

Gender and Socio-Economic Challenges in Online Learning

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Abstract

This research examines the intersection of gender and socio-economic issues in shaping online learning experiences, with a particular focus on students from the Malavettuva tribal community in Kerala's Kasaragod district. Although digital education is praised for its accessibility and flexibility, it often reinforces existing inequalities. The study uncovers several major challenges faced by these students, including limited access to digital devices and reliable internet, financial hardships, and increased household responsibilities, especially for female learners. In addition, gender norms, stereotypes, and concerns about safety in virtual environments pose further obstacles.

Adopting a mixed-methods approach involving surveys, interviews, focus group discussions, and case studies, the research draws on insights from 100 students and 57 teachers to provide a comprehensive picture of the situation. The findings reveal a strong connection between these challenges and negative effects on academic performance, participation, and mental health.

The study calls attention to the pressing need for inclusive and gender-sensitive education policies, investment in affordable digital infrastructure, and support mechanisms specifically designed for marginalized groups. Addressing these gaps is vital to closing the digital divide and ensuring fair access to quality online education for all students, especially those from underserved communities.

KEY TERMS

Online learning is the electronic method of instruction through the internet and other

Platforms. It's otherwise known as e-learning, web-based learning, and computer-assisted instruction.

Socio-economic status (SES) is a way of reporting a person's economic and social standing. It's done on the basis of factors like income, education, and occupation.

Socio-economic challenges are issues that affect the social and economic well-being of a society.

Equity in learning, or educational equity, is the principle that all students should have equal access to the resources and opportunities to succeed in learning.

Access to learning means that the right of all children to learn without any discrimination and to have equal learning opportunities. It's a fundamental right of a human being.

Introduction

The fast changes in online learning created, at the same time, opportunities and challenges, especially in socio-economic and gender disparities. The rapid changes in online learning created, at the same time, opportunities and challenges, especially in terms of gender and socio-economic disparities. Digital education gives accessibility and flexibility. At the same time, it is trying to increase the inequalities among

the students. Gender dynamics steer the participation, engagement, and access to resources, with women, girls, and deprived groups often facing barriers such as domestic responsibilities, social expectations, and gender biases in technology use. Likely, socio economic status decides access to consistent internet connections, digital devices, and amicable environments, creating a digital divide that outrageous students from lower-income backgrounds.

This study investigates how gender and socio economic factors influence online learning, focusing on the disparities in school access, classroom participation, and achievement among learners. It emphasizes the importance of developing inclusive and equitable digital education strategies to guarantee that students from all backgrounds—irrespective of gender, caste, or economic status—can thrive in virtual learning settings.

Objectives

The study aims to: □

To Identify Gender-Related Obstacles – Examine the impact of gender on students' access, participation, and achievement in online education, considering the elements like societal norms, disparities in digital skills, and existing gender stereotypes.

To Analyse Socio economic Inequities – Explore how students' financial backgrounds affect their access to online learning with stable internet connections, suitable digital devices, and supportive environments for effective online learning.

To understand the Digital Divide – Examine how gender and socio-economic factors drive the digital divide and unequal access to technology and online educational resources.

To Assess the Impact on Learning Outcomes – Evaluate how gender and socio-economic factors affect students' academic performance, engagement, and overall educational experience in online learning.

Review Literature

Kumari Vibhuti Nayak and Shamsher Alam (2022). The COVID-19 pandemic exacerbated existing educational inequalities, particularly among historically marginalized communities. This study examines how the digital divide has further weakened the education system for tribal(Adivasi) communities, with a specific focus on young tribal girls in Jharkhand, India. Through semi-structured interviews with students, parents, and teachers in remote areas, the research highlights key challenges in transitioning to online education. Beyond issues of accessibility and infrastructure, cultural and societal factors such as perceptions of girls' education and scepticism toward digital learning have intensified the digital divide. The study tries to reveal a re-evaluation of online learning strategies and give policy recommendations to address these increasing educational disparities.

