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School of Computer Science & Engineering

IILM University Greater Noida

Presents

1st National Conference

on

Technologies for Sustainable Development Goals 2025 (TECH4SDG-2025)

3rd March 2025

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INTERNATIONAL JOURNAL OF RESEARCH IN MODERN ENGINEERING & EMERGING TECHNOLOGY (IJRMEET)

Dear Author / Researcher,

On behalf of the *International Journal of Research in Modern Engineering & Emerging Technology (IJRMEET)*, I extend my heartfelt gratitude to all the authors and research scholars for choosing our platform to publish their valuable research contributions.

IJRMEET, a Refereed, Peer Reviewed, Indexed, and Monthly Journal in Electronic format, has been consistently dedicated since April 2013 to advancing scholarly work in the domains of Modern Engineering and Emerging Technologies. Your innovative and quality research is at the core of our mission to promote academic excellence and practical solutions in the ever-evolving field of engineering and technology.

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Our journal aims not only to disseminate high-quality research globally but also to highlight critical engineering problems and their practical resolutions. I encourage researchers, academicians, faculty members, and industry professionals to continue contributing to IJRMEET and to inspire their peers and students to join us in this academic pursuit.

We sincerely thank our respected Editors, Reviewers, Technical Advisors, Authors, Web Developers, Subscribers, Supporters, and the extended academic community whose efforts and encouragement make each issue of IJRMEET a successful endeavor.

With warm regards,

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डॉ. मोहम्मद रिहान / Dr. Mohammad Rihan
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MESSAGE

I am happy to know about Tech4SDG-2025, a distinguished national conference that aims to explore and highlight the transformative power of technology in achieving the United Nations Sustainable Development Goals (SDGs). This event serves as a critical platform for fostering collaboration among experts, innovators, and leaders who are dedicated to creating solutions that drive sustainable change.

As we face global challenges ranging from environmental sustainability to social equity, it is clear that technological advancements will play a pivotal role in shaping our collective future. Tech4SDG-2025 presents a unique opportunity to examine how cutting-edge technologies can contribute to solving the most pressing issues of our time, from climate change to poverty alleviation.

I look forward to the engaging discussions and innovative ideas that will emerge from this conference. I believe that by working together, we can harness the potential of technology to drive meaningful progress towards a sustainable and equitable world.

I extend my best wishes to all the participants and organizers of Tech4SDG-2025.

27.02.25

(Dr. Mohammad Rihan)

Dated: 27th February, 2025
Place: Gurugram

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The Impact of British Rule on the Indian Education System

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Abstract : British colonization affected the Indian education system through administrative restructuring, English education, the establishment of university systems, curricular reform and introduction of new certifications. These reforms created opportunities in some sectors but left many others underprivileged in terms of access. This paper explores the link between colonial education policies, institutions and mass literacy through historical documentary analysis and descriptive analysis of official published census statistics. The qualitative analysis examines the policies and the interpretation of colonial history of education throughout the nineteenth century to independence. The key statistical comparison relies on the official series of crude literacy rates for 1901 – 1931 with the year 1941 separately considered due to known limitations in enumerations. The total literacy increased from 5.35% in 1901 to 9.50% in 1931 with the female to male literacy ratio increasing from approximately 0.061 to 0.188. Thus, institutional development went hand-in-hand with educational exclusivity. It is argued that colonial education built important institutions but did not achieve universality and depended on Indian reformers, communities, philanthropists and nationalistic policies apart from colonial policy.

Keywords: British India, colonial education, literacy, educational inequality, English education, historical analysis

Introduction

The effects of British rule on Indian education cannot be assessed only in terms of universities' formation or English language learning spread. Education was linked with employment, public finances, cultural prestige, social hierarchy and politics. Therefore, comprehensive assessment should distinguish between institutional development and opportunities provided.

Prior to colonialism, people got education through various channels: vernacular schools, religious institutions, home teaching and occupational apprenticeship. The reach and the form of these means varied considerably. Thus, British colonialism did not introduce learning into the educational void, but changed the recognition, financing and economic worth of existing institutions.

The evolution of colonial education was achieved through the interaction of various actors including officials, missionaries, Indian patrons, teachers, reformers and families. All these actors had different goals. The need to provide certain qualifications determined the official demands while Indians used education for the sake of employment, intellectual stimulation, social mobility or politics.

The key question, therefore, is how colonial institutions have changed both educational opportunities and educational inequalities. This paper answers to this question by integrating policy and historiographical analysis with the limited but clear assessment of historical literacy data. It treats institutional development, cultural change and access as related but separate concepts.

