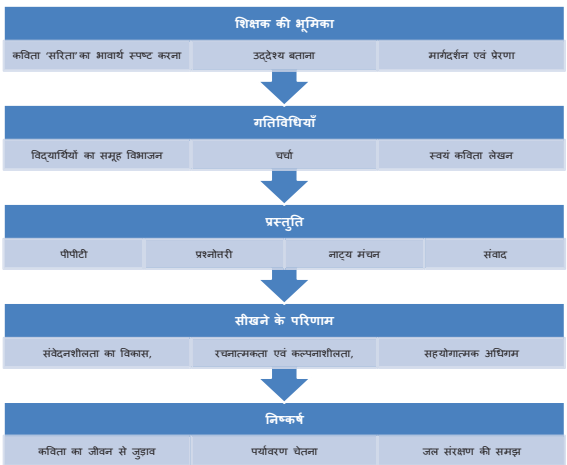
इस गतिविधि के माध्यम से जल प्रदूषण के कारणों, दुष्परिणामों एवं समाधान पर पीपीटी, संवाद एवं नाट्य मंचन के माध्यम से प्रस्तुति दी। गतिविधि के अंत में विद्यार्थियों द्वारा जल संरक्षण की सामूहिक प्रतिज्ञा भी ली गई, जिससे उनमें पर्यावरणीय संवेदनशीलता एवं सामाजिक उत्तरदायित्व की भावना विकसित हुई।

"यह गतिविधि हिंदी साहित्य को भूगोल, पर्यावरण अध्ययन तथा नैतिक शिक्षा से जोड़ते हुए बहुविषयक अधिगम का प्रभावी उदाहरण बनी।"

प्रस्तुतीकरण के माध्यम

विद्यार्थियों ने अपने–अपने कार्यों को पीपीटी, वीडियो, प्रश्नोत्तरी, संवाद, नाटक के माध्यम से प्रस्तुत किया। इससे उनके आत्मविश्वास, संप्रेषण कौशल, रचनात्मकता और टीमवर्क का विकास हुआ। विद्यार्थियों के अधिगम का मूल्यांकन **समूह सहभागिता, प्रस्तुतीकरण, रचनात्मक अभिव्यक्ति तथा प्रश्नोत्तरी** में सक्रिय भागीदारी के आधार पर किया गया।

शिक्षण–अधिगम प्रक्रिया का क्रम (Flow Chart)



सीखने के प्रतिफल

1. कविता की गहरी समझ विकसित हुई
2. पर्यावरणीय चेतना का विकास
3. सहयोगात्मक एवं संप्रेषण कौशल में वृद्धि
4. रचनात्मक अभिव्यक्ति को प्रोत्साहन
5. मूल्यपरक एवं जीवनोपयोगी शिक्षा का सुदृढ़ीकरण
6. स्वयं कविता लेखन के प्रयास ने विद्यार्थियों में भाषा के प्रति आत्मविश्वास एवं सृजनात्मक अभिव्यक्ति को प्रोत्साहित किया ।

NEP 2020 से संबद्धता

यह गतिविधि राष्ट्रीय शिक्षा नीति 2020 के प्रमुख बिंदुओं–

1. अनुभवात्मक अधिगम
2. बहुविषयक दृष्टिकोण

3. जीवन कौशल
4. मूल्य एवं संवेदनशीलता आधारित शिक्षा

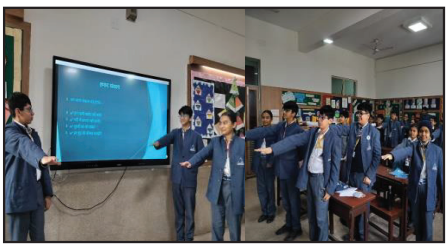
– को सफलतापूर्वक साकार करती है। विद्यार्थियों द्वारा स्वयं कविता लेखन, समूह कार्य, प्रश्नोत्तरी एवं प्रस्तुतीकरण के माध्यम से संप्रेषण, रचनात्मकता एवं सहयोग जैसे 21वीं सदी के कौशल विकसित हुए। यह गतिविधि विद्यालय को कौशल एवं संवेदनशीलता के केंद्र के रूप में विकसित करने की NEP 2020 की परिकल्पना को साकार करती है।

निष्कर्ष

इस गतिविधि के दौरान यह स्पष्ट हुआ कि जब विद्यार्थियों को सीखने की स्वतंत्रता दी जाती है, तो वे अधिक उत्तरदायी और रचनात्मक बनते हैं। कविता 'सरिता' ने विद्यार्थियों में भाषा कौशल के साथ–साथ प्रकृति के प्रति संवेदनशील दृष्टिकोण विकसित किया। यह गतिविधि यह सिद्ध करती है कि साहित्य शिक्षण को यदि रचनात्मक एवं जीवन से जुड़ा बनाया जाए, तो वह विद्यार्थियों के सर्वांगीण विकास में महत्वपूर्ण भूमिका निभा सकता है। इस प्रकार की शिक्षण पद्धति विद्यालयों को वास्तव में कौशल और संवेदनशीलता के केंद्र के रूप में स्थापित करती है।

ANNEXURE (PHOTOGRAPHIC EVIDENCE)
सरिता कविता पर आधारित शिक्षण गतिविधियों के छायाचित्र

नदियों से जुड़े तथ्यों पर आधारित क्विज में उत्साहपूर्वक भाग लेते विद्यार्थी।



जल संरक्षण हेतु विद्यार्थियों द्वारा ली गई सामूहिक प्रतिज्ञा।

जल प्रदूषण के कारणों एवं निवारण पर पीपीटी के माध्यम से विद्यार्थियों द्वारा की गई प्रस्तुति।

कक्षा सातवीं के विद्यार्थियों द्वारा 'सरिता कविता पर समूह आधारित पीपीटी प्रस्तुति।

'सरिता कविता पर आधारित गतिविधि के दौरान छात्र समूह में सहयोगात्मक रूप से कार्य करते हुए।

नाट्य मंचन के माध्यम से नदियों के भावों को जीवंत रूप में प्रस्तुत करते विद्यार्थी।

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Book Maker Learning: A Classroom Pedagogy for Foundational Reconstruction and Learner Engagement

Shimon Nawaz Loan (Science Teacher)
Sunbeam International School, Varuna

Abstract

Teachers across curricula often encounter students who work hard yet fail to build strong conceptual understanding. Through teaching science and biology across CBSE, ICSE in my coaching and IGCSE classrooms in the school where I teach, I observed that this struggle frequently originates from weak or unclear foundational concepts rather than lack of effort or ability since it is in human psychology to try one's best not to lose even though one is not prepared for the situation. Differences across boards further revealed that while some learners excel in recall and terminology, others perform better in application and competency-based tasks, yet no single structure serves all learners equally well. In response, I developed a classroom pedagogy, which I have termed Book Maker Learning, aimed at rebuilding conceptual foundations before advancing to higher-order understanding, like building a very strong 1-storey foundation before building a huge skyscraper. This approach treats learning as an active, high-energy process, keeping in mind that the attention spans of students are not more than 10 minutes, and emphasizes student-created knowledge, peer engagement, rapid recall, and assessment of literacy.

The pedagogy seeks not merely to improve performance but to reshape students' emotional relationship with learning itself, enabling them to experience thinking as an engaging, purposeful, and memorable process.

Context and Rationale

I teach CBSE and ICSE (class 6 to class 12) and IGCSE (class 3 to class 9) classrooms. Teaching these students, I got insight into their respective strengths and limitations, particularly in how students learn-the art of learning. Over time, it became evident to me that many students struggle not because they lack intelligence or motivation, but because their foundational understanding is either underdeveloped or fragmented.

When such students encounter new chapters, they attempt to build complex ideas on unstable conceptual ground. Even with sincere effort, learning becomes difficult, frustrating, and short-lived, even though with rigor they do manage to score good marks, but the knowledge does not stay with them; it is both a waste of their time and energy. This challenge is not confined to any single board; rather, it appears differently across curricula. These repeated observations led me to question whether the issue lay less in curriculum design and more in

how learning foundations are reconstructed-or left unreconstructed-inside classrooms.

2. Foundational Fragmentation in Science Learning

In science education, clarity of basic concepts is essential. A single misunderstanding can quietly weaken an entire chapter. For example, when teaching the circulatory system, students are expected to understand what blood is. Many learners incorrectly classify blood as a homogeneous or heterogeneous mixture (plasma can be called a homogeneous mixture), failing to recognize it as a tissue composed of cells and plasma. If this basic idea remains unclear, understanding circulation, transport, immunity, or even injury becomes difficult.

Some students from certain boards may recall textbook definitions accurately, they often struggle to apply this knowledge to unfamiliar situations such as diagram-based or competency-based questions, conversely, some learners handle application-based questions well but lack precision in foundational terminology. These patterns suggest that curriculum alignment alone cannot ensure conceptual strength there has to be something that guarantees that education is learn once apply anywhere (LOAA) similar to write once run everywhere capability of Java language. A more fundamental instructional response is required—one that rebuilds understanding before advancing content.

Learning as an Affective, High-Energy Process

A key belief in this pedagogy is that learning is not purely cognitive; it is deeply emotional. Students often associate learning with anxiety, boredom, or fear of failure, more importantly a jargon they would never be using in life. I observed that when learning is experienced as energetic, participatory, and mentally stimulating, students begin to associate thinking with excitement rather than stress.

It is important to know your students better and then modify this pedagogy to cater to their needs. One notable example of which is, some hyperactive students in my biology class were given the task of competing holding breathe and writing whatever their mind is feeling what they are resisting apart from wanting to breathe. This was how I taught them about involuntary and voluntary phenomenon in our body and how the body tries its best to maintain homeostasis. how brains send signals and motivate to not stay in difficult situation and how low oxygen affects thinking, Carbon dioxide buildup, respiration and the lactic acid cycle.

The aim of Book Maker Learning is not to make lessons entertaining in a superficial sense, but to allow students to experience the process of understanding as rewarding. Over time, students begin to engage with learning in the same way they engage with sports or art-not as an obligation, but as an activity they look forward to.

4. Book Maker Learning: Design and Core Principles

4.1 Diagnostic Concept Surfacing

Each chapter begins without authority or instruction. Students are first asked to write, in their notebooks, what they already believe about a concept. For instance, when starting the chapter on blood, students write what they

think blood is. This step is intentionally done in class, without books or internet access, ensuring that responses reflect genuine understanding and misconceptions.

This process surfaces conceptual gaps naturally and non-judgmentally, providing a clear starting point for instruction.

4.2 Guided Rediscovery Through Provocative Questioning

Instead of immediately correcting misconceptions, students are guided through a fast- paced rediscovery process. Questions such as "Are we filled with blood like a balloon is filled with water?" or "Why do we bleed even when the skin is cut but veins are not visible?" Prompt students to reason functionally.

These questions shift focus from memorized facts to purpose and structure, encouraging students to think about roles, composition, and consequences.

4.3 Visual and Structural Integration

Once curiosity is activated, visual representations such as diagrams of the circulatory system are introduced. Students link observations—such as bleeding at the tissue level-to larger structures like vessels and organs. This stage helps anchor abstract concepts spatially, strengthening retention and comprehension.

4.4 Active Recall and Social Accountability

The teacher plays an active role in maintaining cognitive engagement. Movement across the classroom, direct eye contact, voice modulation, repetition of key ideas, and random questioning prevent passive disengagement. Students are asked to repeat concepts, stand up, and pose their own questions based on newly gained understanding, while peers respond.

This shared responsibility for explanation converts learners into active participants rather than silent recipients.

4.5 Learner-Generated Knowledge Artefacts: The "Book"

Students then write a summary of what they have learned-entirely from memory and without textbooks. This handwritten work forms the core of the "book" in Book Maker Learning: a personalized record of reconstructed understanding.

In Class 9, students go a step further by creating side books-handwritten chapters with diagrams-for students who will study the subject the following year. This task transforms learners into contributors to future learning, reinforcing ownership and depth of understanding.

4.6 Time-Bound Micro-Assessments

Immediately following instruction, students attempt many multiple-choice questions within a very short time frame. The strict time limit discourages copying and promotes fast, instinctive recall. This process reveals the level of fluency achieved and encourages focused thinking.

For the following week, students complete daily case studies with time-bound questions. These tasks ensure sustained engagement, reinforce transfer of knowledge, and allow both weak and strong learners to

progress without stigma.

5. Role of the Teacher in Sustaining Engagement

In this pedagogy, the teacher is not a passive facilitator. Sustaining attention and energy requires deliberate action: movement, proximity, repetition, and emotional presence.

These strategies are used not to control behavior, but to keep working memory active and engagement consistent.

This approach ensures that classroom energy supports thinking rather than distraction.

6. Peer Assessment and Assessment Literacy

Students are asked to design short-answer questions based on the chapter and collectively form a question paper. They answer these questions, exchange answer sheets, and correct one another's work. Each paper is checked multiple times by peers before the final review by the teacher.

Through this process, students learn how answers are evaluated, recognize multiple valid responses, and understand why certain answers fail. Assessment becomes a learning experience rather than a judgment.

7. Observed Outcomes and Behavioural Shifts

One of the most significant observations was the transformation of students who were considered disruptive in other classes. In this learning environment, these students became highly engaged, performed well academically, and often took on the role of explaining concepts to peers. They displayed humility, focus, and responsibility, suggesting that behavioral issues were linked more to under-stimulation than inability.

Such shifts indicate that engagement, when structured effectively, can naturally regulate behavior.

8. Implementation Feasibility

The complete cycle of Book Maker Learning requires approximately six periods per chapter. It does not demand additional resources, extended hours, or reduced syllabus coverage. Instead, it replaces low-efficiency activities with focused, high-impact tasks, reducing teacher burden while increasing learning depth.

G. Limitations and Reflective Considerations

This pedagogy relies heavily on teacher energy, classroom rapport, and active facilitation. It may require adaptation based on class size and context. Additionally, outcomes described here are based on classroom observation rather than formal data collection, suggesting the need for further exploration.

Conclusion

Book Maker Learning is not designed to improve examination scores alone. Its deeper purpose is to change how students relate to learning. When students experience thinking as energetic, participatory, and rewarding, they begin to associate effort with satisfaction rather than fear. Such experiences leave lasting imprints, shaping learners who value the process of understanding beyond the classroom.

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Conic Sections Meet Sikkim's Fauna

Ms Shaveta Sachdeva (PGT Mathematics)
Ramjas School, Pusa Road, Delhi

Abstract

Conic sections are often taught through rules and fixed forms, so many Grade 11 students can solve sums but still struggle to "see" what the equation is doing on the coordinate plane. This paper reports a classroom project conducted by Grade 11 students of Ramjas School, Pusa Road, where learners used "Conic Sections Meet Sikkim's Fauna" as a creative example to learn conics in a deep and visual way. In this activity, student groups modelled Sikkim-related fauna (red panda, stag beetle, snow leopard, and Nairobi fly) by building drawings from circles, ellipses, parabolas, hyperbolas, and straight lines.

Across four sessions, learners analysed each animal into curve parts, wrote equations, plotted them, and repeatedly changed parameters—especially translations with centres (h,k) until the shape matched the intended silhouette.

Classroom observation and student presentations showed strong student-led reasoning, peer coaching, and improved comfort with orientation, symmetry, and translation. The approach also aligns well with NEP 2020, which promotes experiential learning and art-integrated, joyful learning across subjects.

Introduction

Conic sections (circle, ellipse, parabola, hyperbola) are a core part of senior secondary mathematics. Yet in many classrooms, the topic becomes a set of formulas to remember. Students learn standard forms, do substitution, and practice routine graphing. But they often miss the meaning" of parameters like how changing a, b or shifting the centre to (h,k) changes the curve on the plane. This gap becomes clear when students cannot place a conic at a chosen location, or cannot predict the effect of a parameter change.

To address this, Ramjas School project used an affordable, creative modelling task: students used conic equations to draw fauna connected with Sikkim Red Panda, Snow Leopard, Stag Beetle and Nairobi Fly.

The key idea was simple, if learners must match a curve to a visual target, they are forced to reason about parameters (size, stretch, shift, orientation) instead of only following a template. This is strongly in line with NEP 2020's push for experiential, competency based learning where students learn concepts through doing and reflecting, not only through rote practice.

Literature Review

1) Place-based and context-rich learning

In Mathematics, place-based approaches can help learners see Mathematics in land, culture, and community, making abstract ideas feel more real. In this project, Sikkim's fauna served as the shared context. Even though the school is in Delhi, the fauna theme still worked as a meaningful and India linked context and supported cross-curricular talk about biodiversity and geography while keeping the math goal clear.

2) Art-integrated and visual learning in mathematics

Art-integrated tasks can make mathematics more engaging and can support visual sense-making. NEP 2020 also encourages art integration and hands-on learning as a regular classroom practice. Studies on "math art" tasks report that such tasks help students link equations with graphs and learn through creative construction. This project used the same spirit: create something visible, then explain the mathematics behind it. The project aimed to include visual learners and let them experiment with graphs for better understanding.

3) Collaboration and mathematical talk

Research-based guidance for mathematics teaching highlights the value of collaborative learning and meaningful mathematical discussion. Ramjas school activity was designed as group work, with students sharing plotting tasks, checking intersections, and improving equations together , a differentiated group activity. The above activity helped in imbibing life skills of sharing, tolerance, acceptance of others view, team work.

Methodology

Design and setting

The innovation was implemented in a Grade 11 mathematics classroom through four sessions. Students worked in groups of five and chose a fauna focus within each team (Red Panda, Stag Beetle, Snow Leopard, Nairobi fly). A well designed rubric was shared with students which highlighted parameters like Mathematical accuracy , graphical representation, concept application and real life application, creativity and innovation, group collaboration and presentation.

Session flow (as implemented)

- Sessions 1-2: Students discussed Sikkim fauna and revised key ideas of conics: axes, symmetry, intercepts, and orientation. Teaching then extended to translated conics with centres at any point (h,k),so students could place features anywhere on the plane instead of being forced to draw everything around the origin.
- Sessions 3-4: Groups designed a composite "fauna landscape" on graph sheets. They broke the animal (and sometimes habitat elements like trees or mountains) into curve segments, selected conics and lines for each segment, plotted them, and then adjusted parameters again and again until the silhouette and intersections looked right.

Student output requirements

Each group submitted:
1. A plotted, labelled diagram, and
2. An equation bank listing every curve used.

Data used for this report

This paper is based on the teacher's classroom observation and student presentations, focusing on:

- how students chose curves,
- how they used translation/orientation ideas, and
- how collaboration supported mathematical explanation.

Results

All groups produced detailed plotted artefacts, each made with more than 50 conic and linear equations.

Students showed clear modelling choices in how they matched shapes to conics. Examples observed across groups included:

- Red panda: face using a circle, belly with an ellipse, legs with straight lines.
- Snow leopard: body built mainly from ellipses.
- Mountains/trees: mountains made using intersecting straight lines; trees using lines and ellipses.
- Stag beetle and Nairobi fly: combinations of ellipses, parabolic arcs, and line segments for wings, antennae, and contours.

During presentations, students often explained why a curve needed to open up/down, why a centre had to be shifted to a chosen (h,k)and how they changed values until the graph matched the target. Teacher observation also noted frequent student-led derivation and refinement, moving learning away from rote substitution toward parameter reasoning.

Group work supported peer coaching and division of tasks like plotting, checking intersections, and documenting equations supporting inclusive learning where learners of different abilities some good in drawing , some with strong analytical skills , few of them as good speakers collaboratively worked together to give impressive presentations.

Discussion

The project worked because it changed the learning task from "solve and plot" to "design and justify."

1) Better understanding of translation and orientation

In many classrooms, translated conics remain a tough topic . Here, translation became necessary. To place an eye, ear, wing, or body part at the right location, students had to shift centres and vertices. It was the delight of visual learners as it helped individuals to learn best by seeing and observing conics.

2) Visual checking created real mathematical feedback

Students did not stop at writing an equation. They had to test it visually, see mismatches, and correct them.

This cycle (choose → plot → check → refine) is very close to how modelling works in real life: mathematics is improved through

feedback, not written once and assumed correct. Feedback from teacher and peers also helped the student to correct the equations of the curves.

3) Collaboration improved mathematical talk and ownership

Students negotiated choices: "ellipse or parabola?", "shift left or right?", "wider or narrower?" This kind of talk supports deeper learning, and the project structure also encouraged shared ownership each group had to produce one final model, so students naturally supported each other. The project helped in removing maths phobia among students and enhanced their problem solving and analytical skills.

Alignment with NEP 2020

NEP 2020 calls for experiential learning, competency-based learning, and more joyful and engaging classroom practice. It also recommends art-integrated education as part of the push toward experiential learning. This project matches those directions in a practical way:

- Experiential: students learned by doing plotting, checking, refining. They researched on fauna of Sikkim, analysed the curves and plotted graphs. The project provided hands-on experience in planning, executing and presenting work.
- Competency-based: students demonstrated understanding by building a working model and explaining parameter choices. Students juggled with lot of critical thinking and problem solving in deriving equations and curves which could match the different fauna and flora involved in picture.
- Art-integrated and multidisciplinary: students used a creative output (fauna drawings) and linked mathematics with environmental awareness and Indian biodiversity. It proved to be multi-disciplinary project where students discussed about geographical conditions of Sikkim, its fauna, how symmetry and mathematical shapes are seen in nature among animals. Students inculcated their Mathematical and art skills to present an innovative project on "conic section meet Sikkim". Their presentation helped in developing their communication skills too.

Conclusion and teacher takeaways

The Conic Sections Meet Sikkim's Fauna example showed that conic sections can be taught in a way that is engaging, low-cost, and concept-rich. Using fauna as an innovative resource supported conceptual clarity about translation and orientation, strengthened equation building through visual verification, and developed collaboration and communication.

Practical takeaways for teachers

- Start with one "mini-model" (like a face or leaf) before a full animal.
- Require an equation bank so students must connect each curve to a purpose.
- Use peer roles (plotter, checker, recorder, presenter) to keep participation balanced.

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21

Teaching with Empathy in a Changing Classroom

Ms. Sonal Arora (TGT English, HOD English VI to X)
DAV Public School, Uppal's Sothend, Sector-49, Gurugram

"*All of us do not have equal talent. But all of us have an equal opportunity to develop our talents.*" - **Dr. A. P. J. Abdul Kalam**

Inclusive and differentiated teaching practices have emerged as fundamental approaches in contemporary education. Every classroom has a unique story. Some students speak with confidence, while others hesitate. Some grasp contents quickly, while others require time, reassurance and repeated exposure. Effective teaching is not about delivering the same lesson uniformly to everyone. It is about reaching each learner in a way that resonates with them. These practices are not merely instructional strategies. They reflect empathy, patience and a deep belief in the potential of every learner.

In today's rapidly changing educational landscape, marked by uncertainty and complexity, the classroom mirrors a VUCA world that is volatile, uncertain, complex and ambiguous. Education therefore, must prepare the learners not only for examination but for life. The inclusive and differentiated teaching wraps up the classes in a blanket of safety, tenderness, and motivation where students are perceived as being the ones who matter, who can do things and who feel that they are actually confident.

Understanding Inclusion Beyond Labels

Inclusive education is not only about students with identified learning needs being the only ones to have their needs met, but it is a more complex issue of accepting and embracing diversity in various forms like the different paces of learning, the abilities of the students, language skills, emotional maturity, and life experiences. There are in every classroom, for instance, confident speakers and silent thinkers, analytical and creative minds. This is precisely the reason why inclusion is a must; it makes sure that no learner is either invisible or left behind.

The classrooms that are inclusive are the ones that are the most empathic and respectful of each other. The students learn how to appreciate differences, to accept and understand the diversity of viewpoints, and to see the special talents their fellow students have. Such surroundings help the students to open up, to take courageous steps in their intellectual development, and to thrive in both the academic and emotional spheres of life.

The Necessity of Differentiation

Differentiated teaching imparts an essential truth and that- differences among students in terms of learning abilities and speeds. Through

differentiation, teachers can change the three environmental factors- content, learning processes, and assessments, to suit the needs of all learners while at the same time setting high expectations for everyone.

An illustration of this could be a student who is unable to express his/her ideas through writing but is able to express well while speaking. The teacher in this case may allow oral responses or group discussions as ways to assess understanding. Another student who is good at visual thinking may be helped through mind maps, charts, or illustrations. A creative student may be given a chance to show his/her understanding of a subject through storytelling, acting, or extending the project he/she is working on.

The same flexibility will also apply to the assessment. On the one hand, some learners may find written tests very easy and perform at their best, while, on the other hand, some others may so easily demonstrate a deeper understanding of the topic during role plays, reflective journals, peer feedback, or collaborative tasks. Through differentiation, the teaching process becomes so much easier, without losing the academic challenge.

Creating Safe and Responsive Classrooms

The foundation of an actual inclusive classroom is emotional safety. When students feel that their rights are respected, they are able to learn the best way. The use of positive language, recognition of efforts, and the acceptance of mistakes together with the celebration of small successes are the practices that help to build up resilience, self-esteem, and a growth mindset.

Through the use of different instructional methods like learning by doing, interactive discussions, and experiential tasks teachers are able to reach the students and engage them with the content based on their learning styles. Visual, auditory, and kinesthetic learners all have their ways of getting into the learning process and making it meaningful for them.

For instance, a student cannot keep up with the long text, instead of making the student read the whole text at once, the teacher will break the text into small parts and will allow the learner to use visuals or discussions to convey the gist or the main points of each part. Besides, the class-timid student may be asked to work with only one or two classmates first before presenting his/her ideas to the whole class. These kinds of adjustments are considerate and hence the participation of every student is guaranteed without pressure.

Life Skills and Resilience

In a world full of uncertainties, solely relying on academic knowledge will not suffice. Inclusive and differentiated teaching strategies will necessarily develop life skills like communication, empathy, adaptability, collaboration, and resilience.

Debates, storytelling, group projects, and reflective writing activities make it possible for the learners to demonstrate respect for others' opinions, recognise differences in perspectives, handle difficulties, and build their self-confidence. When a learner is provided with an adequate amount of space and time for

growth, even the most reluctant ones will start to exhibit self-assurance and independence.

Being inclusive does not imply that one has to compromise on the standards. It signifies giving adequate help so that all students can aspire to the same level of excellence.

Teacher Preparedness and Reflective Practice

The main factor for the success of inclusive education is the peculiar features of the teachers who reflect, adapt, and respond to the situation. Those educators who consider diversity to be a positive thing and not a problem, are the ones who can meet the needs of the different learners best.

Continuous professional learning, working with others, and reflective practices in the classroom enable teachers to improve their strategies and to be effective in their response to student diversity. Teaching is a process of mutual growth for both the learners and educators.

Challenges and Honest Reflections

The implementation of inclusive and differentiated practices does come with challenges. A teacher can be tested with large classes, limited time, curriculum requirements and the different needs of learners. Nevertheless, even tiny things like flexible grouping, using different questioning techniques and giving personalised feedback can result in a great impact.

Inclusion does not mean being perfect. It means being conscious, being sensitive, and being kind.

Impact on Learners

The influence of inclusive and differentiated teaching is not limited to academic achievement but goes further. Students gain traits such as confidence, empathy, collaboration skills, and self-awareness. They are not only appreciating differences as strengths but also recognizing their own voices as valuable.

Curiosity, creativity, and problem-solving skills are the characteristics that such classrooms develop. Students change to be more engaged, responsible, and resilient learners who are ready for life after school.

Conclusion

The present educational setting requires the use of inclusive and differentiated teaching practices. These practices equip the students with the skills of resilience, empathy, and confidence to face a complex and ever-changing world.

When teaching is based on comprehension, flexibility, and kindness, it becomes a powerful change for the better. Teachers who adopt the philosophy of inclusion and differentiation not only present the material, but also influence lives, develop talents, and motivate people to learn for the rest of their lives. It is possible to turn any classroom into a place where every pupil is recognized, listened to, and helped.

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Empowering Learners through learning the Language: Impactful Pedagogy Anchored in NEP 2020

Narinder Kaur (TGT English)
Mahavir Senior Model School

"When learning is experienced, reflected upon, and shared, it moves from the classroom to life."

Introduction

Education contributes to an individual's personality development by introducing them to different perspectives. When we talk about education, we need a well-designed and planned framework to impart education to our young assets, so the need to have a policy framed keeping the 21st century challenges in consideration. Herein comes the NEP 2020, planned to cater to the present century challenges. In alignment with NEP 2020, the methodology to teach English Language as a subject is a blend of appreciation for literature, comprehension and critical analysis, along with experiential learning, among the learners.

It is firmly believed that Experiential learning emphasizes on the students actively engaging with the material, applying knowledge in real-life situations, and learning from direct experiences. The aim is holistic development of learners, equipping them with the key 21st century skills and incorporating the life skills such as communication, cooperation, teamwork and critical thinking, with greater focus on experiential learning.

Child Centric Approach:

Being a Language teacher, I firmly believe that Language is the communication of ideas, thoughts, and opinions, and the best way to teach it is by making it meaningful for the learners through effective strategies such as group work, pair discussions, role plays, debates, storytelling, project-based learning, and experiential activities. These approaches encourage learners to actively participate, collaborate, and express themselves in authentic contexts. By integrating real-life situations, interactive tasks, and opportunities for reflection, language learning becomes child-centric, engaging, and purposeful. Such strategies not only develop linguistic competence but also foster critical thinking, creativity, confidence, and a sense of ownership over the learning process.

When we talk about group tasks, it must be remembered that for a discussion to be constructive and culminate in the desired learning outcomes, meticulous planning of learning objectives and outcomes is imperative before the task is assigned to the learners.

