

Tribal Education in India: Challenges, Digital Learning and Community - Based Support – A Review

Prof. Sanjana Pawale¹, Sakshi Jawade², Shabdali Pawar³, Shweta Shinde⁴, and Sneha Lulekar⁵

¹Project Guide and ^{2,3,4,5}MCA Student

ASM's Institute of Business Management and Research, Pune, Maharashtra, India

Abstract— Education plays an important role in the social and economic development of children. The tribal communities in India like Katkari, Dhargar, Mahar etc. continuously faces several challenges or barriers in educational access, participation and learning. These barriers may include poverty, geographical isolation, improper infrastructure, language differences, shortage of teachers, limited educational resources and restricted access to the digital technologies. Recent Literature also highlights the importance of community participation, scholarships, residential facilities, culturally responsive education and multilingual learning approaches.

This review examines major challenges in tribal education in India and analyses existing approaches including government initiatives, residential schools, digital education, multilingual education and community based-educational support. The reviewed literature indicates that although government programmes and educational interventions have improved access to education, significant challenges remain, particularly in remote tribal communities. Digital education provides opportunities for improving access but connectivity, device availability, digital literacy and language barriers can limit its effectiveness. Recent systematic evidence also identifies community participation and supportive interventions as important facilitators of tribal education.

Based on the reviewed literature, this paper identifies a scope for integrated technology enabled educational support that combines supplementary learning, volunteer coordination, monitoring, multilingual access and transparent resource management. The discussion provides the conceptual foundation for platforms such as Shiksha Setu, proposed for supplementary educational support to Katkari tribal children.

Keywords— Tribal Education, Katkari Community, Digital Education, Multilingual Education, Community Based Education, Educational Technology, Tribal Children, Volunteer Teaching.

1. INTRODUCTION

Education is one of the fundamental factors contributing to the individual development and social progress. However equal education opportunities are not available to all sections of society. Tribal communities in India often experience educational disadvantages because of their geographical, Socio-economic, linguist and cultural conditions.

Tribal children living in remote areas may face difficulties such as long distances to schools, inadequate transportation, insufficient infrastructure, poverty, limited learning resources and irregular educational support.

These recurring operational barriers frequently result in lower literacy rates and higher dropout counts within vulnerable communities.

Language is another important issue. Many tribal children enter school speaking a home or tribal language that differs from the dominant language used in formal education. UNESCO's State of the Education Report for India 2025 identifies linguistic execution, culturally irrelevant curricula, teacher preparation, poverty, attendance and accountability gaps as interconnected challenges affecting tribal education.

Digital technology provides another possible mechanism for extending educational support. Nevertheless, digital education itself is affected by connectivity, device availability, digital skills and language. Research from tribal and rural contexts in Assam, for example, highlights the relationships between language proficiency and student's ability to effectively use digital educational technologies.

Therefore, there is a need to examine tribal education not only from the perspective of school access but also from the perspective of supplementary learning, community participation, digital inclusion, language accessibility and educational monitoring.

2. LITERATURE REVIEW

2.1 Educational and Socio-Economic Barriers

Tribal Education in India is influenced by several interconnected Socio-Economic, geographical and institutional factors. Children living in remote tribal settlements may face difficulties related to long distance from school, transportation, poverty inadequate educational resources and limited awareness of available educational programmes.

Chalumuri examined Indian Government initiatives for strengthening tribal education and identified several constraints affecting tribal students. These includes geographical conditions, economic circumstances, medium of instruction, parental attitudes, school related factors, curriculum, teacher related issues and educational monitoring. The study indicates that government initiatives alone may not be sufficient unless their implementation and monitoring are effective.

A mixed-methods systematic review by Parida and Das, covering 47 peer-reviewed studies published between 2010 and 2024, similarly identifies teacher shortage, language barriers, poverty, geographical isolation, infrastructure deficiencies and cultural alienation among the recurring barriers to tribal education.

These findings indicate that tribal education requires support beyond the basic school access. Continuous educational assistance, learning resources, coordination and monitoring are important for improving educational participation and continuity.

