BABU BANARSI DAS UNIVERSITY

Department of Computer Science and Engineering

MINOR PROJECT
(Session:2026)

AI BASED LANGUAGE TRANSLATION FOR RURAL SCHOOLS

Submitted to:
Coordinator: Ms. Divya Agrahari
(Assisstant Professor)
Supervisor: Ms. Anjali Nigam
(Assisstant Professor)

Submitted by:

Name	Class Roll no.	University Roll no.
Mukesh Ruwali	25	1230432413
Naman Bajpai	29	1230432417
Nandini Singh	32	1230432420
Nitish Kumar	45	1230432435
Mohd. Waiz Khan	17	1230432404

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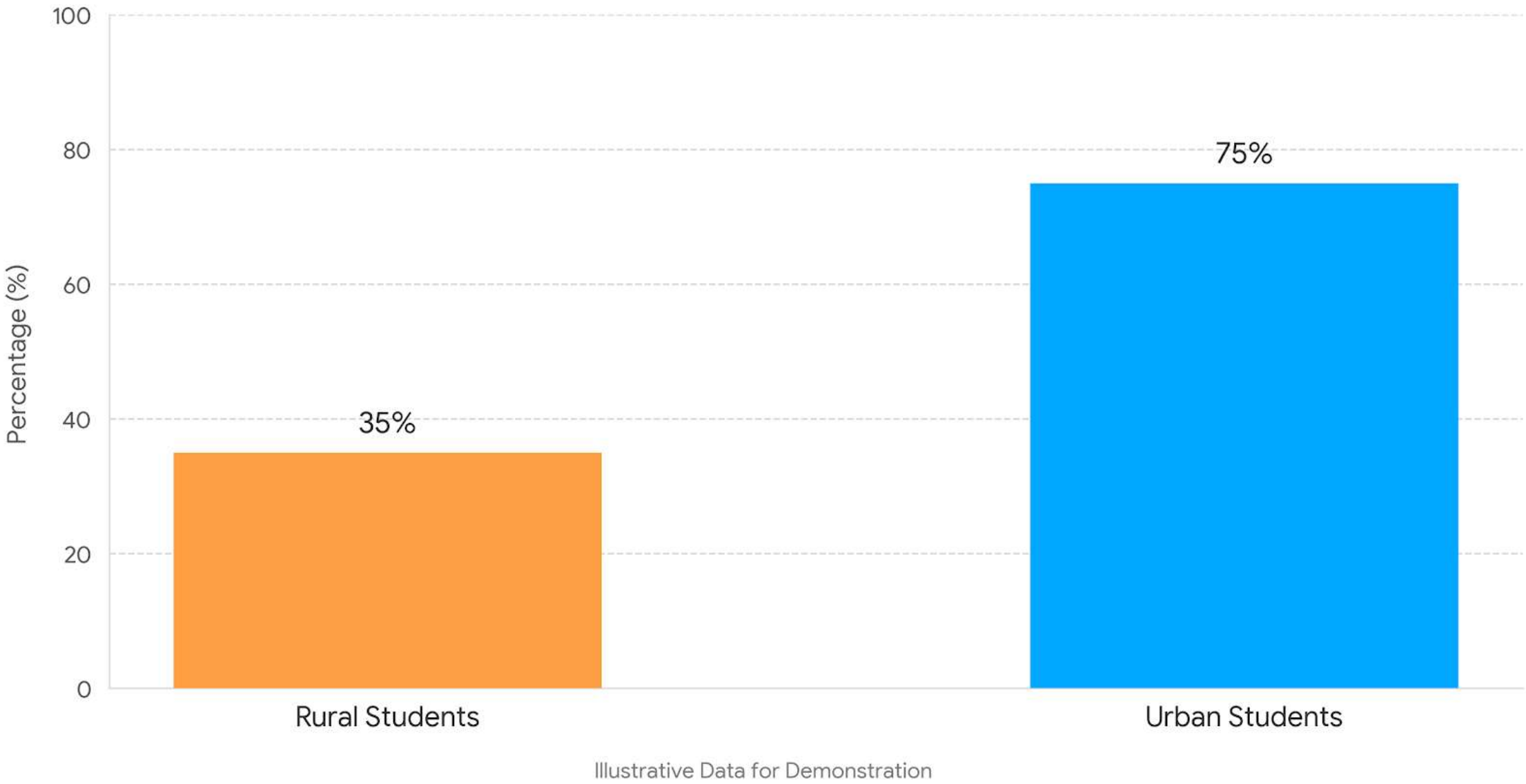
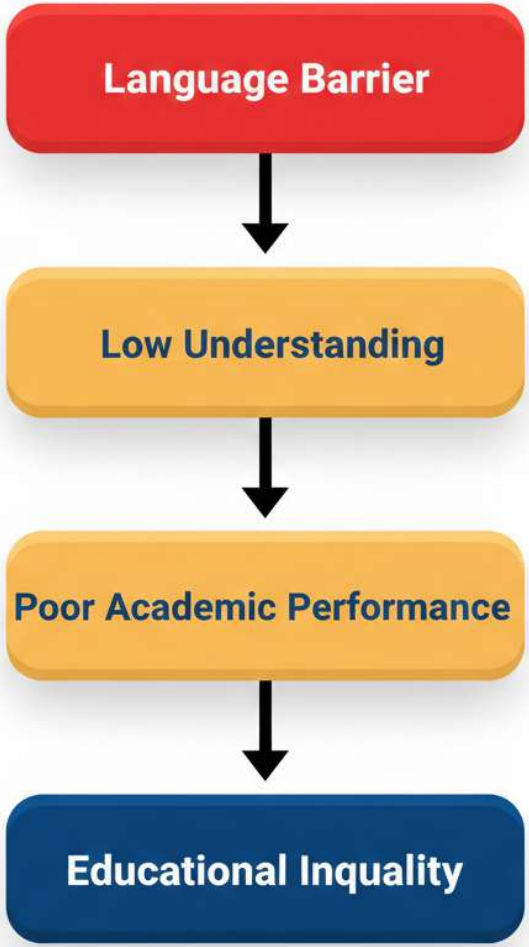
INTRODUCTION

