**Innovative Open Educational Practices for Inclusive Lifelong Learning in Ugandan Universities: Exploring Pedagogies, Technologies, and Specialised Opportunities for Women and Persons with Disabilities**

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**Abstract**

This study investigates the potential of Open Educational Practices (OEP) to advance inclusive lifelong learning within Ugandan higher education, with a specific focus on women and Persons with Disabilities (PWDs). Grounded in social justice and Universal Design for Learning (UDL) frameworks, the research employs a convergent mixed-methods design, combining quantitative survey data (N = 230) with qualitative insights from case studies, semi-structured interviews, and focus group discussions across three public universities. Findings reveal that while OEP, such as flipped classrooms, MOOCs, and AI-mediated tools, offer flexible and scalable pathways for inclusion, their transformative potential remains constrained by systemic challenges, including infrastructural inequities, insufficient digital literacy, and institutional fragmentation. The study underscores the intersectional nature of exclusion in digital education and highlights the critical role of faculty development, inclusive pedagogy, and strategic policy alignment. Drawing on empirical evidence, it offers actionable recommendations for embedding context-sensitive, equity-driven OEP across Uganda's higher education landscape.

**Keywords**: Open Educational Practices, Inclusive Education, Universal Design for Learning, Digital Equity, Uganda Higher Education

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## 1. Introduction (Elaborated)

The pursuit of inclusive, equitable, and quality education remains a critical global imperative, enshrined in Sustainable Development Goal 4 (SDG 4). This commitment foregrounds the need to ensure lifelong learning opportunities for all, particularly for historically excluded populations such as women and Persons with Disabilities (PWDs). Within this global agenda, Open Educational Practices (OEP) have emerged as a promising set of pedagogical innovations that expand beyond the provision of Open Educational Resources (OER) to encompass open pedagogy, participatory learning, and digitally mediated collaboration.

In Sub-Saharan Africa, and Uganda in particular, higher education systems continue to grapple with entrenched challenges, ranging from gender disparity, socio-cultural constraints, and underdeveloped digital infrastructure, to limited institutional responsiveness to diverse learner needs. These barriers disproportionately affect women and PWDs, undermining their participation and success in higher education and lifelong learning pathways.

Against this backdrop, this study investigates the potential of OEP to advance inclusive education in Ugandan universities by interrogating how pedagogical, technological, and institutional dimensions interact to either support or constrain inclusivity. Specifically, the study seeks to:

- Examine how OEP are currently conceptualized and implemented within public universities;
- Identify strategies and tools that enhance participation for women and PWDs;
- Explore systemic and cultural barriers to inclusive OEP uptake;
- Propose recommendations for embedding inclusive OEP within institutional policy and practice.

By drawing on empirical data from three regionally diverse public universities, this research contributes to the growing discourse on decolonizing digital education, intersectionality, and social justice in higher education. It aligns with the PCF11 themes of leveraging open technologies and inclusive pedagogies to transform education systems across the Global South.

**Problem Statement**

Despite global advocacy for inclusive, equitable education under frameworks such as Sustainable Development Goal 4, participation in higher education in Uganda remains uneven, particularly for women and Persons with Disabilities. Open Educational Practices-which encompass the use of Open Educational Resources, learner-centered pedagogies, and digital platforms, hold significant potential for expanding access and enhancing equity in higher learning. However, their implementation across Ugandan universities remains fragmented and insufficiently responsive to local sociocultural and infrastructural realities. Limited institutional capacity, inadequate policy coherence, and persistent digital inequalities undermine the transformative promise of OEP. There is a pressing need to systematically examine the interplay between pedagogical innovation, digital access, and institutional readiness in promoting inclusive lifelong learning. Yet, empirical research in this domain particularly from Global South contexts, remains scarce. Addressing this knowledge gap is critical to informing scalable, equity-driven educational reform in Uganda.

**Research Objectives**

1. To investigate the current status and conceptualization of Open Educational Practices (OEP) within selected Ugandan public universities.
2. To examine the pedagogical, technological, and institutional factors that facilitate or constrain the participation of women and Persons with Disabilities (PWDs) in OEP initiatives.
3. To explore learner and faculty perceptions of inclusivity and accessibility within digitally mediated learning environments.
4. To assess the extent to which Universal Design for Learning (UDL) principles are integrated into OEP implementation.
5. To generate context-sensitive policy and practice recommendations for embedding inclusive OEP in Ugandan higher education.