Research Objectives

The paper identifies the major changes in administrative structure, language and curriculum in the period of British rule. Also, it examines the divergent views on colonial education and identifies the role of the fiscal policy and Indian participation. Finally, it assesses changes in published indicators of literacy and evaluates the relation between educational development and gender equality.

Literature Review

Education, Administration and Political Development

Basu's The Growth of Education and Political Development in India, 1898-1920 sets up the necessary theoretical framework for analysis of education in connection with political development. Historical approach to the problem helps to analyze education within the general institutional and social context, rather than the chronological sequence of policies (Basu, 1974).

Whitehead (2005) highlights the contentious nature of colonial education historiography and warns about the potential to make oversimplifications which are not backed by archival research. This is important when analyzing claims that British education was the tool either of progress or domination.

Venkatanarayanan (2013) analyzes the development of the elementary education policy and its political economy. He

emphasizes the distinction between recognition of the policy and sufficient allocation of resources for its implementation. Mondal (2017) similarly discusses the partial realization of compulsory education policy and the separation of educational responsibility and financial control under diarchy.

Language, Knowledge and Colonial Authority

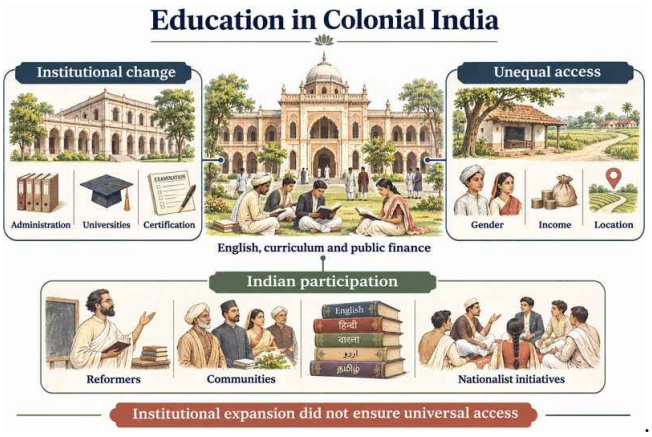
Moir and Zastoupil present documentary collection that shows different positions in the Orientalist–Anglicist debate. The use of official correspondence and Indian interventions proves that educational policies were formed through disputes, not agreement. The 1835 minute by Macaulay is especially enlightening because it presents the explicit position regarding English education and hierarchy of knowledge.

Viswanathan (1989) analyzes English literature learning as the tool of political and cultural power, directing attention to curriculum: selection of the texts and criteria can shape what forms of knowledge gain the institutional prestige.

Seth (2007) develops this idea by analyzing the reception and transformation of the Western knowledge in India, showing that the educational transfer is not always the process of movement of the fixed repertoire of the knowledge from one culture to another. Kumar (1991) similarly considers educational ideas in the context of colonial and nationalist political projects making educational purpose itself the historical subject of inquiry.

Finance, Community and Educational Participation

Chaudhary (2009) uses historical district-level data to explain the insufficient supply of primary education, showing the role of the caste and religious heterogeneity in private schools' supply and spending priorities. These results undermine the explanations based on the centrally issued policies



Chaudhary (2010) further analyzes taxation and educational development finding the connections between the configuration of revenues and expenditures. Taken together, these papers show that the lack of sufficient fiscal resources might result in uneven provision of educational services. Bellenoit (2007) analyzes the missionary education through interplay of religion, knowledge and Indian society showing that missionary institutions should be analyzed beyond the equivalence with government schools. Ellis (2009) similarly critiques the approaches dominated by the elites, putting the emphasis on children, gender, domestic learning and education out of formal classrooms.

Research Gap

These works define the importance of the administration, cultural prestige, finance and participation. The synthesis that will integrate these aspects and at the same time distinguish them is necessary. Thus, this paper investigates the co-existence of the institutional growth with the lack of population coverage and unequal participation without interpreting literacy changes as the simple measure of success of colonial policies.

Materials and Methods

Research Design

This study uses the historical documentary design complemented with descriptive secondary data analysis. The period covered by interpretative part is from the nineteenth century to the independence in 1947. The numerical analysis focuses on 1901-1931 with a separate analysis of 1941 observations. The sources used are the official statistical compilations, census historical monographs, policy documents, scholarly books and academic articles. This is the limited historical synthesis rather than systematic review.

Source Selection and Interpretation

Sources were selected for their relevance to educational policies, languages, finance, participation and historical measurements. The bibliographic information was checked with publishers, journals, governmental or institutional records. The depth of the available material varied from publication to publication; the arguments were restricted by the findings or descriptions that can be verified. The documents were analyzed considering their purpose: recommendations of the officials show their intent, while census returns describe the recorded population characteristics. Neither source type alone can prove the quality of teaching and learning.