- India has 22+ official languages and many regional dialects
- Rural students struggle with English-based learning materials
- Language barriers reduce comprehension and confidence
- Teachers manually translate lessons, increasing workload
- AI-based translation can support inclusive, bilingual education


English Understanding Level Comparison
100
80
60
40
20
0
Percentage (%)
35%
75%
Rural Students
Urban Students
Illustrative Data for Demonstration

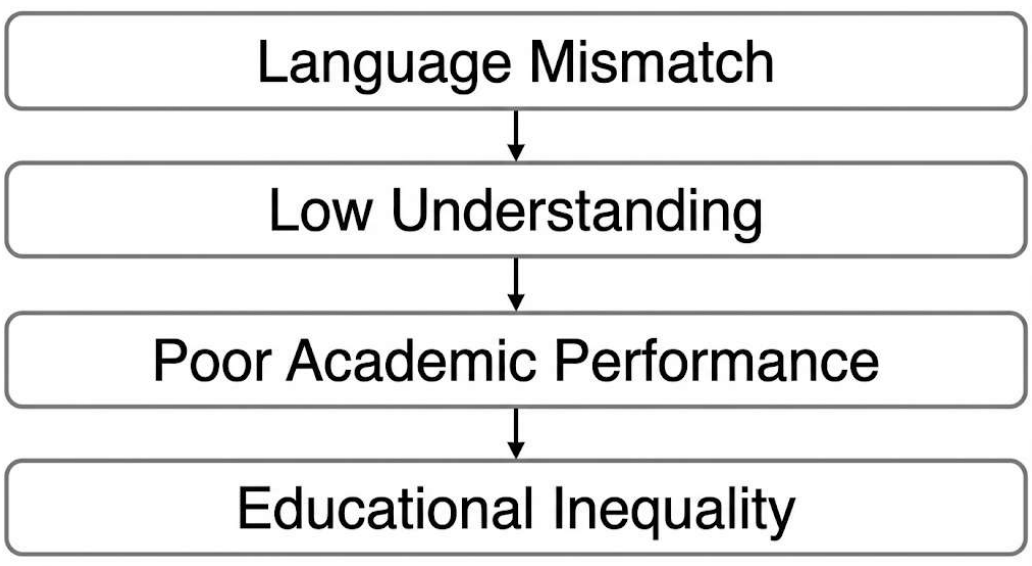
PROBLEM STATEMENT

- Problem Statement (Slide Content – Under 50 Words)
- Rural students study in non-native languages
- Difficulty understanding English textbooks
- Poor reading and comprehension levels
- Teachers manually translate lessons
- Language gap increases academic inequality