Grouping is not a random arrangement but a thoughtfully curated process, designed to ensure diversity, balance, and meaningful participation. Each member is entrusted with a clearly defined role, aligned with the learner's

strengths and potential, thereby nurturing accountability and collaboration. The teacher, in this process, is not a passive bystander but an active facilitator and keen observer, closely monitoring interactions, guiding discussions, and offering timely scaffolding where required. Through continuous observation, the teacher assesses communication skills, critical thinking, cooperation, and engagement, ensuring that learning remains purposeful and inclusive. Such a structured approach to group work transforms the classroom into a dynamic learning space where every learner contributes, reflects, and grows collectively.

Blend of interpreting the content, with experiential Learning:

Literature is the extension of life, with the characters living among ourselves. The learners are introduced to the genre and time period, before starting the lesson. They are given a situation and an extension to the turning point or ending of the story, wherein they put themselves into the character's shoes, or the situation, and present a critical analysis based on it. This fosters critical thinking, along with experiential learning happening, as the students become active participants in the whole process, learning to analyse the given situation, and providing their inputs, after the indepth thought process. The subject (English) does not remain a mere piece of literature to be crammed. It becomes an essential Component of the entire learning process, thus making the learning last longer. A conscious change in the students' active thought process, imbibing the underlying messages and themes conveyed, is sought by. The flaws among the characters, become a point of critical study, thus, moulding one's own prevalent thoughts and opinions, paving way for the more desirable attributes in the personality.

In Experiential Learning, the learners go through the entire process where a topic is introduced, and students are given the opportunity to reflect on their own experiences in that area, relating the topic to their personal learning goals. It is followed by the students becoming personally engaged as they participate in an activity, either in the classroom or outside, intended to build on or enhance their previous experience. The teacher leads the students to internalize the received opportunity to reflect on their participation in the activity and discuss potential effects on their future behaviour and attitudes. The students apply their learning and connect it to the world around.

Though the task is learner centric, but the teacher's role is not incidental. There is a conscious effort to let the learners play an active role. The teacher directs the class using elicitation questions to encourage reflection on students' past experiences and relate that to the new topic or activity. Further, the teacher allows the learners to be actively involved in direct experience, by using the target language communicatively with their peers. This may be called 'a supervised freedom', as the teacher monitors the entire process, allowing the learners to take the lead. The teacher needs to be non-judgmental and encourage the learners to think about their unique engagement with the language, the activities, their connect with other students, leading to strengthening their learning experience by linking the classroom learning with the real world outside classroom, by transferring their classroom experience into

day to day contexts.

Experiential learning becomes more impactful when it is blended with Differential teaching, catering to the need of each learner. Experiential teaching gains the best results when integrated, and designed to be closely knitted together with differentiated teaching to nurture and bring out the best in each learner in a class, irrespective of their nature and the skill-set that they already possess.

Flipped learning

Flipped Learning is another strategy that can be effectively incorporated in the teaching of literature, thus shifting content exploration beyond the classroom and utilising class time for interaction, application, and reflection. In this approach, students are introduced to texts through guided reading tasks, short video explanations, or teacher-curated prompts, enabling them to be prepared for deeper engagement. For instance, the students are asked to prepare a dialogue between two characters, across the chapters in their textbook. They read, discuss, and decide upon the characters chosen for the dialogue creation, applying their comprehension as well as the analytical skills, to prepare and present the dialogue in the class. Thus, flipped learning transforms students into active participants, ensures purposeful engagement, and helps achieve learning objectives more effectively.

Reflection

Another pertinent aspect of learning being long-lasting is reflection on the task undertaken, both by the teacher and the student. This process is essential as it ensures that the learner does not perceive the content in isolated compartments but is able to comprehend it holistically. Through reflection, learners appreciate what has been read, discussed, or experienced, connect it with prior knowledge and real-life contexts, and internalise the learning meaningfully, taking it beyond the classroom. Reflection enables students to evaluate their understanding, identify gaps, and recognise areas for improvement, thereby promoting metacognition and self-directed learning. For teachers, reflective practice helps in assessing the effectiveness of instructional strategies and refining them to better meet learners' needs. Thus, reflection emerges as a crucial pedagogical strategy that deepens understanding, reinforces learning, and ensures its enduring impact.

Conclusion

In conclusion, the thoughtful integration of experiential learning, differential teaching, flipped learning, group tasks, and reflection, in alignment with NEP 2020, ensures that learning is deep, inclusive, and long lasting. These approaches acknowledge the reality of diverse classrooms, where learners differ in abilities, interests, pace, and learning styles. By offering multiple pathways to engage with content, students become active constructors of knowledge rather than passive recipients. Meaningful experiences, collaborative tasks, reflective practices, and learner autonomy together create a holistic learning environment where understanding is internalised and retained beyond assessments.

As educators, embracing the learner-centric strategies enables us to nurture confident, reflective, and lifelong learners.

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From Explanation to Exploration

Renuka Mehra (TGT Science)
Tagore International School, Delhi

Abstract

"Science is not learned by listening alone; it is learned by doing, questioning, and reflecting." This classroom-based study examines the effect of pedagogical approach on student learning while teaching the Grade 6 Science topic *Exploring Magnets*. One section followed a predominantly teacher-centric, textbook-driven approach, while the intervention section experienced a sequence of NEP 2020–aligned pedagogies, including inquiry-based exploration, hands-on investigations, model-making, peer discussion, real-life problem scenarios, formative feedback, and guided use of digital tools. Data collected through teacher observations, student artefacts, participation tracking, questioning patterns, and reflections revealed that the experiential section demonstrated wider participation, increased "how" and "why" questions, deeper conceptual clarity, stronger collaboration, and improved application of learning to real-life contexts. The findings suggest that NEP 2020–aligned pedagogies—experiential, inclusive, inquiry-driven, and formative in nature—significantly enhance engagement and understanding in middle school science classrooms.

1. Introduction

The National Education Policy (NEP) 2020 advocates a decisive shift from rote-based instruction to competency-driven learning that nurtures curiosity, scientific temper, critical thinking, and problem-solving. In middle school science classrooms, however, learning often remains teacher-centric—definitions are explained, properties are listed, and experiments are demonstrated rather than explored. As a result, students may recall facts but struggle to apply concepts or ask meaningful questions.

The topic *Exploring Magnets* in Grade 6 offers rich potential for experiential learning. Concepts such as magnetic attraction, poles, magnetic and non-magnetic materials, and real-life applications can be meaningfully understood only through observation, experimentation, and discussion. This study responds to the need for pedagogical transformation by redesigning how students experience the same prescribed content—without altering the syllabus.

By comparing a traditional teacher-centric classroom with a section taught using NEP 2020–aligned pedagogies, this research explores how teaching strategies influence engagement, inquiry, collaboration, and conceptual understanding in science.

2. Purpose and Objectives

2.1 Purpose

To examine whether NEP 2020–aligned pedagogical practices improve student

engagement, inquiry, and conceptual understanding in comparison to a teacher-centric approach while teaching *Exploring Magnets* in Grade 6.

2.2 Objectives

The intervention aimed to enable students to:

- Develop inquiry habits by asking "how" and "why" questions.
- Understand magnetic concepts through hands-on exploration and evidence.
- Apply learning to real-life situations and simple problem-solving.
- Build collaboration, communication, and feedback skills.
- Engage through multiple modes—talking, experimenting, recording, and creating.

2.3 Research Questions

- How do student engagement and questioning differ between teacher-centric and experiential classrooms in Grade 6 Science?
- In what ways do NEP 2020–aligned practices support inclusive participation and deeper conceptual understanding?

3. Context and Participants

The study was conducted in two intact Grade 6 sections (n = 45 students each) in a middle school Science classroom during the teaching of *Exploring Magnets*. Both sections followed the same syllabus, timeline, and assessment expectations. Before the intervention, both classes displayed similar learning patterns—limited questioning, passive participation, and dependence on textbook explanations.

4. Method and Classroom Approach

4.1 Method

This study adopted a classroom-based action research approach. The focus was not on changing content, but on transforming the learning experience. The comparison section was taught using routine instruction—explanation, note-making, and textbook-based questioning. The intervention section experienced a sequenced set of pedagogical strategies moving from curiosity to exploration, discussion, and application.

4.2 Tools Used

- Bar magnets, iron filings, paper clips, and everyday objects
- Inquiry worksheets and prediction tables
- Digital simulations and short video clips
- Low-cost materials for model-making
- Peer feedback prompts and exit reflections

4.3 Data Collection

Data were collected through:

- Teacher anecdotal records of participation and questioning
- Student worksheets, models, and observation tables
- Informal tracking of participation patterns
- Short written reflections after activities

5. Pedagogical Interventions and Teacher Observations

5.1 Inquiry-Based Exploration: From telling to discovering

Instead of beginning with definitions, students in the intervention section were given magnets and everyday objects and asked to predict, test, and record observations. Questions like *"What*

do you notice?" and *"Why do some objects stick while others don't?"* shifted the classroom tone from receiving information to constructing understanding. Students showed visible excitement and curiosity, and questioning increased organically.


5.2 Hands-On Investigations: Making Concepts Visible

Students engaged in structured hands-on investigations to explore magnetic poles, attraction, repulsion, and direction-finding. Using iron filings and multiple magnets, they observed patterns of magnetic interaction, identified poles, and recorded evidence of attraction and repulsion. Concepts that are often memorised, such as *"like poles repel and unlike poles attract,"* were transformed into observable phenomena grounded in experimentation.

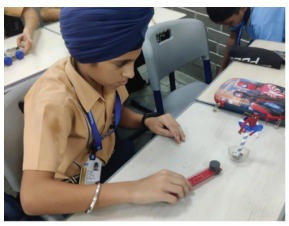
To deepen understanding of direction, students moved beyond memorising that a magnet aligns north-south. They created their own temporary magnets by stroking iron needles with bar magnets and then suspended them to function as simple magnetic compasses. Through this activity, students discovered how a freely suspended magnet consistently aligns in a particular direction. Observations were compared, predictions were revised, and reasoning was refined based on evidence.

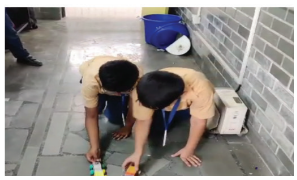
This investigation enabled learners to construct conceptual understanding through experience rather than recall. By making and testing their own temporary magnetic compasses, students demonstrated scientific thinking—predicting outcomes, observing patterns, revising explanations, and drawing conclusions from evidence—thereby strengthening both conceptual clarity and inquiry skills aligned with NEP 2020.




5.3 Model-Making and Design Thinking

To apply learning, students designed simple models showing real-life applications of magnets: magnetic dolls, magnetic trucks, magnetic door catches, crane models for lifting scrap, and pin holders. Early models often worked imperfectly, prompting redesign. This iterative process strengthened cause-and-effect reasoning and problem-solving.



5.4 Peer Discussion and Feedback: Learning Through Dialogue

Peer discussion and structured feedback were systematically integrated after each activity in the *Exploring Magnets* unit to deepen understanding and widen participation. Following hands-on investigations such as identifying magnetic and non-magnetic materials, observing attraction and repulsion between poles, and testing magnetic strength, students discussed observations in small groups. Rather than receiving immediate teacher validation, learners explained reasoning, questioned inconsistencies, and refined ideas using evidence from experiments.

During demonstrations of magnetic poles and model-making tasks (e.g., magnetic pin holders or crane models), peers provided feedback using structured prompts such as one appreciation and one suggestion. This shifted classroom talks from recall to scientific reasoning and design thinking. Feedback often focused on magnet placement, strength, and functionality, leading groups to revise and improve models.

These dialogic routines significantly widened participation. As reflected in data, the intervention section showed higher peer feedback participation (36 vs. 15) and a marked increase in student-generated "how" and "why" questions (28 vs. 7). Quieter students contributed through demonstrations, recordings, and group explanations, indicating more inclusive and collaborative learning aligned with NEP 2020 competencies.

5.5 Technology Integration: Visualising the unseen

Technology was used purposefully—to extend understanding rather than replace thinking. Students connected classroom learning to technology used in everyday life. Videos of real-life applications, such as MRI machines, the use of magnets in cranes in junkyards, etc., help students connect classroom concepts to everyday technology. Technology thus acts as a learning aid that deepens understanding, encourages scientific reasoning, and links theoretical knowledge with real-world applications without replacing active thinking or experimentation.

6. Results (Teacher-Recorded Indicators)

Five indicators were tracked across both sections.

Indicator	Comparison (n=45)	Intervention (n=45)
Students participated ≥ 1 time	15	36
Total student questions	22	62
"How/Why" questions	8	29
Peer feedback participation	16	33
Real-life applications suggested	9	27

The intervention section showed consistently higher engagement, inquiry, and application of learning.

7. Discussion: Why This Worked and Alignment with NEP 2020

The results suggest that sequencing and multi-modality played a critical role. Curiosity was sparked through exploration, understanding was built through investigation and model-making, and communication skills were strengthened through feedback routines. NEP 2020 emphasises experiential learning, inclusivity, formative assessment, and scientific temper, all of which were embedded naturally within the intervention. Students with different learning strengths could contribute meaningfully, making science accessible and engaging.

8. Student Anecdote

Manit - "I enjoyed learning about magnets by actually doing experiments instead of just reading. Making a compass and testing objects helped me understand why magnets behave differently and made science feel interesting, clear, and connected to real life."

Doyel- "I liked this class because we explored, discussed, and made models ourselves. The hands-on activities helped me understand attraction and repulsion better, and I felt confident sharing ideas and learning from my friends."

9. Limitations

The study was conducted with intact classroom sections, limiting randomisation and generalisability of findings. Data relied largely on teacher observations and classroom artefacts, which may carry subjective bias. The duration of the intervention was limited to a single unit, and novelty effects may have influenced student engagement. Long-term retention and transfer of learning were not assessed.

10. Conclusion

This study demonstrates that NEP 2020–aligned pedagogies significantly enhance engagement, inquiry, and conceptual understanding in middle school science. Experiential, inquiry-driven, and collaborative approaches transformed Exploring Magnets from factual learning to meaningful scientific exploration. Without altering syllabus or resources, pedagogical redesign fostered scientific temper, inclusivity, and real-life application. The findings reinforce the need to prioritise learner-centered pedagogy in everyday classroom practice.

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सामाजिक–भावनात्मक अधिगम, मूल्य एवं जीवन कौशल शिक्षा: एक हिंदी शिक्षक का कक्षानुभव

Kalyani Kumari (TGT Hindi, HOD Hindi Vi to X)
DAV Public School, Uppal's Southend, Sec-49, Gurugram

प्रस्तावना

विद्यालयी शिक्षा केवल विषय–वस्तु के ज्ञान तक सीमित नहीं रह सकती । आज की कक्षा में बच्चों को ऐसी शिक्षा की आवश्यकता है जो उन्हें संवेदनशील, सहानुभूतिपूर्ण, आत्मविश्वासी और सामाजिक रूप से उत्तरदायी नागरिक बनाए । सामाजिक–भावनात्मक अधिगम, जीवन कौशल और मूल्य शिक्षा इसी व्यापक उद्देश्य को पूरा करने के प्रमुख साधन हैं। वर्तमान शैक्षिक विमर्श में भी यह स्वीकार किया गया है कि विद्यालय जीवन के लिए शिक्षा का केंद्र होना चाहिए, जहाँ ज्ञान के साथ संवेदना और कौशल का भी विकास हो (एनपीएससी, 2026)।

एक हिंदी शिक्षक के रूप में मेरा अनुभव यह दर्शाता है कि भाषा शिक्षण सामाजिक–भावनात्मक विकास के लिए अत्यंत उपयुक्त मंच प्रदान करता है। साहित्य, कहानी, कविता, संवाद और नाटक ये सभी माध्यम विद्यार्थियों को स्वयं को समझने, दूसरों की भावनाओं को पहचानने और जीवन मूल्यों पर चिंतन करने का अवसर देते हैं।

सामाजिक–भावनात्मक अधिगम की आवश्यकता

किशोरावस्था (कक्षा 8–10) जीवन का वह चरण है जहाँ विद्यार्थी तीव्र भावनात्मक परिवर्तनों से गुजरते हैं। वे पहचान, आत्म–सम्मान, मित्रता, असफलता और प्रतिस्पर्धा जैसे अनुभवों से जूझ रहे होते हैं। यदि विद्यालय उन्हें अपनी भावनाओं को समझने और स्वस्थ तरीके से व्यक्त करने की क्षमता नहीं देता, तो उनका समग्र विकास बाधित हो सकता है। कक्षा आठवीं में पढ़ाए जाने वाले पाठ 'पौधे के पंख उनके अंदर छिपी कई कुंठित भावनाओं को पहचानने और उनका सामना करने में सक्षम बनाता है, जिससे वे अंदर ही अंदर जूझ रहे होते हैं। इस प्रकार शिक्षण के साथ–साथ विद्यार्थी सामाजिक और उससे भी बढ़कर मानसिक उलझनों और उनके ताने–बाने को समझ पाता है और एक संवेदनशील व्यक्तित्व के रूप में विकसित होता रहता है। इससे उसके अंदर आत्म–जागरुकता, आत्म–प्रबंधन, सामाजिक जागरुकता, संबंध कौशल और निर्णय लेने की क्षमता विकसित होती है। हिंदी कक्षा में जब छात्र किसी कहानी के पात्र की दुविधा पर चर्चा करते हैं या कविता की संवेदना को आत्मसात करते हैं, तब ये क्षमताएँ स्वाभाविक रूप से विकसित होती हैं।

हिंदी कक्षा: संवेदना का अभ्यास स्थल

भाषा केवल संप्रेषण का माध्यम नहीं, बल्कि अनुभवों और भावनाओं का संसार है। उदाहरण के लिए, जब विद्यार्थी प्रेमचंद की या कोई भी अन्य कहानियाँ पढ़ते हैं, तो वे गरीबी, अन्याय, करुणा और मानवीय गरिमा जैसे विषयों से जुड़ते हैं। जब वे महादेवी वर्मा के संस्मरण व रेखाचित्र पढ़ते हैं, तो उनके अंदर स्वतः ही पशु–पक्षियों के प्रति संवेदना जाग्रत होती है। चर्चा के दौरान विद्यार्थियों से पूछा जाने वाला प्रश्न "यदि आप इस पात्र की जगह होते, तो क्या करते?" यह प्रश्न उन्हें सहानुभूति विकसित करने की दिशा में प्रेरित करता है। यह प्रश्न उन्हें दूसरे के दृष्टिकोण को समझने के लिए प्रेरित करता है और उनमें इसकी क्षमता विकसित करता है।

कविता–पाठ के समय विद्यार्थी अपनी भावनाओं को शब्दों में व्यक्त करना सीखते हैं। 'डायरी लेखन' और 'अनुभव लेखन' जैसी गतिविधियाँ उन्हें आत्म–चिंतन का अवसर देती हैं। इससे आत्म–जागरुकता और आत्म–स्वीकृति का विकास होता है, जो सामाजिक–भावनात्मक अधिगम का मूल आधार है।

मूल्य शिक्षा का समावेश

मूल्य शिक्षा को अलग विषय के रूप में पढ़ाने की अपेक्षा उसे दैनिक शिक्षण प्रक्रिया में समाहित करना अधिक प्रभावी होता है। हिंदी पाठ्यपुस्तकों में निहित कथाएँ, जीवनियाँ और प्रसंग सत्यनिष्ठा, साहस, सहयोग, करुणा और जिम्मेदारी जैसे मूल्यों को सहज रूप में प्रस्तुत करते हैं।

कक्षा में समूह चर्चा के दौरान मैं विद्यार्थियों को यह सोचने के लिए प्रेरित किया जाता है कि किसी कहानी के पात्र का निर्णय नैतिक दृष्टि से उचित था या नहीं। इससे विद्यार्थियों में नैतिक विवेक विकसित होता है। यह प्रक्रिया उन्हें केवल सही–गलत बताने की बजाय स्वयं विचार करने की आदत सिखाती है।

जीवन कौशल का विकास

जीवन कौशल शिक्षा विद्यार्थियों को वास्तविक जीवन की चुनौतियों से निपटने के योग्य बनाती है। संप्रेषण कौशल, समस्या समाधान, निर्णय–निर्माण, रचनात्मक सोच और सहयोग ये सभी कौशल भाषा शिक्षण के माध्यम से प्रभावी रूप से विकसित किए जा सकते हैं।

नाटक एवं भूमिकानुभव गतिविधियाँ विद्यार्थियों को विभिन्न परिस्थितियों में संवाद करना सिखाती हैं। वाद–विवाद और समूह प्रस्तुति से उनका आत्मविश्वास बढ़ता है तथा वे असहमति को सभ्य तरीके से व्यक्त करना सीखते हैं। इस प्रकार कक्षा केवल पाठ्यक्रम पूरा करने का स्थान नहीं रहती, बल्कि जीवन की तैयारी का मंच बन जाती है।

सुरक्षित और सहायक कक्षा वातावरण

सामाजिक–भावनात्मक अधिगम तभी संभव है जब कक्षा का वातावरण सुरक्षित, सम्मानजनक और सहयोगपूर्ण हो। हम अक्सर कक्षा की शुरुआत इस प्रकार करते हैं–कैसे हैं आप सब ? आज का आपका सबसे खुशनुमा पल कौन–सा रहा?.... इससे उन्हें अपनी भावनाओं को पहचानने और साझा करने का अभ्यास मिलता है। कक्षा के प्रारंभ में हम बच्चों से कुछ छोटे–छोटे व्यायाम करवाते हैं, इस प्रकार के सूक्ष्म व्यायाम उनकी ऊर्जा को एकत्रित करके और उसे सही दिशा में ले जाने में सहायक होता है।

जब कोई विद्यार्थी गलती करता है, तो उसे दंडित करने की बजाय बातचीत के माध्यम से समझाने का प्रयास किया जाता है। यह दृष्टिकोण उन्हें यह सिखाता है कि त्रुटियाँ सीखने की प्रक्रिया का हिस्सा हैं। इससे भय कम होता है और आत्मविश्वास बढ़ता है।

मूल्यांकन की नई दृष्टि

सामाजिक–भावनात्मक और जीवन कौशल विकास का मूल्यांकन केवल लिखित परीक्षा से संभव नहीं है। इसके लिए अवलोकन, सहपाठी प्रतिक्रिया, आत्म–मूल्यांकन और प्रोजेक्ट कार्य अधिक उपयुक्त साधन हैं। उदाहरण के लिए, समूह परियोजना के बाद विद्यार्थी यह लिखते हैं कि उन्होंने टीम में क्या सीखा और उन्हें किन कठिनाइयों का सामना करना पड़ा। यह प्रक्रिया आत्म–चिंतन को बढ़ावा देती है।

प्रौद्योगिकी और संवेदना का संतुलन

यद्यपि डिजिटल माध्यम शिक्षण को समृद्ध बनाते हैं, परंतु सामाजिक–भावनात्मक अधिगम मानवीय संवाद पर आधारित है। इसलिए तकनीक का उपयोग सहायक साधन के रूप में किया जाता है जैसे ऑनलाइन सहयोगात्मक लेखन, ऑडियो कहानी रिकॉर्ड करना या डिजिटल प्रस्तुति बनाना। इन गतिविधियों में भी सहयोग, रचनात्मकता और

जिम्मेदारी जैसे जीवन कौशल विकसित होते हैं।

निष्कर्ष

सामाजिक–भावनात्मक अधिगम, मूल्य और जीवन कौशल शिक्षा विद्यालयी शिक्षा के पूरक नहीं, बल्कि उसके मूल घटक हैं। यूँ तो सभी विषय ये सभी बातें समाहित करते हुए शिक्षण–प्रशिक्षण की दिशा में कार्य करते हैं परंतु एक हिंदी शिक्षिका के रूप में मेरा अनुभव यह बताता है कि भाषा शिक्षण इन तीनों आयामों को एक साथ विकसित करने का एक सहज और सशक्त माध्यम है। जब विद्यार्थी कहानी में करुणा महसूस करते हैं, कविता में अपनी आवाज पाते हैं और संवाद में दूसरों को सुनना सीखते हैं, तब शिक्षा वास्तव में जीवन से जुड़ती है। यही शिक्षा उन्हें केवल परीक्षा के लिए नहीं, बल्कि जीवन के लिए तैयार करती है (एनपीएससी, 2026य शैक्षिक दृष्टि दस्तावेज, 2020)।

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Suhavi Arora

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From Syllabus to Skill: Embedding Experiential Learning in Everyday Classrooms

Rinku Dhingra (PRT)
Delhi Public School, Rohini

Abstract

As classrooms respond to the rapidly changing demands of the 21st century, pedagogical practices must move beyond content delivery, towards deeper, more meaningful engagement. This paper reflects on authentic school-based practices at the school that highlight experiential, enquiry-based and interdisciplinary learning. Through STEM projects in Mathematics and Science, inquiry-driven experiments, integration of Sustainable Development Goals (SDGs) across subjects and through rich language-based activities such as role play, newspaper reading and reading clubs, learning is designed to be relevant, reflective and rooted in real life. Aligned with the vision of NEP 2020, these practices demonstrate how schools can nurture curiosity, creativity, ethical awareness and responsibility while preparing learners for life beyond examinations.

Introduction

In today's fast-paced and technology-driven world, students require far more than subject knowledge to thrive. They need to think critically, collaborate effectively, communicate confidently and act responsibly. At the school, classroom practices consciously aim to bridge the gap between curriculum and life by adopting experiential, enquiry-based and interdisciplinary approaches. These pedagogies are not treated as add-ons or special events but are embedded into everyday teaching and learning.

This paper presents an educator's reflection on how these approaches are implemented across subjects and grades, grounded in what actually happens in classrooms. The focus remains on student engagement, meaningful learning experiences and the gradual development of skills reflecting the ethos envisioned in NEP 2020.

Experiential Learning through STEM and Hands-on Engagement

Experiential learning at the school is rooted in the belief that children learn best when they actively engage with concepts. STEM projects in Mathematics and Science form a strong foundation for this approach.

In Mathematics, students work on STEM-based projects that require them to apply concepts to real-world contexts. Whether it is designing simple models, analysing patterns or solving practical problems, students move beyond textbook exercises to explore 'how' and 'why' mathematics works. These projects encourage logical reasoning , collaboration and creativity while helping students see mathematics as a living subject rather than a set of abstract rules.

In Science, learning is driven by

observation and experimentation. Simple yet powerful experiments—such as activities demonstrating that air has pressure—allow students to discover scientific principles on their own. Instead of being told that air exerts pressure, students experience it through hands-on activities, discussions and reflection. This process builds conceptual clarity and fosters a scientific temper rooted in curiosity and evidence.

Enquiry-Based Learning: Encouraging Questions and Exploration

Enquiry-based learning forms the heart of classroom interactions. Teachers encourage students to ask questions, explore multiple perspectives and arrive at conclusions through discussion and reasoning.

Learning in all subjects is often sparked by open-ended questions: "What do you think will happen? Why? How can we explore this idea?" Students hypothesize, investigate and reflect, understanding that mistakes are an essential part of the learning journey.

In English classrooms, activities such as role plays, newspaper reading, vocabulary-building tasks and speaking exercises help students connect language learning with real-world issues. When students read newspapers or participate in role play around current themes linked to SDGs such as food, water and environmental conservation, language becomes a tool for thinking, questioning and expressing ,rather than rote learning.

Interdisciplinary Learning through SDG Integration

One of the most meaningful expressions of interdisciplinary learning at the school is the integration of Sustainable Development Goals across subjects. Themes such as Food, Water and Earth are explored holistically through multiple lenses.

In Science and EVS, students examine issues of resource conservation, nutrition and environmental sustainability. In Mathematics, data related to consumption, wastage and conservation is analysed. English classes complement this learning through speeches, debates, role plays, newspaper discussions and creative writing activities centred on the same themes. Art and craft activities reinforce learning through poster making, models and recycled-material projects, allowing students to express understanding creatively.

This integrated approach helps students recognise that real-life challenges cannot be addressed through isolated subjects. Instead, solutions emerge when knowledge, values and skills work in harmony.

Language, Reading and Creative Expression

Language learning at the school extends well beyond the textbook. Reading, speaking and creative expression are actively nurtured through a variety of platforms.

The school's Reading Club transforms reading into a shared and celebratory experience through quizzes, dramatizations and themed activities. Library periods encourage students to explore new books and reconnect with their own reading passion, bringing fresh enthusiasm back into the classroom. Reading corners, buddy reading programmes, author interactions and participation in initiatives such as the CBSE Reading Challenge further strengthen reading culture.

Students are encouraged to engage with both print and digital texts, discussions, performances and collaborative reading activities that make reading a shared, reflective and enjoyable experience.

Technology Integration with Responsibility and Purpose

Technology is thoughtfully integrated into teaching and learning at the school. School-based clubs and structured programmes encourage students to explore design thinking, artificial intelligence, media literacy and creative expression in age-appropriate and ethical ways.

AI is introduced as a learning assistant rather than a replacement for thinking. Students are guided to use AI tools for brainstorming, exploring ideas and practising concepts, while being reminded to apply their own judgement, creativity and integrity. Regular sessions on cyber safety and digital etiquette help students navigate the online world responsibly.

Digital platforms are also used to strengthen communication between students, parents and teachers, ensuring transparency and continuity in the learning process.

Assessment, Support and Inclusive Practices

Assessment in experiential and enquiry-based classrooms is ongoing and formative. Projects, presentations, reflections and peer feedback complement written assessments. Clear assessment criteria and descriptive feedback help students understand their progress and areas for growth.

To support learners who struggle, personalised strategies such as peer learning, interest-based tasks and additional support classes are implemented. The HOPE Department and Pastoral Care Unit play a vital role in nurturing emotional well-being and building confidence, ensuring that every child feels heard, valued and supported.

Flexible classroom practices, including varied seating arrangements and team activities are explored to encourage participation and inclusivity.

