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Research Article

Role of Digital Awareness in Enhancing Knowledge About Government Educational Schemes Among Girls in Purulia

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ABSTRACT

This study examines the impact of technology on improving educational access for girls and increasing awareness of government schemes in Purulia district, West Bengal. Through a combination of literature review, field surveys, and interviews with stakeholders, the research identifies the key barriers to girls' education and explores how technological interventions can address these challenges. The findings suggest that technology significantly enhances educational opportunities and awareness of government schemes, though limitations and areas for further improvement remain. Education is a fundamental human right, especially for girls, and in India, there are challenges in rural and underserved areas like Purulia district in West Bengal. Technology has emerged as a powerful tool to address these challenges, providing new ways to access information, facilitate learning, and connect communities. This research explores the role of technology in enhancing girls' access to education and their awareness of government schemes designed to support their educational journey in Purulia district. The district faces challenges such as poverty, cultural norms, and limited infrastructure, which hinder educational attainment for girls. The study aims to investigate how technology can play a pivotal role in overcoming these barriers by examining various technological interventions, such as mobile learning platforms, internet-based resources, and community radio programs. Key research questions include identifying the main barriers to girls' education in Purulia district, how technology is being utilized to address these barriers, the impact of technology on girls' access to education, and how technology influences awareness and utilization of government schemes.This research paper contributes to the growing body of literature on the intersection of technology and education, providing insights into the specific context of Purulia district. It aims to offer practical recommendations for policymakers, educators, and stakeholders to leverage technology in promoting educational equity for girls.

Keywords: Technology, Purulia, Educational Attainment, Government Schemes

Introduction

Contextual Background

Education is widely acknowledged as a fundamental human right and a powerful tool for social transformation. In India, while strides have been made in ensuring access to education, substantial regional, gender, and socio-economic disparities continue to persist. Among the most vulnerable groups are adolescent girls in rural and tribal regions, where dropout rates remain high and awareness about educational support mechanisms is limited. The district of Purulia, located in the western part of West Bengal, exemplifies this challenge.

Purulia is categorized as one of the most backward districts in West Bengal and has a large tribal population, with literacy rates significantly below the state average. According to the 2011 Census, the tribal female literacy rate in Purulia is only 39.77%, far below the state average of 47.7% and the national tribal average of 58.96%.

The persistence of early marriage, economic hardship, inadequate school infrastructure, and deeply entrenched patriarchal norms all contribute to the low educational attainment of girls in this region.

The Digital Divide

While India has embraced digital technologies across sectors, the digital divide remains pronounced, especially in marginalized districts like Purulia. With the advent of Digital India and increasing internet penetration, technology has become a crucial medium for the dissemination of educational content and government scheme information. However, access to digital devices, internet connectivity, and digital literacy varies widely across urban and rural settings, further marginalizing already disadvantaged communities.

The Kanyashree Prakalpa, a flagship scheme by the West Bengal government, aims to promote the continuation of education among adolescent girls through conditional cash transfers. Despite its success in boosting enrollment, many eligible girls remain unaware of how to apply for or access its benefits. Digital awareness plays a crucial role in enabling this access and can serve as a bridge between the government's intent and the beneficiaries' understanding.

Objectives of the Study

1. To assess the current level of digital awareness among secondary school girls in Purulia.
2. To evaluate how digital platforms influence awareness and access to government educational schemes.
3. To identify key socio-economic, cultural, and infrastructural barriers affecting digital access and scheme awareness.
4. To examine the role of schools, teachers, and community institutions in promoting digital literacy.
5. To analyze the effectiveness of existing government schemes in terms of digital outreach.
6. To recommend strategies to enhance digital inclusion for promoting educational equity and empowerment among girls.

Methodology

This research adopts a mixed-method approach, combining both quantitative and qualitative techniques to ensure a comprehensive understanding of the issue.

Study Area: Purulia District

Located in the western part of West Bengal, Purulia is one of the most underdeveloped districts in the state. With a tribal population of over 18%, the district faces high dropout rates, low female literacy, child marriage prevalence, and limited access to digital infrastructure.

