

QUALITY, ACCESS AND GENDERED BARRIERS IN SWAYAM MOOCS: RETHINKING DIGITAL EDUCATION IN THE GLOBAL SOUTH

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ABSTRACT

The proliferation of Massive Open Online Courses (MOOCs) has significantly reshaped higher education in the Global South, with platforms like SWAYAM playing a crucial role in expanding access to digital learning in India. While MOOCs are often heralded as democratizing education, critical concerns persist regarding their quality, accessibility and inclusivity, particularly for marginalized groups, including women and gender minorities. This conceptual paper examines the intersection of quality, access and gendered barriers in SWAYAM MOOCs, framing its analysis within a decolonial perspective on digital education in India.

First, the paper explores quality parameters in SWAYAM MOOCs, assessing course design, pedagogical approaches, learner engagement and assessment mechanisms to determine their effectiveness in meeting diverse learning needs. Second, it investigates access-related challenges, including infrastructural limitations, digital literacy gaps and linguistic barriers that hinder equitable participation. Third, it critically analyses the gendered dimensions of digital learning, highlighting how socio-cultural norms, economic constraints and digital marginalization disproportionately affect women and gender-diverse learners in Indian higher education.

Drawing upon existing literature and policy frameworks, this paper argues that MOOCs, despite their potential, risk reinforcing rather than mitigating educational inequalities if issues of gender and access are not addressed within a quality assurance framework. It calls for a context-sensitive, gender-responsive approach to MOOC design and implementation, advocating for inclusive pedagogies, localized content and enhanced learner support mechanisms. By repositioning SWAYAM MOOCs within a decolonial paradigm, this study emphasizes the need for digital education policies that move beyond techno-solutionism and engage with the lived realities of diverse learners in the Global South. Ultimately, this paper contributes to ongoing debates on digital education equity, urging policymakers, educators and technology developers to rethink the future of online learning through the lens of justice, inclusion and quality.

Keywords: SWAYAM MOOCs, Digital Education, Gender Equity, Quality Assurance, Access Barriers, Decolonial Perspectives, Global South.

Introduction

Digital transformation in higher education across the Global South positions Massive Open Online Courses (MOOCs) as vital tools for surmounting infrastructural shortages, faculty deficits and socio-economic barriers, yet India's SWAYAM platform launched under National Education Policy (NEP) 2020 exemplifies unfulfilled promises amid quality inconsistencies, access fractures and gendered exclusions. SWAYAM, delivering over 14,000 multilingual courses from IITs, IGNOU and central universities, has amassed more than 4 crore enrollments by early 2026, with credit transfers and proctored certifications aiming to democratize lifelong learning for India's 43 million higher education seekers, though average completion rates languish at 4.6% due to motivational mismatches and dropout sans certification intent. These metrics mask deeper inequities: rural broadband penetration at 39%, English-dominant content alienating vernacular speakers and lecture-centric pedagogies yielding passive engagement, all while urban elites benefit disproportionately.

Despite lofty inclusivity goals, SWAYAM's decentralized expanse breeds instructional variability, weak assessments, sparse interactivity and absent adaptive feedback challenging pedagogical coherence and outcomes in diverse Global South contexts. Access transcends

connectivity to encompass digital literacy, cultural relevance and socio-economic capital, where tribal and caste-marginalized learners falter amid infrastructural voids. Gendered barriers intensify this: patriarchal norms, time poverty from unpaid care and mobility curbs yield a 40:60 female-to-male enrollment ratio but sub-30% women's completions, with rural females at 21% internet access facing compounded caste-gender oppressions. Enrollment metrics obscure lived exclusions, demanding scrutiny beyond techno-optimism.

This conceptual paper, "Quality, Access and Gendered Barriers in SWAYAM MOOCs: Rethinking Digital Education in the Global South," interrogates SWAYAM's justice claims via decolonial and feminist lenses, contesting narratives equating scale with empowerment. Feminist critiques unveil "gender-blindness" in designs ignoring embodied realities, advocating intersectional pedagogies for Dalit women's agency. Decolonial imperatives dismantle Western epistemologies, embedding indigenous knowledges, epistemic pluralism and relationality to resist digital neocolonialism. Post-pandemic, with online mandates entrenched, SWAYAM must pivot toward culturally responsive, AI-augmented equity to illuminate who truly benefits and at what structural cost.

