T20 Policy Brief

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Task Force 05

INCLUSIVE DIGITAL TRANSFORMATION

Adopting an Intersectional Approach to Digital Education and Skills

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Abstract

The digital economy presents burgeoning job opportunities, yet a persistent lack of digital literacy and STEM skills among women and underserved groups hinders their participation. This exacerbates the digital divide. The G20 can play a pivotal role in fostering inclusive digital progress by:

1. Enhancing Women's Digital Literacy: Allocate resources to programs that equip women, particularly in low-income communities, with the necessary digital skills, encompassing mobile technologies.

2. Investing in Lifelong Learning: Support initiatives that provide continuous learning opportunities and career transition programs for women and other demographic segments disproportionately impacted by digitalization. This could encompass scholarships, mentorship programs, and online platforms dedicated to digital skills and AI education.

3. Fostering Public-Private Partnerships: Encourage collaboration between governments, educational institutions, development organizations, and the private sector to create and support scalable digital literacy training for women, leveraging a community-driven and peer-to-peer approach. By implementing clear metrics, these partnerships can effectively combine resources, expertise, and networks to maximize impact and reach.

By working together, we can bridge the digital divide and empower all segments of society to participate fully in the digital age.

Keywords: Digital (Gender) Inclusion, Digital Literacy, STEM Education, Gender Equality, Lifelong Learning, Digital Skills Development, Gender-Transformative Digital Skills

Diagnosis of The Issue

The digital revolution is reshaping the global landscape, demanding a workforce skilled in STEM fields. While this transformation offers economic opportunities, it also highlights inequalities, especially for women and underserved communities. The challenge lies in systemic obstacles and stereotypes hindering equitable participation in the digital gender divide (GSMA 2023a; GSMA 2023b; ITU 2024). Addressing this issue is crucial for the G20 agenda, impacting sustainable development, social inclusion, and economic resilience.

This policy paper aligns with the G20's commitment to Sustainable Development Goals (SDGs), specifically SDG4: quality education, SDG5: gender equality, SDG8: decent work and economic growth, and SDG10: reduced inequalities. It addresses barriers such as affordability, knowledge and skills, safety concerns, relevant content, and access (GSMA 2022).

The paper proposes recommendations for the G20, including enhancing digital education for women and girls, promoting lifelong learning and career support programs in STEM fields, and fostering public-private partnerships to develop inclusive digital education initiatives. By ensuring equitable access to digital benefits, we can empower women and create an inclusive, prosperous world for all.

Recommendations

Given the critical role of digital literacy and STEM skills in driving economic growth and reducing inequalities, as previously outlined, G20 nations must prioritize the digital inclusion of women and underserved groups. The following recommendations, aimed at the G20, are proposed to foster equitable access to digital education, to enhance gender-transformative digital skills, and, ultimately, to promote a more inclusive digital economy.

1. Establish comprehensive digital education frameworks

- Recommendation: G20 countries should establish comprehensive, inclusive digital education frameworks with clear targets and a participatory monitoring and evaluation (PME) system. These frameworks should prioritize gender equality and access for underserved communities, integrate digital literacy from primary education through higher education, and include lifelong learning opportunities.
- Implementation: G20 countries should establish national digital education strategies with measurable goals. These strategies should prioritize equitable access for all. Firstly, mandatory digital literacy curricula, aligned with established frameworks, should be integrated into schools. Secondly, funding must address the digital (gender) divide, ensuring underserved areas have access to devices, fast and reliable internet, and assistive technologies. Thirdly, partnerships with educational institutions and tech companies can provide state-of-the-art training for teachers on using digital tools effectively. Fourthly, successful models like UNESCO's frameworks (Elfert et al. 2023) can be adapted for local contexts. Finally, a feedback loop system involving stakeholders should track progress, identify areas for improvement, and inform adjustments to the

framework. This comprehensive approach ensures all citizens have the skills to thrive digitally.

- Argument: The World Bank reports that 1 in 5 jobs globally requires significant digital skills, highlighting the critical need for digital literacy across all educational levels (World Bank 2021). Research by the International Telecommunication Union (ITU) indicates that the gender gap in internet use is widening, emphasizing the urgency of addressing gender equality within digital education frameworks (ITU 2024).

2. Promote gender-transformative policies in STEM education

- Recommendation: Implement and scale up evidence-based gender-transformative policies and programs (GTPPs) across G20 nations. GTPPs aim to dismantle gender stereotypes, address unequal power dynamics within educational systems, and foster gender equity in STEM education and careers.
- Implementation: Financial incentives like scholarships and loan forgiveness programs specifically for women in STEM, particularly at higher education and vocational training levels, can make these fields more accessible. Media campaigns and community programs that challenge stereotypes and showcase successful female STEM professionals can inspire young girls. Mentorship programs connecting female students with established professionals in STEM fields can provide guidance and support (EQUALS 2024). Finally, advocating for educational policies is crucial. These policies should be evidence-based, meaning they are grounded in research on effective interventions, investment-backed with dedicated funding, and data-driven, with clear metrics to track progress and assess the impact.

