A Teaching Module to Transform Hindi Language Learning for Middle Schoolers in Kolkata

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Abstract:

Imagine a classroom in Kolkata where middle schoolers eagerly dive into Hindi stories, their eyes lighting up as they connect with the language in a way that feels real and exciting. This study brings that vision to life through a teaching module designed to boost Hindi language proficiency, with a sharp focus on reading comprehension, for students in Classes 6 to 8. In a city where Hindi often plays second fiddle to Bengali and English, learning it can feel like a chore. Our module changes that by blending interactive activities, cutting-edge tech tools, and stories rooted in Kolkata's vibrant culture. We tested it with 120 students across three diverse schools, using a specially crafted reading comprehension test to track progress over 12 weeks. The results were striking: students' comprehension scores soared, gender didn't sway outcomes, and better Hindi skills tied strongly to overall academic success. Guided by recent research on tech-driven and student-centered learning, this module taps into what makes kids tick. We leaned on 2011 Census data to highlight Hindi's national role, with an eye on the 2025 Census for fresher insights. This work calls for a rethink of Hindi education, urging schools to adopt innovative curricula and train teachers to spark a love for the language in India's multilingual heart.

Keywords: *Hindi Language, Reading Comprehension, Middle School, Kolkata, Teaching Module, Interactive Learning, Technology Integration, Cultural Relevance, Multilingual Education, Academic Achievement.*

1. Introduction:

Language is the heartbeat of human connection—it shapes how we share ideas, build relationships, and make sense of the world (NCERT, 2006). In India, Hindi pulses strongly as the official language and a *lingua franca*, knitting together diverse regions. The 2011 Census tells us that 43.63% of Indians—roughly 528 million people—call Hindi their mother tongue, with countless others using it as a second or third language, making it a cornerstone of national identity (Census of India, 2011). But in Kolkata, a city alive with the rhythms of Bengali, English, and other tongues, Hindi often feels like an outsider in the classroom. For middle school students, learning Hindi as a second language can be daunting, especially when lessons rely on rote memorization rather than real-world relevance.

Middle school, spanning Classes 6 to 8, is a golden window for language learning. At this age, students are curious, eager to explore, and building skills that will carry them through school and beyond. Reading comprehension—the ability to read a text, grasp its meaning, and connect it to their own experiences—isn't just a language skill; it's a gateway to academic achievement and personal growth (UNESCO, 2010). Yet, in Kolkata's multilingual classrooms, many students struggle to engage with Hindi texts. The reasons are clear: limited exposure to Hindi outside school, teaching methods that feel dry and disconnected, and a lack of materials that reflect the city's dynamic, multicultural vibe.

This study steps into that gap with a teaching module designed to make Hindi learning joyful and meaningful for Kolkata's middle schoolers. We've poured creativity into blending interactive group activities, tech tools like mobile apps and videos, and stories that echo the sights and sounds of Kolkata—from Durga Puja celebrations to bustling markets. Our aim is to help students not just read Hindi, but feel it, understand it, and use it confidently. Since the 2021 Census was delayed due to the COVID-19 pandemic, we're grounding our work in 2011 Census data, which underscores Hindi's widespread use. Looking ahead, the 2025 Census, expected to roll out soon with data by 2026, promises new demographic insights to refine language education (India Today, 2024). This module is more than a teaching tool—it's a step toward empowering students to embrace India's linguistic diversity and shine in a connected, multicultural world.

Research Question:

Can a thoughtfully designed teaching module enable middle school students (Classes 6 to 8) in Kolkata to achieve strong Hindi reading comprehension skills that meet expected benchmarks?

Objectives:

1. To craft a teaching module that resonates with the unique linguistic and cultural needs of Kolkata's middle school students learning Hindi.

2. To develop a clear, engaging, and age-appropriate test to measure Hindi reading comprehension accurately.

3. To investigate whether gender influences comprehension outcomes, addressing conflicting findings in existing research.

2. Literature Review:

Teaching kids to read and understand a second language like Hindi isn't just about words on a page—it's about sparking curiosity, building confidence, and making connections. The research offers a treasure trove of ideas on what works, from classroom strategies to tech innovations. This section weaves together insights from Indian and global studies, with a focus on recent work that inspired our module's design.

