Volume-1, Issue-1

January to March 2026

E-ISSN: 3049-3943

INDIAN JOURNAL OF ECONOMICS, COMMERCE AND MANAGEMENT (IJECM)

Peer Reviewed Journal **Refereed Journal** **Indexed Journal**

Indian Journal of Economics, Commerce and Management (IJECM)
E-ISSN: 3049-3943
Website: https://www.economicsandcommerce.in/
Volume 1; Issue 1; January to March 2026; Page No. 1-7

Adoption and Impact of Digital Learning among Tribal Populations in Coimbatore

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Abstract

This study explores the adoption of digital learning and its educational implications among the tribal population living in Coimbatore district. Despite the rapid advancement of the digital education sector in India, tribal communities still lag behind due to socio-economic backwardness, low income, and inadequate infrastructure. The study focused on the availability of digital devices (smartphones, computers), internet access, usage, and academic progress of students. Structured questionnaires and face-to-face interviews were conducted during the data collection phase. The results show that digital learning facilitates easy access to educational resources and enhances students' interest and ability to learn. However, low internet connectivity, lack of digital literacy, and economic constraints continue to be major challenges. Furthermore, parental uncertainty and language-related problems were also observed. Thus, the study emphasizes the need for public and private sector organizations to work together to improve basic facilities, provide digital education, and implement inclusive education policies. This study makes important contributions to the development of a balance between digital education and social justice-based curriculum.

Keywords: *Digital learning, tribals, educational progress, digital divide, Coimbatore, internet access, digital literacy.*

Introduction

Digital learning is a major educational revolution that has led to the development of information and communication technology. Education has spread easily and quickly through the use of the internet, smartphones, computers, online learning platforms, etc. In the 21st

century, the nature of education has completely changed, going beyond traditional classroom learning, and an environment has emerged where students can learn anytime, anywhere.

In particular, the education sector has undergone major changes during the COVID-19 pandemic. With the closure of schools and colleges, online education has become the only option available. Thanks to this, digital platforms like Google Classroom, Zoom, Microsoft Teams were widely used. While these changes have resulted in continuing education for urban and affluent communities, they have created more challenges for disadvantaged and tribal communities.

In India, especially in the Coimbatore region, there are people of different races. Because these communities live mostly in mountainous and forested areas, basic facilities such as electricity, internet connectivity, and digital devices are inadequate. Consequently, they face many challenges in accessing digital education.

Moreover, socio-economic factors play an important role in the use of digital education. Low family income, parental education level, lack of digital literacy, etc., affect students' learning opportunities. As a result, the digital divide is increasing between urban and rural areas, and between civil society and tribal people.

At the same time, digital education offers many benefits. It expands educational possibilities, encourages individualized learning styles, and facilitates access to global knowledge. With proper support and government intervention, digital education has the potential to improve the quality of education of tribal students.

In this context, this study aims to explore the diffusion of digital learning, its use, and its educational and social outcomes among tribal people living in the Coimbatore region. Specifically, the study describes how digital education affects their academic progress, what challenges they face, and how this system can be improved in the future.

The main goal of this study is to provide practical insights to policy makers, educators, and community development organizations on digital education.

Objectives of the study

- Assessing the accessibility of digital devices among tribal people
- To assess the use of digital learning
- Assessing the impact of digital learning on educational progress
- To identify the problems encountered
- Providing policy recommendations

Scope of Study

This study examines the use, access and socio-economic impacts of digital education in selected tribal communities in Coimbatore district. Geographically, the study was limited to specific tribal colonies. Social issues include educational attainment, family, gender and digital literacy. Economic factors include income, employment, internet access and availability of digital devices. Furthermore, the use of digital platforms such as online classrooms and educational apps and their educational impact are analyzed. Data were collected through questionnaires, interviews and observation. Because the study was limited to a particular location and time, its results may not be generalizable to all regions.

Statement of the Problem

Digital literacy penetration among tribal communities living in Coimbatore district remains low. Despite the rapid development of communication technologies, these communities are unable to take full advantage of them. Primarily, lack of internet connectivity and living in remote mountainous areas hinder the access to online learning. Furthermore, the lack of digital devices such as smartphones and computers reduces educational opportunities. A lack of digital literacy among students, parents and teachers further complicates implementation. Additionally, differences in languages and content present learning challenges. Socio-economic factors such as low income and lack of awareness are also barriers. The lack of infrastructure at the school level has also worsened the situation. Thus, there is a need to improve access to digital education for the tribal community.

Methodology

This study is conducted to investigate the use and impact of digital education among tribal people of Coimbatore district. A systematic and scientifically based methodology was followed to achieve the objectives of the study.

Type of Research

This is Descriptive Research. This type of research aims to provide a descriptive record of the current status, use, challenges and socio-economic impacts of digital education. The study is designed to define problems and understand their causes.