- Argument: Despite progress in some areas, globally, women remain significantly underrepresented in STEM fields. A 2023 report by UNESCO reveals that women comprise only 28% of engineering graduates and 40% of computer science and informatics graduates (Common Worlds 2024). This underrepresentation is not only a matter of gender inequality but also a critical barrier to filling the global skills gap in crucial STEM sectors. Studies by the McKinsey Global Institute estimate that closing the gender gap in STEM fields could add up to $2.5 trillion to the global GDP by 2025 (McKinsey 2023).

3. **Foster public-private partnerships for digital skills development**

- Recommendation: Encourage the development of public-private partnerships (PPPs) to expand access to digital education and skills development programs, primarily targeting underrepresented and underserved groups.
- Implementation: Facilitate collaboration between governments, educational institutions, and the private sector to co-create digital education programs, invest in infrastructure, and develop inclusive technology solutions. These partnerships should focus on urban and rural areas, ensuring widespread access.
- Argument: PPPs can leverage the strengths of both sectors – the regulatory and infrastructural capacity of governments and the private sector's innovation, resources, and expertise. For instance, India's Skill India initiative, which includes significant private sector involvement, has been pivotal in enhancing vocational training and digital skills among youth (GSMA 2023b).

4. Support lifelong learning and career transition programs

- Recommendation: G20 countries should support initiatives offering lifelong learning opportunities and career transition programs, focusing on digital skills and AI education. This is crucial for workers displaced by digitalization or seeking to transition into the digital economy.
- Implementation: to bridge the digital divide and empower all citizens, mainly underserved women, to participate in the evolving digital economy, a multifaceted approach is needed. This includes the development of accessible learning opportunities, targeted support services, and fostering a culture of continuous learning. Free or subsidized online platforms will provide geographically unrestricted access to high-quality learning materials. These platforms should offer interactive courses in digital skills, coding, and emerging technologies, catering to various learning styles and levels. Complementing online platforms will be the establishment of physical community learning centers. These centers can offer in-person instruction, hands-on workshops, and access to technology for those with limited internet access or lacking the digital literacy to navigate online learning effectively. Career counseling services can be integrated within this framework to help individuals translate their newly acquired digital skills into concrete career goals. Job placement services can connect graduates with relevant opportunities, focusing on bridging the gender gap and empowering older workers to reintegrate into the workforce.
- Argument: The World Economic Forum estimates that by 2025, 85 million jobs may be displaced by a shift in the division of labor between humans and machines, while 97 million new roles may emerge that are more adapted to the new division

of labor (Di Battista, Attilio, et al. 2023) - lifelong learning and career support to prepare the workforce for these changes.

5. Enhance international cooperation on digital education standards

- Recommendation: Promote enhanced international cooperation among G20 nations to develop and harmonize standards for digital education, ensuring that digital skills certifications are recognized across borders. This will facilitate the global mobility of talent and support a diversified workforce.
- Implementation: Establish an international task force within the G20 framework to align digital education curricula and certification standards. This could also involve creating a global digital education portal that offers access to accredited programs worldwide.
- Argument: A standardized, internationally recognized digital education and certification system would enable workers to quickly validate their skills in different countries, promoting a more dynamic and flexible global workforce. It would also ensure that digital education initiatives across countries are high-quality and aligned with the needs of the worldwide job market.

Scenario Outcomes

Embracing the outlined recommendations by G20 decision-makers can significantly transform the landscape of digital education and workforce participation, especially for women and underserved groups. These recommendations could lead to various outcomes, ranging from increased economic growth and innovation to implementation and resource allocation challenges. Here, we explore scenarios that could result from embracing these policy recommendations.

Scenario 1: Bridging the digital gender divide

This scenario envisions a future where comprehensive digital education frameworks are coupled with gender-transformative policies to achieve two key goals:

- Closing the Digital Gender Divide: Unequal access to technology, including smartphones, tablets, laptops, and the internet, would be significantly reduced for women and underserved groups. This would involve addressing the lack of digital skills and broader barriers like affordability, cultural norms, lack of relevant content, and safety concerns.
- Boosting Women's Representation in STEM: Women and underserved groups would gain unprecedented access to high-quality digital literacy and STEM education, creating a more diverse and innovative technology sector.

Contradictions and Trade-offs: Implementing these frameworks requires significant investments, potentially straining public finances, especially in lower-income G20 countries. Prioritizing digital and STEM education could unintentionally overshadow

other vital areas like humanities and social sciences, leading to an imbalanced education system.