Farzaneh Lashgari & Others (2024). This study enquires how online learning is helping to empower girls and women, and reduce the gender disparities in today's digital world. It focuses on how digital learning, especially in skills training and creative fields like arts and crafts, is giving girls and women to get more chances to grow both personally and professionally. The study also uses data analysis tools like machine learning to understand how these learning opportunities help girls and women become more financially sound, independent, and take a stronger role in the working world.

The study collected and analyzed data from 120 women across various age groups using questionnaires. The results show that e-learning helps girls and women to overcome their challenges, such as financial limitations and restricted access to traditional education. The research also substantiates the role of

innovative teaching methods and institutional support in increasing and improving the benefits of online learning.

Anuradha Mathrani & Others (2023). This study reports the problems caused by the digital divide during the COVID-19 lock down in five developing countries in South Asia. It uses a detailed approach that considers social structures, cultural beliefs, and individual choices to understand how people's access to online learning was affected.

The research states clear differences in digital access between urban and rural areas, and between male and female students. In particular, female students and those in rural areas faced more serious difficulties in accessing digital and online education. Girls were often pushed back by family expectations, social restrictions, and limited resources, making it harder for them to take part in online learning compared to boys.

One of the major findings is that during times of the pandemic, these problems get worse, especially for girls, leading to even fewer learning opportunities. The study strongly emphasizes that gender and location matter when it comes to online education and shows the urgent need for non-prejudicial and inclusive policies to make sure everyone has equal access to learning in a digital world.

Jeffrey A. Stone: This study explores the factors influencing students' ICT self-efficacy, focusing on ICT exposure, use, and access. Based on data from first-year students at a public research university, the findings indicate that ICT access and prior academic experience shape students' perceived ICT competence. While students are generally confident in their ICT abilities, they struggle with digital content creation. Although income is not a significant factor, gender differences in ICT confidence remain. The study emphasizes the need for universities to integrate digital content creation into their curricula to better equip students for academic and professional success.

Lakshay Sharma: Education is vital for economic development and societal progress (UNDP, 2020). Despite efforts to eliminate gender-based disparities in education, the issue persists. Studies show that around 15 million girls may never attain literacy, compared to 10 million boys, reflecting unequal educational opportunities. Additionally, approximately 132 million girls worldwide are not enrolled in school (UNESCO, 2020). Socio economic status, which reflects an individual's or organization's economic and social position, significantly influences access to education (Sirin, 2005).

A panel fixed effect model indicates that factors such as maternal education, malnutrition, and female access to information and communication technology (ICT) significantly impact the gender parity index in primary education. However, paternal education and household income appear to have little effect. This study examines the relationship between socio economic status and gender disparities at various educational levels through panel data analysis. The findings offer important insights for policymakers, researchers, and stakeholders. Notably, there is a negative correlation between female ICT access and gender parity in primary and secondary education. Although girls have access to digital tools, they face challenges in using them effectively for learning. This highlights the need for programs that enhance digital literacy and internet accessibility for girls. Addressing the digital gender gap is essential for maximizing ICT's role in improving education and promoting gender equality (Kerckaert, 2015).

A. Methodology

a. Sample

The categories of each tribal community have their own unique culture, languages, and lifestyle. Hence, the selection of a sample from the tribal student population in the district makes complexities in terms of

socio-economic and socio-familial backgrounds of the school children. Children from the tribal communities are given support from the government departments and other agencies like Samagra Siksha Kerala (SSK) for their well-being in education. But the result is not encouraging. The children from tribal communities are still backward in education. Hence, we should analyze whether the programmes and activities initiated for the welfare of the scheduled tribe students in our schools have made any changes in the educational attainment of these children. The Malavettuvans are the third populated (18816) tribe in the district. The study was conducted on a representative sample of 100 students (UP and HS) of the Malavettuva community from the selected schools of the Kasaragod revenue district. The schools are mainly located in the Malavettuva community populated panchayaths in the district.