MOOCs as a Pathway for Digital Inclusion in the Global South

Massive Open Online Courses (MOOCs) emerge as a compelling pathway for digital inclusion in the Global South, where entrenched infrastructural deficits, faculty shortages and socio-economic disparities have long constrained higher education access for millions. Characterized by scalability, flexibility and low-cost delivery, MOOCs dismantle geographic barriers, enabling self-paced learning from remote rural outposts to urban peripheries, while multilingual and mobile-optimized designs reaching over 449,000 learners across 25 emerging economies --- promise equitable knowledge dissemination amid high student-to-teacher ratios. In contexts like Latin America, Africa and South Asia, platforms leverage open educational resources (OER) to foster lifelong learning and sustainable development goals (SDG 4), bridging North-South knowledge divides through indigenous adaptations that integrate local content and offline access for low-bandwidth regions.

Yet this promise falters against structural realities: uneven internet penetration (rural Global South at ~40%), digital illiteracy and Northern-centric pedagogies yield high attrition often exceeding 90% as generic content overlooks cultural relevance and learner support. SWAYAM exemplifies this duality in India, boasting 4+ crore enrollments yet sub-5% completions, where English dominance alienates vernacular speakers and lecture-heavy formats stifle interactivity for marginalized castes. Gender compounds exclusions, with women facing patriarchal time poverty and device scarcity, underscoring MOOCs' risk of perpetuating digital neocolonialism absent decolonial redesigns.

True inclusion demands reimagining MOOCs beyond techno-solutionism: AI-augmented localization, community mentorship hubs and epistemic pluralism can transform them into justice instruments, amplifying underrepresented voices in STEM and beyond. By embedding relational pedagogies and intersectional equity, Global South MOOCs like SWAYAM pivot from elite replication to empowerment engines.

The Role of SWAYAM in Indian Higher Education

SWAYAM, India's flagship Massive Open Online Course (MOOC) platform under the Ministry of Education, plays a pivotal role in reshaping higher education by operationalizing

National Education Policy (NEP) 2020's vision of equitable, scalable access amid infrastructural and demographic pressures. Launched to host over 14,000 courses from premier institutions like IITs, IGNOU and central universities, SWAYAM delivers multilingual, credit-transferable content across engineering, humanities and professional disciplines, amassing more than 5.5 crore enrollments and 45 lakh certifications by mid-2025 through proctored exams and hybrid delivery. This state-backed ecosystem distinguishes itself via affordability, UGC-recognized credits and nine national coordinators ensuring baseline quality, serving 43 million higher education learners while addressing lifelong upskilling in a nation where faculty shortages plague 70% of institutions.

Yet SWAYAM's transformative claims falter against quality-access-gender fault lines: lecture-dominant four-quadrant models --- video, readings, quizzes, discussions yield sub-5% completion rates despite massive scale, as passive designs stifle interactivity and adaptive support for diverse cohorts. Rural-urban digital chasms persist with 39% broadband penetration, English primacy marginalizing 75% vernacular speakers and tribal/caste exclusions amplifying infrastructural voids, rendering NEP equity rhetoric hollow. Gender disparities sharpen the critique --- women constitute 40% of enrollees but under 30% completers, constrained by patriarchal time poverty, device scarcity (21% rural female internet access) and absent mentorship, intersecting with caste to compound Dalit women's marginalization.

In Global South terms, SWAYAM embodies hybrid promise and peril: its indigenous scale resists commercial MOOC hegemony, yet Western-emulating pedagogies risk digital neocolonial replication absent decolonial pivots. Quality Matters (QM)-adapted rubrics highlight uneven instructional rigor, demanding AI-enhanced personalization and feminist-responsive hubs to elevate SWAYAM from enrollment engine to justice catalyst.

The Intersection of Quality, Access and Gender in Digital Learning

Massive Open Online Courses (MOOCs) promise digital inclusion in the Global South by scaling access amid chronic higher education constraints like faculty shortages and infrastructural voids, yet their intersection of quality shortfalls, access inequities and gendered barriers reveals structural failures demanding urgent scrutiny. Quality in platforms like SWAYAM hinges on instructional rigor--- multimedia integration, formative feedback and interactivity, yet lecture-centric designs prevail, yielding sub-5% completion rates despite 5.5+ crore enrollments, as passive pedagogies undermine cognitive engagement and outcomes for diverse learners. Access barriers compound this: beyond 39% rural broadband gaps, digital illiteracy, English dominance (marginalizing 75% vernacular speakers) and socio-economic exclusions sideline tribal and caste communities, transforming presumed openness into elite privilege.