2.2 Government Initiatives and Residential Education

Government Initiatives and Residential Educational Institutions have an important role in improving educational access for Scheduled Tribe students. Various programmes provide scholarships, residential facilities, educational resources and institutional support.

Halder and Gupta examined the educational status of tribal learners through a case study of Eklavya Model Residential Schools (EMRS) in West Bengal. Their study focuses on indicators such as enrolment, literacy and dropout and discusses the role of EMRS in providing educational opportunities to tribal learners in remote areas.

Residential schools can reduce some difficulties associated with distance, accommodation and access to the educational facilities. However institutional support does not necessarily address all educational requirements. Students may continue to require supplementary learning, language sensitive resources and continuous academic support.

Therefore, Digital systems can complement existing government and residential educational initiatives by supporting supplementary learning, coordination and monitoring rather than replacing formal educational institutions.

2.3 Language, Cultural and Digital Learning

Language is a significant factor in the education of tribal children. Many tribal learners grow up using a home or community language that may differ from the dominant language used in formal education. This difference can influence comprehension, participation and language acquisition.

The UNESCO State of the Education Report for India 2025 identifies linguistic exclusions and cultural irrelevance among the interconnected challenges affecting tribal education and highlights the importance of mother-tongue and multilingual approaches.

Jessy T.M and A. Vijayanand studied the role of cultural connections and media involvement in acquiring English language skills among tribal students. Their study highlights the relationship between cultural background and language learning and discusses the role of television, radio and digital media in supporting language acquisition.

Research by Sharma and Sharma also indicates that language proficiency can influence student's ability to effectively use digital educational technologies in rural and tribal contexts.

These studies suggest that digital educational platforms should not focus only on content delivery. They should also consider language accessibility, cultural relevance, simple interfaces, mobile compatibility and low-bandwidth environments.

3. COMPARATIVE ANALYSIS OF REVIEWED LITERATURE

The reviewed literature covers different but interconnected aspects of tribal education.

Table 01: Comparative Analysis of Reviewed Literature

Source	Main Focus	Key Observations	Relevance to Shiksha Setu
Chalumuri	Government Initiatives	Geographical, economic, Language, teacher and monitoring-related barriers	Monitoring and coordinated support

Parida and Das	Tribal education barriers	Poverty, language, isolation, infrastructure and teacher shortage	Integrated educational support
Halder & Gupta	EMRS	Residential schools support educational access for tribal learners	Supplement Existing institutions
UNESCO	Multilingual Education	Linguistic exclusion and cultural relevance are important	Multilingual learning support
Jessy T.M and Vijayanand	Culture and Media	Culture and media influence tribal student's language learning	Culturally relevant content
Sarma & Sarma	Digital-language gap	Language proficiency affects effective digital learning	Language sensitive digital platform

The comparison indicates that existing studies address government support, residential education, socio-economic barriers, language, culture and digital learning. However, these aspects are generally addressed separately. There is a scope for an integrated digital framework that combines supplementary education, volunteer coordination, multilingual support and educational monitoring.

4. RESEARCH GAP

The reviewed literature demonstrates that tribal education is affected by multiple interconnected challenges, including poverty, geographical isolation, inadequate infrastructure, language barriers and limitations in the implementation of educational programmes.

Existing initiatives such as EMRS and government educational schemes provide institutional support to tribal students. Research on culture and media also indicates the potential of digital and media-based approaches for supporting language learning. However, there is scope for a platform that brings these requirements together in a single digital framework.

In particular, an integrated system can be explored for verified volunteer coordination, supplementary learning sessions, attendance and progress monitoring, multilingual support and transparent management of educational resources.

This identified gap forms the conceptual basis of the proposed Shiksha Setu platform for Katkari tribal children.

5. PROPOSED CONCEPTUAL APPROACH: SHIKSHA SETU

Based on the findings of the reviewed literature, Shiksha Setu is proposed as a digital platform for providing supplementary educational support to Katkari tribal children. The platform is intended to complement existing schools, teachers and government educational programmes rather than replace them.