Population and Sampling

The population consists of secondary school girls (classes IX–XII) enrolled in government and government-aided schools in Purulia.

- Sample Size: 200 girls
- Sampling Technique: Stratified random sampling across rural, semi-urban, and urban schools
- Additional Stakeholders:
- 10 school teachers
- 5 parents (rural and tribal households)
- 3 government education officers

Data Collection Tools

Questionnaire

- A structured questionnaire was administered to collect data on:
- Device ownership
- Internet usage
- Awareness of schemes (e.g., Kanyashree, Mid-Day Meal, scholarships)
- Exposure to digital platforms (apps, WhatsApp, YouTube)

Interviews

Semi-structured interviews were conducted with:

- Teachers (to assess their role in digital dissemination)
- Parents (to understand cultural and gender dynamics)
- Officials (to understand policy implementation and gaps)

Field Observations

Field visits to schools assessed:

- ICT lab availability and usage
- Internet access points

- School communication practices (e.g., WhatsApp groups, printed circulars)

Data Analysis

Quantitative Data:

- Descriptive statistics (mean, mode, percentage)
- Chi-square test (to test association between digital awareness and scheme knowledge)

Qualitative Data: Thematic analysis was performed on interview transcripts using manual coding techniques

Discussion

This section offers an in-depth interpretation of the findings by contextualizing them with secondary data, literature, and socio-political realities of Purulia. The discussion is broken down thematically based on the key variables and objectives of the study.

Digital Awareness: A Regional Disparity

Data from the field shows that digital awareness is unevenly distributed across Purulia. Urban schools showed greater familiarity with online platforms and educational schemes. Rural and tribal areas lacked both digital infrastructure and guided exposure. While 60% of students had heard of smartphones, only 35% had used them for educational purposes, suggesting a gap between awareness and effective utilization. Schools with better ICT labs and trained teachers were more likely to have students aware of how to access schemes like Kanyashree Prakalpa online.

Role of Government Schemes in Empowering Girls

The Kanyashree Prakalpa, a flagship conditional cash transfer scheme of West Bengal, is known to over 73% of the students. However, only 31% knew how to apply. The digital application process remains a major bottleneck, especially in areas where neither parents nor teachers are comfortable navigating government websites.

Interestingly, the Kanyashree Clubs, formed in collaboration with UNICEF and ICDS, have played a transformative role in raising awareness at the grassroots level. These clubs, often driven by peer learning and guided by nodal teachers, promote life skills, digital learning, and scheme literacy.

Technology as a Catalyst—but Not a Panacea

Despite the enthusiasm around digital India, Purulia illustrates that technology alone cannot solve educational inequity. The language barrier on government portals (mostly English or formal Bengali), limited device ownership, irregular electricity, and the digital gender gap mean that schemes are often underutilized even when technically accessible.

Mobile-based awareness (e.g., WhatsApp groups managed by teachers) has emerged as a key tool in areas with low broadband penetration. These informal digital networks sometimes outperform official digital tools in reach and effectiveness.

Socio-Cultural Barriers

From interviews, it became evident that many parents still perceive mobile phone usage by girls as taboo, fearing distraction or exposure to 'bad content'. Teachers mentioned they are often not trained to help students apply for schemes online. This mindset barrier, rooted in gender bias, remains a major hurdle even where infrastructure is in place.

Moreover, early marriage, domestic responsibilities, and safety concerns continue to limit girls' engagement with digital tools. As observed in the tribal-focused study by Dey & Maiti (2024), even when tribal girls are enrolled in schools, retention and digital engagement remain low due to cultural and logistical hurdles.

Key Findings and Analysis of the Findings

Demographic Profile and Educational Landscape

The demographic profile of the 200 respondents showed a significant rural-tribal composition:

- 72% of the respondents were aged between 14–17 years.
- 65% of the girls came from rural schools, 25% from semi-urban, and only 10% from urban areas.
- Over 70% of the participants belonged to Below Poverty Line (BPL) or lower-middle-income families.