**Research Questions**

1. How are Open Educational Practices currently conceptualized and implemented in selected Ugandan public universities?
2. What are the key barriers and enablers affecting the participation of women and Persons with Disabilities in OEP?
3. How do students and faculty perceive the inclusivity and accessibility of digital learning tools and practices?
4. To what extent are Universal Design for Learning (UDL) principles reflected in the pedagogical strategies used in OEP?
5. What institutional, technological, and policy reforms are needed to foster scalable, inclusive, and sustainable OEP adoption?

## 2. Methodology

This study employed a convergent mixed-methods design, integrating both quantitative and qualitative approaches to yield a comprehensive understanding of how OEP can be leveraged to promote inclusive lifelong learning. The rationale for this design lies in the need to capture the breadth of patterns across a large sample and the depth of lived experiences from diverse stakeholders, particularly those at the margins of educational participation.

Study Sites and Rationale

Three public universities were purposively selected to reflect institutional diversity and contextual variation:

- *Makerere University* (an urban, research-intensive flagship institution),
- *Kyambogo University* (a national hub for teacher education and special needs training), and
- *Gulu University* (serving a post-conflict, rural region in northern Uganda).

This selection enabled comparative analysis of how OEP practices vary across geographic, disciplinary, and socio-political contexts.

**Quantitative Phase**

A structured survey was administered to 230 undergraduate students across the three institutions. Stratified sampling ensured proportional representation based on gender, academic discipline, and disability status. Among the respondents:

- 60% identified as female;
- 15% identified as PWDs;
- 45% originated from rural areas.

The survey instrument included closed-ended questions on students' access to digital tools, exposure to OER, perceived inclusivity of teaching methods, and institutional support structures. Data were analyzed in SPSS (v27) using descriptive statistics (frequencies, means) and inferential tests (Chi-square, ANOVA) to examine relationships between demographic variables and OEP engagement.

**Qualitative Phase**

To complement survey data, 15 semi-structured interviews were conducted with academic staff (faculty, deans) and ICT professionals to understand policy implementation, pedagogical design, and infrastructural readiness. In addition, 6 focus group discussions (FGDs) were held with students (8–10 participants each), segmented by gender and disability status to facilitate safe, context-sensitive dialogue. These FGDs explored themes such as digital inclusion, learning accessibility, and perceptions of institutional support.

## 3. Literature Review

Open Educational Practices are gaining prominence as transformative tools in reshaping higher education pedagogy, particularly in developing contexts. While initially centered on enhancing access through Open Educational Resources, OEP now encompass broader values such as participatory learning, open pedagogy, collaboration, learner agency, and the promotion of social justice (Cronin, 2017; Ehlers, 2011). These practices challenge conventional academic hierarchies and empower learners, particularly those from marginalized or under-resourced communities.

In African contexts, scholars argue that the full potential of OEP lies in its capacity to redress long-standing structural inequalities in education. Hodgkinson-Williams and Trotter (2018) emphasize that for OEP to be genuinely transformative, they must confront epistemic injustices, recognize diverse knowledge systems, and align with local cultural and linguistic realities. The goal is not only to provide content access but to create inclusive learning environments that reflect the lived experiences of African learners.

A compelling strand of the literature centers on Universal Design for Learning as a framework that complements OEP. UDL, developed by Meyer, Rose, and Gordon (2014), is based on neuroscientific insights into how individuals learn differently. It proposes that educators provide multiple means of engagement, representation, and expression to support diverse learning needs. Its relevance in Africa, particularly for learners with disabilities, has been supported by empirical studies showing that UDL-informed practices lead to improved academic outcomes and higher retention (Opoku et al., 2021). However, despite its promise, implementation of UDL remains sparse, often due to resource constraints and lack of institutional support.

Gender equity is another central concern in the discourse on openness. Women in Sub-Saharan Africa, including Uganda, face compounded barriers to higher education such as caregiving responsibilities, cultural expectations, limited digital exposure, and early marriage (Kwesiga, 2002; UNESCO, 2022). Researchers argue that inclusively designed OEP, particularly those offering mobile-based, asynchronous, and low-bandwidth formats, can help mitigate these

challenges (Czerniewicz et al., 2019). Yet, the absence of robust, gender-disaggregated data continues to hinder informed policymaking and impact assessment.