Learning Beyond the Classroom

Experiential learning extends beyond classrooms through field trips, heritage walks, astronomy sessions and community engagement. Initiatives such as BYOD (Bring Your Own Dabba), organic gardening, Nukkad Nataks, anti-vaping campaigns and plastic waste awareness drives allow students to translate learning into action.

Activity Clubs provide platforms for creative expression, scientific inquiry and environmental awareness. Social Initiatives and visits to old age homes, help students develop empathy and a sense of social responsibility.

Conclusion

Experiential, enquiry-based and interdisciplinary learning at the school has reshaped classrooms into vibrant spaces of exploration, dialogue and reflection. When students build models, conduct experiments, discuss real-world issues, read widely and express creatively, learning becomes meaningful and lasting. These practices reaffirm the belief that education must prepare children not just for examinations, but for life—nurturing confident, compassionate and responsible citizens ready to engage with an ever-changing world.

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How effective is Team based learning (TBL) in enhancing English vocabulary of grade III learners?

Ms Arti Nathani (PRT English)
Bal Bharati Public School, Rohini

Abstract

This paper presents an action research study conducted with Grade 3 learners, examining the effectiveness of Team-Based Learning (TBL) in enhancing English vocabulary. The research question explored how far TBL supports vocabulary development among young learners. A review of literature highlighted the success of collaborative learning in fostering 21st-century skills at higher grades, while insights from the NIPUN Bharat FLN document and NEP 2020 inspired its application at the foundational level. The study focused on antonyms, synonyms, and affixes (prefixes and suffixes), taught using technology, tools, and toy pedagogy. Learners engaged in collaborative activities such as word cards, word webs, and games. Post- intervention assessment results indicated a significant improvement over pre-assessment outcomes, demonstrating the positive impact of TBL on vocabulary learning.

Purpose of the Research

With the implementation of NEP 2020 and its strong emphasis on Foundational Literacy and Numeracy (FLN), the need to adopt effective, learner-centric strategies for vocabulary development at the primary level has become increasingly significant. Vocabulary plays a pivotal role in language acquisition, reading comprehension, and overall communication skills, particularly by Grade III, when learners are passing through transition from learning to read to reading to learn. This research was undertaken to explore instructional approaches that move beyond rote memorisation and foster meaningful vocabulary acquisition.

While strategies such as dictionary usage, "word of the day," vocabulary notebooks, and digital tools like Kahoot, quizzes, and Nearpod were incorporated into classroom instruction, the primary purpose of this study was to examine the effectiveness of Team-Based Learning (TBL) in enhancing vocabulary among Grade III learners. TBL was deliberately chosen to align with NEP 2020's focus on experiential learning and the development of 21st-century skills such as collaboration, communication, critical thinking, and teamwork.

The research aimed at actively engaging learners in the teaching-learning process, enabling them to explore, discuss, and construct vocabulary collaboratively rather than memorising word meanings in isolation. By encouraging observation, discussion, and application of vocabulary in meaningful contexts, the study sought to build learners'

confidence, improve language use, and expand their active word bank. Ultimately, the purpose was to support holistic language development while preparing learners to become effective communicators and confident users of English at the foundational stage.

Sample

With over two decades of experience in English language teaching, I have realised that an active and growing word bank is essential for effective language use. Continuous professional interactions with fellow English educators encouraged me to explore alternative and innovative approaches to vocabulary development beyond traditional methods.

The sample for this action research comprised Grade III learners and was carefully and purposively selected in alignment with the Foundational Literacy and Numeracy (FLN) goals of NEP 2020. Early primary years are critical for vocabulary enrichment, as language acquisition during this stage directly influences learners' reading comprehension, speaking ability, and overall academic success. By Grade III, students begin to experience transition from learning to read to reading to learn, making vocabulary knowledge a key determinant of meaningful language use.

Young learners were chosen for this study to ensure timely intervention in building a strong and active word bank. Two comparable sections of Grade III, similar in age, curriculum exposure, and mixed learning abilities, were selected in consultation with parallel teachers and school authorities. A pre-intervention assessment focusing on vocabulary skills was administered to both sections to establish a baseline. Based on the results, the section with the lower average score was identified as the intervention group, while the other served as the control group. This purposeful selection ensured that the intervention addressed an authentic learning need. Vocabulary acquired at this stage becomes the foundation for future language development across subjects. The sample represented a mixed-ability classroom, including confident, hesitant, and introverted learners, providing an authentic learning context.

While language games and pair or group activities are commonly used to build confidence in language use, this study seeks to examine the effectiveness of Team-Based Learning (TBL) in enhancing the vocabulary of Grade III learners.

NEP 2020 strongly emphasises collaboration and group work to nurture 21st-century skills such as communication, teamwork, and critical thinking. This research investigates whether young learners can collaboratively discuss, explore, and construct their own vocabulary through structured team-based activities. Given the learners' age, concepts related to higher- order thinking were simplified to ensure active participation. The study was planned after consultation with school authorities and parallel teachers, keeping in mind the challenges of implementing TBL in large classroom settings.

Method

Team-Based Learning (TBL) was adopted as the primary pedagogical strategy for this action research. TBL is an instructional approach that

actively engages learners through individual accountability and group collaboration and can be effectively implemented even in large classrooms. Researches on its effectiveness at higher grades (articles by Yale Poorvu Centre for Teaching and Learning , teaching strategies for vocabulary by Edulearn2change and blog indicate that TBL positively impacts language learning by promoting active participation and peer interaction. Through this approach, the study aimed to enhance learners' observation, comprehension, exploration, communication skills, and vocabulary acquisition, while also building confidence and positive attitudes towards language use.

Learners were clearly oriented about the objectives of the study and guided on effective teamwork. Vocabulary development activities included word cards, semantic mapping, toy pedagogy, games, and collaborative tasks. Special attention was given to hesitant and introverted learners by providing them with a supportive, informal learning environment that encouraged learning by doing.

Since vocabulary development is cross-curricular, collaboration with other subject teachers was ensured. Regular discussions were conducted to monitor the impact of the intervention and encourage consistent use of TBL strategies across subjects. Identification of control and intervention groups was done in consultation with faculty members. Topics—synonyms, antonyms, and affixes (prefixes and suffixes)—were selected based on their relevance and frequency in language use. A baseline pre-test was administered to both groups prior to the intervention.

The concept of synonyms was introduced using PowerPoint presentations and digital tools such as Wordwall. Learners, working in teams of four, participated in quizzes and games, created butterfly-shaped word webs through semantic mapping, and framed sentences using synonyms. Antonyms were taught using presentations, Kahoot, quizzes, and Extramarks modules. Team activities included designing pairs of mittens with antonym word sets and using them in meaningful sentences. A collaborative activity integrating Mathematics was also conducted to reinforce learning.

Affixes were introduced through presentations, board games, and toy-based activities.

Learners designed their own games using simple materials such as matchboxes and chart paper, reinforcing conceptual understanding through creativity. Continuous assessments were conducted for both control and intervention groups to measure progress. Parent feedback was collected through Google Forms, and classroom observations were conducted by the Headmistress, followed by detailed feedback. Post-intervention assessments reflected a marked improvement in vocabulary usage, expression, and collaborative skills among learners.

Major Findings

The analysis of pre-intervention and post-intervention assessments revealed a significant improvement in the vocabulary achievement of learners exposed to Team-Based Learning

(TBL). The average score of the intervention group increased from a baseline score of 5 in the pre-test to 10 in the post-test, clearly indicating the positive impact of structured collaborative learning. In contrast, the control group showed comparatively marginal progress, establishing the effectiveness of TBL as a pedagogical strategy for vocabulary enhancement at the foundational stage.

Classroom observations further highlighted a noticeable shift in learner behaviour and engagement. Students in the intervention group demonstrated enthusiastic participation, effective collaboration, and a sense of responsibility towards their teams. Learners consistently came prepared with required materials and actively contributed to discussions, games, and creative tasks. The team-based approach helped reduce language anxiety, particularly among hesitant and introverted learners, enabling them to express ideas more freely and confidently.

Although limitations such as restricted classroom space prevented the implementation of movement-intensive activities, the findings indicate that meaningful learning can be achieved even with limited physical resources. Carefully planned low-cost and easily accessible materials proved sufficient to create engaging and impactful learning experiences. TBL significantly increased participation levels and encouraged learners to take ownership of their learning, thereby strengthening communication, collaboration, and time-management skills.

Overall, the findings affirm that Team-Based Learning not only enhances vocabulary acquisition but also nurtures essential 21st-century skills such as teamwork, problem-solving, and critical thinking. The strategy aligns well with the vision of NEP 2020 by promoting experiential, learner-centred education and supporting holistic language development at the primary level.

Follow-up

The learnings and outcomes of this action research were systematically disseminated among educators at local, national, and international levels to encourage reflective practice and collaborative professional growth. The study was shared with several English language teachers and teacher trainers, leading to meaningful discussions on the practical application of Team-Based Learning (TBL) in primary classrooms. Valuable feedback received from Ms.

Shweta Anand, Department of Education, Australia, provided international validation of the approach and reinforced the relevance of collaborative learning strategies in strengthening Foundational Literacy and Numeracy (FLN).

Beyond the academic fraternity, interactions with professionals from diverse sectors such as education management, banking, and corporate organizations enriched the understanding of how teamwork, communication, and problem-solving skills developed through TBL align closely with real-world competencies. Encouraging reviews from the CMD of MINAR Management C Professional Services, India, and other professionals served as strong motivation to

further refine and extend the strategy. These cross-disciplinary perspectives highlighted the long-term significance of collaborative learning in preparing learners for future challenges.

At the school level, all teachers teaching the intervention group were kept informed about the research objectives, methodology, and observed outcomes. A structured Google Form was shared with subject teachers to gather feedback on learner engagement, participation, and vocabulary usage across subjects. Regular professional discussions were conducted to reflect on the effectiveness of TBL and to ensure consistent implementation. As a result of the positive impact observed, Team-Based Learning has since been integrated extensively across primary grades and subjects. Learners now regularly participate in collaborative tasks, projects, and assignments that promote communication, collaboration, critical thinking, and leadership. The sustained use of TBL has contributed to a more inclusive, engaging, and learner-centric classroom environment, supporting the vision of NEP 2020 and preparing students to become confident, competent, and future-ready individuals.

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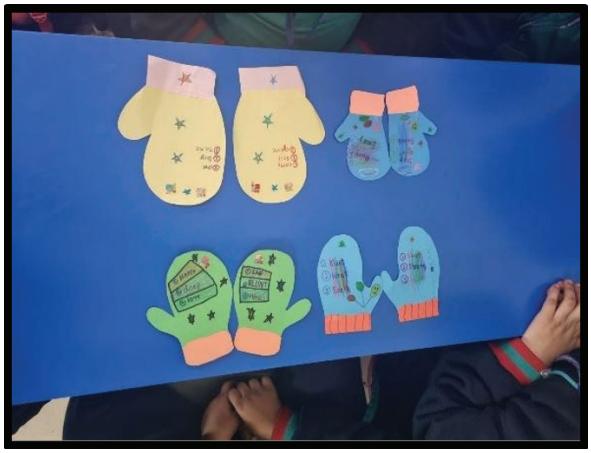
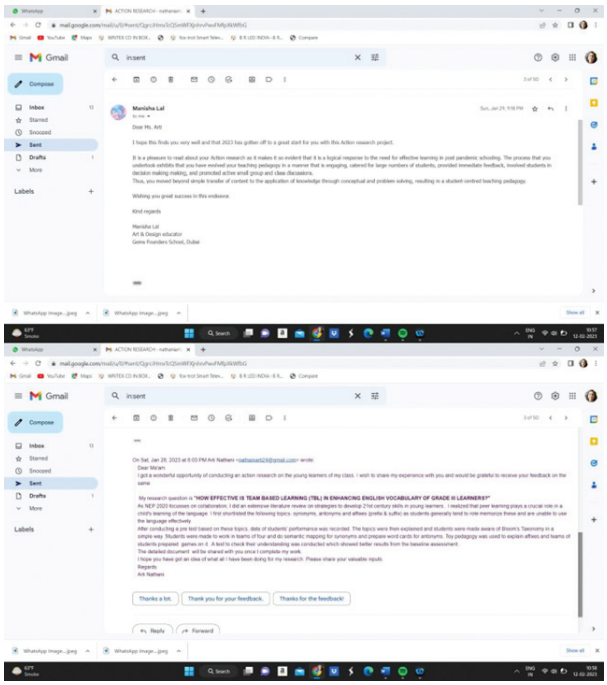
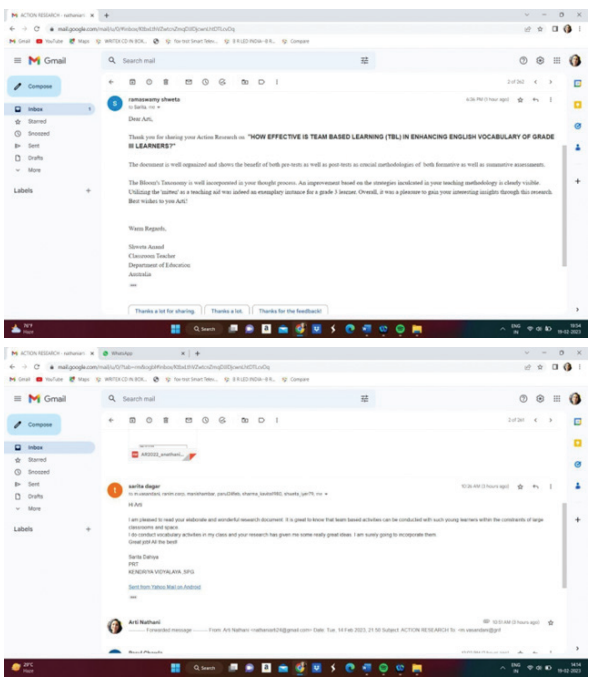
Appendix







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Inclusive Pedagogy in Primary Classrooms: Transforming Schools into Centres of Skills and Sensibility

Arpit Sharma (Special Educator)
The Mann School, Holambi

Abstract

Primary classrooms are vibrant learning environments marked by significant diversity in learners' cognitive abilities, emotional needs, behavioural dispositions, and learning preferences. In such settings, inclusive education must extend beyond mere accommodation and remediation to function as a deliberate and responsive pedagogical framework that nurtures holistic development. This paper offers reflective, practice-based insights drawn from inclusive primary classrooms, illustrating how differentiated instruction, experiential learning, formative assessment, social-emotional learning, and the purposeful integration of technology can collectively transform schools into centres of skills and sensibility. Aligned with the vision of the National Education Policy (NEP) 2020 and the philosophy of Vidya for Life, the paper demonstrates how inclusive pedagogy fosters meaningful participation and lifelong learning for all children, irrespective of their abilities or pace of learning.

1. Introduction

The primary years of education play a crucial role in shaping learners' attitudes toward knowledge, self-esteem, and social relationships. The philosophy of Vidya for Life views schooling as preparation for life itself, rather than a narrow pursuit of academic achievement. This perspective is especially significant in inclusive classrooms, where learners differ not only in academic proficiency but also in emotional regulation, attention span, communication skills, and social interaction.

Shiksha Samvaad foregrounds pedagogical practices rooted in classroom realities, providing educators with a platform to translate educational policy into lived practice. Within inclusive settings, pedagogy must remain flexible, reflective, and responsive to learner diversity. This paper examines how inclusive pedagogical approaches can effectively address a wide spectrum of learner needs within a shared classroom space, while simultaneously nurturing essential skills, values, and sensibility.

2. Inclusion as a Pedagogical Framework

Inclusion is often perceived as an additional support system layered onto mainstream education. However, effective inclusive education operates as a cohesive pedagogical framework in which diversity is embedded within instructional design. Inclusive classrooms may comprise learners with neurodivergent profiles, behavioural regulation needs, varied

learning speeds, and diverse cognitive strengths.

Inclusive pedagogy focuses on designing learning experiences that allow all learners to access shared concepts through differentiated pathways. Rather than creating parallel or segregated curricula, instruction offers multiple entry points, graduated levels of challenge, and varied modes of expression, ensuring meaningful engagement for every learner.

3. Pedagogical Practices in Inclusive Classrooms

Inclusive classrooms thrive on intentional planning rather than uniform instruction. Clearly defined routines provide predictability and emotional security, while flexible task structures enable learners to engage according to their individual strengths. Movement-based activities, collaborative learning opportunities, and open-ended tasks promote participation across diverse learner profiles.

Enrichment opportunities sustain curiosity and depth of understanding among academically advanced learners, while scaffolded instruction and guided practice support those requiring additional reinforcement. In such contexts, innovation emerges not from novelty alone, but from adaptability and thoughtful instructional design.

4. Alignment with NEP 2020

The National Education Policy 2020 emphasises learner-centred education, equity, flexibility, and experiential learning. Inclusive pedagogy naturally aligns with these principles by prioritising participation, progress, and purpose over comparison and competition.

Classroom strategies such as flexible grouping, choice-based tasks, and multimodal instruction; encompassing visual, auditory, kinesthetic, and verbal approaches; ensure accessibility without compromising academic rigour. These practices reflect the NEP's vision of an education system that is inclusive, holistic, and responsive to individual learner needs.

5. Experiential, Inquiry-Based, and Interdisciplinary Learning

Experiential learning forms a cornerstone of inclusive education. Inquiry-based and interdisciplinary approaches encourage learners to actively construct knowledge, fostering curiosity, agency, and ownership of learning.

Such methodologies allow learners with higher cognitive readiness to engage in analysis, synthesis, and application, while enabling others to build foundational understanding through concrete and guided experiences. The integration of movement, visual supports, and structured exploration ensures engagement for learners with attention or sensory needs, thereby supporting cognitive, emotional, and functional development across diverse learner profiles.

6. Differentiated Instruction: Multiple Pathways to Common Goals

Differentiated instruction operates across content, process, and outcomes. Core concepts are introduced through varied instructional tools such as visuals, demonstrations, real-life contexts, and manipulatives. While learning objectives remain aligned with curriculum

standards, expectations are adjusted to reflect individual readiness, interests, and learning profiles.

This approach ensures that all learners work toward common goals, progressing at a pace and depth appropriate to their needs. Differentiation thus promotes equity by acknowledging individual differences without diluting academic expectations.

7. Assessment for Learning

Assessment in inclusive classrooms places greater emphasis on formative processes than on summative outcomes. Continuous observation, anecdotal records, and skill-based assessments provide a comprehensive understanding of learner progress.

Feedback focuses on effort, strategies, and growth rather than comparison with peers. Such assessment practices nurture self-reflection, intrinsic motivation, and resilience, creating a supportive learning environment where learners feel encouraged rather than judged.

8. Purposeful Integration of Technology and AI

When integrated thoughtfully, technology enhances accessibility and engagement in inclusive classrooms. Visual learning aids, interactive platforms, and adaptive digital resources support varied learning needs and individual pacing.

AI-enabled tools further personalise learning experiences by adjusting task complexity and offering immediate feedback. This enables learners to progress independently while remaining supported by instructional guidance. Technology, therefore, functions as an inclusive facilitator rather than a replacement for the teacher's role.

9. Social-Emotional Learning and Life Skills

Social-emotional learning is woven into everyday classroom interactions. Cooperative learning tasks, peer engagement, and reflective dialogue foster empathy, emotional regulation, and interpersonal competence.

Through consistent practice, learners develop self-awareness, collaboration skills, and responsible decision-making abilities. These competencies form the foundation of essential life skills necessary for active citizenship and lifelong learning.

10. Reflective Practice and Professional Responsibility

Reflective teaching lies at the heart of inclusive pedagogy. Continuous self-evaluation, collaboration with colleagues, and meaningful engagement with families inform instructional decisions and enhance responsiveness to learner needs.

Shiksha Samvaad reinforces the role of teachers as reflective practitioners whose professional judgement and commitment shape inclusive and transformative educational environments.

11. Conclusion

Inclusive education captures the essence of Vidya for Life by recognising diversity as a strength

rather than a constraint. When pedagogy is intentionally designed to address varied learner needs, schools evolve into spaces characterised by dignity, participation, and shared growth.

Through differentiated instruction, experiential learning, reflective assessment, and social-emotional development, inclusive classrooms prepare learners not only for academic achievement but for meaningful engagement with life. In doing so, schools truly emerge as centres of skills and sensibility, responsive to the needs of every child and the evolving demands of society.

Anisha Srivastav

28

Innovative And Impactful Pedagogical Practices

Vaishali Bindra (TGT Math)
DAV Public School, Sahibabad

Mathematics plays an essential role in everyday life by helping us measure, compare, and plan the use of space around us. One of the most fundamental and practical concepts in geometry is area, which refers to the amount of surface occupied by a plane figure. Understanding area is especially important in real-life applications such as construction, architecture, interior design, and home improvement. Among all plane figures, the rectangle is the most encountered shape in daily life, as many rooms, floors, books, doors, and tables are rectangular in form.

The area of a rectangle is defined as the product of its length and breadth. This simple formula provides a systematic way to calculate how much surface a rectangular object covers. In practical situations, such as flooring with tiles, this concept becomes extremely useful. Flooring requires covering an entire surface uniformly without leaving gaps or overlaps. To achieve this efficiently, it is necessary to know the exact area of the floor and the area of each tile used.

Accurate calculation helps in estimating the correct number of tiles required, minimizing material wastage, reducing cost, and ensuring proper planning.

For students, learning the area of a rectangle through the example of flooring tiles strengthens the connection between abstract mathematical formulas and real-world applications. It allows learners to visualize how mathematical measurements are used in practical decision-making. By applying the area formula, students develop problem-solving skills, logical thinking, and an appreciation for the usefulness of mathematics beyond the classroom.

This topic also lays the foundation for understanding more advanced geometric concepts such as surface area, volume, and cost estimation. Therefore, the study of the area of a rectangle, particularly through real-life contexts like flooring tiles, is not only academically significant but also practically relevant. It equips learners with essential mathematical skills that are applicable in everyday life as well as in professional fields related to design, construction, and engineering.

Mathematics plays a vital role in everyday life, especially in construction and design. This thesis explains how the concepts of area and perimeter are used in real-life situations by taking a common example—a floor . Calculating the area and perimeter of

a floor helps in estimating materials such as paint, bricks, tiles, or fencing. Through this, we understand how basic mathematical formulas are applied practically and efficiently in daily activities.

Introduction

In daily life, we often encounter floors in homes, schools, and buildings. Whether constructing it, or decorating it, accurate measurement is essential. Mathematics provides tools to measure these structures precisely. Two important mathematical concepts used for this purpose are area and perimeter.

- The area measures the surface covered by the floor.
- The perimeter measures the total boundary length of the floor.

Understanding these concepts helps reduce waste, save money, and improve planning.

Mathematical Concepts Involved

1. Perimeter of a floor

The perimeter is the total length around the floor for a rectangular floor:

Perimeter = 2(Length + breadth)

2. Area of a floor

The area represents the surface that the floor covers. For a rectangular floor:

Area= Length x Breadth

Real-Life Application:

Example

Consider a floor with:

- Length = 5 meters
- Breadth= 3 meters

Perimeter Calculation

Perimeter= 2(5 + 3) = 2 x 8 = 16 meters

This value is useful when:

- Installing borders
- Measuring fencing or wiring around the floor

Area Calculation

Area= 5 x 3 = 15 square meters

This value is when we

- Estimating tiles
- Determining cement quality

Importance in Daily Life

Calculating the area and perimeter of a floor is important for:

- Construction work
- Interior design
- renovation
- Cost estimation
- Reducing material wastage

Builders, engineers, painters, and even homeowners rely on these calculations to plan their work accurately

How to calculate number of tiles

A tile is usually a small square or rectangular piece used to cover floors. Example:

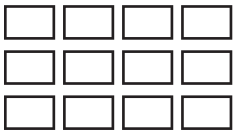
- Square tile: 1 foot × 1 foot
- Rectangular tile: 2 feet × 1 foot
- Each box represents one tile
- Rows show tiles along the length
- Columns show tiles along the breadth

Let us consider a simple rectangular floor.

Example 1:

- Length of floor = 4 tiles
- Breadth of floor = 3 tiles

We draw a graph (grid):



Number of rows = 3 Number of columns = 4

Number of tiles= Number of rows x Number of columns from the graph:

3 x 4 = 12

Example 2

- Floor length = 6 feet
- Floor breadth = 5 feet
- Tile size = 1 foot × 1 foot

Number of tiles along length = 6 Number of tiles along breadth = 5 6 x 5 = 30

So, 30 tiles are needed to cover the floor.

How to calculate the number of tiles if the floor and tiles area is known to us. Example:

Let the area of the rectangular floor = 100 sq metres And the area of one tile = 10 sq metres

Number of tiles = Area of the floor / Area of the one tile

=100/10

=10

If the floor is not a perfect rectangle:

1. Divide the floor into small rectangles
2. Draw a graph for each part
3. Count tiles in each part
4. Add them together

Conclusion

The concepts of area and perimeter are not limited to textbooks but are widely used in real life. Measuring a wall using these mathematical principles helps in efficient planning, saving subject that directly connects classroom learning to everyday activities.

Graphical Representation of Area of a Rectangle (Tiling Concept)

Consider a rectangle drawn on graph paper where each small square represents one tile (1 square unit).

- Draw two perpendicular lines:
- Horizontal line → X-axis
- Vertical line → Y-axis

Step 2: Plot the Rectangle

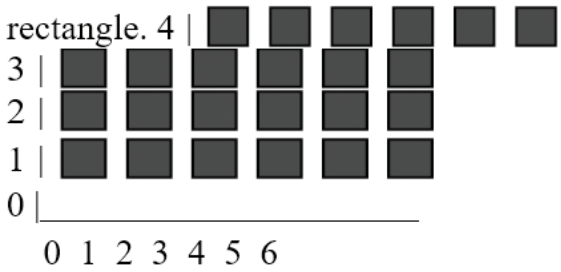
Let the rectangle have:

- Length = 6 units
- Breadth = 4 units

Plot the following points:

- A (0, 0)
- B (6, 0)
- C (6, 4)
- D (0, 4)

Join the points A → B → C → D → A to form a



Step 3: Calculate Area Using Graph

- Number of squares along length = 6
- Number of squares along breadth = 4 Area = 6 x 4 = 24 square units

Relation to Flooring with Tiles

- Each square on the graph = one tile
- Total number of squares = total tiles required
- Hence, 24 tiles are needed to cover the rectangular floor.

Educational Importance

- Graphs help students visualize area
- Shows why the formula Area = Length × Breadth works
- Connects geometry, graphs, and real-life tiling

Relation of Area of a Rectangle to Other Real-Life Problem Topics

The concept of area of a rectangle is not an isolated mathematical topic; rather, it forms the foundation for solving numerous real-life problems across different fields. Understanding area through graphs and tiling strengthens its application in practical situations where surfaces must be measured, covered, or compared.

1. Construction and Architecture

In construction, accurate calculation of area is essential for:

- Flooring rooms with tiles or marble
- Plastering walls
- Roofing rectangular surfaces

Architects and engineers use rectangular area calculations to estimate materials and cost. The graphical method helps in planning layouts before actual construction begins.

2. Agriculture and Land Measurement

Farmers measure rectangular plots of land to:

- Calculate cultivated area
- Decide the amount of seeds or fertilizers required
- Estimate crop yield

Graphs help in mapping land and dividing it into equal sections, like tiling a rectangle.

3. Interior Design and Home Planning

Interior designers calculate the area of:

- Floors for carpets and tiles
- Walls for paint and wallpaper
- Curtains and wooden panels

Using area ensures proper budgeting and avoids wastage of materials.

4. Cost and Budget Calculations

Area plays a major role in:

- Calculating total cost of tiles (cost per square unit × area)
- Estimating painting or carpeting expenses

Thus, area links mathematics with financial literacy.

5. Coordinate Geometry and Graphs

The graphical representation of rectangles:

- Connects geometry with coordinate geometry
- Helps students understand points, axes, and plotting
- Builds a base for advanced topics like surface

area and volume

Counting unit squares on graphs is the earliest step toward understanding algebraic representations of space.

6. Physics and Science Applications

Area is used in science to calculate:

- Pressure (Force ÷ Area)
- Heat transfer across surfaces
- Absorption of sunlight by solar panels

Rectangular surfaces are commonly used in scientific instruments and experiments.

7. Computer Science and Technology

In digital screens and graphics:

- Screen resolution depends on rectangular grids (pixels)
- Each pixel is similar to a small square on a graph
- Image area determines clarity and memory usage

Thus, the tiling concept directly relates to modern technology.

8. Everyday Life Applications

In daily life, area is used while:

- Buying carpets or mats
- Planning furniture arrangement
- Designing playgrounds or parking areas

The idea of covering a surface completely is the same as tiling a rectangle.

Conclusion

The concept of area of a rectangle, especially when taught through graphs and tiling, acts as a bridge between school mathematics and real-world problem solving. It develops logical thinking, estimation skills, and practical awareness. By understanding this topic, students gain a strong foundation for advanced mathematical concepts and everyday decision-making.

Priska

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Making Mathematics Meaningful: Improving Math Teaching In Progressive Schools Of Delhi (Classes 3–5)

Ms Sangita Paul (PRT)
Holy Child Sr Sec School, Tagore Garden, New Delhi

For many children, mathematics is either a subject they love—or one they quietly fear. By the time students reach Classes 3 to 5, their relationship with mathematics often begins to take shape for life. This is the stage when the role of the teacher and her teaching methods help students turn the confusion to curiosity.

Progressive schools in the capital city of Delhi have access to various resources and trained educators who can turn mathematics into an interesting subject. The key lies in teaching better—through visualization, play, hands-on material, and real-life experiences while creating a balance between abstract maths and life skill Maths.