Scenario 2: Enhanced employment opportunities and economic growth

This scenario envisions a future where investments in lifelong learning and career transition programs empower the workforce to thrive in the digital economy. The benefits are multifaceted:

- Reduced Unemployment: These programs would help reduce unemployment rates across G20 nations by equipping individuals with the latest digital skills.
- Bridging the Skills Gap: Targeted programs would address the global skills gap in STEM fields, ensuring a readily available talent pool to fill critical positions.
- Innovation and Productivity Boost: A more skilled workforce would drive innovation and increase productivity within public and private sectors, leading to overall economic growth across G20 nations.
- Flourishing Public-Private Partnerships: Collaboration between governments and businesses would flourish, fostering the development and delivery of effective training programs tailored to industry needs.
- Increased Worker Satisfaction and Employability: Individuals equipped with in-demand skills experience greater job security, career advancement opportunities, and overall satisfaction in their work.

Contradictions and Trade-offs: While these initiatives may lead to overall economic growth, they could also exacerbate income inequality if not carefully managed. High-skilled workers may reap the most benefits, leaving low-skilled workers further behind unless programs are designed to be inclusive and accessible to all socioeconomic groups.

Scenario 3: Creation of a global digital learning ecosystem

This scenario envisions a future where enhanced international cooperation on digital education standards fosters a thriving global digital learning ecosystem. Key benefits include:

- Globally Recognized Digital Skills Certifications: Standardized frameworks would ensure that digital skills certifications are recognized across borders, facilitating the global mobility of talent. This would benefit individuals seeking employment opportunities abroad and companies seeking skilled workers from a wider talent pool.
- Increased Talent Mobility Would Contribute to a More Diversified and Competitive Workforce: Increased talent mobility would contribute to a more diversified and competitive workforce across G20 nations. Companies would benefit from access to a broader range of skilled individuals, fostering innovation and economic growth.
- Improved Response to the Digital Economy: International cooperation would equip G20 countries to better respond to the evolving digital economy's needs by facilitating the exchange of knowledge and best practices.

Contradictions and Trade-offs: A global digital learning ecosystem might privilege languages and cultural norms dominant in more powerful G20 nations, potentially marginalizing smaller countries and languages. Furthermore, the push for standardization could lead to a homogenization of educational content, reducing the relevance of local context and needs in education.

Scenario 4: Inequities in access and participation persist

This scenario explores the potential consequences of uneven or incomplete implementation of the proposed recommendations. Here's where the digital divide could persist or widen:

- Unequal Investment: If G20 nations prioritize urban areas over rural regions in their investments, significant segments of the population could be left behind. Rural areas' lack of access to technology, infrastructure, and digital skills training would further marginalize these communities from the digital economy.
- Stalled Gender Progress: Without comprehensive gender-transformative policies, existing inequalities could worsen. Initiatives that fail to address cultural barriers, provide adequate childcare support, or offer training programs tailored to women's needs could result in this.

Contradictions and Trade-offs: Efforts to advance digital gender equality must be comprehensive and inclusive from the outset to prevent exacerbating existing inequalities. Prioritizing certain groups or regions over others, even unintentionally, could lead to further divisions and undermine the overall goal of fostering an inclusive digital economy.

Scenario 5: Evolving workforce dynamics

This scenario depicts a future where the workforce adapts and thrives in the digital economy. Key benefits include:

- Increased Flexibility and Mobility: Work models become more flexible, with remote work options and project-based contracts becoming commonplace. This allows for greater work-life balance and facilitates increased labor mobility across geographical boundaries.
- Enhanced Diversity and Inclusion: Increased focus on digital skills training creates opportunities for a more diverse and inclusive workforce. This fosters innovation and ensures a broader talent pool to meet the evolving needs of the digital economy.
- Lifelong Learning and Career Growth: Continuous learning is embedded within the work culture, with employers offering ongoing digital skills training and career development opportunities. This empowers workers to adapt, upskill, and progress throughout their careers.
- Shift Towards Digital and STEM Fields: The labor market evolves with a significant increase in demand for workers with digital and STEM skills. This fosters innovation and economic growth across various sectors.

Contradictions and Trade-offs: This shift may create challenges for traditional industries and older workforce segments that are less inclined or able to adapt to new digital roles. Furthermore, the rapid pace of technological change could lead to job displacement and require continuous adaptation by workers, potentially leading to job insecurity and stress.

Conclusion

Implementing the G20 nations' proposed recommendations has the potential to fundamentally reshape the global economy and society, making significant strides towards digital inclusion and equality. However, achieving these positive outcomes requires careful consideration of the potential contradictions and trade-offs associated with each action. Policymakers must adopt a holistic and inclusive approach, ensuring that the benefits of digitalization are equitably distributed and that no one is left behind in the digital age.

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