NATIONAL EDUCATION POLICY (NEP) 2020

Evaluating Hindi-Medium Pedagogy in Upper-Primary Classrooms of Haridwar: Implementation Status, Instructional Barriers and Educational Outcomes under NEP 2020

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Abstract

The National Education Policy (NEP) 2020 places substantial emphasis on home-language and regional-medium instruction across Indian school curricula. This investigation critically examines the operationalization of Hindi-medium teaching, teacher preparedness, instructional challenges, and student achievement within government upper-primary institutions (Grades 6–8) in Haridwar district, Uttarakhand. Adopting an explanatory sequential mixed-methods design, quantitative data were gathered from 50 educators and 200 learners across 10 sample schools (selected via transparent lottery sampling), supplemented by in-depth semi-structured interviews with 10 senior teachers. Empirical analyses revealed that 65% of survey responses supported the prevailing implementation status of Hindi instruction (Weighted Mean = 2.55). Regarding instructional preparedness, 60% of teachers expressed confidence, whereas 30% voiced uncertainty when delivering technical concepts (Weighted Mean = 2.50). Half of the teaching staff (50%) designated practical pedagogical hurdles as "high" (Weighted Mean = 2.30). Student evaluations (2,000 total responses across 10 items) demonstrated a strong preference and comfort level, with 79% positive endorsement (Weighted Mean = 2.71). Competency testing categorized student learning levels into 35% High, 45% Medium, and 20% Low achievement tiers. Findings suggest that while learner engagement in vernacular setups is remarkably strong, systemic bottlenecks—including specialized vocabulary deficits, lack of quality bilingual material, and inadequate digital resources—hinder full policy realization.

Keywords: Hindi-medium pedagogy; NEP 2020; upper-primary education; teacher competence; vernacular learning outcomes; mixed-methods evaluation; Haridwar district

1 Introduction and contextual background

Instructional language is fundamental to cognitive development, conceptual internalization, and overall educational attainment. Children grasp complex academic ideas most effectively when taught through the linguistic channels of their immediate environment. At the upper-primary tier (Classes 6 to 8), learners shift from basic literacy acquisition to analytical engagement with abstract concepts in STEM and social sciences, making the medium of instruction a vital determinant of comprehension.

In response to India's linguistic diversity, the National Education Policy (NEP 2020) recommended prioritizing the mother tongue or regional language as the primary instructional medium through Grade 5, extending ideally to Grade 8 and beyond (Government of India, 2020). This policy framework is anchored in cognitive research demonstrating that early mastery in familiar languages fosters durable cognitive structures and eases second-language acquisition.

Haridwar district presents a representative socio-cultural setting wherein public school cohorts predominantly originate from semi-urban, rural, and economically vulnerable backgrounds. For these learners, Hindi and local dialects serve as the principal mode of communication. Consequently, evaluating how effectively NEP 2020 mandates translate into classroom realities in Haridwar yields crucial empirical insights for educational practitioners and regional policymakers.

2 Strategic and curriculum framework

NEP 2020 treats multilingualism as an instructional asset rather than a barrier. As corroborated by the National Curriculum Framework for School Education (NCERT, 2023), transitional bridges must link home dialects with standardized Hindi instruction, particularly when introducing technical concepts in mathematics and natural sciences.

Realizing these goals requires synchronized operational pillars:

- **Curricular Textual Support:** Availability of age-appropriate, lucidly written Hindi textbooks aligned with updated competency benchmarks.
- **Professional Development:** Equipping educators with modern pedagogical strategies to decode complex scientific terminology in accessible vernacular forms.
- **Inclusive Multilingual Management:** Nurturing classroom environments that validate local linguistic variations, such as Garhwali and Kumaoni dialects.

3 Review of literature and research gap

A synthesis of regional and international scholarly contributions underscores the strategic role of mother-tongue instruction:

- UNESCO (2025) highlighted that vernacular instruction substantially elevates learning retention and student engagement, though policy success remains contingent on high-quality bilingual learning resources.
- Verma (2023) reported up to a 40% enhancement in conceptual clarity when educators instruct in familiar tongues, while noting acute shortages in standardized technical glossaries (TLM).
- Vogelzang et al. (2025) reported an association between strong regional language foundations and enhanced secondary language competency across 1,272 primary learners.