Gender emerges as the pivotal axis, where patriarchal norms inflict time poverty from unpaid care work, mobility restrictions and device scarcity --- rural women at 21% internet parity enroll at 40% rates but complete under 30%, their agency eroded absent mentorship, safe hubs and culturally attuned support. Intersectionality amplifies oppressions: Dalit women navigate compounded caste-gender digital chasms, with SWAYAM's gender-blind metrics obscuring lived exclusions under enrollment facades. These nexuses defy techno-neutrality, as Northern-centric quality rubrics ignore Global South relationalities, perpetuating epistemic hierarchies.

Rethinking demands feminist-decolonial praxis: AI-personalized, multilingual scaffolds; community-based gender-responsive designs; and localized quality assurance to forge MOOCs as justice conduits rather than divide replicators, aligning SWAYAM with NEP 2020's equity mandate.

Gender and MOOCs: A Feminist Perspective on Digital Education

Massive Open Online Courses (MOOCs), particularly India's SWAYAM platform, hold transformative potential for higher education equity, yet feminist perspectives reveal entrenched gender blindness that perpetuates rather than dismantles patriarchal exclusions in digital spaces. Women constitute approximately 40% of SWAYAM enrollees but achieve under 30% completion rates, constrained by intersecting barriers of time poverty from unpaid domestic labour, restricted mobility due to safety concerns and limited device ownership, rural females access internet at just 21% parity with males --- transforming presumed openness into gendered sieve. Feminist pedagogy critiques SWAYAM's lecture-centric, instructor-led models as hierarchical extensions of traditional academia, sidelining relational learning, distributed expertise and affective support essential for women's embodied realities amid caste-class oppressions.

From a feminist lens, MOOCs demand redesign beyond scale metrics: flexible, asynchronous pathways accommodating care responsibilities; community mentorship hubs fostering peer solidarity; and inclusive content amplifying women's voices in curriculum authorship to counter epistemic erasure. Distributed Open Collaborative Courses (DOCCs) offer prototypes, prioritizing collaborative knowledge co-creation over centralized authority, enabling situated agency for Global South women navigating patriarchal digital divides. In SWAYAM, such praxis necessitates intersectional audits; gender-caste lenses on analytics to expose Dalit women's compounded marginalization, where vernacular exclusions and infrastructural voids amplify dropout.

Ultimately, feminist digital education reframes SWAYAM from neutral conduit to justice praxis, embedding relational pedagogies, ethical AI for personalized equity and participatory governance that honours learners' lived temporalities, evolving MOOCs into liberatory ecosystems for the Global South.

Rethinking Digital Education: Towards a Decolonial Framework for MOOCs

Massive Open Online Courses (MOOCs) like India's SWAYAM demand a decolonial rethinking to transcend their replication of Western-centric hierarchies and foster genuine epistemic justice in Global South digital education. Dominant MOOC architectures, lecture-driven, English-primed and scalability-obsessed --- embody colonial legacies, eroding indigenous knowledge systems through Northern content dominance and one-size-fits-all pedagogies that marginalize relational, oral and community-based learning traditions vital to diverse learners. In SWAYAM, despite NEP 2020 multilingual ambitions spanning 12+ languages, English inertia persists, alienating 75% vernacular speakers while quality rubrics like adapted Quality Matters (QM) overlook contextual relevance, yielding sub-5% completions amid 5.5 crore enrollments.

Decolonial frameworks counter this by centring epistemic pluralism: curriculum co-creation with local knowledge holders integrates caste-specific narratives, tribal cosmologies and feminist oral histories, dismantling "digital neocolonialism" where Global South platforms

mimic edX or Coursera templates. Pedagogically, relational designs supplant individualistic autonomy --- peer circles, AI-facilitated vernacular discussions and offline hybrids emulate indigenous pedagogies, enhancing retention for rural women facing 21% internet parity and time poverty. Infrastructure decolonization demands low-bandwidth optimizations and community-owned hubs over top-down connectivity drives, bridging 39% rural broadband gaps while auditing for caste-gender biases in algorithms.