2.1 Indian Studies:

In India, researchers have been peeling back the layers of what shapes reading comprehension, looking at everything from school resources to students' home environments. Chettri (2010) explored English comprehension among Sikkim students, finding that urban and rural kids performed similarly, but those in private schools often outshone their peers in government schools. Why? Better access to books, tech, and trained teachers. Tamang (2009) dug deeper, showing that school management and location (urban vs. rural) played a big role in English skills, but gender didn't seem to matter much, hinting that the school environment can outweigh personal factors.

When it comes to Hindi, especially in non-Hindi-speaking regions like Kolkata, the research is picking up steam. Singh (2019) tested a flipped classroom model—where students watch videos or read at home and then tackle activities in class—and found it lit a fire under students, boosting their Hindi comprehension and enthusiasm. Gupta and Sharma (2023) took a tech-forward approach, showing that mobile apps for practicing vocabulary and fluency helped middle schoolers in multilingual areas master Hindi texts more effectively (Gupta & Sharma, 2023). Kumar et al. (2022) pushed the envelope further, using AI-driven tools that adapt to each student's pace, proving that personalized feedback can transform Hindi vocabulary and reading skills, especially for kids juggling multiple languages (Kumar et al., 2022). These studies point to a clear trend: innovative, student-centered methods are key to unlocking Hindi proficiency.

2.2 International Studies:

Across the globe, researchers are uncovering strategies that make reading comprehension click, and their ideas helped shape our module. Mullis et al. (2017), through the Progress in International Reading Literacy Study (PIRLS), stressed that a well-planned curriculum—one with clear goals and a steady build-up of skills—is critical for helping kids read better (Mullis et al., 2017). Smith and Taylor (2015) showed that multimedia tools, like videos and interactive texts, grab students' attention and deepen understanding, especially for those learning a second language (Smith & Taylor, 2015).

The latest global research is even more inspiring. Lee and Chen (2024) found that turning lessons into games—think quizzes, story-based challenges, or digital adventures—makes learning a second language fun and boosts comprehension by keeping students motivated (Lee & Chen, 2024). Zhang et al. (2023) explored self-regulated learning, where students set their own goals and track their progress, finding it led to stronger reading skills in multilingual classrooms (Zhang et al., 2023). Anderson and Wilson (2010) backed this up, showing that teaching kids to think about their reading process—like asking themselves questions or summarizing as they go—helps even struggling readers catch up. These global insights gave us a roadmap for making Hindi lessons engaging and effective.

2.3 Research Gaps:

Despite all this progress, there are still blind spots in the research that our study aims to address:

1. **Tech's Untapped Potential in Hindi**: While Kumar et al. (2022) and Gupta and Sharma (2023) highlight the promise of AI and apps, these tools are barely scratching the surface in Hindi classrooms, especially in diverse urban hubs like Kolkata.

2. **Gender Questions Lingering**: Some studies, like Tamang (2009), find no gender differences in comprehension, but others, like Mohanty (1993), suggest boys or girls might have an edge in certain contexts, leaving us with more questions than answers.

3. **Overlooking Urban Multilingual Settings**: There's a shortage of research on teaching Hindi as a second language in cities like Kolkata, where students navigate a whirlwind of languages daily, making it hard to apply findings from other regions (Gupta & Sharma, 2023).

Our study jumps into these gaps, testing a module that's tech-savvy, culturally grounded, and designed for Kolkata's unique linguistic landscape, while also checking if gender plays a role in how students learn.

3. Methodology:

Creating a teaching module that actually works means getting the details right—from designing lessons that spark interest to testing them in real classrooms. We took a methodical, hands-on approach to build,

implement, and evaluate our module, ensuring it fits the needs of Kolkata's middle schoolers and delivers measurable results. Here's the full picture of how we did it.

3.1 Research Design:

We opted for an experimental research design, which let us test the module's impact by comparing students' Hindi comprehension before and after the program. Students took a reading comprehension test at the start (pre-test) and again after 12 weeks (post-test), giving us a clear before-and-after snapshot. We kept the setting natural, using regular classrooms rather than a lab, to see how the module holds up in real-world teaching conditions. This approach avoids tweaking variables artificially, focusing instead on practical outcomes. It's a tried-and-true method for educational studies, offering solid evidence of what works without leaning on historical data or one-off case studies.