The proposed system connects students/community members, verified volunteer teachers, administrators and educational supporters. Volunteers can register on the platform and undergo an administrative verification process before participating in educational activities. Verified volunteers can be scheduled for supplementary learning sessions.

The platform can maintain digital records of attendance and basic student progress. Session-related information can be submitted for administrative verification, allowing administrators to monitor the delivery of planned educational activities.

A multilingual approach can address some of the language-related challenges identified in the reviewed literature. The proposed platform can support Marathi, Hindi and English interfaces and can provide learning resources appropriate to the local context.

The platform can also support educational-resource management. Books, stationery and other educational materials can be recorded from procurement to distribution. A transparency dashboard can provide authorised stakeholders with relevant information regarding educational activities and resource utilisation.

Proposed Educational Workflow

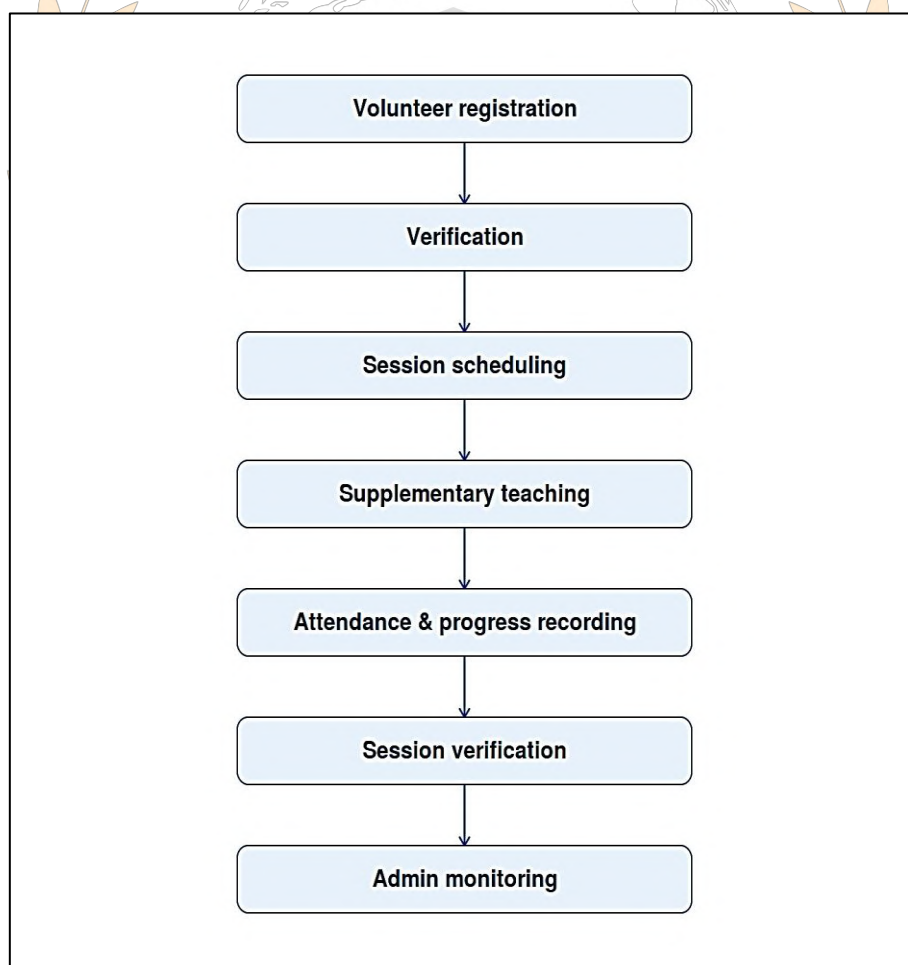


Figure 01: Proposed Educational Workflow

Proposed Resource Management Workflow

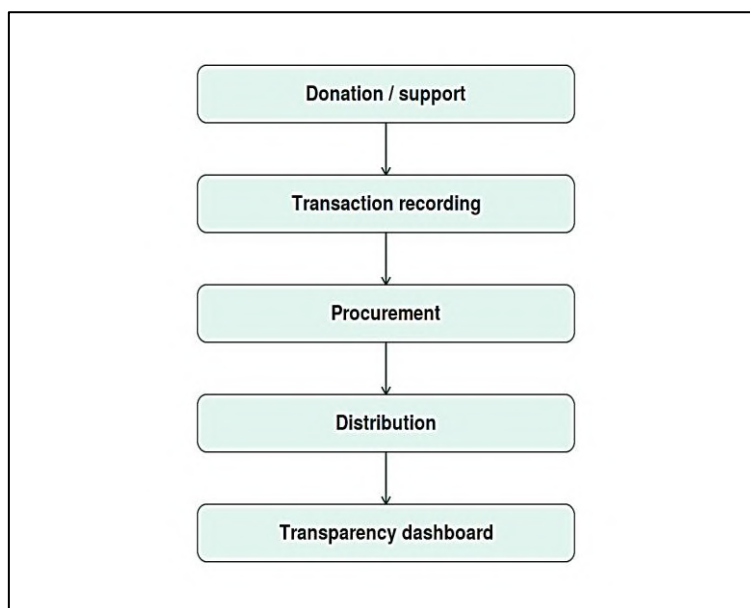


Figure 02: Proposed Resource Management Workflow

Thus, Shiksha Setu combines supplementary education, volunteer coordination, multilingual accessibility, educational monitoring and resource transparency within a single digital framework.

6. DISCUSSION

The reviewed literature indicates that tribal education cannot be understood through a single factor. Socio-economic conditions, geographical isolation, language, infrastructure, availability of teachers and implantation of educational programmes interact with one another.

Government and residential educational initiatives can improve access to education, particularly for students living in remote areas. However, additional mechanisms may be required to provide continuous supplementary learning and monitor educational activities.

Language and culture considerations are also important. Studies on tribal language learning and multilingual education indicates that educational content and digital systems should consider learners' linguistic and cultural backgrounds. Digital education can provide additional opportunities, but connectivity, device availability and language proficiency remain important considerations.