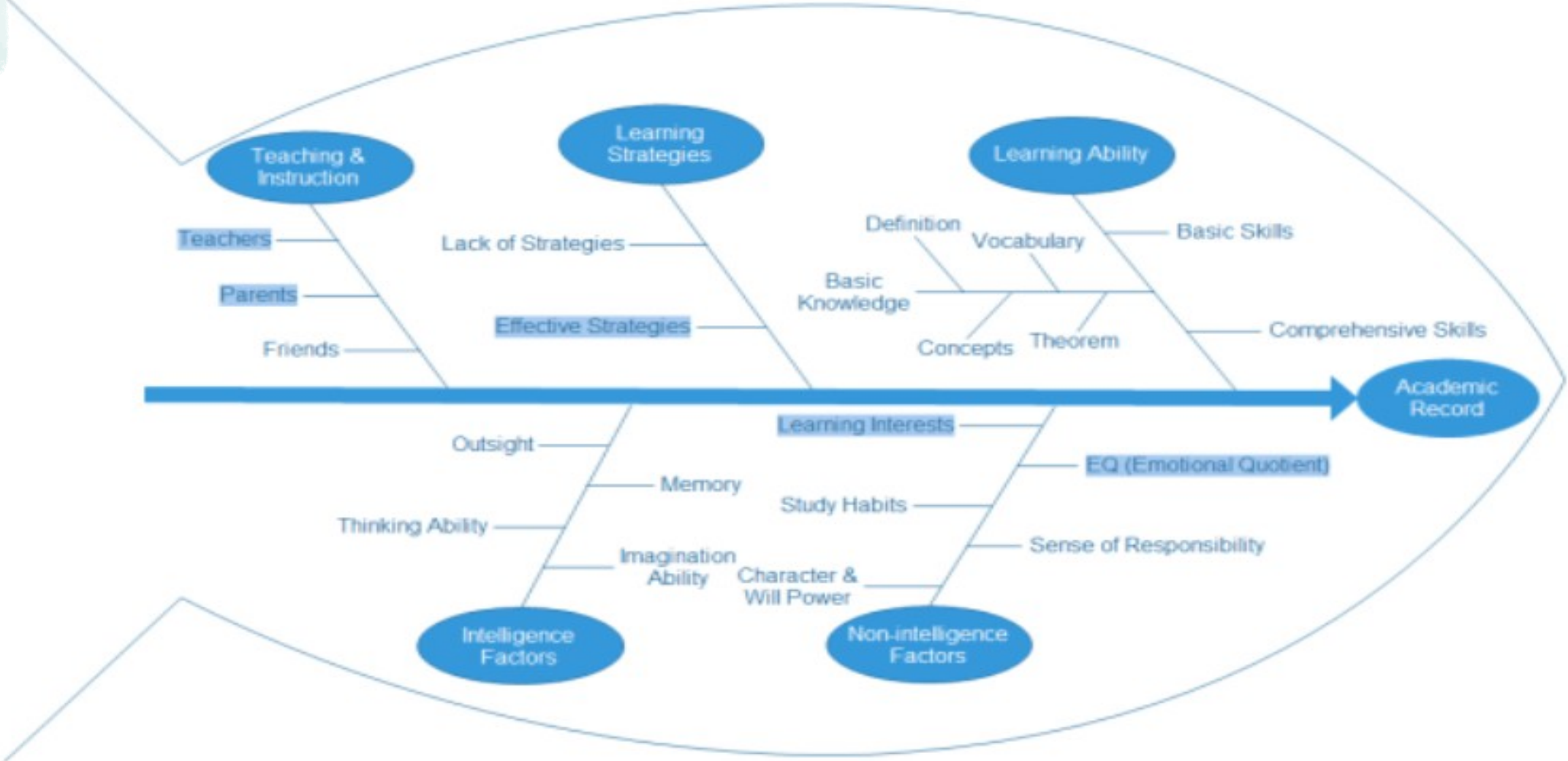

Language Barrier
Low Understanding
Poor Academic Performance
Educational Inquality