Beyond gender, structural and technological barriers significantly affect the uptake of OEP across the continent. While mobile phone penetration is high, persistent challenges such as limited internet access, inconsistent electricity supply, and the lack of affordable and accessible digital platforms, remain major obstacles (Lwanga, 2021). Digital literacy, too, is frequently insufficient, particularly in rural and marginalized areas, limiting learners' ability to engage meaningfully with digital content (Ngugi, 2021).

Finally, institutional and policy environments are pivotal to the sustainability of OEP. Without cohesive national strategies, institutional support, and funding, many initiatives remain isolated and unsustainable (Isaacs, 2016; Bossu, Brown, & Bull, 2014). Academic reward systems, often tied to traditional publishing models, can further discourage openness. For OEP to take root, universities must cultivate enabling environments that incentivize innovation, collaboration, and knowledge sharing.

**Conclusion of the Literature Review**

The reviewed literature demonstrates that Open Educational Practices (OEP) hold significant promise in advancing inclusive, equitable, and socially just higher education, particularly within resource-constrained and historically marginalized contexts such as Uganda. The conceptual evolution of OEP from content provision toward participatory, learner-centered pedagogies underscores its transformative potential. However, realizing this potential depends heavily on the integration of complementary frameworks such as Universal Design for Learning (UDL), which emphasize pedagogical flexibility and responsiveness to learner diversity.

Despite global enthusiasm, implementation across Sub-Saharan Africa remains uneven and constrained by a constellation of structural, technological, gendered, and institutional barriers. Women and Persons with Disabilities (PWDs) face unique intersecting forms of exclusion that require deliberate, context-sensitive approaches to OEP design and deployment. The persistent gaps in digital infrastructure, data disaggregation, faculty readiness, and policy alignment reflect a misalignment between the ideals of openness and the on-the-ground educational realities of many African institutions.

These insights reveal a pressing need for empirical research that centers marginalized learner experiences and examines the systemic enablers and constraints of inclusive OEP. Building on these theoretical and empirical gaps, the present study aims to investigate how OEP can be harnessed to support inclusive lifelong learning in Ugandan higher education, particularly for women and PWDs, through a multi-level analysis of pedagogy, technology, and institutional practice.

## 4. Findings

The findings from this study underscore a complex and uneven implementation of Open Educational Practices (OEP) across the three Ugandan public universities surveyed, revealing disparities at the infrastructural, pedagogical, and policy levels.

Digital Access and Socioeconomic Disparities

While 68% of students reported having regular access to digital tools, qualitative responses revealed significant variation in the quality and consistency of that access. Students from rural backgrounds, lower-income households, and informal settlements reported frequent internet outages, inadequate bandwidth, and reliance on shared or outdated devices. In some cases, students had to travel to urban centers or university libraries to download materials for offline study. This reinforced the urban–rural digital divide, a well-documented challenge in East African higher education.

Barriers for Persons with Disabilities (PWDs)

Among PWD respondents, there was consensus about systemic inaccessibility. Institutional learning platforms (such as Moodle) were described as incompatible with screen readers or lacking alt-text and captioning features. Many PWD students indicated reliance on peer support or external tools, which affected their autonomy and learning pace. Few reported encountering intentional inclusive design in their coursework, an indicator that UDL principles have not been mainstreamed into teaching practice.

OER Awareness and Use

OER awareness stood at 54%, with only 31% of students actively using open resources. Usage was most often linked to short-term donor-funded projects or modules led by individual lecturers, rather than part of an integrated institutional approach. Students reported that they were rarely introduced to OER repositories by faculty and often encountered them serendipitously through internet searches or peer sharing. This suggests a need to embed OER literacy into curriculum orientation and ICT training.

Digital Platforms and Learning Adaptation

In the absence of formal LMS use, students, especially those from under-resourced areas, turned to social media apps and mobile learning. WhatsApp, YouTube, and Telegram were the most cited platforms for sharing lecture notes, videos, and assignments. These bottom-up adaptations point to both student resilience and institutional underinvestment in mobile-optimized learning environments. WhatsApp groups were also used for peer tutoring, a form of informal knowledge co-creation consistent with open pedagogy principles.