Variables and Statistical Procedure

The quantitative source is the compilation of the Ministry of Statistics and Programme Implementation which presents the table of crude literacy rates citing the Census of India as the source. Crude rates use the total population as the denominator and should not be confused with the modern age-specific measures. Four indicators were calculated: percentage-point change per decade, percentage-point change overall, the difference in male-female literacy and female-to-male literacy ratio. Percentage-point change equals the difference between the later rate and the earlier rate.

Difference in male-female literacy equals the difference between the male literacy and the female literacy. Ratio of female-to-male literacy equals the division of female literacy by the male literacy. No significance tests, regression coefficients, confidence intervals or respondent-level statistics were calculated. Results

Historical Policy Context

Colonial educational policy repeatedly redefined the relationship between government responsibility, language, and institutional provision. These shifts were unevenly implemented and should not be mistaken for immediate nationwide changes.

Table 1. Selected policy developments and analytical significance

Development	Date	Significance for this study
Charter Act educational provision	1813	Formal recognition of expenditure on learning
Macaulay's minute	1835	Advocacy of English and Western learning
Wood's Despatch	1854	Framework for a more articulated educational administration
Hunter Commission	1882	Examination of educational provision, including primary education
Government of India Act	1919	Transfer of education to Indian ministers under diarchy
Provincial compulsory education legislation	Early twentieth century	Expansion of legal provision with uneven implementation

Recorded Literacy Change

Table 2 presents the main series used in the analysis.

Census year	Total literacy (%)	Male literacy (%)	Female literacy (%)
1901	5.35	9.83	0.60
1911	5.92	10.56	1.05
1921	7.16	12.21	1.81
1931	9.50	15.59	2.93

Source: Ministry of Statistics and Programme Implementation, Table 1.20, based on Census of India data. mospi.gov.in

These series show the expansion from the very low starting point. But these series do not separate the independent contributions of the government policy, the mission activities, Indian institutions, household demand or other factors.

Growth and Gender Inequality

Table 3. Indicators calculated from Table 2

Indicator	Calculated result
Total literacy increase, 1901–1911	0.57 percentage points
Total literacy increase, 1911–1921	1.24 percentage points
Total literacy increase, 1921–1931	2.34 percentage points
Total literacy increase, 1901–1931	4.15 percentage points
Male–female gap, 1901	9.23 percentage points
Male–female gap, 1931	12.66 percentage points
Female-to-male ratio, 1901	0.061
Female-to-male ratio, 1931	0.188

Female participation in education increased relative to the male participation, but the absolute gap became wider. These results are mathematically possible: proportional increase from the very low starting point is compatible with growing percentage-point difference.

Reliability of the 1941 Observation

The official compilation presents the total, male and female literacy in 1941 as 16.10%, 24.90% and 7.30%, correspondingly. Although these numbers are the historical evidence, their apparent acceleration should be qualified. Natarajan explains that literacy totals in British Indian territories were the provisional enumerator totals without detailed tabulation afterwards. Potential confusion between partial literacy and the ability to read and write adds the uncertainty. Thus, the present analysis excludes 1941 from the principal comparison rather than interpreting the observed increase as the unqualified measure of educational achievement.

Institutional Development and Restricted Access

The historical documentary evidence shows the divergent development of educational institutions and educational opportunities. Educational administration could become more formalized while provision in rural areas, affordability and participation were restricted.

Table 4. Synthesis of documentary findings

Dimension	Institutional change	Qualification
Administration	More formal supervision and funding arrangements	Implementation depended on resources
Language	Greater prestige attached to English qualifications	Advantages were unevenly accessible
Curriculum	Expansion of institutionally recognized Western learning	Other knowledge traditions lost relative authority
Elementary schooling	Repeated recognition of wider provision	Universal participation remained unrealized

Dimension	Institutional change	Qualification
Political life	New educational networks and qualifications	Learners could challenge colonial objectives

Sources: Kumar (1991), Seth (2007), Venkatanarayanan (2013), and Mondal (2017).

Discussion

Institutional Modernization and Mass Education

The findings support the distinction between the institutional modernization and mass education. Departments, examinations and recognized qualifications could make the education standardized but not accessible to everybody. Thus, institutional development is not the sufficient measure of social impact.

The published evidence on literacy corresponds to the limited educational development. However, it cannot prove the counterfactual scenario of what literacy would have been without the British rule. Derivation of this scenario would require additional comparative evidence and careful consideration of the historical regions and institutions.