Such praxis transforms SWAYAM from extractive scale machine to pluriversal ecosystem, aligning with decolonial calls for cognitive justice where Southern voices author global knowledge, not merely consume it. By foregrounding situated agency over universal metrics, decolonial MOOCs catalyse educational sovereignty, empowering marginalized learners as knowledge producers in post-pandemic India.

Literature Review

SWAYAM MOOCs advance Global South digital ambitions under NEP 2020, yet literature exposes quality deficits, access fractures and gendered inequities demanding decolonial synthesis. Scholarship clusters around four domains: quality frameworks reveal lecture-heavy designs yielding sub-5% completions despite 5.5 crore enrollments, with adapted QM rubrics flagging interactivity gaps and contextual irrelevance for diverse Indian learners. Access studies document digital divides 39% rural broadband, English primacy excluding vernacular majorities and socio-economic barriers sidelining tribal/caste groups, transforming openness into stratified privilege.

Gender analyses highlight patriarchal exclusions: women at 40% enrollment but <30% completion amid time poverty and 21% rural internet parity, intersecting with caste to amplify Dalit marginalization absent feminist interventions. Decolonial critiques interrogate Western-emulating pedagogies in SWAYAM, advocating epistemic pluralism, indigenous integrations and relational models to counter neocolonial replication. Indian studies affirm scale (14,000+ courses) but urge localized AI, mentorship hubs and equity audits for justice-aligned transformation.

Quality Frameworks in MOOCs

MOOCs quality frameworks emphasize robust instructional design, learner engagement and adaptive assessment, yet SWAYAM's implementation reveals persistent gaps undermining Global South equity goals. Global standards like Quality Matters (QM) rubrics adapted for SWAYAM --- prioritize multimedia integration, formative feedback and accessibility, but lecture-heavy four-quadrant models dominate, yielding sub-5% completion rates amid 5.5 crore enrollments due to sparse interactivity and contextual misalignment. Indian scholarship critiques this as pedagogical inertia, where centralized oversight by nine coordinators enforces baseline rigor yet fails vernacular learners and diverse cohorts, amplifying passive consumption over cognitive depth.

Decolonial critiques highlight Northern-centric benchmarks ignoring relational pedagogies and indigenous epistemologies, while AI-driven analytics promise personalization, predicting dropouts, curating pathways but risk exacerbating divides absent ethical localization. NEP 2020-aligned evaluations underscore scalability triumphs alongside deficits in scaffolding for rural women and castes, demanding hybrid frameworks blending QM rigor with feminist-

responsive, pluriversal designs to elevate SWAYAM from scale artifact to transformative quality engine.

Access Barriers: Digital Divide, Language and Socio-Economic Constraints

MOOCs in the Global South promise equitable access yet SWAYAM exemplifies how digital divides, linguistic silos and socio-economic constraints entrench exclusions despite NEP 2020 scale. Rural broadband penetration stalls at 39% versus urban 78%, throttling connectivity for 70% of India's agrarian learners, while device scarcity compounded by unreliable power affects 55% of households, transforming open platforms into urban preserves. Language barriers amplify this: English-dominant SWAYAM courses sideline 75% vernacular speakers from Hindi-belt states to Dravidian South, with mere 12-language support failing true plurilingualism amid 22 scheduled tongues.

Socio-economic fissures stratify further: caste-tied poverty curtails data costs for SC/ST learners, while Digital India initiatives like BharatNet yield uneven last-mile reach, leaving tribal regions at <20% penetration. These intersect with gender --- rural women at 21% internet parity face patriarchal gatekeeping on devices yielding enrollment without engagement, as sub-5% completions mask dropout cascades. Decolonial redress demands low-bandwidth vernacular scaffolds, subsidized community kiosks and literacy-embedded onboarding to reforge access as justice, not mere connectivity.