Here are a few points how mathematics teaching for Classes 3 to 5 can become more joyful, meaningful, and effective when learning is designed around how children learn.

Understanding the Child Behind the Numbers

Primary-level students are naturally curious. They love stories and learn best when they see, touch, and experience ideas. Yet, in mathematics classrooms they carry out abstract work without understanding its application in real life.

Visualization: Helping Children See Mathematics

Numbers, fractions, and operations are ideas that children cannot physically see. Visualization helps bridge this gap.

Visualization Works

When children can see mathematics, it stops feeling mysterious. Visuals help them understand relationships between numbers and work with them.

Simple Ways to Bring Visualization into Classrooms

Using Concrete Materials

Base-ten blocks, beads, counters, fraction circles, and measuring tools allow children to learn through their hands.

For example, Instead of explaining place value verbally, students can build numbers using blocks.

Fractions become clearer when children fold paper, cut fruit shapes, or compare fraction strips. These experiences stay with children far longer than verbal explanations.

Drawing and Representing Thinking

Encourage students to draw:

- number lines for addition and subtraction
- arrays for multiplication
- drawing depicting scenario for word problems

When students are allowed to draw their thinking, they understand concepts and become familiar to and friendly to various terms.

Gaming: Learning Through Play

Children love games. Games bring laughter, movement, discussion, and excitement into learning. In mathematics, games offer repeated practice without boredom.

Most importantly, children learn without realising they are "studying."

Practical Game Ideas for Classrooms

Board and Card Games

Simple games using dice, cards, or spinners can reinforce:

- addition and subtraction
- multiplication tables
- fraction comparison

For example, a dice game where students add numbers to move ahead on a board keeps them practising mentally.

Group Challenges

Small-group math challenges—such as operation solving math relays—build communication and reasoning skills. Children explain ideas to one another, which strengthens understanding.

Digital Games (Used Wisely)

Educational apps and digital games can be powerful when guided by teachers. These tools: offer instant feedback, adapt to student levels, and keep children engaged.However, the focus should always remain on thinking, not just speed or scores.

- Making Learning Material: Giving Children Ownership

When children create their own learning materials, they shift from passive learners to active thinkers. This process deepens understanding and builds confidence.

Creating materials helps children :

- organise their thinking
- explain concepts clearly, and
- feel proud of their learning

In primary classes, students create learning materials such as:

- math journals,
- drawn models
- student-made flashcards and posters (including multiplication flashcards),
- fraction concept posters,and
- geometry charts

When these materials are displayed in the classroom, students feel valued and develop a sense of responsibility for their learning space.

Writing Their Own word Problems

Ask students to write word problems based on real-life situations such as shopping, sharing sweets and travelling distances. Solving each other's word problems makes learning social and meaningful.

Math Stories

Combining storytelling with mathematics helps children who are more language-oriented. A simple story involving numbers can make even complex ideas accessible and engaging.

Experiential Learning: Mathematics Beyond the Classroom

Mathematics is everywhere—in markets, kitchens, playgrounds, and streets. Experiential learning brings these real-life connections into classroom lessons.

Experiential Learning is Powerful

When children experience mathematics in real situations: Learning becomes relevant,understanding deepens and confidence grows. Mathematics stops being "just a school subject" and becomes a meaningful life skill.

Ways to Create Experiential Math Learning

Real-Life Situations

Teachers can use everyday contexts such as:

- calculating change in a mock shop
- measuring ingredients during a cooking activity
- planning seating arrangements using area and perimeter

These activities help children understand why mathematics matters beyond textbooks.

Outdoor and Field Activities

Outdoor learning allows students to identify shapes, patterns, and measurements in their surroundings. Visits to markets or nearby parks can turn into data-collection exercises.

Data Collection Projects

Students can conduct surveys, count objects, or record observations. Creating graphs from their own data makes statistics meaningful and fun.

The Teacher's Role: From Instructor to Guide

In progressive classrooms, the teacher is not just a problem-solver,but a facilitator of thinking.

Effective Teacher Practices

- Asking open-ended questions
- Encouraging multiple solution methods Valuing effort over speed
- Allowing mistakes as part of learning

When teachers model curiosity and patience, students feel safe to explore.

Assessment That Supports Growth

Assessment should help children learn—not label them. Students' should help teachers understand mistakes in their reasoning.

Better Assessment Approaches

- Observing students during activities
- Using projects and presentations
- Maintaining portfolios of work
- Encouraging self-reflection

These practices help achieve learning outcomes and motivate the students through stars, positive remarks etc.

These methods help generate interest in learning in students over time and create individual learning journeys.

Improving mathematics teaching in Classes 3 to 5 is not about adding pressure or

content—it is about changing experiences. When math is visual, playful, hands-on, and connected to real life, students become confident and begin to say," I can do it," thus developing confident math learners.

Progressive schools in Delhi have the opportunity—and responsibility—to nurture confident, curious mathematical thinkers. By focusing on visualization, gaming, student-created materials, and experiential learning, mathematics can become a subject that children enjoy, trust, and carry with them far beyond the classroom.

Asmi Gupta

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"शिक्षा संवाद": संगीत के माध्यम से एनईपी 2020 की नवीन शिक्षण पद्धतियों का एकीकरण

Harish Kumar (TGT)
Delhi Public School Sector & 45 Gurgaon

प्रस्तावनाः शिक्षा और संगीत का अटूट संबंध

शिक्षा का अर्थ केवल सूचनाओं का संचय नहीं, बल्कि व्यक्तित्व का परिमार्जन है। जिस प्रकार एक कुशल गायक राग के स्वरों को साधता है, उसी प्रकार एक शिक्षक छात्र की क्षमताओं को तराशता है। "शिक्षा संवाद" इसी दिशा में एक सार्थक पहल है। राष्ट्रीय शिक्षा नीति (NEP) 2020 हमें वह मंच प्रदान करती है जहाँ हम पारंपरिक रटंत प्रणाली से मुक्त होकर एक ऐसी कक्षा की रचना कर सकें जो जीवंत हो। एक संगीत शिक्षक होने के नाते, मेरा यह शोध पत्र इसी बात पर केंद्रित है कि कैसे संगीत की लय और एनईपी के सिद्धांतों को मिलाकर हम एक 'शिक्षण का महासंगीत' तैयार कर सकते हैं।

नवीन और प्रभावशाली शिक्षण पद्धतियांः एनईपी 2020 के अनुरूप रणनीतियां

एनईपी 2020 'होलिस्टिक डेवलपमेंट' (समग्र विकास) की बात करती है। संगीत में जैसे हम 'आलाप' से शुरुआत करते हैं और धीरे–धीरे 'तान' और 'झाला' की ओर बढ़ते हैं, शिक्षा भी वैसी ही क्रमिक होनी चाहिए।

सक्रिय सहभागिताः कक्षा अब 'वन–वे कम्युनिकेशन' नहीं रह गई है। मैं अपनी कक्षा में छात्रों को केवल 'श्रोता' नहीं, बल्कि 'सह–गायक' मानता हूँ।

कक्षा रणनीतिः 'फ्लिप्ड क्लासरूम' तकनीक के तहत, मैं छात्रों को पहले से ही किसी राग की रिकॉर्डिंग सुनने को देता हूँ और कक्षा में हम उस राग के इतिहास और उसके पीछे के तर्क पर चर्चा करते हैं। यह पद्धति छात्रों में नेतृत्व और स्व–अध्ययन की भावना जागृत करती है।

अनुभवात्मक, पूछताछ आधारित और अंतः विषय शिक्षण

ज्ञान जब तक अनुभव न बने, वह केवल स्मृति है।

अनुभवात्मक शिक्षण

विज्ञान के 'साउंड वेव्स' (ध्वनि तरंगों) को समझाने के लिए मैं सितार के तारों का उदाहरण देता हूँ। जब छात्र तार की लंबाई बदलने से पिच बदलते हुए देखते हैं, तो वह अनुभव उनके मन में स्थाई हो जाता है।

अंतः विषय शिक्षणः इतिहास पढ़ाते समय हम स्वतंत्रता संग्राम में 'वंदे मातरम्' या 'झंडा ऊँचा रहे हमारा' जैसे गीतों के प्रभाव को जोड़ सकते हैं। गणित के अनुपातों को हम 'ताल' की मात्राओं (12, 14 या 16 मात्रा) के माध्यम से सरलता से सिखा सकते हैं। यह 'वि ायों की जुगलबंदी' छात्रों की सोच को व्यापक बनाती है।

समावेशी और विभेदित शिक्षण पद्धतियांः हर छात्र की अपनी 'श्रुति' संगीत हमें सिखाता है कि हर साज की अपनी अहमियत है। हारमोनियम की अपनी जगह है और तबले की अपनी। समावेशी शिक्षा का अर्थ भी यही है।

विभेदित शिक्षणः कक्षा में कुछ छात्र 'गिफ्टेड' (कुशाग्र) होते हैं और कुछ को अधिक समय चाहिए होता है। संगीत की भाषा में कहूँ तोकृकिसी की आवाज 'मंद्र' (नीचे) के सुरों में अच्छी होती है, तो

किसी की 'तार' (ऊँचे) सुरों में। मैं हर छात्र के सीखने की गति के अनुसार अपनी शिक्षण सामग्री तैयार करता हूँ। दृष्टिबाधित या विशेष आवश्यकता वाले बच्चों के लिए संगीत एक अद्भुत माध्यम है, जहाँ वे अपनी अन्य इंद्रियों के माध्यम से दुनिया से जुड़ सकते हैं।

सीखने के लिए मूल्यांकनः सुधार और निरंतर प्रतिक्रिया

संगीत में हम 'परीक्षा' नहीं, 'रियाज' और 'प्रस्तुति' पर ध्यान देते हैं।

सुधारात्मक प्रतिक्रियाः मूल्यांकन का उद्देश्य छात्र को डराना नहीं, बल्कि उसे 'सम' पर लाना है। मैं कक्षा में 'रचनात्मक मूल्यांकन' का उपयोग करता हूँ। जैसेकृएक छात्र जब गलत स्वर लगाता है, तो मैं उसे डांटने के बजाय उसे दोबारा 'सुनने' के लिए प्रेरित करता हूँ। शिक्षा में भी हमें 'समेटिव' (अंतिम) परीक्षा के बजाय 'सतत सुधार' को प्राथमिकता देनी होगी।

कक्षाओं में प्रौद्योगिकी और AI का सार्थक एकीकरणः डिजिटल तानपुरा

आज के युग में तकनीक एक 'इलेक्ट्रॉनिक तानपुरे' की तरह है। वह शिक्षक को रिप्लेस नहीं करती, बल्कि उसे सहयोग देती है।

AI का सार्थक उपयोगः हम एआई टूल्स का उपयोग छात्रों के गायन के ग्राफ को देखने, पिच सुधारने और कंपोजिशन सीखने के लिए कर सकते हैं। एआई आधारित 'लर्निंग मैनेजमेंट सिस्टम' छात्रों को उनकी कमजोरियों के आधार पर खुद को बेहतर बनाने का सुझाव देता है। यह तकनीक हमारे लिए 'संगतकार' की भूमिका निभाती है, जिससे मुख्य गायक (छात्र) की प्रस्तुति निखरती है।

सामाजिक–भावनात्मक शिक्षा मूल्य और जीवन कौशल

शिक्षण का अंतिम लक्ष्य एक 'सभ्य मनुष्य' का निर्माण है।

सामाजिक–भावनात्मक विकासः संगीत मन को शांत करता है। 'राग भैरवी' की कोमलता या 'राग दुर्गा' की शक्ति छात्रों को अपनी भावनाओं को व्यक्त करना सिखाती है।

जीवन कौशलः एक समूह गायन में छात्र 'तालमेल' और 'धैर्य' सीखते हैं। उन्हें पता होता है कि अगर वे दूसरों के सुर में सुर नहीं मिलाएंगे, तो संगीत कर्कश हो जाएगा। यही सहयोग और सहिष्णुता जीवन के सबसे बड़े मूल्य हैं।

निष्कर्ष

शिक्षा संवाद'' का यह सफर हमें एक ऐसे भविष्य की ओर ले जाता है जहाँ शिक्षा बोझ नहीं, बल्कि एक 'संगीत सभा' की तरह आनंदमयी हो। एनईपी 2020 के मार्गदर्शन में, जब हम तकनीक, समावेशिता और कला का संगम करते हैं, तब हम वास्तव में एक ऐसी पीढ़ी तैयार करते हैं जो न केवल बुद्धिमान है, बल्कि संवेदनशील भी है। मेरा यह शोध पत्र इसी विश्वास का प्रतीक है कि एक शिक्षक के रूप में हम भविष्य के भारत के लिए एक सुंदर 'बंदिश' लिख रहे हैं।

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31

Modernization without Westernization: Reflective Classroom Practices for Building Skills and Sensibility

Isha Chopra (PRT)
MRG School,New Delhi

In recent years, school education has witnessed a growing emphasis on modernization through learner-centric pedagogy, experiential learning, and technology integration. However, this shift is often misunderstood as westernization, leading to apprehensions regarding the loss of cultural values and contextual relevance. This paper presents original, classroom-based pedagogical practices that demonstrate how modernization can be meaningfully implemented without westernization. Drawing from authentic teaching experiences in a school classroom, the paper highlights inquiry-based learning, experiential activities, inclusive practices, and reflective assessment aligned with the vision of NEP 2020. The practices discussed focus on nurturing essential life skills and sensibility among learners, reinforcing the idea of schools as centres of holistic development and lifelong learning.

Keywords

Pedagogical Best Practices, Experiential Learning, NEP 2020, Skills Education, Sensibility, Classroom Practice.

1. Introduction

The role of schools today extends far beyond content delivery. Classrooms are expected to nurture learners who are curious, empathetic, skilled, and socially responsible. With the implementation of NEP 2020, teachers are encouraged to move towards experiential, inquiry driven, and competency-based pedagogy. However, the adoption of such practices is sometimes perceived as westernization, especially when they differ from traditional teacher-led instruction.

Based on my classroom experience, this paper argues that modernization in pedagogy does not imply imitation of Western models. Instead, it involves adapting effective strategies in ways that respect students' cultural backgrounds, learning contexts, and value systems.

2. Understanding Modernization in Classroom Pedagogy

Modernization in education focuses on how students learn rather than what they memorise. In my classroom, modernization translated into practices that encouraged questioning, collaboration, reflection, and the application of learning to real-life situations. These practices helped students become active participants rather than passive recipients of knowledge.

Westernization, on the other hand, often refers to uncritical adoption of external models, materials, or examples that may not resonate with students' lived experiences. Conscious efforts were therefore made to contextualise learning using familiar social, cultural, and school-based situations.

3. Classroom Context

The practices described were implemented in a middle school classroom with students from diverse socio-economic and linguistic backgrounds. Learners displayed varying levels of confidence, language proficiency, and learning pace. The objective was to create an inclusive environment where every student felt heard and valued. The pedagogical approach focused on:

- Inquiry-based discussions
- Experiential and activity-driven learning
- Collaborative tasks
- Reflective assessment

These strategies were embedded into regular lessons rather than treated as add-ons.

4. Pedagogical Best Practices: Classroom Examples

4.1 Inquiry-Based Learning through Questioning

Instead of beginning lessons with explanations, I introduced topics through open-ended questions. For example, before a language lesson on communication, students were asked, "Where do we use language in our daily lives apart from textbooks?" Their responses ranged from family conversations to social media interactions.

This discussion helped students connect academic content with real-life experiences, encouraging critical thinking and active participation.

4.2 Experiential Learning through Real Life Tasks

To develop communication and collaboration skills, students were assigned a group task to design a short role-play based on everyday situations such as resolving a disagreement or helping a new student adjust to school life. Students wrote dialogues, assigned roles, and reflected on emotions involved.This activity not only strengthened language skills but also nurtured empathy, teamwork, and emotional awareness.

4.3 Interdisciplinary Connections Learning tasks were often linked with social themes such as environmental awareness or responsible citizenship. For instance, a writing activity was connected to the topic of water conservation, allowing students to integrate language learning with values and life skills.

Such interdisciplinary tasks helped students see learning as interconnected rather than fragmented into subjects.

4.4 Inclusive and Differentiated Practices Recognising learner diversity, tasks were designed with flexibility. Students could express understanding through writing, oral presentations, drawings, or group discussions. Peer support and mixed ability grouping ensured that slower learners were supported without feeling excluded.

This approach fostered confidence and participation across varying learning levels.

4.5 Technology as a Supportive Tool Technology was used meaningfully—for example, students created short digital presentations or participated in online quizzes for formative assessment. However, technology never replaced classroom interaction. Instead, it served as a tool to enhance engagement and understanding, aligning with NEP 2020's balanced view on technology integration.

5. Assessment for Learning

Assessment practices focused on feedback rather than marks. After activities, students reflected on what they learned and what they found challenging. Peer feedback was encouraged, helping learners develop self-awareness and responsibility. This shift reduced fear of failure and promoted a growth mindset among students.

6. Alignment with NEP 2020

The classroom practices align with key NEP 2020 principles:

- Experiential and competency-based learning
- Holistic development beyond academic achievement
- Emphasis on life skills and values • Teacher autonomy in pedagogical decision-making

By focusing on skills such as communication, collaboration, empathy, and critical thinking, these practices support NEP's vision of education for life.

7. Skills and Sensibility: Observed Outcomes

Over time, noticeable changes were observed:

- Increased student engagement and confidence
- Improved collaboration and
- respectful communication
- Greater willingness to express ideas and emotions
- Enhanced sensitivity towards peers' perspectives

Students began taking ownership of their learning, demonstrating both skill development and emotional maturity.

8. Challenges and Reflections

Initial resistance was observed as students were accustomed to direct instruction. Time constraints and classroom management also posed challenges. However, consistent practice, clear expectations, and reflective teaching gradually led to positive outcomes.

These experiences reaffirmed the importance of teacher reflection and adaptability.

9. Conclusion

Modernization in education is essential, but it must be rooted in context and values. The classroom practices discussed demonstrate that it is possible to adopt modern pedagogical strategies without westernization. By aligning teaching practices with NEP 2020 and focusing on skills and sensibility, schools can truly function as centres of holistic development. Teachers, through reflective and responsive

pedagogy, play a crucial role in shaping meaningful learning experiences for life.

A Friendly Suggestion: Revisiting Our Roots through Indian Mythology As schools strive to balance modernization with cultural sensibility, a gentle yet meaningful inclusion of Indian mythology within the school curriculum

can serve as a powerful bridge between the past and the present. Indian mythological narratives, when approached as stories rich in values, ethics, and human dilemmas, offer timeless lessons in courage, empathy, resilience, and moral reasoning. Rather than viewing mythology as religious instruction, it can be introduced through storytelling, literature, art, drama, and discussion, encouraging critical thinking and reflection.

Aligned with the vision of NEP 2020 and NCF 2023, the integration of Indian mythology can support holistic education by nurturing emotional intelligence, cultural awareness, and ethical sensibility. Revisiting these narratives allows students to connect with their roots while developing a deeper understanding of universal values, making learning both meaningful and contextually relevant. Such an approach can help students appreciate their cultural heritage with pride, curiosity, and openness, thereby strengthening identity while preparing them for a global future.

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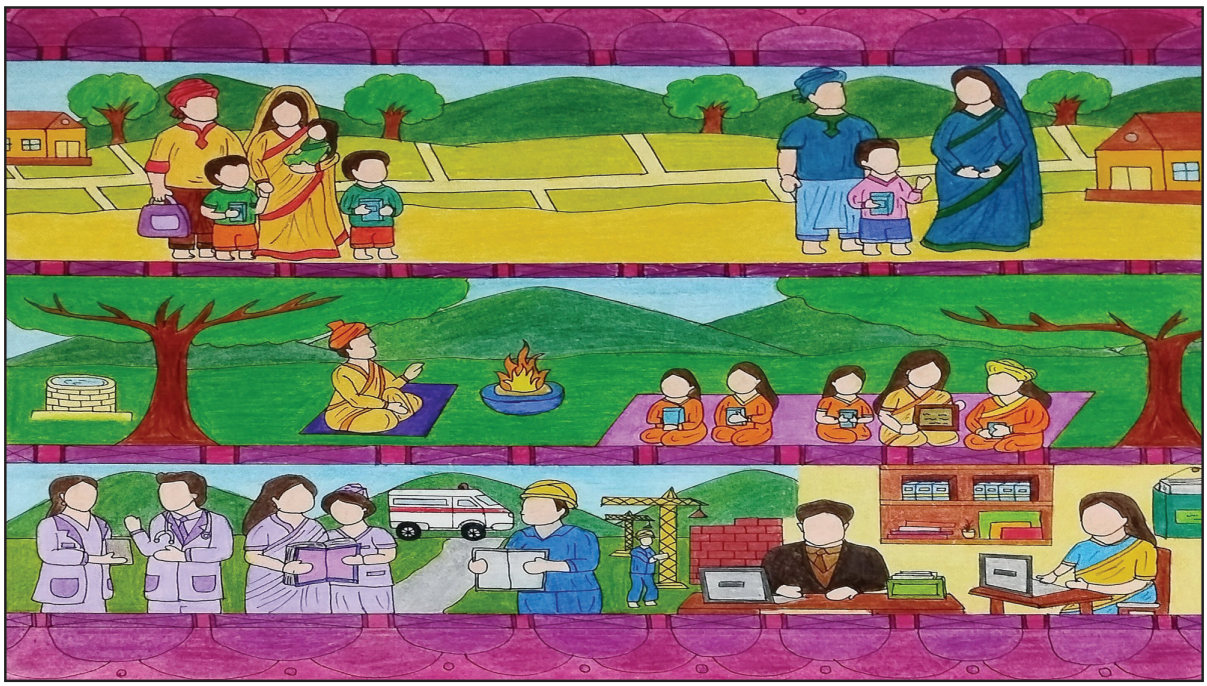

Aashi Maurya

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Operationalizing NEP 2020 In Classroom: Strategy Framework for Competency Based Learning

Ms. Vridhi Gupta (TGT English)
Mahavir Senior Model School,Delhi

Abstract

National Education Policy (NEP) 2020 seeks to shift from rote, examination-driven schooling to competency-based learning that enables real-life application. Yet teachers often struggle to translate this vision into everyday lesson design amid limited time, assessment pressures, and heterogeneous readiness. This paper presents a classroom strategy framework for operationalizing NEP 2020 through several pillars: competency mapping with learning progressions; backward design and performance tasks to elicit transfer; inquiry- and experience-rich pedagogy; formative assessment and feedback loops; inclusion through differentiation; and mastery-oriented pacing with structured revision. Drawing on established scholarship on formative assessment, feedback, and differentiated instruction, the framework specifies practical routines, rubrics, and evidence sources that teachers can embed within units. The argument is that coherent alignment among competencies, tasks, and feedback creates learner agency and reduces reliance on recall-dominated assessment. The paper concludes with scalable recommendations for "minimum viable" implementation across subjects and grades. Adaptable for mixed-ability classrooms everywhere.

Introduction

The National Education Policy (NEP) 2020 aims to changes in school education from rote memorization and examination driven teaching to learning which develops competencies for real life applications. While this vision is appreciated, its implementation is often challenging in the context of time, assessments, and multiple readiness levels in the classrooms. There are still students who perform well in recall based tasks and struggle to apply to reasoning, critical thinking, idea articulation, and collaboration. Thus, the importance of Competency Based Learning (CBL) is not only on what the students know, but what the students can actually do with that knowledge. Therefore, NEP 2020 requires structured strategic frameworks that assist educators in translating competencies into habitual teaching practices, lesson tasks, and feedback cycles. This paper proposes and utilizes a classroom based framework of Competency Mapping, Performance Task Designing, Inquiry Based Teaching, Formative Assessment Cycles, and Differentiation. This study aims to assess the support of this framework to the growth of competencies and individuals learning agency. The paper also describes the classroom level enablers and the challenges in strengthening

NEP-aligned practice.

Conceptual Background

Under the new NEP, India plans to move away from rote and high-stakes testing and towards competency-based teaching and assessment. CBL, is built on the idea of regular formative "assessment for learning" (rather than assessment of learning) and tracking progress on higher order thinking and holistic learning. In conceptual terms, CBL requires three interrelated shifts: (1) articulating competencies as demonstrable outcomes, (2) creating tasks that allow for the demonstration of those competencies, and (3) implementing ongoing feedback to facilitate progress. This is a well-established approach backed with evidence. One of the most recognized reviews by Black and Wiliam explores the relationship between assessment and learning. In it they note that formative assessment, characterized by clear criteria for success, feedback that is specific and actionable, and self-assessment by students, is one of the most significant contributors to learning, and is most effective when feedback is integrated as part of teaching instead of treated as a final evaluative judgment. Hattie and Timperley describe the more effective forms of feedback and clarifies that feedback works best when the learner is clear about the goal they are trying to achieve, how close they are to reaching that goal, and what the next steps are, and is more effective than mere praise. Feedback related to the task, the process, and self-regulation are all more effective than feedback that is simply positive. Classrooms are by default heterogeneous, and so the planned differentiation that operationalising CBL requires is Marzano's differentiated instruction. Tomlinson's differentiated instruction framework spans the four essential components of content, process, product, and learning environment.

Implementing NEP 2020 through Competency-Based Learning

Turning NEP 2020 into a reality involves moving beyond general policies to concrete, actionable plans that teachers can incorporate into lesson design that includes, content, learning organization, and evidence of learning. The NEP 2020 mentions the need for assessments to be regular, have a formative structure, be competency based, and for the assessments to be for learning instead of learning. Along with this, the emphasis is placed on the development of analytical, critical, and conceptual thinking. With this in mind, the classroom framework of the competency based framework (CBL) learning must include competencies, learning transfer, improvement, and growth.

Pillar 1: Competency mapping and learning progressions.

CBL starts with transforming syllabus outcomes into manageable assessable competencies. These are mostly a mix of subject-specific competencies and transversal competencies. This type of 'translation' is important because covering competencies does not equate to content coverage. Competencies, in this context, are not merely a classroom pseudo-intellectual construct, but the ability to harness

and apply the necessary knowledge and skills to overcome challenges. Practically, these operational competencies take the form of 'I can ….' statements and levels of success criterion (emerging, developing, proficient, advanced) to delineate what quality looks like. These success criteria are instructional hypotheses, meaning they influence the order of lessons, the design of scaffolds, and the boundary of evidence that will count as a demonstration of competency.

Pillar 2: Backward design and performance tasks.

Competency reform is still a work in progress, and failures result from teaching and testing primarily through recall mechanisms and continually treating competencies as mere add-ons. What is done in backward design offers a structured path: from what should be understood and from what should be transferred; then from what assessments may be designed that will credibly capture and reflect those outcomes, to what purposeful learning experiences may be crafted. The Understanding by Design (UbD) framework captures this best, emphasizing that what is being designed should 'move backward' from what needs to be transferred and understood, proposing that what is designed is far better than what is simply confirmatory. In NEP-aligned practice, this means at minimum one performance task per unit: debates, investigations, design challenges, community-related problem-solving, etc. where students must transfer knowledge and apply it in a different context. The task comes with a competency rubric so that judgments are made based on certain criteria, rather than teachers having to rely on their gut. Such tasks also easily allow genuine interdisciplinary integration (e.g., literacy + social studies) , integration is by way of a competency requirement rather than a themed context.

Pillar 3: Inquiry- and experience-rich pedagogy (building competence through practice).

Competencies are cultivated through cycles of modelling, guided practice, and independent performance under varied conditions. This aligns with NEP's emphasis on experiential and inquiry-oriented learning, which foregrounds sense-making and application. Within the framework, inquiry routines are treated not as occasional "projects" but as everyday pedagogical structures. Strategically, teachers can adopt think–pair–share with accountable talk stems, concept mapping, "claim–evidence–reasoning," learning stations, or structured discussion protocols—to distribute cognitive work to students. At the theoretical level, this connects with broader. competency scholarship emphasising "deeper learning" capacities- cognitive, interpersonal, and intrapersonal competencies as mutually reinforcing rather than separable.

Pillar 4: Formative assessment and feedback loops (turning evidence into improvement).

NEP 2020 positions assessment as an integral part of instruction rather than a separate, end-point summative event, aligning with the formative assessment scholarship of Black and William, who argue that achievement

improves when evidence of learning is continuously elicited and teaching is adapted in response. Within this pillar, the assessment cycle can be organised around four elements: Evidence, Criteria, Feedback, and Instructional Adjustment. Evidence is gathered through diagnostic prompts, short quizzes, observation of classroom talk, and oral/written feedback, including peer and self-assessment. Criteria are defined using grade-level learning outcomes, translated into clear success indicators so that students understand what quality performance entails. Feedback is then provided, clarifying the learning goal, the learner's current status, and specific next steps. Finally, Instructional Adjustment follows from the evidence through re-teaching, scaffolding, regrouping, or revision opportunities. When peer- and self-assessment recur across checkpoints, learners internalise criteria and strengthen the competencies targeted by the unit.

Pillar 5: Inclusion and differentiation by design (equity as a structural feature).

Competency-based systems can fail when they mistakenly think everyone is at the same level. The NEP's emphasis on equitable opportunities means that differentiation is a must. Tomlinson's differentiated instruction model is a good example because it offers teachers the ability to differentiate content, processes, products, and the learning environment based on a student's readiness, interest, and learning profile, while still achieving the same learning goals for everyone. Within the framework, the differentiation is tiered tasks that share the same competency target, scaffold ladders, learning demonstration choice boards, and evidence-based flexible grouping. This means all students are working toward the same competency goals, just through different levels of support and challenges.