CURRENT CHALLENGES

- Language mismatch in classrooms
- Limited multilingual teaching materials
- Insufficient teacher training
- Weak implementation of NEP 2020
- Low digital infrastructure in rural areas



Academic Record Cause-effect Diagram

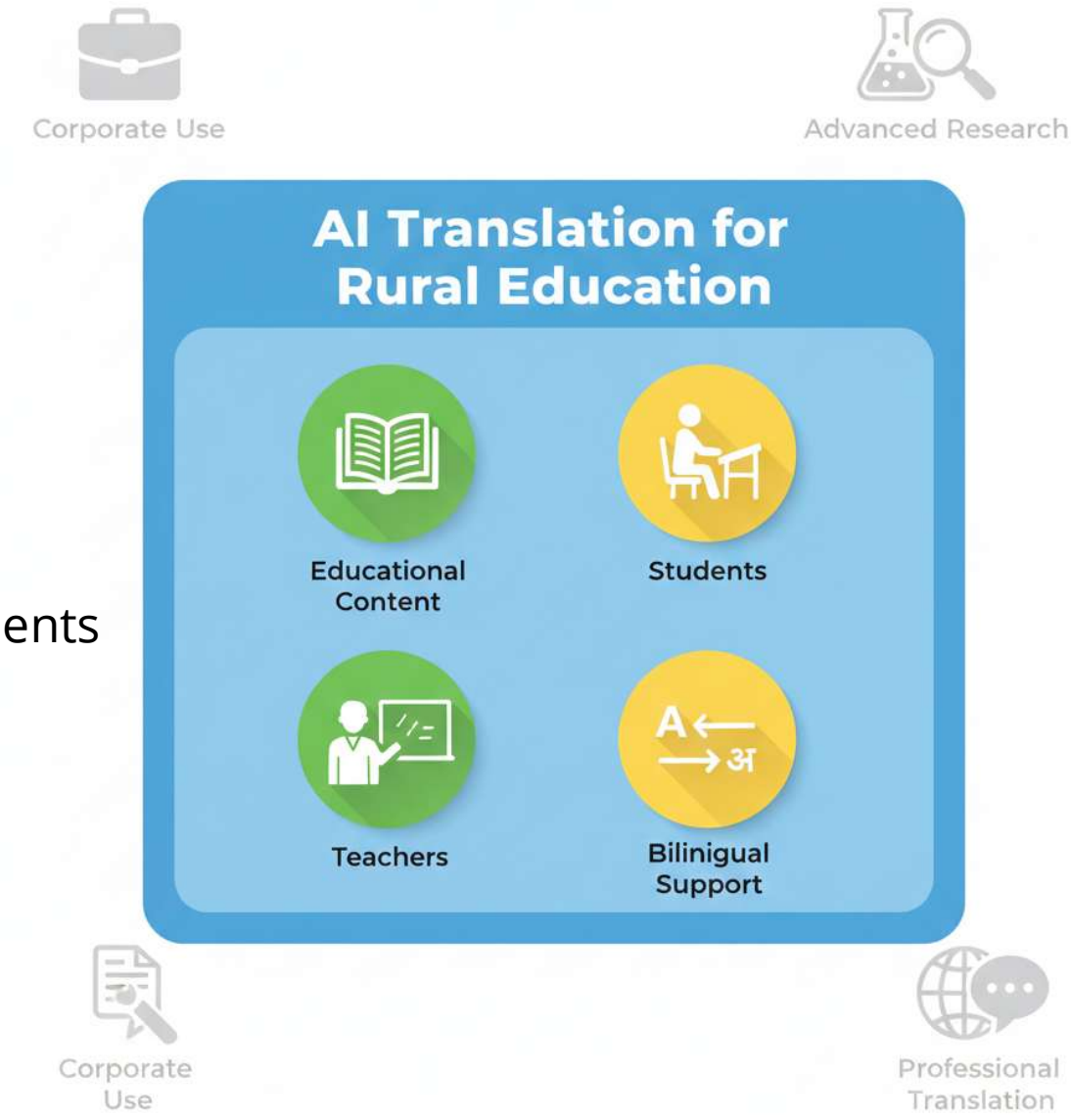


OBJECTIVE OF THE SLIDE

- Reduce language barriers in rural education
- Promote bilingual learning support
- Explore AI-based transl ation solutions
- Improve accessibility to learning materials
- Support inclusive and equitable education