Gender and MOOCs: Socio-Cultural and Economic Dimensions

MOOCs literature heralds Global South democratization yet unmask SWAYAM's quality-access-gender fault lines demanding decolonial synthesis. Quality frameworks critique lecture dominance yielding sub-5% completions despite 5.5 crore enrollments, with adapted QM rubrics exposing interactivity deficits and contextual voids for diverse Indian learners. Access barriers 39% rural broadband, English primacy sidelining 75% vernacular speakers, caste-tied poverty stratify openness into elite privilege, amplified by digital illiteracy in tribal regions.

Gender scholarship reveals socio-cultural chokeholds: women at 40-45% enrollment but <30% completion amid patriarchal time poverty, 21% rural internet parity and mobility curbs intersecting caste to marginalize Dalit learners absent mentorship. Decolonial lenses interrogate Western-emulating pedagogies, urging epistemic pluralism, relational designs and AI-localized equity to transform SWAYAM from scale artifact to justice praxis. Indian studies affirm NEP 2020 scale while prescribing feminist hubs and vernacular scaffolds for authentic inclusion.

Decolonial Perspectives in Digital Learning

MOOCs quality frameworks prioritize instructional rigor through rubrics like Quality Matters (QM), yet SWAYAM's decentralized model reveals persistent deficits in Global South contexts. Lecture-dominant four-quadrant structures video, readings, quizzes, discussions dominate despite NEP 2020 guidelines, yielding sub-5% completion rates amid 5.5 crore enrollments as sparse interactivity undermines adaptive feedback and learner autonomy. Indian scholarship critiques uneven adoption of QM adaptations, where nine coordinators enforce baseline standards but overlook contextual relevance for vernacular and rural cohorts.

Decolonial perspectives expose Northern-centric metrics sidelining relational pedagogies and indigenous epistemologies, amplifying quality as cultural violence rather than equity. AI-driven personalization emerges promising dropout prediction, pathway curation but risks

algorithmic bias absent localization. Bridging these requires hybrid frameworks fusing feminist-responsive scaffolds with pluriversal designs, repositioning SWAYAM as transformative rather than replicative.

Objectives

This conceptual paper aims to:

- Evaluate the quality parameters of SWAYAM MOOCs concerning pedagogical effectiveness, learner engagement and content relevance.
- Identify access barriers to SWAYAM MOOCs, focusing on digital infrastructure, linguistic diversity and socio-economic constraints.
- Examine gendered disparities in MOOC participation and learning outcomes.
- Propose a decolonial and gender-responsive framework for improving SWAYAM MOOCs.

Research Questions

- How do quality factors in SWAYAM MOOCs impact learner engagement and educational outcomes?
- What are the primary barriers to access for students, particularly from marginalized communities in India?
- How do gendered challenges influence participation, completion rates and learning experiences in SWAYAM MOOCs?
- What policy and pedagogical interventions can enhance the quality and inclusivity of SWAYAM MOOCs?

Methodology

This study adopts a qualitative, conceptual approach grounded in critical theory and informed by feminist and decolonial perspectives. It synthesizes interdisciplinary insights to explore how SWAYAM MOOCs align with the ideals of equitable, high-quality digital education in the Global South.

Content Analysis: A content analysis of selected SWAYAM MOOCs across disciplines is conducted to examine their pedagogical design, assessment strategies, multimedia integration, learner engagement mechanisms and accessibility features. This analysis helps evaluate whether these courses reflect inclusive, context-sensitive educational practices or replicate traditional didactic models.

Policy Review: A policy review is undertaken to scrutinize key documents, including the National Education Policy (NEP) 2020, SWAYAM guidelines and government reports on digital education. This review assesses the extent to which current frameworks incorporate gender responsiveness, linguistic diversity and socio-economic inclusivity and highlights policy-level gaps that may perpetuate digital inequalities.

Gendered Digital Divide Framework: The study is underpinned by a gendered digital divide framework, drawing on feminist scholarship and decolonial theories to understand the structural and socio-cultural barriers faced by women and marginalized learners. This includes analyzing how patriarchal norms, unequal care burdens, limited digital access and epistemic exclusion shape learners' engagement with MOOCs.

By integrating these strands, the paper seeks to generate a holistic and critical understanding of the interplay between quality, access and gender in India's digital higher education ecosystem, offering theoretical insights and practical recommendations for transforming SWAYAM into a truly inclusive platform.