Conclusions and Recommendations

This paper argues that operationalising the NEP 2020 is best viewed as an exercise in instructional translation i.e. operationalising the policy's competency to focus classroom decisions on what learning is, how it is to be learned, and how learning progress is to be sustained. NEP 2020 calls for a complete shift from rote memorization and high-stakes testing to continuous, formative, low stakes, competency-based assessments of learning, and fostering the development of higher order thinking (hot) skills like analysis, critical thinking, and conceptual understanding. The classroom framework presented responds to this mandate by treating competencies as visible learning progressions, embedding inquiry and experience based routines as the primary means of competence development, and using performance tasks to generate evidence of transfer (beyond recall) that a learner is able to apply what they have learned.

Aligned to this rationale, the recommendations stem from what the research base indicates is most valid and reliable about effective learning systems. First, schools and teachers need to apply a "start small, build coherence" principle: select 2-3 high leverage competencies per unit and design clear success criteria and a common rubric so that learners understand and internalize the quality of the

target. Second, all units should have at least one thoughtfully created performance task and two to three formative checkpoints, as frequent formative assessments have been shown to positively influence learning when teachers call for evidence and adjust teaching in real time. Third, the feedback should be a structured loop, telling the students what the goals are, where they currently are, and what the next steps are, as the impact of feedback is directly connected to feedback density and feedback action. Lastly, competency reforms must be equitable by design. The differentiation in content, process, product, and learning environment based on readiness, interest, and learning profile ensures that mixed-ability classrooms can work toward the same competency goals through different pathways.

Gyana Ram

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Petals To Prayers - From a Classroom Question to a Community Movement

Aditya Dutta Choudhury (Dean Academics and Innovations)
Sunbeam Lahartara, Varanasi

Genesis of the Project

Petals to Prayers began in the most organic way possible—not as a planned initiative, but as a moment of genuine curiosity inside a classroom.

In a Class VII Hindi class, a teacher had just completed teaching the evocative poem "Pushp Ki Abhilasha" by Makhanlal Chaturvedi. The poem, which speaks of a flower's silent desire to serve the nation, stirred something deep within the students. As the class moved into discussion, children began sharing their thoughts freely—what the poem meant to them, what sacrifice looked like, and how relevance changes with time and place.

Then came a question—simple, honest, and unmistakably child-like in its clarity. One student said,

"Ma'am, we don't really see soldiers or wars here. Thankfully, there is no such situation around us. If flowers cannot be used the way the poet imagined, what else can they do?"

The classroom fell quiet—not because there was no answer, but because the question was real.

Living in **Varanasi**, a city steeped in spirituality, students see flowers everywhere—at temples in the early morning, at ghats during aartis, during festivals, weddings, and daily rituals. As the discussion continued, children began sharing what they observed beyond the classroom. They spoke about flowers floating in the Ganga, lying in heaps outside temples, being eaten by animals, or rotting by the roadside, creating stench and pollution.

One child remarked softly,
"Something that is offered to God should not end like this."
That sentence changed the direction of the conversation.

What made this moment even more powerful was that the discussion did not end with the bell. Over the next few days, students returned with fresh observations. One spoke about seeing heaps of marigolds dumped near a temple and said,

"Yesterday they were beautiful. Today they smell bad. It feels wrong."
Another wondered,

"If the river is sacred, shouldn't we protect it from this waste?"

Some children shared how, after puja at home, flowers were simply thrown away because

"that's what everyone does." For many, this was the first time they had paused to question a long-accepted practice.

Sensing the sincerity of the concern, the teachers did not rush to give answers. Instead, they asked the children a simple question:

"What do you think can be done?"

That shift—from being told to being trusted to think—marked the true beginning of *Petals to Prayers*.

From Curiosity to Inquiry

Students of Classes VII and VIII were encouraged to research what could be done with discarded flowers. Ideas flowed freely—natural dyes, composting, potpourri, reuse in rituals.

Hindi and Sanskrit teachers guided the exploration, grounding it in Indian tradition, literature, and values. During this phase, a teacher discovered a local NGO in Varanasi working with women from nearby villages to make organic agarbattis from recycled flowers.

The school reached out. Conversations began. Visits followed. Students learned that flowers could be:

- Collected,
- Sun-dried,
- Powdered and converted into paste,
- Hand-rolled into chemical-free, organic agarbattis.

What had begun as a question now had direction.

Academic Integration Across Subjects

Without being planned as such, Petals to Prayers became deeply interdisciplinary.

Science

Students researched:

- Chemicals used in commercial incense sticks,
- Health effects of burning them in closed spaces,
- Environmental impact of synthetic products.

They compared these with organic alternatives, understanding environmental chemistry, air quality, and human health.

Languages (Hindi & Sanskrit)

Literature moved beyond textbooks. Students wrote reflections, poems, discussions, and connected classical ideas with modern responsibility.

Social Science & Economics

Students explored livelihoods, dignity of labour, informal economies, and community-based enterprises.

Commerce & Financial Literacy

Senior students devised:

- Costing models,
- Pricing strategies,
- Simple marketing plans.

The school remained a facilitator, allowing student thinking to lead.

Social-Emotional Learning & Community Building

As students interacted with women working at the NGO, a strong SEL dimension emerged. Children listened to stories of early mornings,

long hours, and aspirations to educate their children better.

They began to understand privilege, resilience, and dignity. Empathy developed—not through lectures, but through relationships.

Student Ownership: A Living School Practice

Today, Petals to Prayers is no longer an occasional activity. It is a regular, student-owned project, especially for Classes VII and VIII.

During free periods, students take turns to:

- Collect flowers,
- Dry them in the school playground under the sun,
- Turn and monitor them carefully,
- Protect them from moisture and decay.

The layground has quietly become a **living laboratory**.

No marks. No prizes. Only purpose.

Connecting to the Sustainable Development Goals (SDGs)

Students soon recognized that their work aligned naturally with the SDGs, especially:

- SDG 12 – Responsible Consumption and Production
- SDG 13 – Climate Action
- SDG 3 – Good Health and Well-being
- SDG 8 – Decent Work and Economic Growth
- SDG 11 – Sustainable Cities and Communities

They learnt that global goals begin with local action.

Scaling the Initiative: From One School to Many

With growing impact, the project began scaling. **Other Sunbeam schools are now being onboarded** to:

- Increase raw-material quantity,
- Strengthen NGO partnerships,
- Build a shared, sustainable supply chain.

Each school identifies nearby temples, places collection bins, and sensitizes communities—turning one idea into a collective movement.

Community Outreach & Visibility

- Agarbatti stalls during PTMs
- Gifts to dignitaries and guests
- Presentation to international delegates during the Round Square Regional Forum
- Annual function showcasing the life cycle of a flower

Students now collect flowers from local temples weekly. A memorable moment occurred during Honorable Prime Minister Shri Narendra Modi's visit to Varanasi, when students—with permission—collected floral decorations from the railway station, sparking curiosity and conversations.

Alignment with NEP 2020 & NCF – School Education

The project reflects the core vision of **NEP 2020 and NCF-SE**:

- Experiential, inquiry-based learning
- Multidisciplinary integration
- Environmental and ethical consciousness
- Vocational exposure

- Student agency
- Indian knowledge systems rooted in local context

Conclusion

What began as a question at the end of a poem has grown into a deeply rooted educational movement.

Petals to Prayers reminds us that education does not always begin with plans or policies. Sometimes, it begins with a child noticing something and daring to ask, "Why does it have to be this way?"

When children are trusted with responsibility, they do not just learn—they lead.

Enclosed: The annual function Video: Petals to prayers Photographs of our children in action.

Reflection Sheets

Annual Function Video Petals to Prayers

https://drive.google.com/file/d/1WsOc8uNBXwbU8GHki3YBb5sSXiT1dHtQ/view?usp=sharing
Photographs of our children in action
https://drive.google.com/drive/s/14RSJx0kowOAe6o4LVeepssHpBoslU0Xd?usp=drive_link

Prerit Bidhuri

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Reimagining Classrooms Through Innovative Pedagogical Practices

Ms. Gracy Singh (TGT English)
Guru Tegh Bahadur 3rd Centenary Public School, Mansarovar Garden, New Delhi

Education today stands at a decisive crossroads, shaped by rapid technological change, evolving societal expectations, and the growing realization that academic knowledge alone is insufficient for success in life. The classroom is no longer a space where information is simply delivered and memorized; it has become a dynamic environment where learners actively construct understanding, develop values, and acquire skills essential for the future. Innovative and impactful pedagogical practices play a crucial role in this transformation, enabling education to respond meaningfully to the needs of learners in the twenty-first century. The vision of the National Education Policy 2020 further reinforces this shift by advocating a learner-centered, inclusive, flexible, and holistic approach to education.

Modern pedagogy recognizes that meaningful learning occurs when students are actively involved in the process rather than being passive recipients of information. Teaching practices today emphasize engagement, reflection, collaboration, and application of knowledge. Teachers act as facilitators who design learning experiences that encourage curiosity and independent thinking. Strategies such as collaborative tasks, real-life problem-solving, storytelling, role play, and project-based activities allow learners to connect abstract concepts with practical situations. Such practices not only deepen understanding but also foster confidence and intrinsic motivation among students, making learning both enjoyable and purposeful.

The principles laid down by the National Education Policy 2020 have brought renewed focus on competency-based education. Instead of prioritizing the completion of syllabus content, classrooms are increasingly oriented towards developing conceptual clarity and transferable skills. Learners are encouraged to question, analyze, and express ideas rather than reproduce information. Flexibility in teaching methods and learning pathways allows students to progress at their own pace, respecting individual differences. Multilingual expression and cultural inclusivity further enrich classroom interactions, helping learners appreciate diversity while strengthening their communication abilities. These strategies collectively ensure that education nurtures understanding rather than superficial achievement.

Learning become struly effective when students experience concepts directly. Experiential learning bridges the gap between theory and practice by involving learners in

hands-on activities, experiments, observations, and real-world tasks. Such engagement helps students internalize concepts and retain knowledge for longer periods. Inquiry-based learning strengthens this process by encouraging learners to explore questions, investigate causes, evaluate evidence, and arrive at conclusions independently. This approach cultivates critical thinking, creativity, and scientific temper. When learners are guided to discover answers rather than receive them, they develop confidence in their ability to learn and solve problems.

Interdisciplinary learning further enhances relevance by dissolving rigid subject boundaries. Real-life challenges rarely belong to a single discipline, and education must reflect this reality. Integrating concepts from different subjects helps learners understand the interconnected nature of knowledge. For instance, a theme related to environmental sustainability may draw upon science, social studies, language, mathematics, and ethics simultaneously. Such integration promotes holistic understanding and enables students to apply learning across contexts. It also encourages collaboration and creativity, preparing learners to address complex issues with a broader perspective.

Diversity within classrooms makes inclusive pedagogy essential. Learners differ in abilities, backgrounds, interests, and learning styles, and effective teaching must respond to these differences. Differentiated instruction allows teachers to adapt content, processes, and learning outcomes to suit individual needs. Visual resources, hands-on activities, audio materials, flexible grouping, and scaffolded support ensure that all learners can participate meaningfully. Inclusive practices also require emotional sensitivity and respect, ensuring that learners feel safe, valued, and confident. By addressing diverse needs thoughtfully, educators promote equity and ensure that learning opportunities are accessible to every student.

Assessment practices have undergone significant change as education shifts towards learner- centered approaches. Traditional examinations alone are no longer seen as reliable indicators of understanding. Continuous and formative assessment plays a vital role in tracking progress and supporting learning. Tools such as projects, portfolios, observations, peer evaluation, and self- reflection provide richer insights into student growth. Constructive feedback becomes a powerful tool, guiding learners towards improvement rather than merely highlighting errors. When assessment is used as a means to support learning, students develop self-awareness, responsibility, and a positive attitude towards challenges.

Technology has emerged as an influential force in reshaping teaching and learning. Digital resources expand access to information, enhance engagement, and support personalized learning experiences.

Smart classrooms, virtual simulations, online platforms, and interactive tools allow learners to explore concepts beyond textbooks. Artificial Intelligence further strengthens this process by enabling adaptive learning, timely feedback, and data-informed instructional

decisions. However, technology is most effective when used purposefully. Teachers play a critical role in guiding students towards ethical, responsible, and thoughtful use of digital tools. Technology thus serves as a facilitator that enhances human interaction rather than replacing it.

Education must also address the emotional and social dimensions of learner development. Academic achievement loses significance if learners lack empathy, resilience, and ethical judgment. Social-emotional learning helps students understand themselves and others, manage emotions, build healthy relationships, and make responsible decisions. Classroom discussions, reflective practices, collaborative activities, and value-based narratives nurture emotional intelligence and social awareness. Life skills such as communication, adaptability, leadership, and problem-solving equip learners to navigate real-world situations with confidence. Education rooted in values such as respect, compassion, honesty, and responsibility contributes to the formation of balanced and ethical individuals.

The changing education all and scape places new responsibilities on teachers. Continuous professional learning, reflective practice, and openness to innovation are essential for effective teaching.

Educators who experiment with new strategies, integrate technology thoughtfully, and adapt to learner needs create vibrant and responsive classrooms. Teachers also serve as role models, Demonstrating curiosity, empathy, and lifelong learning. Collaboration among educators and engagement with parents and the wider community further strengthen the impact of pedagogical innovation.

In essence, innovative and impactful pedagogical practices are fundamental to building an education system that prepares learners for the complexities of contemporary life. When teaching aligns with the vision of the National Education Policy 2020, emphasizes experiential and interdisciplinary learning, embraces inclusivity, reforms assessment, integrates technology wisely, and nurtures social- emotional development, education becomes truly transformative. Such an approach moves beyond examination scores to develop thoughtful, skilled, and value-driven individuals. By reimagining Classrooms as spaces of exploration, reflection, and growth, educators empower learners to become lifelong learners and responsible contributors to society, ensuring that education serves as a powerful force for personal and national development.

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Reimagining Foundational Education: Montessori Principles in the Context of NEP 2020

Shalini Sharma (Faculty, Primary Wing)
The Mother's International School, New Delhi

The Mother's International School is a CBSE-affiliated educational institution in South Delhi. It is committed to providing high-quality education for holistic development of children since 1956. Early Childhood Care and Education (ECCE) years are anchored in a thoughtful synergy between Sri Aurobindo's Integral Education and the Montessori philosophy and methodology, ensuring that children experience joyful, meaningful, and developmentally appropriate learning.

Montessori Philosophy and the Vision of NEP 2020

The Montessori philosophy aligns seamlessly with the vision of the National Education Policy (NEP) 2020, particularly at the Foundational Stage. Both recognize children as natural learners who construct knowledge through their interaction and exploration of their environment. They are intuitive, instinctive, and very organic with the process of acquiring knowledge. Thus, learning emerges organically through sensory exploration, movement, and purposeful activity. Our school consciously creates a safe, nurturing, and stimulating environment rich in opportunities for this.

Dr. Maria Montessori emphasized that learning rooted in experience is most meaningful, stating, "Education is a natural process carried out by the child and is not acquired by listening to words but by experiences in the environment."

"Learning by Doing": The Montessori Approach

A peep into a regular Montessori class: Little hands at work. Eager hearts and minds centered on the task.

Montessori Education is based on respect for the child's natural developmental tendencies and intrinsic motivation to learn. In Montessori classrooms, the principle of "learning by doing" is a core tenet. Children actively engage with their environment, finding joy and purpose in meaningful work. This approach fosters curiosity, confidence, independence, and a lifelong love for learning, all key goals emphasized by NEP 2020 for foundational education.

Experiential Learning at the Foundational Stage

Lessons for Life!

One of the most significant benefits of the Montessori classroom is its emphasis on experiential learning. Children learn by working with hands-on materials that stimulate their 'indriyas' or senses and encourage active exploration. Practical life activities such as pouring grains and liquids, spooning seeds, buttoning, polishing shoes, cleaning glass, or using dusters and brooms help children develop fine and gross motor skills, coordination, concentration, grace, and independence.

Dr. Montessori observed, "The hands are the instruments of man's intelligence".

It is here that theory and experiential learning intersperse seamlessly. The environment lends itself to empowering children to make decisions that reflect not only their individual choices but a sense of responsibility, mindfulness, and sensitivity towards each other and their environment.

One witnesses the little ones working and acquiring everyday skills such as dicing bananas, shelling peas, washing their utensils, washing and drying their napkins, looping a belt in a pair of jeans, or neatly folding shirts and pants. Such purposeful activity is in consonance with NEP 2020's emphasis on play-based real-life learning, laying strong foundations for life skills and self-sufficiency.

Respect for Individuality and Socio-Emotional Development

Respect for the child is pivotal for Montessori Education. Each child's individuality, pace of learning, and learning style are valued. Children are encouraged to celebrate success, develop resilience through challenges, and learn from mistakes. Opportunities to express ideas, ask questions, discuss, and debate help children build confidence and critical thinking skills.

This respect is reflected in activities and during Circle Time sessions, where children are encouraged to express their thoughts and opinions freely. A Montessori facilitator works with the profound understanding that the spark of intelligence, potential, imagination, and creativity is present inherently in all children.

Similarly, peer learning is integral to Montessori classrooms, fostering collaboration, empathy, and socio-emotional development.

These experiences align closely with NEP 2020's focus on nurturing emotional well-being, cooperation, and ethical values from early childhood.

Building Independence, Self-Esteem, and Concentration

By respecting children's autonomy, Montessori Education builds self-esteem and dignity. Children are encouraged to work at their own pace, make choices, and complete individual tasks independently. This autonomy strengthens concentration and attention span, both essential foundations for lifelong learning.

The Absorbent Mind, Sensitive Periods, and the Scaffolding given by the Montessori Auto-didactic Material

Dr. Montessori described early childhood as a phase of the 'Absorbent Mind' during which children effortlessly assimilate

impressions from their environment. These impressions shape both their conscious and subconscious self. As she noted,

"Impressions do not merely enter his mind; they form it, they incarnate themselves in him."

Montessori pedagogy also recognizes 'Sensitive Periods' as windows of opportunity during which children are especially receptive to learning skills such as language, movement, order, coordination, and sensory refinement. Hence, learning experiences are designed to align with these periods through rich sensory-motor activities.

The Montessori equipment provides the required 'Scaffolding' due to the uniqueness of being autodidactic. Through perfect, scientifically precise proportions, interlocking parts, and self-correcting design, the material gives clear, immediate feedback to the child. The Montessori materials for Language development (English and Hindi), Numeracy skill development, and understanding the world around us are brilliantly detailed and specifically designed to provide children with opportunities to discover key learning outcomes through repetition and practice. Each material teaches one skill at a time and is intentionally designed to support independent learning and problem-solving.

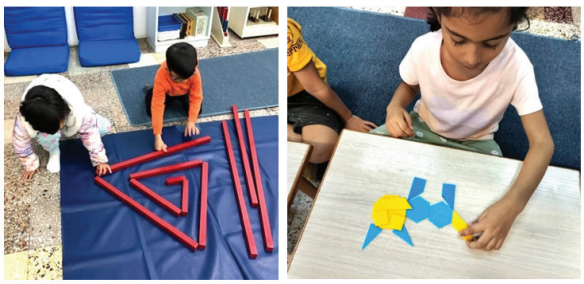
Inclusive, Differentiated, and Interdisciplinary Learning

Montessori classrooms accommodate diverse abilities, learning styles, and developmental timelines with ease. Children progress at their own pace, receive individualized or small-group lessons, and experience minimal comparison or competition. Thus, the children move beyond rote memorization towards deeper understanding and application. They master a skill through repeated activity and engagement.

Learning is interdisciplinary and inquiry-based, enabling children to connect ideas across languages, mathematics, science, culture, and life skills. Differentiation is embedded within the scheme of work. Lessons are based on observation, allowing children to revisit or advance as needed. Dr. Montessori captured this philosophy in her appeal, "Help me to do it myself".

Tracing and matching with varying degrees of complexity. *Sequencing with shapes.*

Shape construction: Collaborating and working with the Sensorial Long Rods.



Individual Creative Expression: Understanding shapes with the Tessellation Kit.

The presentations and lesson plans proceed through a progressive approach, from concrete to abstract, simple to complex, and individual to collaborative form. This approach reflects NEP 2020's call to reduce rigid subject boundaries and promote holistic, integrated learning experiences at the foundational stage.

A simple example illustrating how FLN (Foundational Literacy and Numeracy) is taken up in a Montessori classroom is through teaching shapes. Children are not only introduced to names and distinct features of a particular shape, but they also acquire a comprehensive understanding of shapes through fine motor-based tracing, sorting, sequencing, and matching activities. The Montessori Exercises of Practical Life take this understanding further, with a sandwich-making activity. During pre-writing exercises, the Insets for Design are used. Through games and movement, the gross motor based 'Walking on a Line' is conducted. The Tessellation kit and the Constructive Triangles help them to explore shapes creatively. A variety of Sensorial geometry-based apparatus and activities that encourage shape construction are just a few ways that they expand their understanding of shapes.

Lesson planning focuses on sustaining fascination, excitement, and the desire to explore. From nature walks to science experiments, harnessing the child's curiosity remains a constant.

For example, working with seeds may involve collecting seeds on a nature walk, counting, sorting, and arranging them into a 'rangoli'. Stories, rhymes, and vocabulary-building activities, understanding plant growth with experiments, and gardening activities layer their understanding. Reflective exercises inspire children to further understand their significance.

Jal Tarang:

Music appreciation integrated with Montessori Exercises of Practical Life, language development, and Mathematical concepts.

Music and art appreciation are woven through hands-on activities, mathematics, and vocabulary building. The classes offer a language-rich environment, working on developing speaking and listening skills. Language sessions lay special emphasis on storytelling, story-building, conversational skills, comprehension-based exercises, and other oral language development activities. Learning phonics, reading, and writing spontaneously integrates with the ongoing project-based learning.

Foundational numeracy begins with a tactile understanding of the pre-number concepts, number-quantity correspondence, and subsequently mathematical operations are smoothly integrated with the monthly themes and projects.

Dr. Montessori described this holistic vision when she said, "To educate the child is to give him a sense of the universe."

Though the curriculum is planned with age-appropriate activities, the planning

always leaves room for flexibility and child-led incorporation. Children are encouraged to investigate materials, ask questions, and repeat activities to achieve mastery of a skill, to discover concepts independently.

The Prepared Environment and the Role of the Facilitator

The prepared environment plays a crucial role in Montessori classrooms. These inviting spaces feature floor seating, child-sized furniture, and low open shelves that promote independence and freedom of movement. Materials are arranged systematically for purposeful engagement. Structure, order, beauty, and elements of nature coexist harmoniously.

Dr. Montessori emphasized, "The environment must be rich in motives which lend interest to activity and invite the child to conduct his own experiences."

Display boards reflect cultural topics, while Peace Corners offer calm spaces for reflection and emotional regulation. Such environments align strongly with the emphasis of the NEP 2020 on safe, inclusive, and engaging learning spaces.

Within the prepared environment, the teacher is a guide, facilitating learning through observation, patience, and sensitivity. The children are the active participants, with the freedom to choose and construct knowledge independently. The facilitator does not impose answers but guides learning through gentle support, encouraging curiosity and reflection in the children. The approach aligns with NEP 2020's emphasis on nurturing curiosity, creativity, and scientific temper at an early age.

Conclusion:

A Shared Vision for Foundational Education

Thus, Montessori Education aligns deeply with and complements the vision of NEP 2020. The Montessori program at our School has been an enriching and evolving program that has yielded consistent, tangible learning outcomes in the children. Yet, the intangibles are the life-altering outcomes that the School has witnessed over the years. The perceptible, dynamic impact on the children can be felt in their collective consciousness, individual perspective, and mindful living.

Samridh Bose

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Rethinking Education For A Complex World

Nisha Yadav (TGT German)
Delhi Public School Rohini

The classroom is a place of high drama. You'll never know what you've done to, or for, the hundreds coming and going. You see them leaving the classroom: dreamy, flat, sneering, admiring, smiling, puzzled. After a few years you develop antennae. You can tell when you've reached them or alienated them. It's chemistry. It's psychology. It's animal instinct.

You are with the kids and, as long as you want to be a teacher, there's no escape. Don't expect help from the people who've escaped the classroom, the higher-ups. They're busy going to lunch and thinking higher thoughts. It's you and the kids. So, there's the bell. See you later. Find what you love and do it.

-Frank McCourt, teacher and author of Teacher Man

These lines always remind me of my teachers at school and college whose words continue to echo long after textbooks are forgotten. They were the ones who gave me the confidence to speak, the courage to choose and the strength to rise after failure. As an introverted girl, I was too shy and afraid to speak up about my wishes and opinions. I will always remain thankful to my teachers whose impact lay not merely in academic instruction, but in shaping my value system and life skills.

From the wisdom of Dronacharya in ancient Indian tradition to the compassionate art teacher Ram in Taare Zameen Par, history and literature alike affirm that a teacher's role extends far beyond academic instruction—it shapes character, resilience, and the ability to navigate life with confidence and empathy.

Twenty-first century education is facing significant changes due to global shifts in the educational landscape. Moreover, the emphasis on cognitive elements of education often overlooks the importance of social and emotional skills in a changing world, without which there may be a lack of focus on resilience, responsibility, cooperation, conflict resolution, and perseverance .

This leads us to a fundamental question: What constitutes life skills education, and why is it so important in contemporary schooling? Life skills, as defined by UNICEF, are psychosocial abilities that enable individuals to respond effectively to the demands and challenges of everyday life. The World Health Organization further identifies core competencies such as decision-making, problem-solving, critical, and creative thinking, communication, empathy,

self-awareness, and coping with stress and emotions. Despite their universal relevance, life skills education in India has traditionally received limited systematic attention, with academic achievement often prioritized over emotional and social growth.

Indeed, during the COVID-19 pandemic, teachers in our country found it necessary to bring the social and emotional well-being of students at the forefront of their instruction. They focused on building classroom communities, social interactions, and collaborative learning environments. India is a diverse and multifaceted society, and its public education system reflects multiple cultures and, at times, significant socio-cultural divides.

Teachers have a big job beyond just sharing knowledge; they aim to spark a love for learning that lasts a lifetime. They work hard to make classrooms feel safe and welcoming, where every child knows they matter. By showing empathy and support, teachers build strong relationships that help kids interact better and feel good about themselves. Therefore, values and life skills education in schools have become the need of the hour. These lessons help children handle the real world with confidence, kindness, and purpose. Life skills and values, when taught well, prepare students for life – not just academics. You can see improved classroom engagement, student discipline, and real-life readiness. With life skills and values:

- Academics, attendance, communication, teamwork, problem-solving skills improve.
- Stress and change are handled with resilience.
- Safe, kind and wiser choices are made and build healthier relationships.
- Their future – career, work, and life – is set on a stronger foundation.

Teaching values and life skills education comes with its own package of difficulties, including curriculum packed with academic requirements, teachers who have not been trained to deliver skill-based sessions, difficulty measuring behavioural and emotional growth and lack of physical spaces for activities.

Self-confidence, self-awareness, and social responsibility were significant categories related to self-esteem, whereas conflict management and decision-making pointed toward enhanced self-efficacy.

”A boy hit me in school. Normally I would hit back, but instead I decided not to and reported the incident to my teacher” (Student, male)

”I had the habit of throwing food wrappers out of the window while traveling in bus but now I have stopped doing that.” (Student, male)

”You blindfolded me and then the boys were shouting, some saying left and some saying right… When something like that happens, we must think and decide for ourselves. People will keep changing what they say. But we should be careful, and listen to those who care about us, like our parents” (Student, female)

”I used to talk back to my mother and father, and they would hit me. If they ask me

not to go somewhere, I would say that I would go there. I do not do that nowadays" (Student, male)

The change that teachers can create for their students through life-skills and value education is not abstract; it can be seen and measured in a student's behavior in the classroom toward peers, in their peer-to-peer interactions and in their ability to self-regulate. Activities designed to be structured (i.e., role playing, reflective journal writing, group problem solving projects, and guided discussion), allow students to apply their skills in actual situations (i.e.: making decisions; being empathetic; resolving conflicts). For example, when students regularly participate in circle-time discussions or receive peer feedback, their communication skills and emotional vocabulary have been shown to improve. In addition, when students work on collaborative projects, they develop cooperation and leadership skills. Schools that intentionally provide social-emotional learning experiences to their students have fewer disciplinary problems; a greater number of students attend school every day, have higher attendance rates, and a greater percentage of the student body exhibits increased academic success (persistence). The results of these schools verify that teachers who design learning experiences with the intent of addressing students' feelings, relationships, and beliefs are not just transferring knowledge but are also changing students' behaviour and attitudes and developing students' coping mechanisms, thereby transforming feelings into measurable behaviours.

Teachers are working with colleagues, family members, politicians, academics, community members, employers, and others to set clear and obtainable standards for the knowledge, skills, and values we should expect our children to acquire. They are participating in day-to-day decision-making in schools, working side-by-side to set priorities, and dealing with organizational problems that affect their students' learning.

To summarize, in modern schools one sees how, by using dynamic and exciting teaching methodologies, the learners are drawn into the world of self-actualization and realization of their aims, aspirations, dreams, goals and hopes. Collaboration, role-play, data sharing, using the internet for research and reference, has become quite the norm. Experiential learning and a sense of connectivity through the net has taken the world of education by storm. Hence, the role of the facilitator extends, at times, to beyond the classroom. She/he is a leader, a mentor, a role model, a counselor, a coach, a therapist, a seeker, a knowledge base, a disciplinarian, a data collector, a curriculum planner, an event manager and an entertainer among many more avatars.

And today, after twenty years, as a teacher myself, I strive to carry forward the legacy of those who once shaped me. I am merely continuing the legacy of my teachers, the legacy of bringing smile on my students' faces, helping my students to face the harsh realities of life, and accepting them unconditionally.

It is with this belief that I conclude with Dorothy Law Nolte's poem Children Learn

What They Live, which beautifully reminds us that children internalize the emotional climate of their surroundings.