English Education and Unequal Opportunity

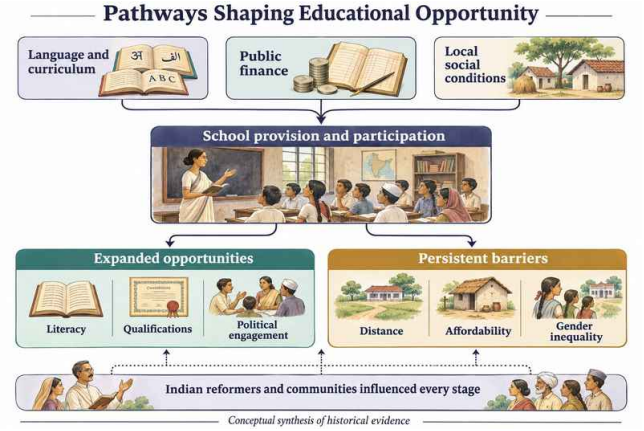
English education provided the access to particular professional and administrative opportunities. The perception of the advantages could motivate families to send their children to schools, but resources to pursue this path were unevenly distributed.

Language affected the cultural prestige. The institutions giving the preference to particular texts and ways of thinking affected the judgments about what was advanced knowledge. This interpretation concerns the issue of authority and not the claim that Indian learners accepted the colonial judgments passively. The students, writers and teachers could appropriate the institutional knowledge for different purposes.

Finance and Local Conditions

The fiscal policies are the key explanatory factor behind the uneven educational development. Schools need the continuous funding of teachers, buildings, materials and supervision. Assignment of the responsibility to local institutions does not mean that they have enough revenues to provide educational services.

The studies of Chaudhary show that both public finance and local social conditions mattered. The implication is that the educational results should be explained through the interaction of state priorities, community resources and distributional conflicts. Explanations based on the single motive ignore these mechanisms of implementation.



Indian Agency and Political Change

The Indian participation was the part of the process of educational development. Reformers, patrons, religious organizations and families influenced the demand for education and institutions providing it. Their goals included employment, but also social reform, community development and intellectual independence.

The political consequences of the education could go beyond official expectations. The educational networks and shared vocabulary could help to criticize the colonial authority. However, this relationship cannot be simplified to the claim that the English schools alone produced the nationalistic movements: political mobilization depended on other economic, institutional and social processes.

Interpreting Gender Inequality

The gender indicators prove the necessity to go beyond the single statistical measure in the historical evaluation. The relative convergence does not imply the equality of opportunity, while the growing absolute gap does not necessarily imply the decrease in female participation.

Also, aggregate series cannot explain regional or community variation among women. The more complete account should consider the household resources, proximity to schools, teaching arrangements, social expectations and reform initiatives in the particular community. The emphasis of Ellis on education out of the formal institutions is especially valuable since the census literacy does not capture all educational practices.

Limitations

The principal limitation is the dependence on the aggregate historical statistics whose definitions, coverage and administrative boundaries require careful interpretation. The official series cannot be considered the fixed-boundary district panel; it includes populations beyond the territories directly administered by the British, thus cannot be interpreted as the measure of the performance of the direct colonial governance.

The concept of literacy is narrower than the concept of education. It does not capture the scientific knowledge, professional skills, classroom experience or quality of teaching. Documentary sources disproportionately preserve the official and literate voices, while the experiences of excluded children are more difficult to discover.

Finally, this synthesis does not rebuild the series of expenditure, school availability and enrolment from the original district records. The contribution of this study is in the alignment of the historical interpretation with the explicitly limited descriptive evidence.

Conclusion

British rule significantly transformed the Indian education in terms of organization, language, curriculum and certification. These transformations created important opportunities, but the mass participation in the education remained incomplete. The educational development also depended on the Indian initiative and negotiation, thus making the exclusive attribution of colonial administration insufficient.

The analysis demonstrated why the institutional development and the educational equality should be separately considered. The recorded literacy increased, but the gender results showed the simultaneous relative progress and the persisting absolute inequality. The balanced interpretation of the history should include institutional development, restricted access, cultural hierarchy and Indian agency within the single account.

Future Research

The future research should assemble the comparable district-level records of expenditure, school availability, enrolment and literacy. The comparisons of the directly administered provinces and princely states would help to understand the differences in the institutions. Such research should harmonize boundaries, distinguish the school attendance from the enrolment and use the local language records and learner experiences.

Data Availability

All numerical observations are reproduced from the identified official compilation. Derived indicators are calculated directly from Table 2. No survey responses or experimental observations are reported.

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