Results or Findings

Although this study is conceptual in nature, a synthesis of existing literature, policy analysis and course reviews reveals several critical and anticipated findings related to the implementation and impact of SWAYAM MOOCs in India's digital education ecosystem.

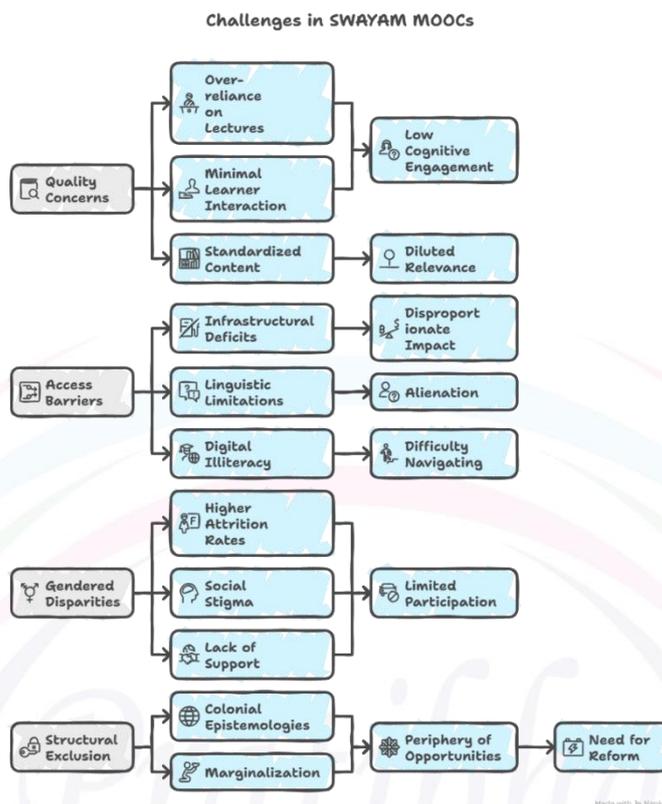
Quality Concerns emerge as a significant limitation, with many SWAYAM courses demonstrating an over-reliance on lecture-based pedagogy, passive content delivery and minimal learner interaction. The absence of dialogic learning models, peer-based assessments, or locally relevant case studies often leads to low cognitive engagement, thereby undermining pedagogical effectiveness. These courses tend to prioritize standardized content over contextualized, need-sensitive curriculum, which dilutes their relevance for learners from diverse socio-cultural and linguistic backgrounds.

In terms of access barriers, infrastructural deficits such as unequal internet access, lack of affordable digital devices and power instability continue to disproportionately affect students from rural and underserved regions. Despite efforts to increase mobile accessibility, the platform's linguistic limitations with a majority of content available only in English or Hindi alienate speakers of regional and tribal languages. These access issues are compounded by digital illiteracy, making it difficult for first-generation learners to navigate online learning platforms effectively.

Gendered disparities persist across all phases of MOOC participation. Women learners, particularly from rural and lower-income households, face higher attrition rates due to time poverty, household duties and limited access to private digital spaces. Social stigma surrounding women's digital engagement, coupled with safety concerns and lack of institutional support, further inhibits sustained participation in online learning.

The analysis reveals structural exclusion embedded within the digital learning architecture itself. SWAYAM MOOCs, though conceived as inclusive, often reproduce colonial epistemologies, privileging Western-centric knowledge systems and marginalizing local epistemes and grassroots experiences. As a result, learners from marginalized castes, tribes and low-income communities remain at the periphery of meaningful digital learning opportunities.

These findings underscore the urgent need for critical reform in the design, delivery and governance of MOOCs, ensuring that digital learning does not become another instrument of educational exclusion but a platform for transformative equity.



Implications

The findings of this study offer critical insights for reshaping India’s digital higher education landscape through AI-driven strategies while foregrounding equity, inclusivity and contextual relevance. These implications span both practical policy actions and theoretical advancements, especially relevant to emerging economies in the Global South.

Policy Recommendations

7.1.1. Localized Content Development: SWAYAM MOOCs' quality-access-gender deficits in the Global South necessitate targeted policy reforms prioritizing localized content development to fulfil NEP 2020's equity mandate. English dominance excludes 75% vernacular learners despite nominal 12-language support, while urban-centric case studies ignore regional epistemologies, contributing to sub-5% rural completion rates amid 5.5 crore total enrollments. UGC must mandate AI-powered localization pipelines; real-time neural translation, contextual voice synthesis and adaptive regional narratives, leveraging NCERT's school MOOC infrastructure for scalable higher education deployment.