The proposed Shiksha Setu model responds to these observations by using technology not only for delivery educational content but also for volunteer coordination, session scheduling, attendance recording, progress monitoring and educational-resource management.

However, Shiksha Setu is currently a conceptual/project-level framework. Its actual effectiveness cannot be established through the literature review alone. Field implementation and evaluation among Katkari children would be required to assess its effect on participation, learning continuity and educational outcomes among Katkari children.

7. LIMITATIONS

This review has several limitations. First, it follows a narrative literature review approach and does not constitute a systematic review based on a formal PRISMA protocol.

Second, the reviewed studies cover different tribal communities and geographical regions of India. Therefore, their findings may not directly represent the specific educational conditions of the Katkari community.

Third, digital educational interventions depend on internet connectivity, device availability, electricity and digital literacy, which may limit their use in remote settlements.

Finally, the proposed Shiksha Setu framework requires field-level implementation, user feedback and empirical evaluation before its effectiveness can be established.

8. CONCLUSION AND FUTURE SCOPE

Tribal education in India continues to be influenced by interconnected socio-economic, geographical, linguistic, cultural and infrastructure factors. The reviewed literature shows that government initiatives, residential schools, multilingual approaches and digital or media-based learning can provide important forms of educational support.

However, the literature also indicated the importance of local context, language accessibility, implementation and continuous monitoring. Existing approaches generally address individual aspects of tribal education, creating scope for integrated digital support.

In response to this gap, Shiksha Setu proposes a supplementary digital educational platform for Katkari tribal children. The proposed platform integrates verified volunteer participation, session scheduling, attendance and progress monitoring, multilingual support and transparent educational-resource management.

Future work can focus on pilot implementation in the target community, collection of user feedback, evaluation of student participation and learning outcomes, development of locally relevant multilingual content, optimisation for low-connectivity environments and possible expansion to other tribal communities.

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