Children Learn What They Live

If children live with criticism, they learn to condemn.

If children live with hostility, they learn to fight.

If children live with ridicule, they learn to be shy.

If children live with shame, they learn to feel guilty.

If children live with encouragement, they learn confidence.

If children live with tolerance, they learn to be patient.

If children live with praise, they learn to appreciate.

If children live with acceptance, they learn to love.

If children live with approval, they learn to like themselves.

If children live with honesty, they learn truthfulness.

If children live with security, they learn to have faith in themselves and others.

If children live with friendliness, they learn the world is a nice place in which to live

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Aaniya Negi

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Student-Centric AI Learning for Future-Ready Skills

Deepti Malhotra (TGT Computer Science)
Modern Public School

Introduction :

Enhancing Employability, Fostering Entrepreneurship and Focusing on experiential and practical learning to instill 21st-century skills in children is very important.

Target group: Class IX to XII

Objectives

Enhancing Communication and Collaboration, Employability Skills, Adaptability And Learning, Understanding Emerging Technologies, AI and Its Applications, Design Thinking, Specific Industry Skills

Competencies focused:

Prepare students for the future workforce, Foster creativity and innovation, Promote a holistic approach to education, Develop responsible and ethical citizens, Inculcate Problem-Solving ability.

Name of practice: Tech of Students, by the students, for the students

Being Head of IT Department and an Educator for Artificial Intelligence and Computer

Science. I firmly believe that skill obtained is the investment for the future .But only classroom teaching isn't enough to encourage students and we need a game changing strategy.

Action Plan:

In the class **time table** where 3-4 periods are scheduled for Artificial Intelligence, I dedicated one period per week for activity named **Tech Talk** in classroom setup. Students are grouped in 4-5 members. Children are paired with one-on-one volunteers who could be older children within the school or members of the School Alumni Association. This showed increased positive attitudes and enthusiasm and at the same time developed Team building and collaboration skills.

Monthly Schedule:

1. **Month one** Students brain storm a societal problem where students are given tasks to observe their environment and society , go deep in observation of things which need to be improved , with an opportunity to talk and discuss them. Topics could include issues in the medical field, environmental issues, academic problems, behavioral and psychological issues etc.
2. **Month Two** Students in the same groups discuss innovative solutions related to the same Topic.
3. **Month Three** Students meet and explore tools which can be used to solve that problem .

4. **Month four:** Students work on developing prototypes for solutions
   For Next 3-4 months these teams worked on creating prototypes.
5. I am In charge of the Cyber Security club and I encourage Students to research and share insights on prevailing Cyber and AI threats, and conduct awareness for dealing with them.

Innovation in Practice

- **Student Lead Conferences** are initiated where students present their
- Problem solving journey in front of Selected Parents, Alumni.
- Internships, Industry Engagement sessions and Boot camps are made mandatory which is sometimes supported by our Alumni.
- For making Learning entertaining I introduced AI Avatar of Class Assemblies. Our school incorporated AI Avatars into class assemblies which meant that we had avatars of students and teachers speaking and presenting.

After the above deliberations Our students have been part of Problem identifications around us and proposing solutions following AI-Powered

STEM Projects some of which are as follows :

Project 1: Data Analysis Software for Student performance :

Project 2: Welcoming Guests in School using image recognition:

Project 3: Cyber Guardian - An AI supported App

Project 4: Healthara – The Ultimate Health App

Project 5: Namaste A I Exploring History using AI

Project 6: Menti bot

Project 7: AgroGuru : A Bot for Farmers.

Project 8: READ-A-CAFFEINE (Community Book recommendation system)

Project 9: Project 10: Game creation on educational topic: Taxation

Project 10: Career counseling

Materials/tools used

1. Thunkable
2. Chatbase
3. Chatroll
4. OpenAI GPT (API)
5. Weebly
6. Google form
7. NLP Libraries
8. Dialogue Flow
9. Poe
10. BotPress
11. Microsoft BOT Framework
12. YOLOv5: A real-time object detection model, fast and accurate, used for detecting and classifying objects in images and videos.
13. Kaggle: A platform for data science and machine learning competitions,offering datasets, notebooks, and collaboration tools for AI projects.

Various online lab platforms like Google colab, Jupyter, Python tutor, code.org,Thunkable , Thonny are some online coding experiment platforms

Methodology

Competency based pedagogy

As an educator, I embrace Competency-Based Pedagogy (CBP) to help my students craft STEM and capstone projects that focus on mastering essential skills. I set clear, measurable competencies—like research, collaboration, and problem-solving—that guide how projects are chosen, structured and assessed.

- I align student teams taking care of their competencies.
- All types of intelligences are considered while making project teams.

Computational thinking – Problem-solving approach through logic

As a mentor, I integrate computational thinking and entrepreneurship to help students solve real-world problems. Through decomposition, pattern recognition, algorithms, and practical tools, students think critically, innovate, and present solutions.

Experiential learning – Investigating in a complex world

Students thrive through hands-on learning and reflection, conducting field research, surveys, and empathy-driven analysis before proposing solutions, which are tested using AI and Design Thinking in specialized labs.

Gamification – Engagement through play and the pedagogies of games

We can catch interest of students if problem identification and solution becomes a game for them . I make students make educational and relatable games using platforms like Scratch, Python etc.

Evidence Based Impact

AI chatbot development helps students grasp natural language processing, user experience design, and ethical AI usage, while prediction models build strong foundations in machine learning, data science, and statistical inference. When we implemented some of the projects made by students in various school functionalities it boosted their confidence, collaboration, and problem-solving skills.

Student learning outcomes (data, assessment results)

I have observed that skill-based projects such as AI chatbots, prediction models, and educational games significantly boost student engagement, critical and future thinking, data literacy, reasoning, deeper understanding, and cross-disciplinary competence.

Testimonials, student products or outcomes

As a mentor I can testify the following:

- Development of AI chatbots helped students understand the principles of natural language processing, user experience design, and ethical use of AI,
- Prediction models emphasized a strong foundation in machine learning, data science, and statistical inference.
- Evidence from work done in the Artificial Intelligence lab, Robotics lab and innovation lab indicate that these projects increased confidence in students, enhanced their collaborative skills, and allowed students to

practice problem solving.

Some innovative projects made by students used in our school's day to day activities:

- AI based Cyber BOT is embedded on School's website to benefit Community
- Cyber Guardian App is circulated among stakeholders for creating awareness for Cyber threats
- A student performance analyzer made by a student was tested and validated by IT teachers. The School's Result compiling team is planning to use it.
- Book Reading club is using a Book recommendation system made by another team of innovators
- Namaste AI app is integrated as learning tool in Social Science

Engagement or behaviour changes

Skill-based projects such as artificial intelligence chatbots or prediction models, increase student engagement, impacting behaviors in a positive way.

Improved Collaboration and Communication:

Working together to problem-solve, establish successful solutions and bring it to fruition, increases skills in collaboration and communication, teamwork, and leadership.

Greater Confidence and Ownership

As students move past initial failures, they learn how to manage uncontrollable situations with perseverance to debug their solutions because these experiences involve patience and critical thinking. These experiences also build confidence, especially for students who are introvert and may not generally expose these strengths in academic environments.

Career Awareness and Future Orientation

As a Mentor I have noticed that beyond the skill development process, students also become more future- oriented. They develop a strong interest in various careers connected to the work of artificial intelligence; interest in careers connected to data science; and interest in careers connected to innovation design innovation in practice development.

Connection to real-world problems or current trends

Mandatory internships, industry engagement, and boot camps create valuable opportunities that help bridge the gap between what students learn in the classroom and the real-world challenges they'll face.

Inclusivity and Equity

Participation of diverse student groups

i. Hybrid grouping is done on basis of multiple factors like different intelligences

ii. Specially abled students are distributed evenly in various teams

iii. Students who have issues in communication are paired with their peers who are given responsibility to support them.(This has shown us marvellous results)

Sustainability and Cost Effectiveness

AI initiatives need strong planning, time management, and motivation. Most tools, Python, and AI libraries are free or low-cost;

only advanced computer vision models demand high-end hardware investment.

Challenges faced and solutions

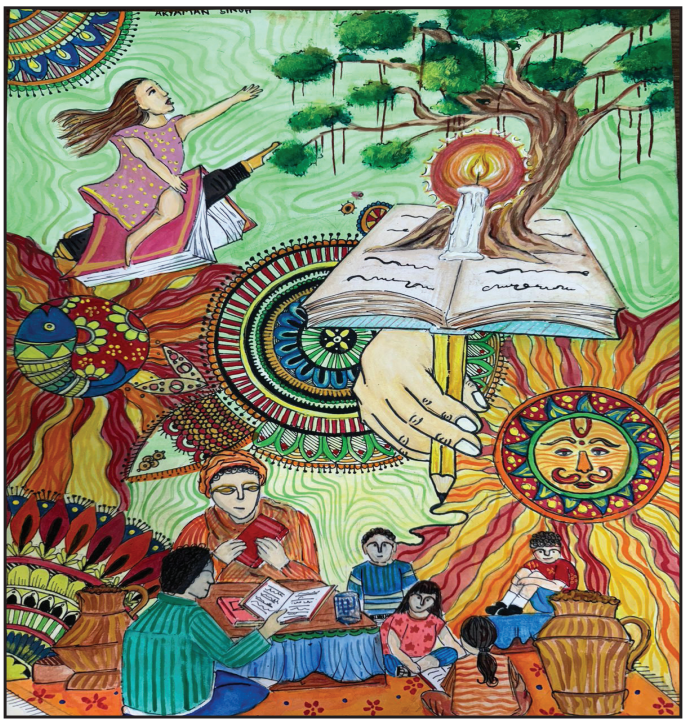
Many AI tools and coding require Laptops and can't be created on mobile phones. Thus we have to give additional time to these tech enthusiasts in our Labs .

Making students aware about Ethical Considerations of AI usage and follow AI. Ethics is another big challenge which we face.. We have trained them on following:

- Taking written consents form parents of their peers or peers whichever is age appropriate if they are using their AI versions .
- Giving Due credits to Sites and resources which they are using for creating prototype
- Avoid using Chat Gpt , Gemini , Co-pilot or any such AI tool and rely more on their Human Intelligence
- They should use AI as a tool not as a replacement of Human Intelligence.

Conclusion

Now students understand that solutions to AI resolvable problems lie beyond the confines of their textbooks. I've watched them enhance their problem-solving abilities, build confidence, and learn valuable lessons from their mistakes. This practical, forward-thinking approach not only boosts their academic success but also helps mold them into self-driven, thoughtful, and capable learners who are ready to take on the future.



Aryaman Singh

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The Dialogic Classroom : Evaluating The Impact of Flipped Questioning and Structured Literacy Periodsin Middle School English Pedagogy

Tanu Arora (TGT (English)
MM InternationalSchool, Ambala

Abstract

Modern English language teaching has transitioned from traditional textbook instruction toalearner-centricmodelfocused on developing confident communicators and creativethinkers. Thispaperexplorespedagogical best practices implemented in middle school English classrooms, specifically highlighting "flipped questioning" and "structured reading periods" within the Indian school context. Drawing on a decade of practitioner experience, the study examines how these strategies foster a dialogue-rich environment under the "Shiksha Samvaad" philosophy—a movement emphasizing dialogue and reflection. By integrating experiential learning and formative assessment, these strategies shift students from passive recipients to active leaders. The findings suggest that decentralizing teacher authority significantly enhances comprehension, fluency, andcritical engagement with literature.

Keywords: Englishpedagogy, flipped questions, structured reading, experiential learning, learner-centric, Shiksha Samvaad, Action Research, Middle school education.

INTRODUCTION: THE SHIFT TO WARD DIALOGICPEDAGOGY

English language teaching in the 21st century has under go neaseismic shift. Nolongeristhe classroom a place for rote memorization of grammar rules or the passive reading of prose. At MM International School, our pedagogical mission aligns with the Shiksha Samvaad philosophy—a movement that emphasizes dialogue, reflection, and collaborative learning.

The middle school years (grades 6-8) represent acriticaldevelopmentaljunction.At this stage, students transition from "learning to read" to "reading to learn." If the pedagogy remains rigid and teacher-centered, we risk extinguishing the natural curiosity of the learner.This paper argues that by decentralizing the teacher's authority through"flipped questioning" and "structured reading," we can create a classroom ecosystem where the English language is not just a subject, but a living tool for expression. Over a decade of practice, I have observed that the most successful lessons are those where the teacher moves from being a "sage on the stage" to a "guide on the side."

THEORETICAL FRAMEWORK : LEARNER-CENTRICITY

A learner-centric approach is not merely about" letting students dowhatthey want."Itisa highly structured framework grounded in Vygotsky's Social Constructivism.

The Zone of Proximal Development (ZPD)

In our English classrooms, lessons are designed to hit the ZPD—the gap between what a student can do alone and what they can do with scaffolding. By using visual prompts, anecdotes, and relatablereal-life questions, we activate prior knowledge (schema) before a single word of anewchapterisread.Thisensuresthat thestudent isneitherbored bytasks that are too easy nor frustrated by those that are too difficult.

Differentiation and Universal Design for Learning (UDL)

Every classroom at MM International School is a neurodiverse environment. To ensure inclusion, our pedagogy employs Universal Design for Learning (UDL). Tasks are varied: a visual learner might map out a story's plot using a storyboard, while an auditory learner might participate in a "fishbowl" discussion. This ensures that the English language becomes accessible to all, regardless of their starting proficiency level.

FLIPPED QUESTIONS : ARCHITECTING HIGHER-ORDER THINKING

The most transformative practice identified in this research is the Flipped Questioning Strategy. In a traditional setting, the teacher holds the "answer key." In our "Shiksha Samvaad" model, we flip the script.

The Mechanics of Student-Led Inquiry

After a first reading of a text, students are tasked with generating their own inquiries. We categorize these into three levels:

- Factual Questions: (e.g., "What was the protagonist's motivation?") – These build the foundation of comprehension.
- Inferential Questions: (e.g., "How does the weather reflect the character's mood?") – These require students to read between the lines.
- Divergent/Opinion Questions: (e.g., "If the ending were different, would the moral of the story still hold weight?") – These encourage critical thinking and personal connection.

Impact on Student Agency

When a student frames a question, they are forced to engage with the text at a deeper cognitive level. They become "investigators" rather than "receivers." During our peer-discussion sessions, I have observed that students who were previously hesitant to speak become emboldened when they are the ones leading the inquiry. This practice builds the "soft skills" of leadership and public speaking.

RESEARCH METHODOLOGY

Research Design: A Decade of Practitioner-Action Research

This study utilizes a Qualitative Action Research design, rooted in my ten years of professional practice as an English educator. Unlike detached statistical surveys, this research is born from a "reflective practitioner" model. Over a decade of classroom observation, the methodology follows a cyclical process of Plan, Act, Observe, and Reflect.

Instrumentation and Data Collection

The study employed a combination of structured observation rubrics, student portfolio reviews, and feedback questionnaires. A total of 358 student interactions across grades 6, 7, and 8 were analysed to identify patterns in engagement and retention.

STRUCTURED READING TIME: CULTIVATING THE LITERARY IMAGINATION

The "crisis of reading" is a global concern as short-form digital content competes for students' attention. To combat this, we have implemented Structured Reading Time Periods.

The Role of Modelling and Read-Aloud

A key component is the teacher as a "Reading Role Model." When a teacher reads aloud with expression, pausing to wonder about a word's meaning or a character's choice, they are demonstrating the "internal monologue" of a skilled reader. This helps students move past the mechanical act of decoding to the psychological act of comprehension.

Post-Reading Reflections

Reading does not end when the book is closed. Our periods include dedicated "reflection time" where students explore vocabulary in context. Instead of looking up words in a dictionary, they use "contextual clues" to guess meanings, which is a vital skill for standardized testing and real-world reading.

INTEGRATING THE FOUR LANGUAGE SKILLS (LSRW)

Our pedagogy rejects the "siloed" teaching of skills. We believe that Listening, Speaking, Reading, and Writing are intertwined threads of the same fabric.

- Listening & Speaking: Through role-plays and "Shiksha Samvaad" circles, students learn that speaking is only half of communication; the other half is active listening and responding to peer ideas.
- Reading & Writing: We use "Mentor Texts." If students read a high-quality diary entry in their literature book, their writing assignment for the week is to produce a creative diary entry from the perspective of an antagonist. This creates a "loop" of learning where reading informs writing.

EXPERIENTIAL LEARNING AND CONTEXTUAL GRAMMAR

Grammar has historically been the "boring" part of English. Our best practice involves Contextual Grammar Integration, or what I call "Grammar in the Wild."

Grammar in the Wild

Rather than teaching "Present Perfect Tense" as a list of rules, we find examples of it within the stories we are currently reading. Students "hunt" for the tense and then discuss why the author used it. Was it to show a completed action? To show a link to the present? This has shown a 40% higher retention rate in long-term memory.

Literature as Experience

By enacting scenes—a practice known as "Process Drama"—students embody the characters. This experiential approach ensures that themes like "justice," "courage," or "empathy" are felt

emotionally, not just understood intellectually.

ASSESSMENT FOR LEARNING: THE FORMATIVE REVOLUTION

Assessment at MM International School is not a "trap" at the end of a unit; it is a "bridge" to further learning.

- Peer Assessment: Students use simplified rubrics to give each other "Two Stars and a Wish" (two things done well, one thing to improve). This reduces the "evaluative anxiety" often associated with teacher grading.
- Formative Checkpoints: These are used as "checkpoints" to identify common misconceptions in grammar or comprehension, allowing the teacher to adjust the next day's lesson plan in real-time.

CRITICAL REFLECTION: CHALLENGES AND GROWTH

As a practitioner of 10 years, I must acknowledge that shifting to a learner-centric model requires a "letting go" of total classroom silence. A dialogic classroom is naturally noisier. However, this is "productive noise"—the sound of students negotiating meaning. The challenge lies in balancing this freedom with the requirements of the syllabus. At MM, we found that while the initial transition took time, the students' eventual mastery of the material was much higher than in previous years of rote instruction.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The strategies of flipped questioning and structured reading periods, combined with a commitment to experiential learning, have redefined the English classroom. By honouring the principles of Shiksha Samvaad, we have seen students evolve from passive recipients into active thinkers. As we look toward the future of education, our goal remains clear: to equip students not just with a vocabulary, but with a voice.

Recommendations

Embrace Productive Noise: School leadership should support teachers who allow dialogue-heavy classrooms.

Contextualize All Skills: Language should never be taught in isolation; grammar must be found in the "wild" of literature.

Invest in Practitioner Research: Teachers should be encouraged to document their own "Action Research" to share best practices within the school community.

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Every Child Matters: Practising Inclusion through Differentiation

Swati Dixit (Special Educator, Learning Centre)
Sanskriti School

When we speak of inclusion, what images and assumptions arise? Too often, the term is associated only with specific groups; children with disabilities, those from disadvantaged backgrounds, or those perceived as marginalized. In doing so, do we unintentionally imply that children outside these categories cannot experience exclusion? Are we not narrowing inclusion to a set of predefined groups, thereby reinforcing the very boundaries we aim to dissolve?

My school and classroom observations suggest that inclusion is far broader and more powerful in comparison to categories and labels. It can be seen when a child helps a new student who feels lost in an unfamiliar school environment. It emerges when a teacher understands the linguistic challenges faced by a student who has recently arrived from another country. It is present when peers support a classmate transitioning from a Hindi-medium school into an English-medium setting or when a teacher responds with empathy to a child experiencing mental health difficulties.

These everyday moments reveal that inclusion is not merely a programme or policy, it is a mindset; a way of seeing, acting and relating. It is rooted in acceptance, empathy and the recognition of each child's need for belonging. Inclusion becomes a lens through which teachers and students perceive and interact with the world and with one another.

This article explores what inclusive and differentiated teaching practices look like in practice, why they are essential in Delhi's school classrooms, who benefits from them, how they align with the National Education Policy (NEP) 2020 and the classroom strategies I use that have proven effective and sustainable to a certain extent.

Inclusion is recognized as a universal human right that ensures equal access and opportunities for all individuals, regardless of caste, class, race, gender, or disability. While traditionally associated with children with special needs, the concept has expanded to address broader social dimensions. It emphasizes equal participation, acceptance and belonging for all individuals, regardless of their differences. Inclusion involves removing barriers to participation in education, employment and public life and fostering environments where everyone is valued, respected and supported. It should be reflected in an organization's culture, practices and relationships, promoting a diverse and equitable workforce. In a pluralistic society like India rich in caste, class, language, ethnicity and religion social inclusion is especially relevant. (E Gyankosh, IGNOU)

If one travels through India by train, one can notice not only changing landscapes but also

many different types of dresses and food; hear different languages, familiar and unfamiliar and see different scripts on the way. Even within a particular region, one can often come across people from other parts of India with different customs and traditions. This is India's rich diversity and it is usually the first thing that strikes visitors to our country. While diversity is indeed beautiful, making sense of it is not so easy. Over a century ago, the British historian Vincent Smith wondered, "How, in the face of such bewildering diversity, can a history of India be written?... The answer to the query is found in the fact that India offers unity in diversity." (NCERT Grade 6 SST textbook)

According to NEP 2020, Education is the single greatest tool for achieving social justice and equality. Inclusive and equitable education while indeed an essential goal in its own right -is also critical to achieving an inclusive and equitable society in which every citizen has the opportunity to dream, thrive and contribute to the nation. The education system must aim to benefit India's children so that no child loses any opportunity to learn and excel because of circumstances of birth or background. (NEP, 2020)

At the global stage, India's commitment to inclusive education and sustainable development was showcased during the 18th G20 Summit in New Delhi (September 2023) under the theme "One Earth, One Family, One Future. Guided by the philosophy of Vasudhaiva **Kutumbakam-ONE EARTH ONE FAMILY**, India emphasized collective responsibility for a sustainable future. The summit emphasised that "there is no inclusive growth without inclusive education." (NDTV Article, 2023)

Delhi classrooms are naturally diverse. There are children from different cognitive abilities, languages, cultures, economic backgrounds and some may even be first generation learners from their families etc. in such classrooms, teaching everyone in the same way does not work. When teachers use different strategies like differentiated practices, they plan lessons keeping these differences in mind from the start. This helps in responding and supporting students before they begin to struggle, rather than reacting only after challenges appear. Differentiated learning is a process where a teacher proactively adjusts their methods to meet students where they are, rather than expecting every student to follow a "one-size-fits-all" lesson. The teacher modifies the content, the process and the assessment of what the students learn. A study by Tomlinson (2014) in "The Differentiated Classroom" shows these practices boost engagement by matching tasks to individual needs.

Inclusive education is closely linked to equity and the Right to Education. Both the National Education Policy (NEP) 2020 and the National Curriculum Framework (NCF) emphasise that every child deserves more than just a physical presence in the classroom. They should be able to actively participate and feel capable. When teachers adjust their teaching and assessment methods, learning becomes more accessible and meaningful for all students.

Inclusive and differentiated practices also improve engagement. When lessons connect with students interests and ways of learning, children feel more confident and motivated to participate. This helps reduce frustration, especially for those who may otherwise feel left behind.

Learning in inclusive classrooms supports social growth as well. Children develop

empathy, cooperation and respect by learning alongside peers with different backgrounds and abilities. In a diverse city like Delhi, this social learning is as important as academic learning. Most importantly, inclusive practices benefit everyone, not just children with special needs. Flexible teaching methods help more students understand concepts better, leading to stronger participation and improved learning outcomes across the classroom.

In classrooms across Delhi and in schools working to implement the vision of NEP 2020, the focus is shifting toward teaching that meets children where they are, builds on their strengths and helps them feel valued as learners. This shift supports not just academic growth, but emotional and social development too, helping every child feel that school is a place where they can learn, grow and belong.

As an educator, I have been working with children of different abilities for the past fourteen. years. During this time, I have worked with children with autism, ADHD, intellectual disabilities, learning disabilities, learning gaps and children from economically weaker backgrounds. This journey has taught me that there is no single method that works for every child. Sometimes I use what I have learned from theory and at other times I simply try new strategies through trial and error. Many of these attempts have worked well for me and for my students and they have shaped the way I teach today.

One of the most important things I focus on in my classroom is building a strong connection with every child. I believe learning starts only when a child feels comfortable and accepted. I make an effort to talk to students, understand their interests and create a safe space for them. When children feel that their teacher genuinely cares for them, they are more willing to participate and try, even if they are afraid of making mistakes. This is especially important for children who may already feel anxious or discouraged because of their learning challenges.

I also believe that the student's voice matters. Ilow a child likes to learn plays a big role in how well they understand concepts. Instead of concentrating on what a child cannot do, I try to build on what the child already knows. I give importance to their strengths and interests. When I begin with something a child enjoys or feels confident about, it becomes easier to engage them and move forward with learning.

Another area I work on is helping children understand and accept differences. I talk openly in the classroom about how everyone is different, using simple and factual language. This helps children feel at ease with classmates who may seem "different" to them. This also builds empathy amongst all. Setting common rules for all students helps create a sense of fairness and belonging. Through stories, discussions and everyday conversations, I try to teach values like empathy, kindness and being helpful. Over time, this has helped my classroom become more sensitive and accepting.

For me, inclusion does not always mean that children immediately include everyone in their play or activities. Sometimes, I see inclusion when children stop pointing out or complaining. about another child's different behavior. Even if they are not actively including the child yet, the absence of exclusion feels like a positive step forward.

Working closely with class teachers has also been an important part of my role. I regularly talk to them, share observations and take their

feedback and suggestions. At the same time, I try to help them understand different disabilities and how these may show up in a classroom. This teamwork has been helpful not just for us as educators, but also for the children. Some of my students are able to manage the regular class curriculum, so they stay in the classroom for certain lessons. At other times, I take them out for small group or individual sessions to work on specific skills as part of targeted intervention. I often explain the same concept in different ways to make it easier to understand. I also modify worksheets and assessments according to each child's level, which has helped them feel more confident and successful. Using visual schedules, clearly labeled tables, task analysis and a visual work schedule supports the student throughout the school day by providing predictability. This structure helps the student feel more at ease, understand expectations and know what to expect next in their routine.

An important part of an inclusive school is how everyone views and supports inclusion. When a school has a strong inclusive culture and values, it becomes more positive, effective and forward-thinking. Being part of an inclusive school has helped me connect more closely with our school's ethos, while also giving me the opportunity to contribute to and support this inclusive culture.