Gendered Experiences of Flexibility

Female students praised asynchronous learning models, citing increased control over their schedules and reduced transportation costs. Yet, this flexibility was double-edged: the shift to home-based learning led to heightened expectations around domestic work, childcare, and family obligations. As one female participant put it, “Online learning came into my kitchen.”

This highlights how gendered labor burdens intersect with educational technology in complex ways.

Faculty and Institutional Readiness

Faculty interviews revealed generally positive attitudes toward OEP but limited capacity to implement open or accessible pedagogies. Most lecturers had not received training on accessible content design or licensing. Barriers cited included fragmented university ICT strategies, lack of inter-departmental coordination, absence of OEP policy frameworks, and limited leadership engagement. Even among digitally savvy staff, there was uncertainty about institutional expectations or rewards for implementing open approaches.

Over all. The study's findings reveal that the adoption of Open Educational Practices (OEP) across Uganda's public universities is uneven and shaped by intersecting infrastructural, socio-economic, and institutional factors. While digital access is relatively widespread, deep disparities persist, particularly for students from rural areas, low-income households, and those with disabilities, highlighting the need for inclusive and mobile-friendly platforms. The use of Open Educational Resources (OER) remains limited, often tied to isolated initiatives rather than systemic integration. Students demonstrate resilience by relying on social media platforms for learning, yet institutional support for such innovation is lagging. Gendered dynamics further complicate the promise of flexible learning, as domestic burdens disproportionately affect female learners. Faculty expressed interest in OEP but face structural constraints, including lack of policy, training, and cross-unit coordination. Collectively, these findings underscore the urgent need for targeted investments in inclusive infrastructure, capacity building, and coherent institutional strategies to realize the full potential of OEP in Uganda's higher education system.

## 5. Discussion (Expanded and Deepened)

The findings resonate with broader literature on the promise and pitfalls of OEP in the Global South. This study confirms Cronin's (2017) observation that openness is as much about values and power as it is about tools. While digital access is improving, its stratified nature—linked to income, geography, and ability—means that OEP implementation must go beyond mere provisioning of hardware or internet.

The uneven uptake and use of OER mirrors the observations of Bossu et al. (2014), who warned that open content often remains peripheral to core instructional design unless supported by coherent institutional strategies. Participants' reliance on WhatsApp and YouTube echoes Czerniewicz et al.'s (2019) findings that marginalized learners adapt creatively to infrastructural constraints—but at the risk of pedagogical fragmentation and inconsistent quality.

A central insight of this study is the differential experience of flexibility: while asynchronous learning is often lauded as inclusive, it can reinforce inequality when social roles and domestic labor are unacknowledged in instructional design (UNESCO, 2022). For many women students, the home became both a site of learning and surveillance—blurring public–private boundaries and reducing study efficacy. Meanwhile, PWD students' struggles reflect institutional blind spots around digital accessibility, reinforcing the need for Universal Design

for Learning (UDL) not just as policy rhetoric, but as practice embedded in academic routines (Meyer, Rose, & Gordon, 2014).

Institutional readiness emerged as a limiting factor, echoing Isaacs' (2016) critique that OEP in Africa often depends on individual champions rather than systemic commitment. The absence of top-down mandates, incentives, and professional development pathways has created an uneven OEP landscape. Faculty willingness alone is insufficient; robust ecosystems—including ICT infrastructure, inclusive pedagogy training, and open education policies—must co-evolve.

Crucially, this study also affirms the value of intersectional analysis. Experiences of exclusion were rarely based on a single variable but emerged from the confluence of gender, disability, geography, and socio-economic status (Crenshaw, 1991). This supports calls to move beyond generic "inclusive education" frameworks toward more targeted, nuanced responses.

Together, these findings suggest that OEP's transformative promise lies not just in openness, but in intentional inclusiveness—one that is contextually grounded, culturally responsive, and structurally supported. The next step is to translate these insights into action across curricula, professional development, and institutional governance.