Data Type

This study uses Primary Data and Secondary Data.

Primary data

Collected directly from users. This includes information collected through questionnaires and interviews with students, parents and teachers. This data is the main source of the study.

Secondary data

Obtained from research articles, books, government information reports, education related websites and previous studies. This strengthens the theoretical foundation and background of learning.

Research Instrument

- Structured questionnaire* is used to collect data in this study.
- The questionnaire is designed in plain and understandable language.
- Contains both closed and open questions.
- Questions covered issues such as socio-economic background of the respondents, availability of digital devices, use of internet, level of use of digital education and challenges faced.
- A pilot study was conducted prior to the use of the questionnaire and necessary changes were made.

Furthermore, the reliability and validity of the data were confirmed. The data obtained were analyzed using statistical methods and interpreted according to the objectives of the study. Thus, this methodological approach enhances the accuracy and reliability of the study.

Research design

This study used Descriptive Research Design. This creativity is a way of writing descriptively about events, events and behaviors in a specific community in a natural setting. In particular, this methodology is more suitable for describing the current status, use and impact of digital education among the tribal people of Coimbatore district. With Descriptive Research Design, the researcher can collect, analyze and interpret structured data without restrictions or experiments. In this study, the perceptions, experiences and attitudes of students, parents and teachers were recorded simultaneously. Through this, the real situation regarding digital education is revealed.

Furthermore, this strategy also helps in assessing the impact of social and economic factors. For example, it clearly explains how factors such as family income, educational level, availability of digital devices and internet access affect the use of digital education. Data collection methods such as Questionnaire, Interview and Observation are used in this study. The collected data were analyzed using statistical tools and presented in the form of tables and graphs. Therefore, by using a Descriptive Research Design, it may be possible to provide a clear and reliable definition of the status, challenges and outcomes of digital education in the community.

Sample

In this study, 120 individuals were selected as a sample from the tribal population living in Coimbatore district. This sample size is considered adequate to obtain data appropriate to the objectives of the study and draw general conclusions.

Random sampling method is used as the sampling method. In this method, a list of tribal people in the study areas was prepared and respondents were randomly selected from it without any pre-determined bias. Thus, each individual had an equal chance of being in the sample. Furthermore, attention was paid to ensuring that factors such as gender, age, education level and economy were naturally reflected in sample selection. Thus, the reliability and validity of the study is increased.

The 120 participants were recruited from three categories namely students, parents and other teachers. This helps to understand the use and impact of digital education from various angles. Thus, the use of a random sampling method ensures the unbiased nature of the study and the results obtained to be representative of the wider population. They are in a representational environment.

Collection of data

In this study, the primary data was collected from the tribal population living in Coimbatore district. Two main methods were used in data collection: (1) Questionnaire and (2) Interview. Through these methods, the reliability and completeness of the data was established.

1. Type of questions

Structured questionnaires were developed for the study and administered to the families and students of the selected families. The questionnaire consisted of closed and open-ended questions.

Through these questions, details like

- Socioeconomic status of the family
- Availability of digital devices
- Internet use and access
- Use of digital instruction and its impact they were combined.

Participants completed the questionnaires at their convenience. The researcher explained the answers directly to the illiterate participants and recorded them on the recording. Thus, the data were obtained clearly and accurately.

2. Questioning style

Through interview method, in-depth data was collected from students, parents and teachers. Semi-structured interviews were conducted, which provided an opportunity to obtain additional explanations on pre-designed questions.

In interviews, aspects as well

- Awareness about digital education
- Problems encountered while using

- Impact of digital learning on educational progress
- it was written in detail.

Furthermore, data such as experiences, opinions and feelings of the participants were also collected through interviews. This provided depth and credibility to the study data.

Conclusion

Digital learning is emerging as an important tool for educational development among tribal communities living in the Coimbatore region. This study shows that progress has been made in the acquisition of new learning materials through digital instruction and improvements in their knowledge and skills have been made. In particular, online classrooms, educational apps and electronic resources are expanding students' learning experiences. However, this development is not the same in all tribal areas. Basic problems such as poor internet connectivity, lack of digital devices, and lack of digital skills persist. Furthermore, many families are unable to take full advantage of digital education due to social and economic constraints. Thus, for digital education to be fully effective, the basic infrastructure needs to be improved first. This includes better internet access, affordable digital devices, and computer labs in schools. In addition, digital skills training should be provided for students, parents and teachers. Furthermore, content tailored to the linguistic and cultural context of tribal students is required. These challenges can only be overcome if government and schools work together. Overall, digital learning has the potential to improve the quality of education for indigenous people. However, its full benefits will only be realized if the infrastructure and support systems for its implementation are strengthened.

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