

AI Driven Multilingual Classrooms : Transcending Linguistic Boundaries in Multi - Disciplinary Undergraduate Education

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Abstract

India a multilingual nation, provides rich grounds of linguistic diversity. The promotion, preservation and propagation of the multilingual characteristic of our nation is upheld through the Nep 2020 curriculum framework. While the policy makers emphasize on its implementation, the hindrance at the ground level initiates the use of technological support in the form of AI Tools in order to strengthen the multilingual aspect of our education system. The present paper is a qualitative research that explores the role of AI Tools within the multidisciplinary undergraduate Classrooms . While the study reflects upon the role of AI Tools in overcoming the linguistic barrier, it also reveals the challenges , limitations and success that the learners experience while using these tools. The study explores how an AI driven multilingual classroom can be a solution to the linguistic barrier in the multidisciplinary undergraduate education scenario where learners experience transition from regional learning set-up to English language dominated learning . It also reflects upon the need of AI Driven Classroom within the multidisciplinary education as a detrimental aspect for skilling and upskilling the future learners for the contemporary modern global scenario.

Keywords : AI tools, Multidisciplinary approach, multilingual Classroom ,Nep 2020

1.Introduction

The Indian educational system has been experiencing drastic changes with the introduction and implementation of the NEP 2020 educational policy. The emphasis of this policy has been a reflection of SDG 4 that envisions a drastic change in the global educational scenario and seeks to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” by 2030 (*National Educational Policy*, 3). This goal initiates the reforms introduced by NEP 2020 to create equal opportunities and integration of various streams of learning within the premises of higher education. The Policy strives to revive the multilingual characteristic of India and hence enforces three language learning patterns , in order to preserve the rich linguistic heritage of our nation and promote the cognitive learning that comes with it. In doing so , the policy needs to match up with the transition that takes place from the regional medium of instruction to English language as the medium of instruction . There are more than 38.5 million students enrolled (“Press Release:Press Information Bureau,” 2025) in undergraduate streams and focusing on multidisciplinary and multilingual approach within this structure will promote not only inclusion and equal opportunities but also help the learners to think creatively and critically and in turn preserve our rich cultural heritage .

In order to turn all the higher education centres into centres of vibrant learning it is necessary to create an ecosystem that provide opportunities to face the challenges that come with siloed academic learning and motivate the learners towards personal learning .When language becomes a barrier in learning it can lead to “disengagement , academic underperformance and reinforcing social and educational inequalities (Singh, 2025, 4) Hence it is essential to provide enough resources to bridge the gap between the mother tongue language and the language of instruction . While NEP 2020 emphasizes on the multilingual and multidisciplinary approach it also accelerates

the use and incorporation of technological support for improved self learning . “technologies are making it simpler to participate and also help folk who are timid or need extra time to plan for participation” (Byndoor, 2023, 5) reducing stress and promoting self reliance. With classrooms becoming digitalized , the introduction to AI tools becomes the need of the hour to allow students to navigate through multidisciplinary studies and enjoy the learning that will promote innovative ideas and holistic cognitive learning. Thus, introducing AI Driven Multilingual Classrooms will help offer “personalized learning experiences, stimulate critical thinking and encourage creative problem solving.” (Lin, 2024, 2). AI tools like ChatGpt, Google Translate, Preplexity , Canva have become favorites of the learners making learning an enjoyable process for them. But , there is also a dire need to introduce more linguistic AI tools developed nationally as well as internationally and assimilate them into regular classrooms for easy access.The present paper will look into the use of AI Tools and their efficiency in multidisciplinary undergraduate education and how they are beneficial to reduce the inhibitions within the multilingual learners .

2. Objectives

- 1.To understand the usage of AI tools in multilingual classrooms
2. To analyze the barriers while implementing these tools in a Multilingual classroom
3. To evaluate the usage of linguistic AI Tools as well as Stream related Ai Tools in undergraduate multidisciplinary education
4. To propose an AI -NEP framework for inclusive and equitable learning
- 5 To measure the successful achievement in learning outcomes through AI support

3. Research Problem

While looking at the performance of the learners at the undergraduate level it is evident that the learners do face linguistic barriers. They can't cope up with the difficult terminologies pertaining to their fields in English impacting their academic performance and their self esteem.This is one of the reasons for the increase in the number of dropouts in the undergraduate level.