SCOPE OF THE PROJECT

- Focus on rural school education
- Translation of educational content
- Supports bilingual learning
- Applicable in low-resource environments
- Designed for students and teachers



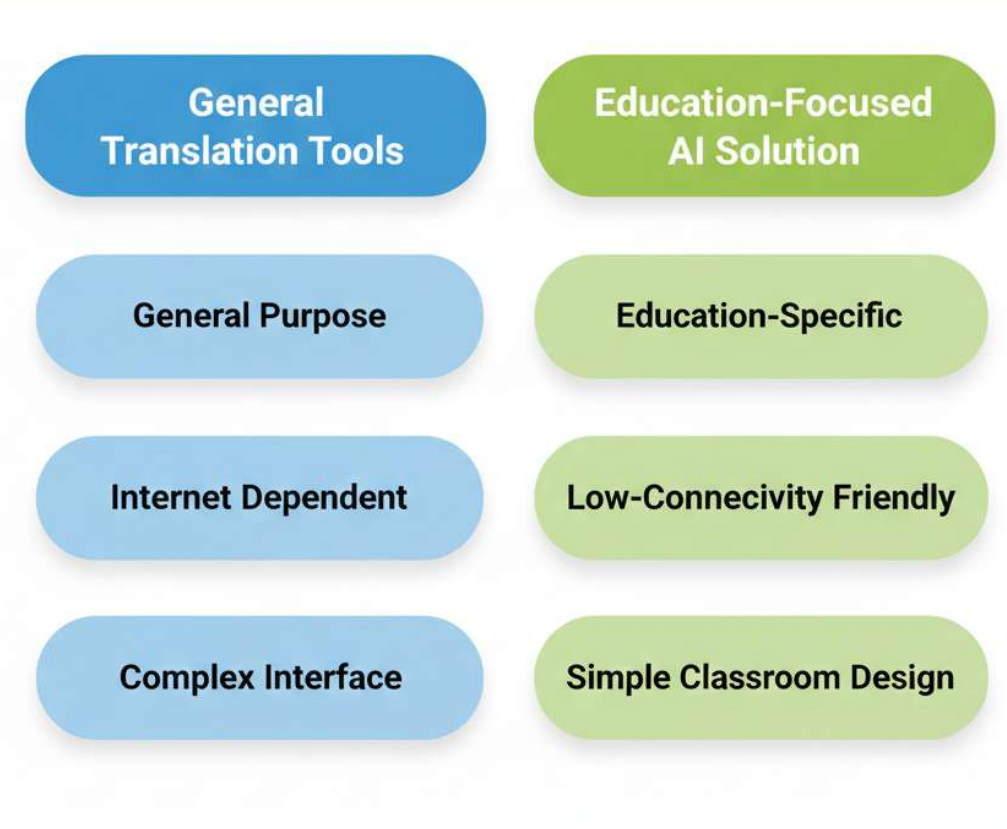
LITERTURE REVIEW

- Existing translation tools are general-purpose
- Most require strong internet connectivity
- Limited focus on rural education
- Not optimized for classroom learning
- Need for education-specific AI solutions

General Translation Tools	Education-Focused AI Solution
General Purpose	Education-Specific
Internet Dependent	Low-Connectivity Friendly
Complex Interface	Simple Classroom Design

Comparative Analysis

- Existing tools focus on general communication
- High internet and processing requirements
- Limited classroom usability
- Not tailored for rural students
- Need for simple, education-centered solution