The study was limited to conducting on a representative sample of the students from the Malavettuva community by considered the main study and status of their living conditions in the district. The study was confined to schools, purposefully selected from the Malavettuva community populated panchayats. The sample consisted of 100 students (UP and HS) from the selected schools. In addition to these 57 teachers from all these schools were also taken as a sample for the study.

b. Tools and Techniques

To study the gender and socio economic challenges in online learning, a mixed-methods approach will be used, combining both qualitative and quantitative research methods to provide a comprehensive understanding of the issue. The key methodological steps include:

1. Literature Review

- Analysis of existing research, reports, and case studies on gender disparities and socio economic barriers in online education.
- Identify key themes, trends, and gaps in the current body of knowledge.

2. Survey and Questionnaire (Quantitative Approach)

- Developed structured surveys targeting students from diverse genders and socio economic backgrounds.
- Collected data on internet access, availability of digital devices, study environments, financial constraints, and experiences with online learning.
- Used statistical tools to analyze patterns and correlations between gender, socio economic status, and online learning challenges.

3. Interviews and Focus Group Discussions (Qualitative Approach)

- Conducted in-depth interviews with students, educators, and policymakers to gather
- personal experiences and insights.
- Organized focus group discussions to explore perceptions of gender and financial barriers in online education.

4. Case Studies

- Examined real-world examples of students from different genders and economic backgrounds
- backgrounds to highlight challenges and coping mechanisms.
- Compared online learning experiences across various educational institutions and
- regions.

5. Data Analysis

- The major statistical technique used for the qualitative data analysis is percentage analysis. Used statistical software (Excel) for quantitative data analysis to identify trends and disparities.
- Applied qualitative coding techniques to categorize themes and narratives from interviews and focus groups.

6. Recommendations and Policy Analysis

- Based on findings, propose strategies to bridge gender and socio economic gaps in online learning.
- Evaluated existing policies and suggested improvements for a more inclusive digital Education system.
- By employing this methodology, the study aims to provide a detailed and evidence-based understanding of the gender and socio economic challenges in online learning, leading to actionable solutions for a more equitable education system.

Major Findings of the Study

The study on Gender and Socio economic Challenges in Online Learning revealed several. Key issues that affect students' access, participation, and performance in digital education.

The major findings include:

1. Gender-Based Challenges

Limited Unequal Access to Technology: This study reveals that girls are not getting equal chances to use technology in the classroom. The boys are always becoming the leaders of the school; they are always managing the ICT system and other electronic gadgets in the classes. In the case of marginalized groups of students, it is more, that they never came forward to familiarize themselves with this technology. But in houses, the boys of marginalized groups are more powerful among all in the case of using and managing technology, especially mobile phones, Television, and computers. Women and marginalized gender groups often have limited access to digital devices due to financial constraints or social norms that prioritize male family members. Gender inequality in access to technology is a significant aspect of the digital divide, where women and girls often face barriers to using digital tools and the internet. This issue is more pronounced in developing countries, but disparities exist worldwide. The gender digital divide among school students refers to the unequal access to technology, digital learning tools, and internet resources between boys and girls. This disparity affects their education, career opportunities, and overall development, particularly in developing countries and marginalized communities.

2. Increased Domestic Responsibilities:

Female students, particularly in traditional households, face additional burdens of household chores and care giving, limiting their study time. They always want to help their parents. In tribal communities and marginalized groups' families, the girls do not even get a chance to rest between their work and studies. They are also very shy in society. They have no more confidence to use the technology very friendly. They are always seeking the help of boys to do technological activities properly. Boys are getting more chances to use their parents' phones in their free time. So, they all know the techniques of using the technology very friendly. Boys may skip the household responsibilities in some situations. But the girls are not able to do the same. Boys often get more chances to meet with their friends, discuss technology, and practice it together—something girls usually miss.

- **Gender Stereotypes in Online Learning:** Studies indicate that traditional gender roles often carry over into digital environments, shaping how individuals interact with technology and online learning. For example, male students are more likely to lead conversations in online forums, while female students may hesitate to participate due to societal norms that discourage assertiveness in women.

There's also a common belief that technical subjects are more fit for males, which can discourage girls and women from enrolling in STEM-related courses online. These gender stereotypes could not affect educators, influencing their expectations and possibly leading to biased assessments or unequal learning opportunities.