4. Research Question

1. How effective do the students and teachers find the AI Tools at the UG level ?
2. Do the AI Tools support learning within the multilingual classrooms ?
3. How do the AI Tools help in overcoming linguistic and subject related barriers ?
4. Are AI Tools better options for self motivated learning?

5. Research Gap

- 1 . There is no studies yet on use of AI tools in bridging the linguistic barrier within the multidisciplinary undergraduate learning
2. There is still lack of awareness about availability of language apps like Duolingo, Bhashini, Anuvadini or Langua
3. There is lack of data available about the effectiveness of use of AI in Higher Education Institutions

6.Literature review

The need towards introducing a multidisciplinary approach arises from the ancient Indian knowledge in various fields of learning in science, arts and commerce. Dr S. Saktikumar emphasizes that this approach when integrated with latest technology and AI Tools will allow a better educational access to marginalized learners and streamline the planning and execution of the policy . It will create individuals who are well equipped with all types of knowledge , skills ,competencies (Saktikumar, 2023, 13)

In their Chapter *From Margins to Mainstream Multidisciplinary Education as a tool for Inclusion* Swapna Deb and Dr Papiya Upadhay enlist Multidisciplinary approach as a potent tool for social change which changes the narrative from one of marginalization to empowerment (Deb & Upadhay, 2025, 13)

Dr P.R. Suresh argues the reasons for NEP 2020 to enlist the usage of Multilingual approach so that the learners can gain proficiency in their regional languages along with English promoting and acknowledging the identity of Indian Languages “ by adhering to this methodology students are guaranteed to acquire adeptness in numerous languages all the while preserving a profound affinity for their cultural heritage.” (Suresh, 2024, 11)

Akhil Singh acknowledges Nep 2020 Multilingual policy as an answer to improved academic performance , high rate of literacy and deep student engagement in the learning process . It also shifts the focus from language as an administrative requirement to language of cognition and social resource. When this language acquisition is supported with technology and AI Tools it revitalizes the endangered languages and enhances their identity. The policy further “recommends the use of AI -based tools , bilingual digital platforms , content and technology -driven teacher training modules to enhance multilingual instruction” (Singh, 2024, 7)

AI driven multilingual classrooms can become transformative agents creating environment for inclusive learning in any form of language and transcend the traditional language barriers, Linguistic AI Tools help the learners to gain improved content knowledge and boost their confidence.For a teacher these tools can be an asset to drive their multilingual classrooms into learners paradise where inclusion and equitability thrives and where knowledge is gained unanimously . Kevon Muhoozi asserts “ Pedagogical success in AI driven multilingual education hinges on educator empowerment, collaborative creation and thoughtful oversight. By integrating tools intentionally, training thoughtfully and moderating outputs teachers ensure AI improves access , inclusion and learning depth without compromising cultural meaning and education integrity,” (Muhoozi, n.d., 18)

7. Research Design

The research design used is qualitative research which is descriptive in nature . The survey with the help of online google form of 50 students and 18 faculty members were considered from colleges in Virar region of Palghar taluka of Maharashtra state .

8. Findings and Analysis

A formal survey of 18 faculty members and 50 students from various multidisciplinary colleges in Virar region of Palghar District of Maharashtra state were retrieved through online google form survey . The results received authenticated the findings

8.1 Students Demographics (survey of 50 students from varied multidisciplinary streams at undergraduate level)

Programme	Mother tongue with percentage	comfort level in writing assignments	difficult terms
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		in english (1-5)	
B.com/BAF/BMS	Marathi 60%	50% for the scale of 5	Commerce- Logistic management , supply chain ,ISO etc
BSc/BSc IT	Hindi 20%	24% for the scale of 4	Mathematical & Technical terminologies,
BA	Gujrati 10%	20% for the scale of 3	Tenacious , Scholastic etc
	Others 10%	5% for the scale of 1 and 2	

8.2 Student Statistics Survey [Student Feedback Form \(Responses\)](#)

- 50% students asserted their comfort while writing their assignments in English
- 100% students agreed to the use of AI tools in their learning process
- 72% students agreed to facing linguistic barriers during internship /placements
- 49% students agreed using chatgpt and 12% students google translate
- 50% students felt that AI tools supported them in their subject understanding
- 36% students never heard the term NEP 2020

8.3 Faculty statistics survey)(<https://forms.gle/cVksVdS3CCpdNj5w6>)

Teachers agreed that 70%-80% students struggled with the english terms in their subject

The usage of AI tools in the learning process was found to be 100%

The effective use of Ai Tools for subject specific vocabulary understanding was 38%

33% faculty members were fully aware about the Nep2020 policies

8.4 Efficiency related to the AI Tool Usage

The survey confirms that the students use familiar AI Tools like Chatgpt, Canva and Google Translate and Google Gemini , but there are few students who use, Perplexity and Grammarly . There is limited or no knowledge about the availability of AI Tools to overcome the language barriers . Students were unaware about the Linguistic AI Apps available like Duolingo, Langua, mesmerise, Mondly as well as the Indian Linguistic apps developed by the government of India like Bhashini, Anuvadini, Adivaani and BharatGen.