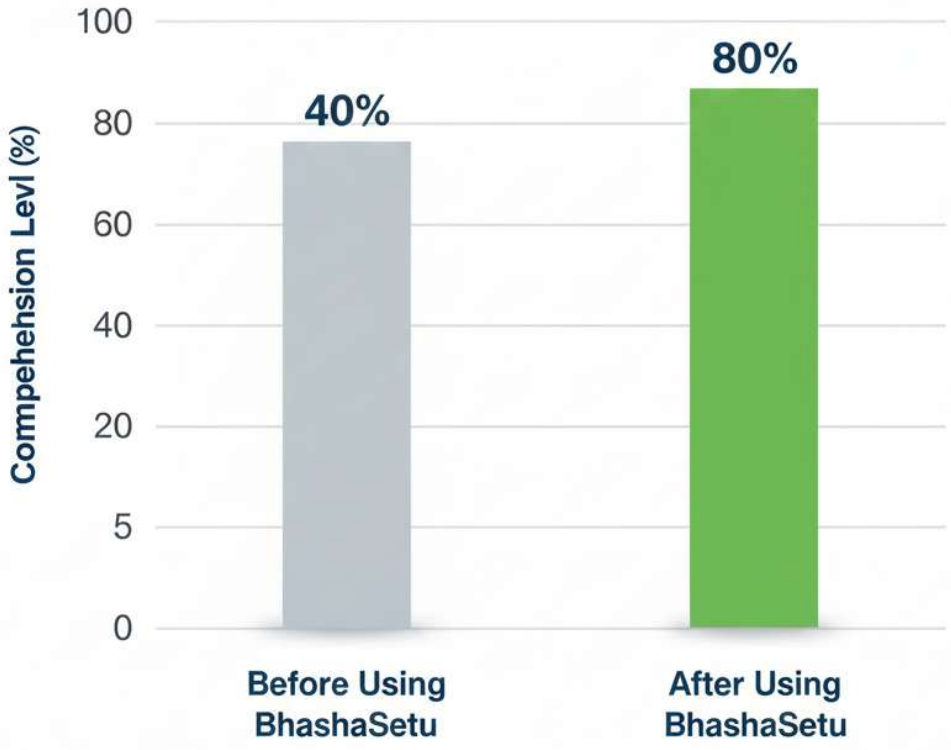


PROPOSED SYSTEM

Expected Outcomes

- Improved student comprehension
- Reduced teacher workload
- Better bilingual classroom interaction
- Increased accessibility to learning materials
- Support for inclusive education (SDG 4)

Learning Improvement with AI Support



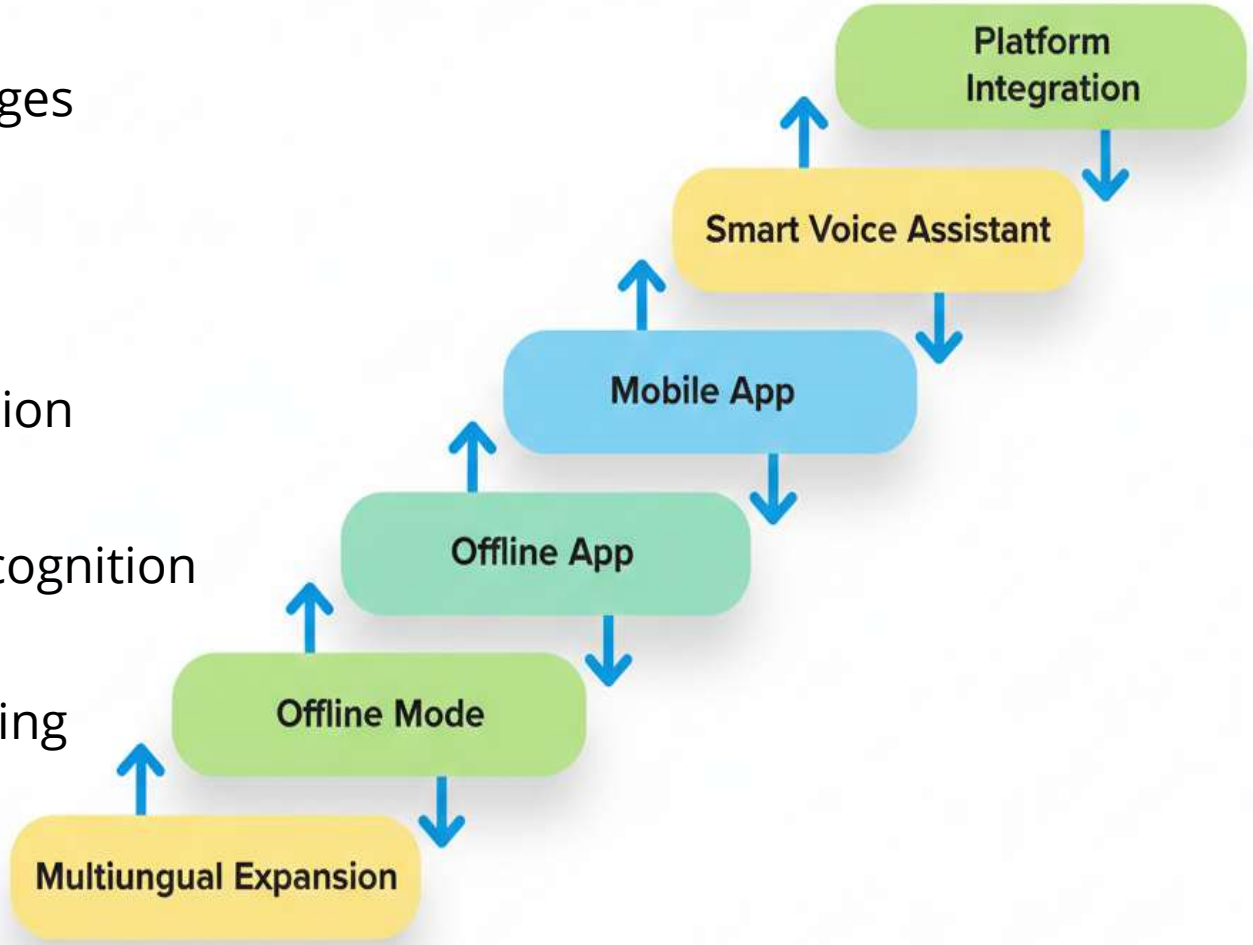
Projected Improvement (Conceptual Data)