## 6.Practical, and actionable recommendations.

### 6.1. Pedagogical Innovation and Faculty Development

- Institutionalize UDL Training: Integrate Universal Design for Learning (UDL) into faculty orientation and continuous professional development programs. Prioritize training on accessible content creation (e.g., subtitles, screen-reader compatibility, multimodal formats).
- Incentivize Open Pedagogy: Revise teaching evaluation frameworks to reward instructors who adopt participatory, inclusive OEP approaches—such as co-creation of materials, student-led discussions, and peer feedback loops.
- Curriculum Redesign: Embed OEP into mainstream curricula rather than isolated modules or donor-funded initiatives. Require departments to include at least one openly licensed resource or learner-generated content component.

### 6.2. Digital Infrastructure and Student Support

- Subsidize Mobile Learning: Negotiate with telecom providers to offer affordable or zero-rated access to educational platforms and OER repositories, especially for rural and low-income students.
- Build Device Loan Banks: Establish campus-based loan systems for tablets, laptops, and assistive devices to reduce access inequality for under-resourced learners.

- Strengthen Learning Management Systems: Upgrade university LMS platforms to ensure compatibility with screen-readers, text-to-speech tools, and offline functionality.
- Peer Digital Mentorship: Create student-led peer support networks to provide ICT and OER training for incoming or less digitally fluent learners.

### 6.3. Gender-Responsive and Disability-Inclusive Strategies

- Design with Flexibility: Promote asynchronous, mobile-friendly, and low-bandwidth content to accommodate learners with caregiving duties or limited connectivity.
- Intersectional Data Collection: Collect and analyze data disaggregated by gender, disability, rural/urban origin, and socioeconomic background to identify structural gaps and inform targeted interventions.
- Create Inclusive Policies: Adopt institutional policies mandating inclusive pedagogical practices—such as allowing flexible deadlines, recording lectures, or offering alternative assessment formats.

### 6.4. Institutional Policy and Governance

- Develop an Inclusive OEP Policy Framework: Draft and implement university-wide policies that articulate principles, standards, and support systems for inclusive OEP, aligned with national education priorities.
- Establish OEP Committees: Form cross-functional taskforces—including students, faculty, ICT staff, and disability units—to oversee and co-design inclusive OEP implementation and evaluation.
- Fund Inclusive Innovation: Allocate annual budget lines to support open content development, faculty training, accessibility audits, and digital equity projects.

### 6.5. National and Cross-Institutional Collaboration

- Embed OEP in National Policy: Advocate for inclusion of OEP and UDL in Uganda's higher education strategic plans, digital education policies, and accreditation criteria.
- Leverage Regional Networks: Partner with other African universities to share OER, co-develop regional repositories, and pool resources for staff development on open practices.
- Promote Open Science and Research: Encourage open-access publication and knowledge dissemination as part of faculty promotion criteria, aligning with global research equity movements.

### 6.6. Monitoring, Evaluation, and Sustainability

- Develop OEP Readiness Indicators: Implement metrics for tracking institutional readiness, learner participation, accessibility levels, and content openness.

- Use Participatory Evaluation: Involve marginalized learners—particularly women and PWDs—in the design and review of OEP initiatives to ensure lived experiences inform improvement cycles.
- Scale What Works: Pilot interventions across departments and scale successful models institution-wide through adaptable toolkits and case studies.

## 7. Conclusion

Open Educational Practices offer a compelling pathway for advancing inclusive lifelong learning in Ugandan universities, particularly when grounded in equity-driven design and sustained institutional commitment. This study has surfaced critical insights into how learners—especially women and PWDs—experience both the affordances and constraints of OEP, illuminating gaps that must be addressed to realize SDG 4's vision of "education for all."

Key findings show that digital access, while improving, remains uneven and fragile; inclusive pedagogy is emergent but inconsistent; and institutional cultures vary widely in openness maturity. Faculty support for OEP exists but is undermined by limited training and fragmented policy frameworks.

The study's contributions are threefold:

- Theoretical: It integrates UDL, social justice, and intersectionality to frame OEP within African realities.
- Empirical: It triangulates multi-site, multi-stakeholder data to reveal systemic patterns in OEP implementation.
- Practical: It advocates for a coordinated strategy centered on faculty development, policy coherence, infrastructure equity, and learner agency.