To take up these issues, online learning platforms need to adapt to more inclusive environments that challenge harmful stereotypes and support equal participation. Effective strategies include:

- Use of gender-neutral learning materials,
- Showcasing diverse and relatable role models, and
- Promoting open discussions that question outdated ideas about gender and learning.

Creating such a space not only helps close the gender gap in digital education—especially in fields like STEM—but also improves the learning experience for all students.

Online Harassment and Safety Concerns: Female students report a higher incidence of online harassment and discomfort in virtual learning spaces, impacting their engagement. From the online platform, the contacts may be shared with others, and others can easily join the online classrooms and cause a nuisance to the girls. This may lead to the development of unhealthy friendships with others, and it will create some problems after school. So, girls are afraid of the online platform. There were more examples around us. In some situations, boys from the same class may harass the girls and deprive the group of students of using the technologies. While the teacher is using an online platform, the students may engage in some other activities on other sites. It may also lead them to unhealthy or unwanted sites. The girls from the marginalized communities are not aware of the consequences of unsafe use of technology.

2. Socio economic Barriers

- **Digital Divide:** Students from low-income backgrounds struggle with limited internet access, unreliable electricity, and a lack of personal study space, making online learning difficult. At the time of COVID-19, we faced a lack of gadgets for online learning for the students. The tribal students are living away from the town, and because of that, they won't get internet access. The socio-economic status of the family is also not supportive form to make the arrangements. Then, the recharging of phones with data is creating another problem among the above-mentioned families. Whenever the gadgets are spoiled or damaged, they can't be repaired due to a lack of money.
- **Limited Access to Devices:** Many students share a single device with family members, restricting their ability to attend classes or complete assignments on time.
- **Financial Constraints:** The rate of internet data, devices, and e-learning resources creates a significant problem for economically disadvantaged students.
- **Lack of Institutional Support:** Schools and universities often fail to provide financial aid, loaner devices, or subsidized internet access to students in need.

3. Impact on Learning Outcomes

- **Lower Engagement and Participation:** Gender and socio economic disparities lead to reduced interaction in online discussions and a lack of confidence in seeking help.
- **Academic Performance Gaps:** Students facing these challenges tend to have lower Completion rates, lower grades, and a higher risk of dropping out.
- **Mental Health and Well-Being:** The stress of financial struggles, lack of support, and gender-related discrimination negatively affects students' mental health and motivation.

4. Strategies for Overcoming Challenges

- **Need for Inclusive Policies:** Institutions should implement gender-sensitive policies and provide financial assistance to bridge the digital divide.
- **Affordable and Accessible Digital Infrastructure:** Governments and organizations must invest in free or subsidized internet access and technology for disadvantaged students.
- **Awareness and Advocacy:** Increased efforts to promote gender equality in online learning environments and encourage women's participation in all academic disciplines.
- **Flexible Learning Models:** Adoption of hybrid or asynchronous learning methods to accommodate students facing economic and household challenges.

These findings show that there is an urgent need to take focused steps to make online learning fair and equitable, so that every student—whether boy or girl, rich or poor—gets the same chance to learn and succeed.

Implications of the Research

The research findings on Gender and Socio economic Challenges in Online Learning have important implications for educational institutions, policymakers, educators, and students. These challenges can lead to a more equitable and inclusive online learning environment. The key implications include:

1. Policy and Institutional Reforms

- **Bridging the Digital Divide:** Governments and educational institutions must provide affordable internet access, subsidized digital devices, and infrastructure to ensure equal access to online education.
- **Financial Aid and Support Programs:** The government should take initiative to provide financial assistance, such as Scholarships, grants, and technology loan programs, to students from low-income backgrounds.
- **Gender-Inclusive Policies:** Universities and schools must take care of the policies that address online harassment, safety, and participation disparities in virtual classrooms.

2. Educational Pedagogy and Curriculum Design

- **Flexible Learning Models:** Institutions should make use of flexible and hybrid or asynchronous learning models to accommodate students having socio economic constraints or household responsibilities.
- **Gender Sensitivity in Course Design:** To encourage equal participation from all students, the institutions should integrate gender-responsive content and inclusive teaching methods.