Identified gap: Previous literature heavily focuses on macro-level policy evaluations or primary-grade literacy. Micro-level empirical investigations examining upper-primary teacher readiness, classroom challenges, and subject-wise learning outcomes within Uttarakhand's specific socio-geographic landscape post-NEP 2020 remain sparse. This study fills this gap.

4 Objectives

The primary aims of this investigation are to:

1. Examine the operational status of Hindi-medium instruction across upper-primary schools in Haridwar district.
2. Assess teacher competency, mental preparedness, and instructional attitudes toward vernacular teaching.
3. Identify practical pedagogical obstacles in delivering scientific and mathematical content.

4. Evaluate student participation, conceptual comprehension, and self-confidence under Hindi instruction.
5. Categorize and analyze student learning achievement profiles.
6. Propose action-oriented policy measures to optimize vernacular educational delivery.

5 Research methodology

5.1 Research design

An explanatory sequential mixed-methods design was implemented. Quantitative survey metrics established empirical patterns, which were subsequently clarified using qualitative thematic insights from teacher interviews.

5.2 Population and sample selection

The target group encompassed educators and students in government upper-primary schools across Haridwar district. A sample of 50 teachers and 200 students across 10 institutions was drawn using stratified random and lottery selection methods. In-depth interviews were conducted with 10 senior teachers. The sampling distribution is summarised in Table 1.

Table 1. Sampling distribution and methodological breakdown.

Sample category	Sample size (*N*)	Selection strategy
Target Institutions	10 Public Schools	Purposive / Stratified Random
Surveyed Teachers	50 Educators	Stratified Random Sampling
Interviewed Teachers	10 Senior Faculty	Purposive Sampling
Student Participants	200 Learners (Grades 6–8)	Random Lottery Selection

5.3 Instrumentation and reliability

Content validity was established via expert review by DIET faculty and educational linguists. Internal consistency was verified through pilot testing (30 students, 10 teachers), yielding Cronbach's alpha values of $\alpha = 0.82$ for the teacher instrument and $\alpha = 0.86$ for the student scale, indicating robust reliability.

5.4 Quantitative analysis

Weighted means were computed on a 3-point Likert scale (Agree = 3, Uncertain = 2, Disagree = 1) using Equation (1), where f is the frequency and w the weight of each response category:

$$\text{Weighted mean} = \frac{\sum fw}{\sum f} \tag{1}$$

6 Data analysis and results

Table 2 presents teacher perceptions of the current Hindi instruction environment.

Table 2. Assessment of the current Hindi instruction environment (teacher perception, N = 100 item-responses).

Response category	Frequency (*f*)	Percentage (%)	Weighted score
Agree (Weight = 3)	65	65	195
Uncertain (Weight = 2)	25	25	50
Disagree (Weight = 1)	10	10	10
Total / weighted mean	100	100	255 (mean = 2.55)

Interpretation: The mean of 2.55 signifies a strong baseline acceptance of Hindi instruction in government upper-primary schools, though 25% uncertainty highlights an ongoing need for institutional reinforcement.

Table 3 summarises educator preparedness for teaching technical content in Hindi.

Table 3. Educator preparedness for vernacular technical instruction (N = 100 item-responses).

Response category	Frequency (*f*)	Percentage (%)	Weighted score
Agree (Weight = 3)	60	60	180
Uncertain (Weight = 2)	30	30	60
Disagree (Weight = 1)	10	10	10
Total / weighted mean	100	100	250 (mean = 2.50)

Interpretation: While 60% feel competent, 30% express vulnerability when navigating complex scientific vocabulary without specialized bilingual glossaries.

The perceived level of classroom instructional challenge is shown in Table 4; half of the teachers rated the challenge as high (weighted mean = 2.30).

Table 4. Perceived level of classroom instructional challenge (N = 50 teachers).