3.2 Sample:

We worked with 120 students—60 boys and 60 girls—from Classes 6 to 8 at three Kolkata schools: Calcutta Boys' Group of Schools, St. Paul's Mission School, and Elias Meyer Free School & Talmud Torah. These schools were chosen for their diverse student bodies and their commitment to teaching Hindi as a second language. To keep things fair, we used stratified random sampling, ensuring an equal mix of boys and girls across the three grades. This approach makes our findings relevant to a broad swath of Kolkata's middle schools. We calculated the sample size to have enough statistical power to detect meaningful changes in comprehension scores, balancing rigor with practicality.

3.3 Teaching Module Development:

The heart of this study is the teaching module, a 12-week program with three 40-minute sessions per week, built from the ground up for middle schoolers learning Hindi in Kolkata. It's designed to meet NCERT standards, ensuring it fits into existing curricula, but it's infused with creativity to keep students engaged. Here's what makes it tick:

- **Interactive Activities**: We included group discussions, storytelling sessions, and cloze tests (where students fill in missing words) to get kids talking, thinking, and collaborating. These activities build vocabulary and comprehension while making learning feel like a shared adventure.

- **Tech Tools**: Videos and interactive slideshows bring Hindi texts to life, showing scenes of Indian culture or animated stories. A mobile app, inspired by IIT Bombay's fluency tools, gives instant feedback on reading accuracy and pronunciation, helping students improve on the spot.

- **Kolkata-Centric Stories**: Lessons feature tales of the city's life—think Durga Puja processions, Howrah Bridge at dusk, or street food adventures. These stories make Hindi relatable, tying the language to students' everyday world.

- **Skill-Building Focus**: The module hones key comprehension skills, like picking out main ideas, summarizing short stories, and making simple predictions about what happens next. Each activity is tailored for 11- to 14-year-olds, matching their developmental stage.

To make sure the module landed well, we ran teacher training workshops before the program started. These sessions equipped educators with the skills to lead interactive lessons, use tech effectively, and create a classroom vibe where every student feels included.

3.4 Reading Comprehension Test:

We designed a custom reading comprehension test to gauge students' Hindi skills, crafted specifically for middle schoolers. The test, worth 100 marks and spread over 2 hours, is engaging and thorough, covering different aspects of comprehension in a way that feels manageable for young learners. It's divided into four sections:

1. **Section I (40 marks)**: Students tackle short-answer questions about prose and poetry, summarizing key points or explaining themes, plus multiple-choice questions to test basic facts and simple inferences. This section checks if they're grasping the big picture and details.

2. **Section II (30 marks)**: This part focuses on using Hindi creatively, with tasks like building sentences, matching words to their meanings, and writing short paragraphs about familiar topics, like a favorite festival or a day in Kolkata.

3. **Section III (15 marks)**: A listening test plays audio clips—short stories, dialogues, or descriptions—and asks students to answer questions, testing how well they follow spoken Hindi.

4. **Section IV (15 marks)**: Students read a passage aloud, scored on pronunciation, fluency, and natural pacing, to see how confidently they express Hindi orally.

We piloted the test with a small group to iron out any kinks, ensuring the language was clear, the questions were fair, and the format suited middle schoolers' abilities.

3.5 Data Collection and Analysis:

Data collection was straightforward but meticulous. Students completed a printed questionnaire and the comprehension test in their classrooms, ensuring a consistent environment. The pre-test gave us a baseline of their Hindi skills, while the post-test showed what they'd learned after 12 weeks. We used descriptive statistics—like averages (means) and standard deviations—to summarize score patterns. To dig deeper, we ran t-tests to check for gender differences and calculated correlations to see if better Hindi comprehension linked to stronger overall grades, using students' end-of-term marks. All analysis was done with statistical software (like SPSS), with a threshold of $p < 0.05$ to spot significant findings. This approach gave us a clear, reliable picture of the module's impact.

4. Results:

The numbers tell a compelling story about how our module transformed Hindi learning. This section breaks down the key findings, from test score improvements to gender insights and academic connections, answering our research questions with hard data.

4.1 Pre- and Post-Test Scores:

At the start, students averaged 50.8 on the pre-test (SD = 9.1), a solid but modest score that reflects the challenges of learning Hindi as a second language in Kolkata. After 12 weeks with our module, their post-test average soared to 76.4 (SD = 6.8). A paired t-test confirmed this leap was statistically significant ($t(119) = 14.72$, $p < 0.01$), showing the module made a real difference. The blend of interactive tasks, tech feedback, and local stories clearly helped students connect with Hindi texts in a deeper way, turning reading from a task into a skill they could own.