Through all these experiences, I have learned that inclusion is a gradual process. It requires patience, flexibility and constant reflection. Most importantly, it requires seeing each child as they are and supporting them in the way they need, rather than focusing on their limitations,

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आधुनिक शिक्षा में समावेशी और विभेदित शिक्षण विधियों की भूमिका

Shweta Puri (TGT Hindi)
Indraprastha World School, Paschim Vihar

सारांश

प्रस्तुत शोध पत्र का मुख्य उद्देश्य समावेशी शिक्षा (Inclusive Education) और विभेदित शिक्षण (Differentiated Instruction) के महत्व, चुनौतियों और कार्यान्वयन की रणनीतियों का विश्लेषण करना है। 21वीं सदी की कक्षाओं में छात्रों की विविधता—चाहे वह संज्ञानात्मक, शारीरिक, सामाजिक या आर्थिक हो—एक सामान्य विशेषता है। यह शोध दर्शाता है कि कैसे शिक्षण पद्धतियों में लचीलापन लाकर प्रत्येक छात्र की क्षमता का अधिकतम विकास किया जा सकता है।

प्रस्तावना

शिक्षा का अधिकार केवल स्कूल में प्रवेश तक सीमित नहीं है, बल्कि गुणवत्तापूर्ण शिक्षा तक पहुंच सुनिश्चित करना भी है। समावेशी शिक्षा का अर्थ है कि सभी बच्चे, उनकी क्षमताओं या अक्षमताओं की परवाह किए बिना, एक ही कक्षा में साथ सीखें। वहीं, विभेदित शिक्षण वह साधन है जिसके माध्यम से शिक्षक समावेशी वातावरण में हर बच्चे की व्यक्तिगत सीखने की जरूरतों को पूरा करता है।

समावेशी और विभेदित शिक्षण को सफल बनाने के लिए निम्नलिखित विधियाँ कारगर साबित होती हैं:

यूनिवर्सल डिजाइन फॉर लर्निंग (UDL)

UDL एक ढांचा है जो शिक्षण को लचीला बनाता है। इसके तीन मुख्य सिद्धांत हैं:

1. प्रस्तुति के विविध तरीके: जानकारी को देखने, सुनने और छूने योग्य बनाना।
2. अभिव्यक्ति के विविध तरीके: छात्रों को अपनी बात कहने के अलग–अलग विकल्प देना।
3. जुड़ाव के विविध तरीके: छात्रों की रुचियों के आधार पर उन्हें प्रेरित करना।

पीयर ट्यूटरिंग

इसमें एक ही कक्षा के छात्र एक–दूसरे को सिखाते हैं। यह सामाजिक कौशल विकसित करता है और सीखने के तनाव को कम करता है।

मचान

शिक्षक छात्र को तब तक सहायता प्रदान करता है जब तक वह स्वतंत्र रूप से कार्य करने में सक्षम न हो जाए। जैसे–जैसे छात्र सीखता है, सहायता धीरे–धीरे कम कर दी जाती है।

समावेशी शिक्षा के लाभ

1. शैक्षणिक सुधार: जब शिक्षण छात्र की शैली (दृश्य, श्रव्य या गतिज) के अनुसार होता है, तो परिणाम बेहतर होते हैं।
2. सामाजिक विकास: छात्र सहानुभूति, सहिष्णुता और विविधता का सम्मान करना सीखते हैं।
3. आत्मविश्वास में वृद्धि: विशेष आवश्यकता वाले छात्र स्वयं को समाज का हिस्सा महसूस करते हैं।

कार्यान्वयन में चुनौतियाँ

भारत जैसे विकासशील देशों में इसे लागू करना चुनौतीपूर्ण है:

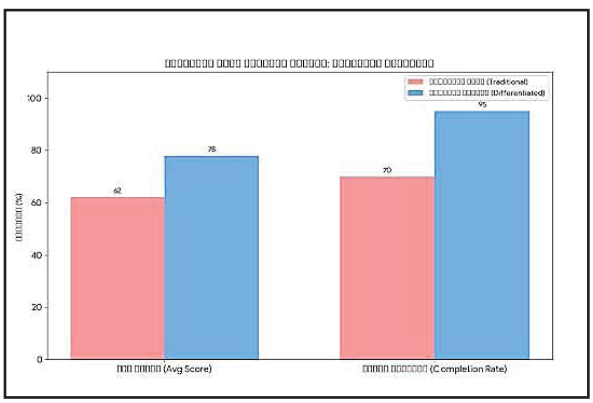
प्रशिक्षित शिक्षकों की कमी: सामान्य शिक्षकों को विशेष शिक्षा का पर्याप्त प्रशिक्षण नहीं मिलता।

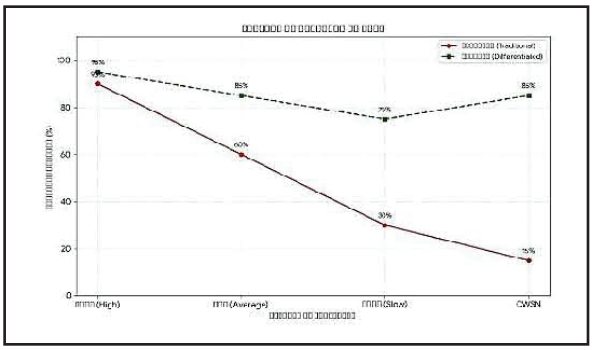
बुनियादी ढांचे की कमी: स्कूलों में रैंप, विशेष शौचालय और सहायक उपकरणों का अभाव। बड़ी कक्षाओं का आकार: एक शिक्षक के लिए 40–50 छात्रों पर व्यक्तिगत ध्यान देना कठिन होता है।

रूढ़िवादी सोच: दिव्यांगता को लेकर सामाजिक कलंक आज भी एक बाधा है।

शोध से यह स्पष्ट होता है कि विभेदित शिक्षण केवल विशेष बच्चों के लिए नहीं, बल्कि प्रतिभाशाली छात्रों के लिए भी आवश्यक है।

समावेशी और विभेदित शिक्षण विधियां आधुनिक शिक्षा प्रणाली की रीढ़ हैं। यदि हम एक न्यायपूर्ण और समतावादी समाज का निर्माण करना चाहते हैं, तो हमें अपनी कक्षाओं को इतना लचीला बनाना होगा कि वहां हर बच्चा अपनी गति और गरिमा के साथ सीख सके। शिक्षा का उद्देश्य केवल सूचना देना नहीं, बल्कि प्रत्येक छात्र की अद्वितीय क्षमता को प्रज्वलित करना है।





यहाँ कक्षा 10 के डेटा का ग्राफिकल विश्लेषण और विस्तृत विवरण दिया गया है, जो स्पष्ट करता है कि समावेशी और विभेदित शिक्षण विधियां किस प्रकार परिणाम बदलती हैं।

परिचय

कक्षा 10 के पाठ्यक्रम में व्याकरणिक शुद्ध ता और तार्किक समझ पर विशेष बल दिया जाता है। 'पदबंध' और 'समास' ऐसे विषय हैं जहाँ छात्र अक्सर भाषाई सूक्ष्मताओं के कारण भ्रमित होते हैं। यह शोध पत्र दर्शाता है कि कैसे विभेदित शिक्षण (Differentiated Instruction) इन जटिलताओं को सरल बना सकता है।

शोध का उद्देश्य

1. हिंदी व्याकरण (पदबंध और समास) को सरल और सुलभ बनाना।
2. विशेष आवश्यकता वाले छात्रों (CWSN) को मुख्यधारा की कक्षा में सक्रिय करना।
3. विभिन्न सीखने की शैलियों (Visual] Auditory] Kinesthetic) के अनुसार शिक्षण सामग्री तैयार करना।

कार्यप्रणाली

इस अध्ययन के लिए 'एक्शन रिसर्च' (Action Research) पद्धति अपनाई गई।

1. प्रतिदर्श (Sample): कक्षा 10 के 45 छात्र।

2. उपकरणः पूर्व–परीक्षण (Pre&test), बहु–संवेदी शिक्षण सामग्री (डनसजप–ेमदेवतल पके), और पश्चात–परीक्षण (Post&test) ।

3. शिक्षण तकनीकः टियरड असाइनमेंट्स (Tiered Assignments) और पीयर ट्यूटरिंग।

कक्षा अनुभव एवं रणनीतियाँ Strategies)

पदबंधः विजुअल मैपिंग तकनीक

पदबंध की पहचान के लिए 'पिरामिड संरचना का उपयोग किया गया। छात्रों को सिखाया गया कि कैसे एक 'शब्द' विकसित होकर 'पद' और फिर 'पदबंध' बनता है।

शिक्षण अनुभवः छात्रों को रंगीन स्ट्रिप्स दी गईं। संज्ञा पदबंध के लिए लाल और विशेषण के लिए पीली। जब छात्रों ने ''बरगद की घनी (पीली) छाँह (लाल)'' जैसे उदाहरण खुद जोड़कर देखे, तो उनकी त्रुटि दर में भारी कमी आई।

समासः विग्रह और वर्गीकरण

समास के छह भेदों को समझाने के लिए एक 'डिसिजन ट्री' (क्मबपेपवद ज्तमम) मॉडल का उपयोग किया गया।

शिक्षण अनुभवः छात्रों को 'समास चक्र' ैउें ैममस) बनाने को दिया गया। चक्र को घुमाने पर सामासिक पद' आता और छात्र को उसका 'विग्रह' बताना होता। इसने खेल–खेल में 'अव्ययीभाव' और 'तत्पुरुष' के अंतर को स्पष्ट कर दिया।

डेटा विश्लेषण

पहला ग्राफः यह दर्शाता है कि जब हमने 'पदबंध' और 'समास' जैसे व्याकरणिक विषयों को पारंपरिक लेक्चर के बजाय गतिविधियों के माध्यम से पढ़ाया, तो महत्वपूर्ण बदलाव आएः

1. औसत स्कोर पारंपरिक विधि में कक्षा का औसत स्कोर 62ः था, जो विभेदित शिक्षण के बाद बढ़कर 78ः हो गया।

2. कार्य पूर्णता (Completion Rate): 70ः से बढ़कर 95ः छात्र समय पर अपना कार्य पूरा करने लगे, क्योंकि कार्य उनकी रुचि और क्षमता के अनुसार (Tiered Assignment) दिया गया था।

   दूसरा ग्राफ (Line Graph) यह दर्शाता है कि विभिन्न प्रकार के शिक्षार्थियों की भागीदारी में कितना अंतर आयाः

3. धीमे सीखने वाले (Slow Learners): पारंपरिक विधि में इनकी भागीदारी केवल 30ः थी, जो विभेदित शिक्षण (जैसेः विजुअल कार्डस और ग्रुप वर्क) के बाद 75ः तक पहुँच गई।

   CWSN (विशेष आवश्यकता वाले छात्र): सबसे बड़ा सुधार यहाँ देखा गया। समावेशी तकनीकों (जैसेः ऑडियो नोट्स और सहयोगी शिक्षण) के उपयोग से उनकी भागीदारी 15ः से बढ़कर 85ः हो गई।

डेटा से प्राप्त मुख्य निष्कर्ष

1. समता बनाम समानताः डेटा स्पष्ट करता है कि सबको एक जैसा पढ़ाने से पिछड़ने वाले छात्र और पीछे रह जाते हैं। लेकिन जब हम छात्रों की जरूरत के अनुसार संसाधन देते हैं, तो सीखने का अंतर कम हो जाता है।

2. उच्च उपलब्धि हासिल करने वालों का विकासः अक्सर यह माना जाता है कि समावेशी शिक्षा से 'ळपजिमक' बच्चों की गति धीमी हो जाती है। लेकिन डेटा दिखाता है कि उनकी भागीदारी 90% से बढ़कर 95% हुई क्योंकि उन्हें उनकी क्षमता के अनुसार 'चुनौतीपूर्ण' प्रोजेक्ट्स दिए गए।

3. कक्षा का माहौलः भागीदारी बढ़ने से कक्षा में 'अनुशासनहीनता' के मामलों में कमी आई, क्योंकि छात्र अपनी पसंद की गतिविधियों में

व्यस्त थे।

इस शोध पत्र के माध्यम से यह सिद्ध होता है कि समावेशी और विभेदित शिक्षण केवल एक शैक्षिक सिद्धांत नहीं है, बल्कि आधुनिक समय की अनिवार्य आवश्यकता है।

1. व्याकरण की सुगमता: 'पदबंध' और 'समास' जैसे कठिन विषयों को जब दृश्य और क्रियात्मक रूप दिया जाता है, तो वे अधिक बोधगम्य हो जाते हैं।
2. समता का समावेश: यह पद्धति यह सुनिश्चित करती है कि 'धीमे सीखने वाला' छात्र पीछे न छूटे और 'प्रतिभाशाली छात्र को उसकी क्षमता के अनुसार चुनौती मिले।
3. शिक्षकों के लिए संदेश: यद्यपि इस विधि में तैयारी हेतु अधिक समय की आवश्यकता होती है, परंतु इसके दीर्घकालिक परिणाम छात्रों के शैक्षणिक और सामाजिक विकास के रूप में बहुत सुखद हैं।

संदर्भ सूची

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2. NCERT (2005): राष्ट्रीय पाठ्यचर्या की रूपरेखा (NCF) 2005, नई दिल्ली।
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5. गार्नर, एच. (1983): Frames of Mind% The Theory of Multiple Intelligences, बेसिक बुक्स (बहु–प्रतिभा सिद्धांत के लिए)।
6. पाठ्यपुस्तक (कक्षा 10): स्पर्श (भाग–2) और संचयन (भाग–2), NCERT- नई दिल्ली। शोध पत्र और लेख (श्रवनतदंसे – ।तजपबसमे):
7. UNESCO (2020): Global Education Monitoring Report% Inclusion and Education & All means All.
8. हिंदी व्याकरण सुधा: पदबंध और समास के आधुनिक शिक्षण आयाम, शैक्षिक अनुसंधान जर्नल।

निष्कर्ष: आधुनिक शिक्षा का भविष्य

यह डेटा–संचालित अनुभव सिद्ध करता है कि समावेशी और विभेदित शिक्षण केवल एक सिद्धांत नहीं, बल्कि एक व्यावहारिक समाधान है। विशेष रूप से कक्षा 10 जैसे तनावपूर्ण वर्ष में, यह पद्धति हर छात्र को सफलता का अवसर प्रदान करती है. चाहे उसकी प्रारंभिक स्थिति कुछ भी हो।

Kaavya Khandelwal

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Pedagogical Transformation under NEP 2020

Mrs. Monika Verma (PGT English)
Guru Tegh Bahadur 3rd Centenary Public School, New Delhi

The National Education Policy 2020 has ushered in a new era for Indian education by emphasizing holistic development, flexibility, equity, and relevance to real life. Schools are no longer expected to merely transmit information but to nurture capable, curious, ethical, and emotionally balanced learners who can thrive in a rapidly changing world. Within this vision, classrooms become dynamic spaces where students actively construct knowledge, collaborate with peers, and connect learning with lived experience. This article presents how innovative and impactful pedagogical practices, classroom strategies aligned with NEP 2020, experiential and inquiry-based learning, inclusive and differentiated teaching, assessment reforms, meaningful integration of technology and artificial intelligence, and social-emotional learning together create powerful and future-ready classrooms.

Innovative and impactful pedagogical practices are central to transforming education. Innovation in teaching does not only mean using new tools but also rethinking how learning happens. Teachers are encouraged to move beyond lecture-based instruction to adopt project-based learning, collaborative group work, storytelling, debates, simulations, and real world problem solving. Such approaches make learning joyful and relevant. When students design a model to explain a scientific concept, conduct a community survey for social science, or write creative reflections in language classes, they engage deeply with the content. Innovative pedagogy also values student voice, allowing learners to ask questions, propose ideas, and take ownership of their learning process.

Classroom strategies aligned with NEP 2020 support competency-based and multidisciplinary learning. Instead of teaching subjects in isolation, teachers can design integrated lessons that connect different areas of knowledge. For example, a theme like sustainable development can bring together environmental science, mathematics, economics, and language. Students might analyze data on pollution, write persuasive essays, create posters, and present solutions. Such strategies help learners see the relevance of what they study. Flexibility in choosing topics, learning pathways, and presentation formats also respects diverse interests and abilities, making classrooms more learner-centered.

Experiential, inquiry-based, and interdisciplinary learning further deepen understanding. Experiential learning allows students to learn through doing, reflecting, and

applying. Inquiry- based learning begins with questions and curiosity rather than memorization of answers. When students investigate how water is conserved in their community, interview local residents, or conduct simple experiments, they develop critical thinking and research skills. Interdisciplinary learning connects concepts across subjects, helping students realize that knowledge is interconnected. This approach prepares learners to solve complex real life problems that cannot be addressed from a single subject perspective.

Inclusive and differentiated teaching practices ensure that every learner has an equal opportunity to succeed. Classrooms are diverse, with students differing in abilities, background, language, and learning style. Differentiation means adjusting content, process, and assessment to meet these varied needs. Some students may require visual aids, others may need extra time, and some may need advanced challenges. Flexible grouping, peer tutoring, assistive technologies, and scaffolded instruction allow all learners to participate meaningfully. An inclusive classroom builds empathy, respect, and confidence, creating a supportive environment where each child feels valued.

Assessment reforms and feedback for learning are key features of NEP 2020. Assessment is no longer only about ranking students through examinations but about supporting their growth. Formative assessments such as quizzes, portfolios, presentations, and reflective journals provide ongoing information about student progress. Constructive feedback helps learners understand what they are doing well and how they can improve. Self-assessment and peer assessment further encourage responsibility and reflection. When assessment is used as a tool for learning, it reduces stress and promotes a growth mindset.

Meaningful integration of technology and artificial intelligence enhances teaching and learning when used thoughtfully. Digital platforms enable blended and flipped classrooms, where students can access lessons at their own pace and use class time for discussion and collaboration. AI- based tools can offer personalized practice, adaptive assessments, and instant feedback. Virtual simulations make abstract concepts easier to understand, while online resources expand access to knowledge. However, technology must be used ethically and inclusively, ensuring that it supports, rather than replaces, the human connection between teacher and student.

Social-emotional learning, values, and life skills education are essential for holistic development. Students need to understand their emotions, build healthy relationships, and make responsible decisions. Activities such as mindfulness, group discussions, role plays, and community service help develop empathy, self-awareness, and resilience. Values like honesty, respect, and responsibility can be integrated across subjects through stories, examples, and daily interactions. Life skills such as communication, collaboration, and problem-solving prepare students for future challenges beyond the classroom.

Together, these approaches create classrooms that are engaging, equitable, and aligned with the vision of NEP 2020. Teachers act as facilitators and mentors, guiding students to explore ideas, reflect on their learning, and grow as individuals. Schools that adopt innovative pedagogy, inclusive practices, thoughtful assessment, and responsible use of technology can truly transform education. Such classrooms do not only prepare students for examinations but empower them to become confident, compassionate, and capable citizens who can contribute positively to society.

Practical classroom case studies in Indian schools demonstrate how these ideas work in reality. In a primary school, a teacher teaching about plants can create a small garden where children plant seeds, measure growth, and write observations. This single activity integrates science, mathematics, and language while encouraging care for nature. In a middle school, students studying local history can interview elders, record stories, and create digital presentations, combining inquiry, technology, and social-emotional learning. In secondary classes, physics teachers can use virtual labs to allow students to experiment safely and repeatedly, building confidence and conceptual clarity.

Teacher professional development is equally important for successful implementation. Educators need continuous training in innovative pedagogy, assessment literacy, and digital tools. Collaborative planning among teachers allows the sharing of best practices and interdisciplinary projects. School leaders must support a culture of experimentation where teachers feel encouraged to try new methods and reflect on outcomes. When teachers themselves are learners, classrooms become more vibrant and responsive.

Parents and the community also play a vital role. When schools involve families in projects, exhibitions, and service learning, education becomes more meaningful and connected to real-life. Community partnerships can provide authentic learning opportunities, such as visits to local industries, environmental organizations, or cultural centers. These experiences enrich the curriculum and show students how knowledge is applied outside the school.

Looking ahead, NEP 2020 offers a powerful framework for preparing young people for an uncertain future. Rapid technological change, environmental challenges, and social complexity require learners who can think critically, adapt quickly, and act ethically. By embedding inquiry, collaboration, and values in everyday teaching, schools can nurture these qualities. Students who experience inclusive, engaging, and technology-supported classrooms are more likely to become lifelong learners.

In conclusion, transforming classroom practices in the light of NEP 2020 requires commitment, creativity, and collaboration. Innovative pedagogy, aligned strategies, experiential learning, inclusivity, thoughtful assessment, and meaningful use of technology together create a holistic educational experience. When social-emotional learning and life skills

are integrated with academics, education truly becomes a tool for personal and societal transformation. The success of this vision ultimately rests with teachers who inspire, guide, and empower every learner to discover their potential and contribute to a better future.

To sustain these reforms, schools should develop clear implementation plans that align curriculum, pedagogy, and assessment with national goals. Monitoring progress through reflective practices and student feedback helps ensure continuous improvement. Equity must remain central so that rural, urban, and marginalized learners all benefit equally from new approaches. Investment in infrastructure, connectivity, and teacher support will strengthen the system. When stakeholders work together with a shared vision, NEP 2020 can truly transform education into a powerful force for national development and individual fulfillment for generations to come.

Ultimately, the purpose of education is to help young people understand themselves and the world around them. By encouraging curiosity, compassion, and creativity, schools can nurture balanced individuals who respect diversity and work for the common good. Classroom environments that are safe, inclusive, and stimulating motivate students to take risks and express ideas freely. When learners feel supported, they are more willing to explore complex issues, collaborate with peers, and reflect on their experiences. This culture of trust and engagement is the foundation of meaningful learning and aligns perfectly with the aspirations of NEP 2020 for a vibrant and progressive nation.

Therefore, ongoing dialogue among educators, policymakers, and communities is essential to refine practices and share successes. Conferences, action research, and professional learning networks can spread innovation and inspire continuous growth. By celebrating effective teaching and student achievement, the system builds momentum for change. With dedication and collaboration, the goals of NEP 2020 can be realized in every classroom, ensuring that education remains relevant, humane, and empowering for all learners across the country.

This collective effort will strengthen national unity and prepare young citizens to contribute wisely and responsibly in a global society while honoring Indian values, culture, and democratic ideals that guide the nation toward sustainable and inclusive progress. Such shared commitment ensures quality education for every child in every region.

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Transforming Classrooms Through Experience, Expression, and Engagement

Monika Sindhwani (PGT Physics)
Bal Bharati Public School, Rohini, Sector- 14, Delhi

Abstract

Classroom innovation emerges not from novelty alone but from reflective practice rooted in everyday teaching experiences. This paper narrates my journey as a science educator in rethinking pedagogical practices to make learning meaningful, inclusive, and engaging. By integrating experiential learning, storytelling, visual and performing arts, technology-supported inquiry, and differentiated assessment, science instruction was transformed from content delivery to knowledge construction. Anchored in authentic classroom practice and aligned with the principles of NEP 2020, these strategies foreground learner agency, creativity, and conceptual understanding.

Introduction

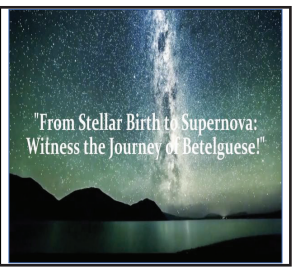
Over the years, I have observed that students often approach science with hesitation. Despite its relevance to daily life, the subject is frequently perceived as abstract and demanding. This disconnect prompted me to reflect deeply on my teaching practices. I began to question whether the difficulty lay in the concepts themselves or in the manner in which they were presented.

The National Education Policy 2020 advocates experiential, learner-centric, and multidisciplinary education. Its emphasis on critical thinking, creativity, and real-life application resonated strongly with my classroom experiences. This paper is a reflective account of how reimagining pedagogy— rather than merely revising content—can revitalise classrooms and rekindle student curiosity.

Rethinking the Classroom Approach

Traditional instruction often places the teacher at the centre and students at the receiving end. While this approach ensures syllabus completion, it leaves limited room for exploration or student voice. In my classroom, I noticed that students could reproduce definitions but struggled to explain concepts in their own words or apply them beyond examinations. This realisation led me to consciously redesign my classroom environment—one where questioning was encouraged, mistakes were treated as learning opportunities, and understanding mattered more than memorisation. My role gradually shifted from instructor to facilitator, guiding learners as they constructed meaning through experience and reflection.

Todeepen engagement,studentswere encouragedtocreateaudionarratives(Podcasts) explainingscientificphenomena.Theseactivities required research, scripting, collaboration, and articulation of ideas in their own words. As students recorded and listened to their own voices,theirconfidencegrewvisibly.This pedagogical practice validated multiple skills beyondacademicknowledge—communication, creativity,teamwork,anddigitalliteracy.Students



Learning Through Experience and Inquiry

A key pedagogical shift involved prioritising experiential learning. Lessons were often initiated with observations, discussions, or exploratory activities instead of direct explanations. Students were encouraged to predict outcomes, test ideas, and articulate reasoning. Inquiry-based questioning became central to classroom discourse. Simple prompts such as "What do you notice?" or "Why do you think this happened?" invited students to think deeply and engage actively. Over time, learners grew more confident in expressing ideas and defending their reasoning.

Using Stories to Teach Science

One of the most effective pedagogical tools in my classroom turned out to be storytelling. Scientific ideas introduced through narratives captured attention instantly. When abstract concepts were embedded in stories, students related to them emotionally and cognitively.

Animation-based storytelling (visual attached shows a clip of a cartoon movie created by studentsonthetopicfuse)furtherstrengthened this connection. Concepts that earlier required lengthy explanations became intuitive through visual narratives. Students frequently recalled

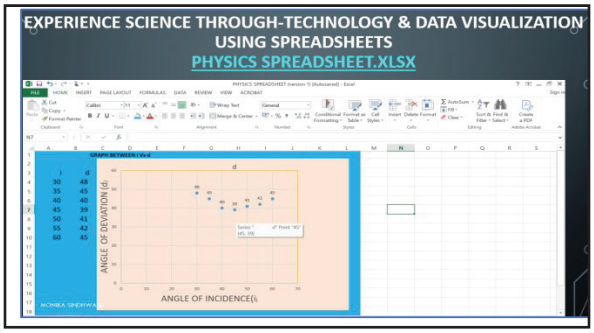
thesestoriesduringdiscussions,indicatingthat learninganchoredinemotiontendstoendure.

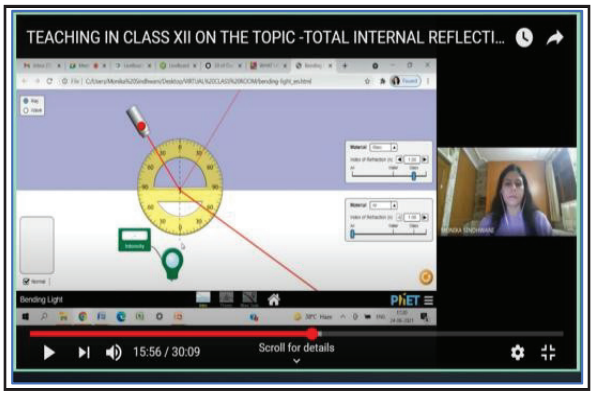
Student Voice Through Audio Narratives

Technology as a Learning Partner

Technology was integrated thoughtfully to support understanding rather than replace teaching.

Interactive simulations enabled students to visualise processes that are otherwise difficult to observe directly. By adjusting variables and observing outcomes, learners engaged in experimentation and hypothesis testing.





Digital tools (like spreadsheets) were also used for data handling and graphical analysis, allowing students to interpret results independently. The flipped classroom approach complemented this strategy by encouraging preparation outside class and deeper engagement during classroom interactions.

When Science Met Art-Visual Expression and Scientific Thinking

Introducingvisualartsintosciencelearningwas initially experimental, but the outcomes were

transformative. Art-based activities allowed students to explore scientific ideas through observationandcreativity.Asstudentsworked with colours and patterns, discussions about scientificprinciplesemergedorganically.These experiences demonstrated that creativity and

scientificthinkingarenotseparatedomainsbut complementary processes.

Learning Through Movement

Performing arts offered another powerful pedagogical avenue. Concepts related to motion, balance, and waves were explored through physical movement. By embodying these ideas, students experienced science rather than merely studying it. Such kinesthetic learning proved particularly effective for students who struggled with conventional instructional methods.

Collaborative Role-Play in the Classroom

Role-play activities brought energy and clarity to complex topics. When students enacted scientific processes by assuming different roles, classroom discussions became animated and meaningful.

These collaborative experiences fostered peer learning, communication skills, and conceptual understanding. Learning shifted from being an individual task to a shared intellectual journey.

Honouring Learner Diversity Through Differentiation

Every classroom is a mosaic of learning styles, interests, and abilities. Recognising this diversity, I adopted differentiated instructional and assessment strategies using Choice Boards. Students were given choices in how they demonstrated understanding—through visuals, explanations, models, or digital artefacts. This flexibility reduced anxiety and allowed learners to engage with content on their own terms. Assessment became a tool for growth rather than judgement.

Connecting Learning to Everyday Life

Relevance plays a crucial role in sustaining learner interest. Classroom discussions frequently drew connections between scientific concepts and everyday experiences. Students were encouraged to observe, question, and experiment beyond the classroom, strengthening the bridge between theory and application.

Teacher Reflection and Growth

Innovation in pedagogy demands reflection, adaptability, and patience. Challenges related to time management, technology, and learner readiness were addressed through continuous reflection and adjustment. These experiences contributed significantly to my professional growth as an educator.

Conclusion

Innovative and impactful pedagogical practices are not defined by complexity but by intention. When classrooms prioritise experience, expression, and engagement, learning becomes accessible and

meaningful. This journey reaffirms that authentic innovation begins with reflective teaching and a willingness to evolve.

The enduring question for educators remains:

How can our daily classroom practices inspire curiosity, confidence, and a lifelong love for learning?

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Nurturing Learners, Transforming Classrooms: NEP 2020 in Practice

Shahar Banu (Dean Academics & Global Coordinator)
Sunbeam School Ballia

Introduction

Education in the 21st century transcends the mere transmission of information from teacher to learner. It is a transformative process that nurtures intellectual ability, emotional intelligence, ethical values, and lifelong learning skills. In an era marked by rapid technological advancement, globalization, and evolving socio-economic demands, pedagogical practices must respond dynamically to the needs of learners and society. **Schools today are not only spaces for academic instruction but also environments where future citizens are shaped.**

The National Education Policy (NEP) 2020 provides a visionary framework for transforming education in India. It emphasizes holistic development, learner-centered pedagogy, competency-based assessment, inclusivity, and the integration of technology. At the heart of this transformation lies **Shiksha Samvaad—the dialogue of education—where teaching and learning occur through meaningful interaction, reflection, inquiry, and collaboration.**

This paper explores pedagogical best practices that align with the principles of NEP 2020 and demonstrates how these practices are implemented effectively in classrooms. It highlights innovative teaching strategies, experiential and inquiry-based learning, inclusive and differentiated instruction, assessment reforms, meaningful integration of technology and artificial intelligence, and the integration of social-emotional learning and life skills to create a holistic and engaging learning ecosystem.

INNOVATIVE AND IMPACTFUL PEDAGOGICAL PRACTICES

Innovative pedagogy redefines the role of the teacher from an information provider to a facilitator of learning. It encourages active engagement, critical thinking, creativity, and collaboration among learners.

Project-Based Learning (PBL) in Classrooms

Project-Based Learning is widely adopted to help students apply theoretical knowledge to real-life contexts. In classrooms, teachers introduce interdisciplinary themes such as environmental conservation, local history, health and nutrition, or sustainable development. Students work in groups to research, collect data, conduct surveys, prepare models, create reports, and present solutions.

For example, while studying water conservation,

students investigate local water usage patterns, interact with community members, prepare awareness campaigns, and reflect on sustainable practices. Teachers guide students through checkpoints, provide feedback, and encourage reflection, ensuring that learning remains structured and purposeful.

Flipped Classroom Model

In the flipped classroom approach, teachers provide digital content such as videos, presentations, or reading material before class. This allows classroom time to be utilized for discussions, problem-solving, case studies, and collaborative activities. Teachers address misconceptions, encourage peer learning, and promote deeper understanding. This approach supports differentiated learning, as students can revisit content at their own pace, while classroom interactions focus on higher-order thinking skills.

Collaborative Inquiry Circles

Inquiry circles foster collaborative learning by engaging students in group discussions around key questions or themes. Each student assumes a role—researcher, presenter, note-taker, or questioner. Teachers facilitate dialogue, encourage evidence-based reasoning, and promote respectful listening. Such practices strengthen communication skills, teamwork, and analytical thinking while creating an inclusive learning environment.

CLASSROOM STRATEGIES ALIGNED WITH NEP 2020

NEP 2020 advocates a shift from content-heavy instruction to competency-based, joyful, and flexible learning experiences.

Holistic and Integrated Curriculum

Teachers design lessons that connect concepts across subjects. For instance, a unit on sustainability integrates science concepts (ecosystems), social science perspectives (human impact), language skills (essay writing), mathematics (data analysis), and art (poster creation). This interdisciplinary approach helps students see learning as interconnected rather than fragmented.