Challenge magnitude	Teachers (*f*)	Percentage (%)	Weighted score
High (Weight = 3)	25	50	75
Medium (Weight = 2)	15	30	30
Low (Weight = 1)	10	20	10
Total / weighted mean	50	100	115 (mean = 2.30)

Learner experience, comprehension and participation are summarised in Table 5; across the 10 items, 79.0% of the 2,000 student responses were positive (weighted mean = 2.71).

Table 5. Learner experience, comprehension and participation (N = 200 students; 2,000 responses).

No.	Survey statement	Agree, *f* (%)	Uncertain, *f* (%)	Disagree, *f* (%)	Mean
1	Clear comprehension of Hindi lessons	150 (75.0%)	30 (15.0%)	20 (10.0%)	2.65
2	Comfort asking questions in Hindi	160 (80.0%)	30 (15.0%)	10 (5.0%)	2.75
3	Ease of verbal self-expression	163 (81.5%)	27 (13.5%)	10 (5.0%)	2.77

No.	Survey statement	Agree, *f* (%)	Uncertain, *f* (%)	Disagree, *f* (%)	Mean
4	Enhanced classroom focus during Hindi delivery	160 (80.0%)	10 (5.0%)	30 (15.0%)	2.65
5	Ease in answering teacher queries	170 (85.0%)	20 (10.0%)	10 (5.0%)	2.80
6	Active participation in learning activities	145 (72.5%)	35 (17.5%)	20 (10.0%)	2.63
7	Hindi aids comprehension of complex subjects	175 (87.5%)	10 (5.0%)	15 (7.5%)	2.80
8	Ability to write clear written responses	155 (77.5%)	25 (12.5%)	20 (10.0%)	2.68
9	Subject confidence boosted by Hindi medium	147 (73.5%)	33 (16.5%)	20 (10.0%)	2.64
10	Overall enjoyment of Hindi instruction	155 (77.5%)	40 (20.0%)	5 (2.5%)	2.75
–	Aggregate	1,580 (79.0%)	260 (13.0%)	160 (8.0%)	2.71

The distribution of student achievement levels is shown in Table 6.

Table 6. Distribution of student achievement levels (N = 200 students).

Achievement level	Score range	Students (*f*)	Percentage (%)
High Level	> 75%	70	35
Medium Level	50% – 75%	90	45
Low Level	< 50%	40	20
Total Cohort	–	200	100

7 Qualitative interview insights

Thematic evaluation of the 10 detailed educator interviews revealed five central themes:

1. **Cognitive Clarity (60%):** Educators reported noticeable improvements in student engagement when contextualizing lessons in conversational Hindi.
2. **Terminology Rigidities (60%):** Explaining advanced terminology (e.g., photosynthesis, hypotenuse) using ultra-formalized Hindi creates cognitive friction; teachers strongly requested bilingual glossaries.
3. **Training Deficits (70%):** A majority of teachers lacked modern in-service pedagogical training aligned with NEP 2020's multilingual framework.
4. **Resource Constraints (50%):** Digital platforms and smart-classroom materials remain heavily skewed toward English, leaving a void in quality Hindi media.
5. **Linguistic Fluidity (60%):** Teachers regularly utilize code-switching to connect standardized textbook Hindi with students' native Garhwali/Kumaoni dialects.

8 Synthesis and policy recommendations

The empirical evidence demonstrates that while student engagement in Hindi instruction is exceptionally robust (79% agreement, Mean = 2.71), systemic obstacles hinder optimal implementation. To bridge this gap, the following measures are recommended:

1. **Bilingual Technical Glossaries:** SCERT/DIET should publish science and mathematics reference guides featuring standardized Hindi terms alongside widely accepted English technical nomenclature.
2. **Targeted Capacity Building:** Organize structured teacher development programs focused on translanguaging and activity-based vernacular pedagogy.
3. **Enriched Vernacular Digital Content:** Expand high-quality Hindi animations, simulations, and interactive media on the DIKSHA portal.
4. **Linguistic Flexibility:** Encourage contextual code-switching in classrooms rather than enforcing strict linguistic purism.

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