Decentralized Regional Content Hubs at IITs, state universities and SCERTs, overseen by SWAYAM's nine coordinators, should enforce plurilingual Quality Matters (QM) rubrics integrating caste-responsive pedagogies and tribal knowledge systems, with 30% credit bonuses incentivizing vernacular course creation. Low-bandwidth OER repositories and offline-first designs bridge 39% rural broadband gaps, amplifying female faculty authorship in gender-sensitive domains to counter epistemic erasure. These reforms reposition SWAYAM from Northern template replicator to decolonial knowledge ecosystem, ensuring policy translates scale into authentic Global South inclusion.

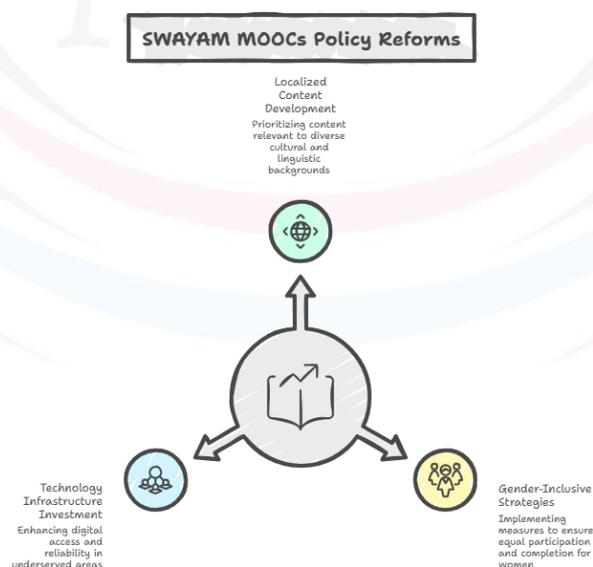
Gender-Inclusive Strategies: SWAYAM MOOCs perpetuate gendered exclusions despite 40% female enrollment, demanding urgent policy interventions that operationalize feminist-

decolonial equity under NEP 2020. Women face 21% rural internet parity, time poverty from unpaid care work and mobility restrictions intersecting caste oppressions, yielding sub-30% completion rates that mask structural violence. MHRD must mandate Gender-Inclusive MOOC Framework: flexible micro-credentials accommodating domestic schedules, subsidized community learning hubs with childcare and safe access and targeted stipends (₹2000/course) for SC/ST/female learners from bottom income quintiles.

Nine SWAYAM coordinators enforce mandatory 30% female instructor quotas, AI-flagged gender bias audits in content/assessments and mentorship networks linking urban completers with rural cohorts. UGC credit multipliers (1.5x) incentivize gender-responsive courses featuring women role models, bias-free case studies and vernacular maternal health narratives while Digital India allocates 15% BharatNet bandwidth for female kiosks. These strategies transform enrollment optics into completion justice, dismantling patriarchal digital architectures through intersectional infrastructure.

Technology Infrastructure Investment: SWAYAM MOOCs' Global South equity claims falter against 39% rural broadband penetration and unreliable power grids throttling access for 70% agrarian learners, demanding strategic infrastructure investments aligned with NEP 2020's digital mandate. MHRD must allocate 25% Digital India corpus to BharatNet Phase III expansion targeting tribal blocks (<20% connectivity), deploying solar-powered community kiosks with cached SWAYAM content and 4G femtocells for offline-first access.

Nine coordinators enforce low-bandwidth protocols video compression to 144p, interactive PDFs replacing heavy simulations; while AI-driven network analytics map real-time deficits, prioritizing underserved pin-codes for PM-WANI public WiFi. Digital literacy skilling via 10,000 SWAYAM Resource Centres equips women and SC/ST youth with device handling, bridging 21% female rural internet parity through gender-segregated bootcamps. These investments transform infrastructural voids into equity infrastructure, ensuring SWAYAM scales justice rather than exclusion.