It is observed that the faculty is aware about the inclusion of multilingualism in multidisciplinary higher education but don't have the access and the skills to use and enlist the use of varied AI tools for their student. The Government needs to make it mandatory to introduce free access to Indian made apps like Bhashini and Anuvadini as they help in promoting and creating language structures for the multilingual learners.

9. Recommendations

This survey highlights the need of AI driven multilingual classroom in multidisciplinary undergraduate education throughout the nation. Along with the findings this research paper puts forth the following recommendation

- a. Creating an atmosphere inclusive of multilingual learning with the use of Linguistic AI apps and tools to overcome the hesitation, fear and shame that comes along with the shortcomings of using English as a medium of learning
- b. Along with the emphasis on three language learning every campus must have free access to AI tools that can create a learning atmosphere in their regional languages
- c. A generous utilization of Linguistic AI apps and tools to enhance the knowledge of multiple languages regional, national as well as international.
- d Each institution must have Free licensed AI Tools for their students
- e. Setting up an AI linguistic lab within the multidisciplinary undergraduate colleges to promote multilingualism and self learning
- f. Promoting the creation of AI apps that can provide a rich store of multilingual glossaries
- g. Training the Faculties in using these AI Tools in their teaching learning process
- h. Creating AI driven multilingual multidisciplinary classrooms for undergraduate learners

10. Conclusion

AI driven multilingual classrooms within the undergraduate learning premises is that missing link that will help in the correct implementation of NEP 2020 within the Indian academics. This research showed the gaps within the undergraduate learning system where students face inhibitions and fear of using the English Language. There is a large amount of ignorance about the available technological support in the form of AI Tools within the faculties as well as the students. This framework tries to showcase how the linguistic barrier can be converted into an asset for the regional learners who can become efficient users of multiple languages within the multidisciplinary set up. This will further allow the regional learners to participate equally in higher education and in turn help the increase in the Gross Enrollment Ratio within the higher education scenario.

References

- Byndoor, N. P. (2023, January). NEP2020: Highlights the Role of Technology in Shaping Higher education. *The Research Dialogue, volume 1*(4), 9. Retrieved march 23, 2026, from https://www.researchgate.net/publication/395335893_Nep_2020_Highlights_the_Role_of_Technology_In_Shaping_Higher_Education
- Deb, S., & Upadhyay, D. P. (2025). From Margins to Mainstream : Multidisciplinary Education as a tool for inclusion. In *Multidisciplinary Education : emerging Paradigms in the Context of Nep 2020*.
- Lin, X. (2024). The Impact of Artificial Intelligence (AI) on Global Higher Education: Opportunities and Challenges Of Using ChatGPT and Generative AI. In *ChatGPT and Global Higher Education Using Artificial Intelligence in Teaching and Learning* (first ed.).
- Muhoozi, K. (n.d.). AI Powered Multilingualism: enhancing Inclusive education Through Language Diversity. 10.13140/RG.2.2.24251.07203
- National Educational Policy*. (n.d.). Retrieved march 23, 2026, from https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
- Press Release: Press Information Bureau. (2025, January 31). In *AISHE 19-20*. Press Release: Press Information Bureau. Retrieved March 12, 2026, from <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2097864®=3&lang=2>
- Saktikumar, D. S. (2023). Nep 2020 and Multidisciplinary Approach. In *A Vision of Nep 2020 India's 2047 On Higher education*. Krishna Publication House.

Singh, A. K. (2024, april). Multilingual Education and Nep 2020:Challenges and Opportunities. *Jindal Journal of Public Policy*, 8(2).

Singh, A. K. (2025, april). Multilingual Education and NEP 2020: Challenges and Opportunities. *Jindal Journal of Public policy*, volume 8(issue II), 17. DOI: 10.54945/jjpp.v8iII.277

Suresh, D. P. R. (2024). *Innovation in India's Education System -An Overview of NEP 2020*. AGH Publishing House.