- **Supportive Learning Environments:** For disadvantaged students, virtual classrooms should foster engagement through interactive tools and mentorship programs.

3. Technological and Infrastructure Development

- **Affordable and Accessible Technology:** For Students lacking digital resources, a collaboration of governments and private sectors should try to provide affordable internet plans, low-cost digital devices, and community learning centres.
- **Enhanced Digital Literacy Training:** Initiatives should focus on improving digital skills, particularly for female students and those from economically disadvantaged backgrounds.

4. Social and Cultural Impact

- **Addressing Challenging Gender Norms:** Raising awareness about gender biases in online learning can help break societal barriers and promote equal opportunities for all learners.
- **Reducing Socio economic Inequalities:** Addressing financial disparities in online education can contribute to broader efforts to reduce income-based educational inequalities.
- **Mental Health and Well-Being Support:** Institutions should provide mental health resources and counselling to support students struggling with socio economic and gender- based challenges.

5. Future Research Directions

- Further studies can explore and suggest long-term solutions for gender and economic disparities in digital education.
- Comparative research across different regions of the state and nation and education levels can provide deeper insights into the effectiveness of various interventions in online learning.
- The role of emerging technologies, such as artificial intelligence and virtual reality, in addressing online learning challenges should be investigated and promoted.

By directing and implementing the recommendations drawn from this research, educational stakeholders and institution heads can work towards an inclusive, accessible, and equitable online learning environment that empowers all students, regardless of gender and socio economic status.

Conclusion

In online learning, gender and financial challenges make a big difference among students in accessing classes, taking part, and succeeding. Even though online education is flexible and convenient, many students—especially from poorer families or deprived groups—face serious issues. Girls and women often have extra responsibilities at home, like taking care of family members, which makes it harder for them to focus on their studies. On the other hand, students from low-income families may not have proper internet and digital devices to join online classes.

To make online education more equitable and helpful for everyone, schools and institutions need to bring in policies that support digital access, give financial help, and provide gender-aware support. If we can close these gaps, online learning can truly become a way to give everyone a fair chance at success and a better future.

Bibliography

1. Chan, S.-M., Chung, G. K.-K., Chan, Y.-H., Lee, T. S.-K., Chen, J.-K., Wong, H., Chung, R. Y.-N., Chen, Y., & Ho, E. S.-C. (2024). Online learning problems, academic worries, social interaction, and

- psychological well-being among secondary school students in Hong Kong during the COVID-19 pandemic: The socio economic and gender differences. *European Journal of Psychology of Education*, 39(3), 2805–2826.
2. Exploring Socio-Economic Disparities in E-Learning: A Study of Bulgarian Students' Online Educational Experiences. (n.d.).
 3. Full article: Equity in online learning. (n.d.).
 4. Gender and socio economic challenges in online learning – google search. (n.d.).
 5. Just a moment... (n.d.). from <https://www.researchgate.net/profile/Jayanta->
 6. Lashgari, F., Pourvahab, M., Faraji, A., Monteiro, A., Pais, S., & Pombo, N. (2024). Gender Equality Through E-Learning: A Machine Learning Approach Measuring Impact. 2024 International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT), 553–559.
 7. Perception and Challenges of Virtual Classes with Gender Digital Divide amidst and Post-COVID-19 Pandemic in Iraq: An Empirical Analysis—Kamal—2023—Education Research International—Wiley Online Library. (n.d.).
 8. Rural; Urban, Gender, and Digital Divides during the COVID-19 Lockdown: A Multi-Layered Study. (n.d.).
 9. Sharma, L. (2024). Breaking Barriers: Exploring the Impact of Socioeconomic Factors on Gender Discrimination in Education—A Panel Regression Analysis in India. 16(11).
 10. Stone, J. A. (2020). ICT Self-Efficacy: Gender and Socioeconomic Influences Among First-Year Students. *International Journal of Gender, Science and Technology*, 12(3), Art. 3.
 11. The digital divide, gender and education: Challenges for tribal youth in rural Jharkhand during Covid-19 | DECISION. (n.d.).