4.2 Gender Differences:

We were curious if boys and girls would show different gains, given mixed findings in past research. The answer? They improved equally. Post-test scores showed boys averaging 76.9 (SD = 6.5) and girls 75.9 (SD

= 7.0), with no significant difference (t(118) = 0.72, p = 0.47). This lines up with studies like Mohanty (1993) and Chege (2012), which found that student-centered methods level the playing field. Our module's focus on collaboration and engagement seems to work for everyone, putting to rest some of the gender debates in the literature.

4.3 Correlation with Academic Achievement:

Here's where it gets exciting: better Hindi skills didn't just stay in the language classroom. We found a strong positive correlation (r = 0.65, p < 0.01) between post-test comprehension scores and students' overall academic grades across subjects. This echoes Chege (2012) and Kumar et al. (2022), showing that mastering Hindi reading boosts critical thinking and learning in math, science, and more. In Kolkata's diverse classrooms, strong Hindi comprehension is a springboard to broader academic success.

5. Discussion:

What do these results tell us about teaching Hindi in a city as dynamic as Kolkata? The massive jump in comprehension scores—from 50.8 to 76.4—shows that our module hit the mark. By weaving in tech tools like the fluency app and videos, we tapped into what Gupta and Sharma (2023) found: technology makes learning stick. The storytelling and group activities, inspired by Lee and Chen's (2024) work on gamified learning, turned lessons into something students looked forward to, not just endured. These elements didn't just teach Hindi—they made it feel alive, relevant, and fun.

The fact that boys and girls improved at the same rate is a big win. Past studies, like Logan and Johnston (2009), sometimes found gender gaps, but our module's inclusive, interactive approach created a space where everyone could thrive, backing up Mohanty (1993) and Chege (2012). The strong link between Hindi comprehension and overall grades (r = 0.65) drives home a bigger point: language skills are a foundation for all learning, as Kumar et al. (2022) and Chege (2012) have shown. In a multilingual city like Kolkata, where students juggle languages daily, this module offers a way to build confidence and competence in Hindi that ripples across their education.

But no study is perfect. We focused on urban schools, so we can't yet say how this module would fare in rural areas with fewer tech resources or less exposure to Hindi. The 12-week timeframe gave us solid short-term results, but we need longer studies to see if these gains hold over time. Relying on 2011 Census data was a necessity, given the 2021 Census delay, but the upcoming 2025 Census could offer new demographic insights to fine-tune our approach (India Today, 2024). Moving forward, we're excited to explore long-term impacts, adapt the module for rural schools, and experiment with advanced AI tools to make learning even more personalized.

6. Conclusion:

This study is a testament to what's possible when we rethink how Hindi is taught. For middle schoolers in Kolkata, our module turned Hindi from a daunting subject into a vibrant, accessible language. By blending interactive lessons, tech innovations, and stories that reflect the city's soul, we saw students' comprehension scores soar, proving that the right approach can make a world of difference. The 2011 Census data reminds us of Hindi's central role in India, and the 2025 Census will soon give us new tools to keep refining language education (India Today, 2024). These findings are a rallying cry for schools to embrace innovative curricula and train teachers to bring Hindi to life. This isn't just about reading better—it's about equipping students to navigate India's rich linguistic landscape, excel in school, and connect with a broader cultural heritage.

7. Recommendations:

Based on what we've learned, here are five ways to take Hindi education to the next level:

1. **Embed in School Curricula**: Roll out this module across Kolkata's middle schools for Classes 6 to 8, aligning with NCERT standards to ensure it's practical and scalable.

2. **Go Big on Tech**: Invest in AI-driven tools, like adaptive learning apps, to tailor lessons to each student's needs, building on Kumar et al.'s (2022) findings.

3. **Study Long-Term Effects**: Launch studies to track how the module impacts students over years, addressing our short-term focus.

4. **Adapt for Rural Areas**: Modify the module for rural schools, using 2025 Census data to tackle resource gaps and limited Hindi exposure.

5. **Empower Teachers**: Create ongoing training programs to help teachers master interactive and tech-based methods, ensuring the module shines in every classroom.

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Citation: **Pandey. Dr. T. N.,** (2025) "A Teaching Module to Transform Hindi Language Learning for Middle Schoolers in Kolkata", *Bharati International Journal of Multidisciplinary Research & Development (BIJMRD)*, Vol-3, Issue-05.1, May-2025 (Special).