Active Learning Practices

Classrooms regularly employ strategies such as think–pair–share, brainstorming sessions, debates, role plays, storytelling, simulations, and quizzes. These methods promote student participation, expression of ideas, and deeper conceptual clarity. Teachers use open-ended questions to encourage critical thinking and curiosity, transforming classrooms into interactive learning spaces.

Personalised and Flexible Learning

To cater to diverse learning needs, teachers provide choice-based activities and learning menus. Students select tasks based on their interests and readiness levels. Advanced learners engage in enrichment activities, while others receive scaffolded support. This approach respects learner autonomy and encourages ownership of learning.

Collaborative Classroom Culture

Seating arrangements, group tasks, and peer tutoring are designed to promote collaboration. Teachers rotate group compositions to ensure

inclusivity and balanced participation, helping students develop social and interpersonal skills.

EXPERIENTIAL, INQUIRY-BASED, AND INTERDISCIPLINARY LEARNING

Experiential Learning Practices

Experiential learning bridges the gap between classroom instruction and real-life experiences. Teachers organize field visits to historical sites, ecosystems, industries, or community institutions. Students observe, record findings, and reflect through journals and discussions. Hands-on activities, laboratory experiments, model-making, and maker spaces allow learners to explore concepts through trial, error, and discovery.

Inquiry-Based Learning in Practice

Inquiry-based learning encourages students to ask questions, investigate phenomena, and draw conclusions. Teachers begin lessons with thought-provoking questions and guide learners through exploration and analysis. Students maintain inquiry notebooks where they document questions, hypotheses, observations, and reflections.

Interdisciplinary Learning Approaches

Themes such as health, heritage, innovation, and environment are explored across subjects. For example, a unit on food and nutrition includes biology (nutrients), mathematics (calorie calculations), social science (food security), and language (recipe writing and reflection). Such integration makes learning relevant, meaningful, and contextual.

INCLUSIVE AND DIFFERENTIATED TEACHING PRACTICES

Inclusive education ensures that every learner feels valued and supported. Inclusive education attempts to provide equal learning opportunities for all students, necessitating teachers to address the diverse needs of their students. Differentiated instruction (DI) emerges as a viable solution by adapting teaching methods to individual learning styles and abilities.

Inclusive Classroom Practices

Teachers adopt Universal Design for Learning (UDL) principles by presenting content in multiple formats—visuals, audio, hands-on activities, and digital resources. Students demonstrate learning through varied modes such as presentations, role plays, artwork, or written assignments. Culturally responsive pedagogy ensures that learning materials reflect diverse backgrounds, fostering a sense of belonging among learners.

Language and Cultural Support:

Teachers encourage the use of home language for concept clarity and gradually scaffold academic language. Classroom examples reflect diverse cultures and lived experiences.

Differentiated Instruction

Teachers design tiered assignments at varying levels of complexity to address diverse readiness levels. Learning stations provide multiple pathways for exploring concepts, while flexible grouping allows targeted instruction and peer learning.

For Example- Tiered Worksheets: Tasks are

designed at different levels of complexity.

Learning Stations: Students rotate through activity corners—reading, hands-on tasks, digital learning, and discussion.

Flexible Grouping: Groups are formed based on learning needs, interests, or mixed abilities.

These practices promote equity while nurturing individual strengths.

ASSESSMENT REFORMS AND FEEDBACK FOR LEARNING

Assessment is reimagined as a tool for learning rather than mere evaluation. Assessment is used as a tool to support learning rather than merely measure it.

The various Assessment Practices Used in Classrooms are regular quizzes, exit tickets, reflections, and observation-based assessments.

Students maintain portfolios containing projects, worksheets, and reflections.

Rubrics are shared in advance so learners understand expectations.

FEEDBACK AND REFLECTION

- Descriptive feedback guides improvement and encourages self-reflection. Students participate in peer assessment and self-evaluation, fostering responsibility and metacognitive awareness.
- Performance-based assessments such as presentations, exhibitions, debates, and projects assess application and higher-order thinking skills.

MEANINGFUL INTEGRATION OF TECHNOLOGY AND AI

Technology enhances accessibility, engagement, and personalization when used purposefully.

- ### Classroom Use of Digital Tools

Smart boards and digital presentations are used to explain complex concepts visually.

Online quizzes, simulations, and virtual labs support concept clarity.

Collaborative tools allow students to work together on shared documents and presentations.

- ### Role of Artificial Intelligence

AI-powered tools provide adaptive learning experiences and instant feedback. Teachers use data analytics to identify learning gaps and design targeted interventions.

AI tools offer instant feedback on writing and problem solving.

Technology empowers both teachers and learners while maintaining the human essence of education.

SOCIAL EMOTIONAL LEARNING

Social Emotional Learning in the classroom helps students understand and manage emotions, build positive relationships, and make responsible decisions. Through discussions, group activities, reflection, and empathy-based practices, learners develop confidence, resilience, collaboration skills, and emotional well-being, creating a safe, supportive, and inclusive learning environment.

- **SEL in Classrooms**

Morning circles, mindfulness activities, and reflection sessions help students build self-awareness and empathy. Group projects promote cooperation, communication, and conflict resolution.

- **Values and Life Skills Education**

Teachers integrate values such as respect, honesty, and responsibility across subjects. Life skills such as decision-making, financial literacy, digital citizenship, and time management are embedded through real-life scenarios and discussions.

Conclusion

Pedagogical excellence in the 21st century demands innovation, inclusivity, and intentional classroom practice. Shiksha Samvaad embodies a dynamic dialogue where teachers facilitate, learners engage, and education becomes transformative. By adopting NEP 2020-aligned pedagogical practices—experiential learning, inquiry-based teaching, inclusive strategies, formative assessment, technology integration, and social-emotional learning—schools create environments where every learner thrives.

Such an approach not only enhances academic outcomes but also nurtures resilient, ethical, and compassionate individuals equipped to navigate an ever-changing world. Through shared commitment and reflective practice, educators can bring the vision of NEP 2020 to life and ensure that learning remains joyful, meaningful, and empowering.

Jahnavi Mishra

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From Equations to Experience in the Chemistry Classroom

Kiran Sarthi (TGT Science)
MRG School, Rohini

"Education is not preparation for life; education is life itself."
- John Dewey

For many students, Chemistry begins as a subject full of equations, symbols, and reactions and for some, it sadly ends there too. Somewhere between balancing equations and memorizing trends of the periodic table, the joy of discovery often gets lost. Yet, Chemistry is everywhere: in the aroma of morning tea, the fizz in a soft drink, the medicines that heal us, the fuels that move us, and even the rust that quietly eats away iron gates.

As a Chemistry teacher, I often reflect on a simple but powerful question: What if Chemistry were taught not as a subject to be feared, but as a story to be lived? This thought lies at the heart of my classroom practice and resonates deeply with the National Conference theme "VIDYA FOR LIFE: Schools as Centres of Skills and Sensibility."

In the spirit of Shiksha Samvaad, which foregrounds teachers' voices and classroom realities, this paper shares how storytelling and real-life connections can transform Chemistry classrooms into joyful spaces that nurture skills, curiosity, values, and sensibility-true to the vision of the National Education Policy (NEP) 2020.

Chemistry, Storytelling, and the Meaning of Vidya

In the Indian knowledge tradition, Vidya is not merely information-it is wisdom that shapes character and guides life. Education loses its essence when reduced to rote memorization and examination scores alone. NEP 2020 strongly reiterates this idea by advocating holistic, experiential, and joyful learning.

"Education must aim at producing engaged, productive, and contributing citizens for building an equitable, inclusive, and plural society."
- National Education Policy 2020

Storytelling helps restore this purpose. Every scientific concept has a story of curiosity, struggle, failure, discovery, and impact. When Chemistry is taught through stories, it becomes human, relatable, and meaningful, helping students connect learning with life.

Why Storytelling Works in a Chemistry Classroom

Students may forget formulas, but they rarely forget a good story.

When I introduce atomic structure, I do not

begin with orbitals and quantum numbers. I begin with the story of human curiosity-from early philosophers imagining indivisible matter to Rutherford's gold foil experiment that shocked the scientific world. Suddenly, atoms are no longer abstract entities; they are characters in a centuries-long quest to understand the invisible.

"Curiosity is the engine of achievement." - Sir Ken Robinson

Storytelling in Chemistry:

- Sparks curiosity and imagination
- Improves conceptual clarity
- Encourages questioning and discussion
- Builds communication and critical thinking skills

This approach strongly aligns with NEP 2020's emphasis on inquiry-based and learner-centred pedagogy, where students actively construct knowledge rather than passively receive it.

Connecting Chemistry to Everyday Life: Learning That Stays

One of the most rewarding moments in teaching is when a student suddenly says, "Oh! So this is why this happens!"

Chemistry offers endless opportunities for such moments:

- Acids and bases through food, digestion, antacids, and tooth decay
- Oxidation-reduction reactions through rusting, respiration, and batteries
- Polymers through clothes, packaging, plastics, and environmental issues
- Thermochemistry through cooking, fuels, and energy efficiency

By linking concepts to daily life, learning becomes relevant and empowering. Students begin to see Chemistry not as a subject confined to textbooks, but as a life skill, exactly what Vidya for Life stands for.

"The goal of learning is not knowing the right answers, but learning how to ask the right questions." -Peter Drucker

Experiential and Inquiry-Based Learning: NEP 2020 in Action

NEP 2020 emphasizes that education must be:

- Experiential
- Contextual
- Multidisciplinary
- Rooted in real-world application

Storytelling naturally supports this vision. A lesson on green chemistry, for example, easily expands into an interdisciplinary discussion involving:

- Science (chemical processes and alternatives)
- Environmental studies (sustainability and pollution)
- Ethics (responsible use of chemicals)
- Social awareness (impact on communities and future generations)

Such discussions encourage learners to think beyond exams and marks, nurturing scientific temper, ethical reasoning, and environmental sensibility.

Inclusive and Differentiated Learning through Stories

Every classroom is diverse, and storytelling embraces that diversity.

- Visual learners imagine chemical processes as scenes
- Auditory learners engage through narration and discussion
- Linguistic learners express understanding through stories
- Slow learners benefit from familiar, real-life contexts

Students are encouraged to:

- Create their own Chemistry stories
- Relate concepts to local and cultural experiences
- Present real-life case studies

This practice reflects NEP 2020's commitment to equity, inclusion, and learner agency, ensuring that every student finds a voice in the learning process.

"Children learn best when they are happy, engaged, and respected." - UNESCO, 2021

Assessment for Learning, Not Fear

Assessment need not be a source of anxiety. In a storytelling-based Chemistry classroom, assessment becomes a tool for reflection and growth.

Some assessment strategies include:

- Short reflective journals on "Chemistry I observed today"
- Explaining reactions through stories instead of definitions
- Case-study analysis and group discussions
- Peer feedback and self-reflection

These methods align with NEP 2020's focus on formative assessment and competency-based evaluation, helping students develop confidence, communication skills, and deeper understanding.

Technology, AI, and Digital Storytelling

Technology enhances storytelling when used meaningfully:

- Animations visualize molecular stories
- Virtual labs simulate experiments safely
- AI tools assist in personalized learning and concept mapping
- Digital storytelling projects foster creativity

At the same time, discussions on ethical use of technology help students develop responsibility.

"Science and technology are great servants, but terrible masters." - Satya Nadella

This balance is crucial for nurturing both skills and sensibility in the digital age.

Teaching Values and Sensibility through Chemistry

Chemistry is deeply connected to societal well-being. Through stories of scientific discoveries and industrial disasters, students learn:

- Responsibility in chemical usage
- Respect for life and the environment
- Ethical decision-making

Topics like pollution, pharmaceutical chemistry, and sustainable materials naturally integrate values education and social-emotional learning.

"The future belongs to those who can combine knowledge with compassion and skill with sensibility."

This is the true essence of Vidya for Life.

Teacher as Storyteller and Lifelong Learner

NEP 2020 recognizes teachers as facilitators and co-learners. Storytelling has transformed my role from a content deliverer to a narrator, guide, and listener. The classroom becomes a space for dialogue, curiosity, and shared discovery- reflecting the spirit of Shiksha Samvaad.

"One child, one teacher, one book, and one pen can change the world."
- Malala Yousafzai

Conclusion: Chemistry Beyond the Classroom

"The purpose of education is to make good human beings with skill and expertise."
- NEP 2020

Teaching Chemistry through storytelling and real-life examples helps students gain not just academic success, but life skills, ethical awareness, and joy in learning. When schools become spaces where curiosity is nurtured and learning connects with life, they truly become centres of skills and sensibility.

That is Vidya for Life- and that is the Chemistry classroom I strive to create every single day.

Raavya

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Play-Based and Inquiry-Driven EVS Learning with AI Support:A NEP-Aligned Classroom Strategy for Grade 2

Ms. Ameesha Shah (Assistant Teacher)
Sunbeam English School, Bhagwanpur

Abstract

Environmental Studies (EVS) in primary education is fundamentally a subject of lived experiences rather than textual memorisation. However, classroom practices often rely heavily on textbooks, limiting students' curiosity, engagement and conceptual understanding. This paper presents a classroom-based pedagogical model implemented in a Grade 2 EVS setting that integrates play-based learning, inquiry-driven questioning, outdoor experiential activities and ethical use of Artificial Intelligence (AI) tools to support teaching and assessment. The approach aligns closely with the National Education Policy (NEP) 2020, emphasising competency-based learning, inclusivity, reduced rote learning and holistic development. Through structured outdoor explorations, classroom simulations, digital extensions and AI-supported formative assessment, students demonstrated improved participation, deeper conceptual clarity, confidence and joy in learning. The findings suggest that blending traditional human-centred teaching with thoughtful technological support can create meaningful, inclusive and sustainable learning environments in early science education.

Introduction

Environmental Studies (EVS) at the primary level is not merely an academic subject; it is a child's first structured interaction with the natural and social world. Concepts such as plants, animals, communication, transport, community and environment cannot be fully understood through definitions alone. Young learners construct knowledge best when they observe, touch, ask questions, experiment and reflect on their experiences.

Despite this, classroom practices often remain textbook-centred, encouraging memorisation rather than understanding. Such approaches frequently result in low retention, reduced curiosity and limited participation, particularly among slow or shy learners.

The National Education Policy (NEP) 2020 strongly advocates for experiential learning, competency-based education, reduction of rote learning, formative assessment and holistic progress tracking. In response to these principles, this paper

proposes and documents a classroom strategy where EVS learning is distributed approximately 50% inside the classroom and 50% outside, combining structured instruction with real-world exploration.

This study presents how blending play-based activities, questioning techniques, outdoor experiences and AI-supported teaching tools can transform EVS classrooms into inclusive, joyful and meaningful learning spaces for Grade 2 students.

Literature Review

Educational research consistently highlights that young children learn most effectively through direct experience and active engagement. Kolb's theory of experiential learning emphasises that knowledge is constructed through concrete experiences followed by reflection and conceptual understanding. Similarly, Dewey advocated learning through real-life interaction rather than passive reception of information.

Studies on play-based learning in early childhood education suggest that structured play improves cognitive development, language skills and social interaction, while also increasing motivation and attention span. Inquiry-based learning models further support the development of scientific thinking by encouraging learners to ask questions, explore their environment and construct explanations.

The National Education Policy (NEP) 2020 strongly recommends experiential, competency-based and interdisciplinary learning approaches, particularly in the foundational and primary stages. It also promotes continuous formative assessment through tools such as the Holistic Progress Card.

Recent literature on artificial intelligence in education indicates that AI can support teachers by enabling differentiated instruction, personalised feedback, and learning analytics when used ethically and under human supervision. However, researchers emphasise that technology should complement, not replace, the teacher's role.

Problem Statement

Several pedagogical challenges were observed in traditional EVS instruction:

- Overdependence on memorisation of factual statements.
- Limited conceptual clarity and short-term retention.
- Passive classroom participation.
- Difficulty addressing mixed-ability learners effectively.
- Assessment focused mainly on written tests rather than real understanding or skills.
- Limited opportunities for learners to explore their environment directly.

Objectives of the Study

The study aimed to:

- Design an experiential and play-based EVS teaching model for Grade 2.
- Integrate inquiry and questioning as central

learning tools.

- Use outdoor learning to support concept formation.
- Employ AI ethically as a supportive instructional and assessment aid.
- Address the needs of mixed-ability learners inclusively.
- Shift learning from rote memorisation to competency-based understanding.
- Align classroom practices with NEP 2020 guidelines.
- Promote life skills, values, and socio-emotional growth.

Pedagogical Framework

The teaching approach is grounded in:

- Experiential Learning Theory – learning through direct experience.
- Inquiry-Based Learning – knowledge constructed through questioning and exploration.
- Constructivist Pedagogy – learners actively build understanding.
- Play-Based Learning – cognitive growth through structured play.
- Formative Assessment Practices – continuous feedback-driven improvement.
- NEP 2020 Principles – holistic, inclusive, skill-oriented education.

Methodology

5.1 Classroom Context

The model was implemented in a Grade 2 EVS classroom consisting of learners with diverse academic abilities, learning styles and socio-emotional needs. Teaching was organised to alternate between classroom instruction and outdoor or activity-based learning.

5.2 Components of the Teaching Model

A. Outdoor Experiential Learning

For topics such as Plants, students were taken to the school garden / an open area. Instead of beginning with definitions, children were given ten minutes to freely explore. They observed leaves, stems, flowers, textures, colours and sizes.

After returning, guided reflection questions were asked:

- What did you touch?
- Which plant felt soft or hard?
- Which one had flowers?
- Which was tall or short?

Through these discussions, students naturally differentiated between herbs, shrubs, flowering and non-flowering plants and leaf structures without memorising textbook sentences. Learning occurred through sensory engagement and self-discovery.

B. Play-Based Classroom Simulations

To teach Means of Communication, a classroom post office was created. Students:

- Wrote letters.
- Prepared envelopes.
- Designed stamps.
- Wrote addresses.
- Took roles as post office staff and postmen.
- Sorted letters according to classroom rows and delivered them.

The classroom became a living model of real

communication systems. Children were not merely learning "what a letter is" but how communication actually functions.

C. Question-Driven Instruction

Each activity concluded with reflective questioning. Daily instruction incorporated:

- Oral conceptual questions.
- Peer discussions.
- Short quizzes.
- "Why" and "How" prompts.

Questions became tools for thinking rather than tools for testing.

D. Digital Extension Activities

Students were introduced to digital communication by composing and sending emails under supervision. This allowed them to compare traditional letters with modern electronic communication, reinforcing EVS concepts while developing digital literacy and responsible technology use.

E. Integration of AI Tools

AI was employed as a teacher-support system, not as a replacement for human interaction. It assisted in:

- Generating differentiated quiz questions.
- Creating worksheets and picture prompts.
- Designing activity suggestions.
- Analysing learning patterns and misconceptions.
- Suggesting remediation strategies.

Ethical discussions were held regarding respectful and safe use of technology, reinforcing values alongside digital skills.

F. Inclusive Learning Strategies

- Slow learners benefited from tactile and visual experiences.
- Fast learners were assigned leadership and advanced tasks.
- Shy students participated comfortably through role play and group activities.
- Peer learning encouraged cooperation and empathy.

G. Assessment Reform and Holistic Progress Tracking

Assessment shifted from isolated testing to continuous evaluation:

- Observation records
- Participation rubrics
- Activity performance
- Oral responses
- Skill indicators

These were aligned with the Holistic Progress Card (HPC) approach recommended in NEP 2020.

6. Data Collection Methods

- Teacher observation journals
- Student responses during activities
- Quiz trends
- Participation charts
- Informal student feedback
- Behavioural changes

Findings and Results

The implementation of this model led to:

- Noticeable increase in classroom engagement.
- Improved understanding of EVS concepts.
- Stronger long-term retention.
- Higher student confidence and curiosity.
- Better participation from slow and shy learners.
- Positive classroom climate.
- Reduced fear of science learning.
- Greater enthusiasm for school activities.

Students began relating lessons to real-life observations, asking deeper questions and displaying genuine excitement for EVS classes.

Limitations

While the proposed classroom strategy demonstrates strong potential for enhancing EVS learning, certain practical constraints should be acknowledged to ensure realistic implementation and scalability across diverse school contexts.

- Requires careful time management to balance experiential activities with curriculum coverage.
- Depends on access to safe and suitable outdoor spaces for field-based learning.
- Necessitates basic AI literacy and technological confidence among teachers for effective integration.
- Involves higher initial preparation and planning effort compared to conventional teaching methods.

Conclusion

- EVS is not meant to be memorised; it is meant to be lived. When children observe plants, act as postmen, ask questions, explore outdoors, and reflect together, learning becomes meaningful and lasting.
- By blending play, inquiry, experiential learning and ethical AI support, teachers can nurture not only knowledgeable students but confident, curious and compassionate young learners. This classroom strategy demonstrates that innovation in education need not be complex or expensive; it simply requires thoughtful design, empathy and belief in children's natural ability to learn through experience.
- The model is scalable, practical and adaptable for primary classrooms across diverse contexts and offers a promising direction for future EVS pedagogy.

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EARLY DIPLOMACY (ED CLUB)

Ms. Preeti Sharma (PGT History & HOD Social Science)
DAV Public School, Pushpanjali Enclave

Rationale :

India has diplomatic relations with 201 countries of the world .The Ministry of External Affairs (MEA) is the government agency responsible for the conduct of foreign relations of India. This innovative project focuses to enhance Early Diplomacy (ED) skills and competencies among school students. Diplomacy can be considered both a skill and a competency depending on the context. It involves specific abilities like – communication, negotiation, conflict resolution and this can be improved with practice. It is also a competency because it represents a broader set of capabilities required for effectively handling sensitive situations and maintaining positive relationships.

This innovative practice aims to develop and implement ED (Early Diplomacy) Club content, activities and worksheets among MIDDLE STAGE school students from class VI to VIII .The project in the first stage was initiated in class VI this session and will be implemented to other classes in the next session.

Background, Justification and Alignment with-

The innovative practice is designed after a thorough reading of NEP-2020 and NCF-2023 .These documents give a lot of freedom to teachers to innovate and experiment. The following extracts are major points of inspiration for the innovative practice-

• The NEP 2020 elaborates on the aim of education- "The aim of education will not only be cognitive development, but also building character and creating holistic and well-rounded individuals equipped with the key 21st century skills. Ultimately, knowledge is a deep-seated treasure and education helps in its manifestation as the perfection which is already within an individual. [NEP 2020, 4.4]

• The innovation helps to- "Develop knowledge, skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen."(NEP-2020)

• The notion of Vasudhaiva Kutumbakam, is promoted by NCF -2023 and also inspires this project.

With the varied and common shared interests to hold strongly within, Indians can aspire to have a free and fair interplay with the rest of world with assurance and confidence.(NCF-2023)

• Competencies listed to be developed among students in NCF-2023 relevant for this innovation are- Communication, empathy, emotional intelligence, conflict resolution and leadership ability; Capacities for Social Engagement(NCF -2023)

• As far as the link of this innovation and subject of Social science is concerned – (NCF-2023) enlists various aims of teaching social science, one relevant for this innovation is - "Social

Science plays an important role in developing in an individual student a comprehensive sense of the human world and its functioning. In an increasingly globalizing and interdependent world, this understanding is critical to help students see how things around them are changing, what the causes of these changes are, and how the change impacts human societies. It also helps them realize the need for interdependence, collaboration, and an appreciation for the diversity of human culture and societies".(NCF- 2023)

Objectives -

• To form an ED (Early Diplomacy) club to promote skills required to foster ED related skills and competencies like - persuasion , negotiation, communication, conflict resolution , discussion ,debates, understanding, empathy , global citizenship etc.

• To create early diplomacy content, worksheets and activities for the Middle stage(in the beginning year for class VI and progress to next classes in upcoming years). India and 201 partner countries will be the main focus.

• To foster art –integrated and inter-disciplinary learning.

• To enhance initiatives for channelizing a mindset of continuous learning and development.

• To sensitize the students to connect the world countries for global welfare causes, providing help during natural or man-made calamities etc.

• To support sustainable development goals by fostering an ethos of healthy foreign relations-promoting responsible resource management, environmental protection, social inclusion etc

•To develop an appreciation for India and the ethos of our nation to foster helpful and useful connections with other countries of the world

• To forge online connections with schools and students from different countries and allow them to practice ED skills.

• To promote appreciation of ICT and AI in promoting international ties and analyze the related impact.

Methodology –

The project in its first phase is specially designed for Middle stage Students of our school from classes (to begin with class VI).

Middle stage students, are in a transitional phase, developing from childhood towards adolescence. Key qualities include shifting towards self-learning, becoming more reflective and confident, and demonstrating a willingness to take on responsibilities. They should be given opportunities so that they are able to think through situations using inquiry, assess information for relevance, and build a deeper understanding of subjects.

Specific qualities which can be promoted at this stage like - Self-directed Learning, Reflective Thinking; Confidence and self-esteem; Responsibility and discipline ; Inquiry-based learning; Critical thinking ; Communication skills; Social and Emotional Growth; Interest Exploration ;Adaptability and Open-mindedness ;Teamwork and Collaboration ,Respect , Empathy etc.

Focus Methodologies for this innovative project -

• Student-Centered Learning: We prioritized student engagement, ownership, and active participation. The selection for the club was choice based.

• Real-World Relevance: We connected students to real-life situations and challenges, making learning more meaningful and gave students freedom to form own views.

• Inquiry-Based Approach: Students were encouraged to ask questions, explore, and discover knowledge independently.

• Interdisciplinary Approach: Project integrated knowledge and skills from various subjects, fostering a holistic understanding.

• Activity based Approach- Students were made part of various activities, like - Model United Nations (Class VI observed the proceedings) ; Cross cultural exchange mainly online student videoconferences

• Teacher as a creator, facilitator and assessor – Project coordinator along with her team created worksheets and presentations (Related to each country with whom India has foreign relations; Other Virtual meeting links of PM and external minster were enlisted and shown ; India's G20 Presidency link were enlisted and shown ; Sample Visa and related documents etc were shown. Ways of communication of embassy officials and diplomats videos were shown; New cuttings related to global news columns were shared and discussed.

• ICT/AI Integration – Promotion ED App for students. As an ongoing project students are planning to develop an app for their club.

Outcomes & Educational Implications–

• The vision and directions of NEP-2020 & NCF - 2023 relevant for the project are being realized.

• ED Club for Middle stage class VI was formed.

• Students understand that we cannot live insulated in today's world, it is important to maintain diplomatic ties with other countries for – National Security ,Economic prosperity , Trade and investment ,access to resources, influence and prestige, global leadership, goodwill ,influence, dealing with climate change ,pandemics, terrorism ,human rights, maintaining law and order globally, management of natural resources like water, public health etc.

• Students navigated diverse perspectives, realize the need to build positive relationships and global citizenship was fostered.

• Student showcased ED skills like - persuasion , negotiation, communication, conflict resolution , discussion ,debates, understanding, empathy etc. during the ED Club periods

• Worksheets and presentations were created and implemented.

• Students understand about India's foreign relations with more than 200 countries.

• Students appreciate the importance of foreign relations, ministry of external affairs, diplomacy, embassy officials etc. and even aspire to join the ministry as future work force.

• Students analyzed strengths and weaknesses of stakeholder countries leading to major global problems like pollution, water crises etc. and debate solutions.

• Art and interdisciplinary integration was promoted through activities, like - Model United Nations (MUN) , Cross cultural exchange mainly online, magazines, special assembly , role play, videos, presentations etc.

• Student ties with other countries were fostered.

• Students discussed the impact of good and bad diplomatic ties on trade and major issues being faced by the world today.

• Students understood the use of ICT and AI in impacting global relation of India with the world. Caution- Foreign relations can be transient and dynamic. Students and teachers need to be thoroughly updated and should form an unbiased view of ongoing scenarios and transforming world order.

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https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

2.NCF – 2023

https://ncf.ncert.gov.in/#/web/home

3.Official website of Ministry of external affairs

https://www.mea.gov.in/foreign-relations.htm

SAMPLE PROOF - 1

LEARNED STUDENTS –ED CLUB

SAMPLE PROOF -2

INDIA – ITALY WORKSHEET

DAV PUBLIC SCHOOL

PUSHPANJALI ENCLAVE

ED CLUB

WORKSHEET TITLE - INDIA –ITALY (SERIES-1)

CLASS - **NAME -** **DATE-**

Q1.RESEARCH AND WRITE A SENTENCE ON THE FOLLOWING ITALIAN BRANDS SOLD IN INDIA -

A.Benetton - _____

B.Tod - 

_____

C.Cavalli - _____

D.Generali Insurance -

E.Food & food processing -

QUIZ Resource -

TEAM ACTIVITY (INDIA TEAM & ITALY TEAM) - TEAM RESOURCE

COMPANY			COMPANY		
Reliance	Reliance Ind	$228 B	UniCredit	UniCredit	$102 B
HDFC Bank	HDFC Bank	$188 B	Intesa Sanpaolo	Intesa Sanpaolo	$100 B
TCS	TCS	$150 B	Enel	Enel	$93 B
airtel	Bharti Airtel	$130 B	Ferrari	Ferrari	$85 B
ICICI Bank	ICICI Bank	$122 B	Generali	Generali	$57 B
SBI	SBI	$82 B	ENI	ENI	$45 B
Infosys	Infosys	$75 B	Leonardo	Leonardo	$35 B
Bajaj Finance	Bajaj Finance	$66 B	Poste Italiane	Poste Italiane	$28 B
HUL	HUL	$66 B	Terna	Terna	$20 B
ITC	ITC	$65 B	Snam	Snam	$19 B

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