Moving forward, institutions must embed OEP within broader educational transformation agendas—linking open pedagogy with inclusive design, capacity building, and national digital education policies. In doing so, OEP can move from isolated experiments to systemic instruments of equity and opportunity.

## REFERENCES


1. Ally, M., & Tsinakos, A. (2014). *Perspectives on open and distance learning: Increasing access through mobile learning*. Commonwealth of Learning.
2. Bali, M., & Sharma, S. (2014). Caring for students: Pedagogical and institutional considerations. *Teaching in Higher Education, 19*(1), 23–35. https://doi.org/10.1080/13562517.2013.827652
3. Bali, M., & Sharma, S. (2014). Culturally responsive open education and online learning. In C. J. Bonk, M. M. Lee, T. C. Reeves, & T. H. Reynolds (Eds.), *Open education: International perspectives in higher education* (pp. 139–151). EdTech Books.
4. Bossu, C., Brown, M., & Bull, D. (2014). *Enabling open education: A feasibility protocol*. Commonwealth of Learning.
5. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101.
6. Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review, 43*(6), 1241–1299.
7. Cronin, C. (2017). Openness and praxis: Exploring the use of open educational practices in higher education. *International Review of Research in Open and Distributed Learning, 18*(5), 15–34. https://doi.org/10.19173/irrodl.v18i5.3096
8. Czerniewicz, L., Deacon, A., Small, J., & Walji, S. (2019). Unbundling and re-bundling higher education in an age of inequality. *EDUCAUSE Review*.
9. Ehlers, U.-D. (2011). Extending the territory: From open educational resources to open educational practices. *Journal of Open, Flexible and Distance Learning, 15*(2), 1–10.
10. Hodgkinson-Williams, C., & Arinto, P. B. (Eds.). (2017). *Adoption and impact of OER in the Global South*. African Minds.
11. Hodgkinson-Williams, C., & Trotter, H. (2018). A social justice framework for understanding open educational resources and practices in the Global South. *Journal of Learning for Development, 5*(3), 204–224.
12. Isaacs, S. (2016). *Open educational resources and change in higher education: Reflections from practice*. South African Institute for Distance Education (SAIDE).
13. Kwesiga, J. C. (2002). *Women's access to higher education in Africa: Uganda's experience*. Fountain Publishers.
14. Laurillard, D. (2012). *Teaching as a design science: Building pedagogical patterns for learning and technology*. Routledge.
15. Lwanga, F. (2021). *Digital access and learning equity in rural Uganda*. Uganda National Council for Higher Education.
16. Meyer, A., Rose, D. H., & Gordon, D. (2014). *Universal design for learning: Theory and practice*. CAST Professional Publishing.
17. Ngugi, C. (2021). Digital literacy and open education: A Kenyan and Ugandan perspective. *African Journal of Education and Technology, 11*(2), 35–50.
18. Nkuyubwatsi, B. (2016). Motivation to learn and completion of MOOCs: Comparative study between students in developed and developing countries. *The Journal of Learning for Development, 3*(2), 101–115.

19. Nkuyubwatsi, B. (2016). Opening up higher education in Rwanda: The potential contribution of open education and MOOCs. *Journal of Learning for Development, 3*(1), 36–49.
20. Nzivo, C., & Chuttur, M. (2019). Accessibility and usability of open educational resources in Sub-Saharan Africa. *Information Development, 35*(5), 692–702. https://doi.org/10.1177/0266666918761360
21. Opoku, M. P., Miti, S., Nketsia, W., & Badu, E. (2021). Universal design for learning and inclusive education in Africa: A systematic review. *International Journal of Inclusive Education, 25*(3), 322–340. https://doi.org/10.1080/13603116.2019.1707303
22. Popenici, S. A. D., & Kerr, S. (2017). Exploring the impact of artificial intelligence on teaching and learning in higher education. *Research and Practice in Technology Enhanced Learning, 12*(1), 1–13. https://doi.org/10.1186/s41039-017-0062-8
23. UNESCO. (2019). *Recommendation on open educational resources (OER)*. United Nations Educational, Scientific and Cultural Organization. https://unesdoc.unesco.org/ark:/48223/pf0000370936
24. UNESCO. (2022). *Global education monitoring report: Gender equality in education*. UNESCO Publishing.