APPLICATION

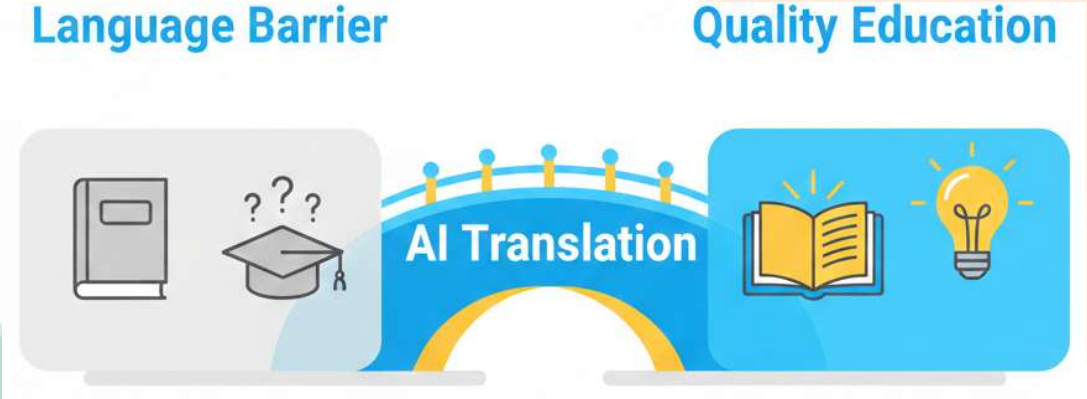
- Rural schools for bilingual teaching
- Teacher assistance in lesson translation
- Government education programs
- E-learning platforms
- NGO awareness and training programs

Future Scope

- Expand to more Indian languages
- Develop offline functionality
- Create mobile application version
- Improve dialect and accent recognition
- Integrate with national e-learning platforms



CONCLUSION



- Language barriers limit rural education
- AI can bridge communication gaps
- Bilingual learning improves understanding
- Promotes equal educational opportunities
- Supports inclusive and quality education

Add a main point

REFERENCE

- Hugging Face, Transformers Documentation
- Liu et al., Multilingual Neural Machine Translation
- Fan et al., M2M100 Multilingual Model
- Python gTTS Documentation
- United Nations, SDG 4 – Quality Education
- Ministry of Education, India – NEP 2020

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- **Sharma A.** Technololical Intervetions in Indian Rural Education." Conference on Digital Learning Initiatives, 2019

THANK YOU

Thank you for your valuable time and attention.

We appreciate your interest in our project.

We welcome your questions and feedback.

Add a main point