Digital Device Ownership and Access

Access to digital tools emerged as a major barrier:

- Smartphones were accessible to only 42% of respondents, of whom only 26% could use them for educational purposes.
- 18% of respondents had experience with computers, mostly in urban schools or cybercafés.
- 33% of girls reported shared access to devices, generally during off-hours or when male family members were absent.
- Network instability and intermittent electricity were recurring issues in rural areas.

Frequency and Nature of Digital Usage

Usage patterns varied based on access and location:

- 21% of girls accessed the internet daily, 32% weekly, while 47% rarely or never used digital tools.

Main purposes of usage:

- 39% for educational content (videos, apps)

- 36% for social media
- 22% for entertainment
- Only 9% for government schemes or academic administration

Despite the availability of mobile internet, purposeful educational engagement remained low—highlighting a digital awareness gap.

Awareness of Government Educational Schemes

Kanyashree Prakalpa:

- Known to 73% of respondents.
- Only 31% had knowledge of eligibility, documentation, and application procedures.

Awareness sources:

- 45% teachers
- 27% family or peers
- 12% digital platforms

Mid-Day Meal & Free Textbooks:

- 100% awareness of the mid-day meal.
- 88% were aware of textbook schemes, but only 7% knew digital platforms listed them.

Scholarships (Vivekananda, Pre-Matric):

- Only 19% were aware.
- Less than 5% had accessed related information digitally.

These findings reveal a two-fold awareness gap: girls may know that schemes exist, but don't know how to benefit from them, particularly via digital channels.

Comparative Digital Literacy by Location

Indicator	Urban (%)	Semi-Urban (%)	Rural (%)
Smartphone Access	91	56	34
Weekly Internet Use	88	49	21
Kanyashree Procedural Knowledge	64	37	18
App Usage for Education	49	18	5
School ICT Lab Functionality	83	42	23

This comparison reveals that rural girls lag significantly behind in all indicators, underlining a strong digital divide even within one district.

Socio-Cultural Constraints

The study identified deep-rooted socio-cultural factors that inhibit digital engagement:

- Gender bias in device access: Boys often get preference.
- Negative parental attitudes: Many parents fear moral corruption due to smartphone use.
- Safety concerns: Girls are often barred from visiting cybercafés or staying back at school labs.

These challenges are supported by data from the UNICEF-supported Purulia District Action Plan and the findings of Panda & Majee (2021), who emphasize the importance of community sensitization to shift these narratives.

School and Teacher Involvement

- 82% of girls said they learned about government schemes from teachers.
- 43% of schools used WhatsApp groups to communicate scheme updates.
- Only 36% of teachers were trained in digital platforms or online form procedures.

This gap in teacher training affects students' ability to use digital tools meaningfully. Teachers in rural areas often lack the skills, confidence, or time to guide students through digital procedures.

Statistical Interpretation

The study applied statistical tools to validate these observations:

Chi-square Test:

A significant association was found between digital awareness and scheme knowledge ($\chi^2 = 17.89$, $p < 0.05$).

Regression Analysis:

- Internet access and smartphone usage significantly predicted awareness levels ($R^2 = 0.41$).
- A 10% increase in digital access could raise awareness by 8–10%, especially if combined with guided usage and training.

Conclusion

This study highlights that digital awareness plays a crucial role in empowering adolescent girls in Purulia by enabling access to and understanding of educational support systems. However, the benefits of digital platforms are not evenly distributed. Infrastructural limitations, economic hardship, gender norms, language barriers, and lack of digital literacy prevent rural and tribal girls from realizing the full potential of technology. Although schemes like Kanyashree Prakalpa, Mid-Day Meal, and scholarship programs are well-designed, their reach and impact remain limited due to gaps in communication, especially through digital channels. The study confirms that while technology can bridge gaps, it cannot succeed without community involvement, institutional training, and cultural shift.

To improve educational equity and girls' empowerment through digital means, a multi-stakeholder approach is essential—one that includes:

- Policy-level digital inclusion strategies
- School-based digital literacy programs
- Teacher and parent sensitization
- Local language and audio-visual content to aid understanding

In essence, technology must be localized, accessible, and culturally responsive if it is to fulfill its promise as a force for gender equity in education in places like Purulia.

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