AN EMPIRICAL STUDY OF THE PROSPECTS AND PITFALLS OF ENGLISH AS A MEDIUM OF INSTRUCTION FOR STUDENTS FROM HINDI MEDIUM BACKGROUNDS IN HIGHER EDUCATION INSTITUTES OF UTTARAKHAND

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ABSTRACT

The debate over vernacular languages versus English in erstwhile Asian and African colonies remains deeply ambivalent and complex. With the forces of globalization and cosmopolitanism, English has emerged as the dominant lingua franca, bringing with it both opportunities and cultural challenges. In India, English facilitates access to global knowledge and career advancement, yet it simultaneously marginalizes native languages and deepens socio-educational divides. This paper presents an empirical study examining the pedagogical and psychological challenges faced by science students from Hindi medium backgrounds in higher education institutes of Uttarakhand. Through questionnaires and interviews with 242 students and science faculty, the study explores the prospects and pitfalls of adopting English as the medium of instruction (EMI) in science education. Findings reveal that while EMI offers clear career and research benefits, students from Hindi medium backgrounds struggle with comprehension, vocabulary, and confidence, underscoring the need for targeted language support.

Keywords: *Higher Education, English Medium Instruction, Hindi Medium Students, Science Education, Uttarakhand*

INTRODUCTION

India's multilingual fabric reflects centuries of linguistic diversity and negotiation. English, introduced during British colonial rule primarily to serve administrative needs (Krishna, 1991), evolved into a pan-Indian link language during the independence movement. Post-independence, despite Gandhi's vision for Hindi as a national language, opposition from non-Hindi-speaking states ensured English's retention as an associate official language under the Constitution.

Today, English has become a global connector—spoken in 54 countries, recognized in 70 others, and dominating international domains such as science, technology, diplomacy, commerce, and the internet (Rao, 2019). Its extensive corpus of literature, academic resources, and professional opportunities has positioned English as a language of advancement. However, in India, English proficiency has also become a marker of social status, accentuating educational and economic disparities.

The divide is particularly stark in higher education. Students from elite English-medium schools transition smoothly into university-level science programs taught in English. In contrast, students from under-resourced government schools—where Hindi is the medium of instruction—face sudden and significant linguistic and cognitive challenges when expected to study complex scientific concepts in English. This inequity not only

hampers academic performance but also limits employability and participation in competitive examinations.

This paper investigates these challenges in the context of Uttarakhand's higher education institutions, focusing on science students from Hindi-medium backgrounds.

LITERATURE REVIEW

The role of English as a global language has been widely discussed in both postcolonial and educational research. Rao (2019) emphasizes English's indispensability in scientific progress and international collaboration, while also noting its role in widening inequalities. Mishra and Sharma (n.d.) specifically document the academic struggles of Hindi-medium students in mathematics at the undergraduate level, linking language barriers to reduced performance and self-efficacy.

Krishna (1991) traces the political agenda behind language policy in education, highlighting how colonial linguistic legacies persist in shaping contemporary educational hierarchies. In the Indian context, English is not merely a medium of instruction but a gatekeeper to academic and professional advancement, making language policy a deeply socio-political issue.

RESEARCH OBJECTIVES

The study aims to:

1. Examine the linguistic and psychological challenges faced by Hindi-medium students in science programs at the university level.
2. Assess perceptions of EMI among students and faculty.
3. Identify potential interventions to support Hindi-medium students in transitioning to EMI environments.

RESEARCH METHODOLOGY

Design and Approach

The study employs a mixed-methods design combining descriptive and exploratory approaches. Quantitative data were collected via structured questionnaires, while qualitative insights were obtained through semi-structured interviews.

Sampling

A non-probability purposive sampling method was adopted to target students most affected by the EMI policy. A total of 242 students from higher education institutions across Uttarakhand participated, alongside interviews with science faculty members.

Data Collection

Primary data were gathered through questionnaires and interviews, administered in person. The questionnaire design was refined after pilot testing to improve clarity and relevance. Secondary data were sourced from books, journals, reports, and institutional libraries, including those at Uttarakhand Open University, Kumaun University, and the Administrative Training Institute, Nainital.

RESULTS AND DISCUSSION

Perceived Challenges

Over two-thirds of respondents (68.2%) agreed or strongly agreed that science students face problems with EMI at the university level, even among those with prior English-medium schooling. This suggests that scientific English poses challenges beyond general language proficiency.

Attitudes Toward EMI

While 57% disagreed or strongly disagreed that the medium of instruction is irrelevant to science education, 73.5% agreed that English skills enhance job prospects—highlighting a pragmatic recognition of English's career value despite its academic challenges.

Specific Language Barriers

Vocabulary emerged as the single largest challenge (21.9%), followed by technical terminology (13.6%),

and sentence structure (5.8%). A subset of students reported combined difficulties spanning vocabulary, comprehension, and writing skills, underscoring the multidimensional nature of EMI barriers.

Resource Limitations

A majority (55.8%) identified a shortage of quality science materials in Hindi, aligning with faculty observations that available Hindi textbooks are often substandard.

Psychological Impact

Interviews revealed persistent "English phobia" among Hindi-medium students, manifesting in reduced classroom participation, examination anxiety, and poor interview performance. This aligns with Mishra and Sharma's findings that language barriers undermine confidence and academic engagement.

FACULTY PERSPECTIVES

Science faculty across institutions reported using bilingual instruction to facilitate comprehension, prioritizing conceptual clarity over syntactic accuracy. Open and distance learning faculty additionally employ ICT tools and workshops to bridge gaps. Faculty widely endorsed the introduction of foundational English training at the undergraduate level.

RECOMMENDATIONS

Based on the findings, the following measures are proposed:

1. **Foundation Courses in English:** Mandatory language bridging programs at the entry level of undergraduate science.
2. **Bilingual Pedagogy:** Strategic use of Hindi for conceptual explanations alongside English materials.
3. **Quality Hindi Resources:** Commissioning of high-quality Hindi translations of core science texts.
4. **Language-Integrated Assessment:** Allowing partial responses in Hindi during initial EMI transition phases.
5. **Faculty Development:** Training teachers in EMI-sensitive pedagogies.

CONCLUSION

The study reveals a paradox: while EMI poses significant initial barriers for Hindi-medium science students in Uttarakhand, these same students overwhelmingly recognize English as essential for their academic and professional futures. This duality calls for a policy balance—leveraging English's global utility while providing equitable linguistic access. Without targeted support, EMI risks perpetuating educational stratification, but with the right interventions, it can serve as a bridge rather than a barrier.

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