Theoretical Contributions

Decolonizing Digital Learning: SWAYAM MOOCs embody Global South digital aspirations under NEP 2020, yet entrenched quality variances, access exclusions and gendered barriers necessitate decolonial policy pivots prioritizing localized content development. English dominance alienates 75% vernacular learners despite 12-language support, while urban-centric designs ignore regional pedagogies, yielding sub-5% rural completions amid 5.5 crore enrollments. Policy must mandate AI-automated translation pipelines real-time voiceovers, adaptive subtitles and culturally resonant case studies drawing from NCERT's school MOOC successes to embed caste-specific narratives and tribal epistemologies in higher education courses.

Decentralized content studios at Regional English Language Offices and IITs, guided by nine coordinators, should enforce plurilingual rubrics integrating Quality Matters (QM) with indigenous scaffolds, fostering co-creation with local faculty to counter Northern templates. Incentives like UGC credit multipliers for vernacular-origin courses, coupled with low-bandwidth OER repositories, bridge 39% rural broadband gaps while amplifying female authorship in gender-responsive domains. Such reforms transform SWAYAM from replicative scale to epistemic justice engine, aligning policy with feminist-decolonial praxis for authentic Global South inclusion.

Feminist Digital Pedagogy: Feminist digital pedagogy reframes SWAYAM MOOCs from gender-neutral platforms to intersectional justice sites, contesting patriarchal hierarchies embedded in lecture-centric designs and enrollment metrics that obscure women's dropout cascades. Core tenets --- distributed expertise, relational learning and embodied agency, counter time poverty affecting 40% female enrollees (under 30% completers), advocating DOCC-inspired models where peer mentorship hubs and flexible async pathways honour unpaid care burdens alongside caste oppressions for Dalit learners. This theoretical pivot integrates reflexivity and power audits into AI analytics, transforming dropout prediction into equity interventions that amplify marginalized voices in curriculum co-creation.

By foregrounding affective dimensions --- safety, solidarity, plurilingual expression; feminist pedagogy dismantles SWAYAM's disembodied universalism, fostering humanized forums and community-responsive assessments aligned with Global South temporalities. Such praxis elevates NEP 2020 equity rhetoric, positioning MOOCs as liberatory ecosystems where women's lived realities reshape digital epistemologies beyond scale.

Conclusion

SWAYAM MOOCs have emerged as a pivotal intervention in India's ambition to democratize higher education through digital means, especially under the broader mandate of the National Education Policy (NEP) 2020. Their transformative promise lies in their ability to reach learners across geographical, economic and social boundaries. However, this potential remains unevenly realized. The present conceptual analysis has underscored that while MOOCs ---

SWAYAM MOOC Reform

Decolonizing
Digital Learning
Prioritizing
localized content
and addressing
language barriers



Feminist Digital
Pedagogy
Reframing MOOCs
to address gender
inequalities and
promote inclusivity

particularly those on SWAYAM can bridge certain learning gaps, they also risk reinforcing existing educational inequities unless key structural challenges are addressed.

Quality concerns, including rigid pedagogical formats, insufficient interactivity and lack of learner-centric design, continue to undermine learner engagement and course effectiveness. Moreover, *access-related barriers*, such as uneven internet availability, digital illiteracy and linguistic exclusivity, disproportionately affect learners from rural, tribal and economically weaker communities. These access challenges are further exacerbated by *gendered inequalities* with women learners often facing higher dropout rates due to entrenched patriarchal norms, caregiving responsibilities and lack of autonomy over digital resources.

A shift towards a *decolonial and gender-responsive paradigm* in digital education is essential to dismantle these systemic exclusions. This includes challenging Eurocentric knowledge frameworks, reimagining course structures to reflect indigenous epistemologies and implementing inclusive practices such as multilingual content, flexible pacing and community-based learning models. Integrating feminist pedagogical principles and intersectional analysis into course design and policy frameworks can ensure that MOOCs do not remain tools of passive consumption but become platforms of active, emancipatory learning.

Future research must build on this conceptual foundation with *empirical validation* --- through participant feedback, learning analytics and comparative impact assessments. Such studies will not only strengthen academic discourse around digital education equity but also guide *evidence-based policy interventions* that move beyond access to ensure meaningful participation, retention and transformation for all learners.

In essence, the true promise of SWAYAM MOOCs lies not just in technological expansion but in *ethical and inclusive innovation* --- grounded in equity, cultural relevance and social justice.

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