Mapping Gender Data Gaps in Education

INTRODUCTION

Gender data on education is a strong indicator for gender equality and a predictor for the achievement of future development outcomes for women and girls. There is still much we do not know about girls' educational experiences and outcomes compared to that of boys. The picture becomes even muddier when trying to make comparisons across countries or to talk about the experiences of socially excluded girls. Fewer than half of countries report data, sex-disaggregated or not, on flagship indicators for SDG 4 (Global Partnership for Education 2019), and the majority are classified as Tier II or III, meaning international methodologies and standards for data collection are lacking.

Today, the most pressing gender data gaps for education are:

- learning outcomes;
- excluded girls;
- digital literacy;
- gender-responsive education infrastructure and facilities; and
- subjective dimensions (aspirations and expectations) of girls' education

WHERE WERE THE GENDER DATA GAPS IN 2014?

During the MDG era, the goal for education was gender equality in enrollment. On average, global gender parity was achieved in primary and secondary school enrollment and completion in 2014 (UNESCO 2016). Yet disparities persist at the regional and country levels, sometimes disadvantaging girls and other times disadvantaging boys (ILO and UNICEF 2018).

In 2014, Data2X identified learning outcomes, excluded girls, and school-to-work transition rates as the most pressing gender data gaps in education.

GENDER DATA AND EDUCATION IN THE SDG ERA

Under the SDGs, the focus has shifted to educational quality, learning outcomes, and social inclusion. SDG 4 aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030. There are ten gender-relevant education indicators within the SDGs (full list available in appendix).

Compared to 2014, we now have better data on the mechanisms that promote or prevent girls' successful transition from school into the workforce (e.g. ILO and UNICEF 2018). Other gender data gaps remain and additional ones have been identified including data on digital literacy, gender-responsive education infrastructure and facilities, and the subjective dimensions of girls' education.

Learning Outcomes

Internationally comparable measures of learning outcomes disaggregated by sex are more common today, but they remain conceptually underdeveloped and not systematically collected in developing countries. There is also currently no globally agreed standard for measuring foundational educational proficiency in reading and mathematics. Moreover, few systematic measures of learning outcomes extend beyond foundational skills to capture technical and vocational skills or transferrable skills like self-confidence and communication (sometimes called "socio-emotional skills"). This is slowly changing as the Organisation for Economic Co-Operation and Development (OECD) has started to focus on socio-emotional skills and the World Bank STEP program is the first initiative to measure job relevant skills in low- and middle-income countries.

Excluded Girls

Most of the world's 262 million children and adolescents out of school are socially excluded children from low-income countries (UN ECOSOC 2019). Socially excluded girls face a double disadvantage that results from being female and belonging to a group that is marginalized because of ethnicity (caste), religion, location (rural/urban), orphanhood, or disability. Data with multiple disaggregations are needed to give a clear picture of the varied educational experiences of girls globally, but few countries disaggregate data from administrative records and national learning assessments beyond sex. Data on the intersections of education with disability and with immigration or displacement are particularly scarce because of the added challenges of collecting data for socially marginalized and mobile populations.

Digital Literacy

Digital literacy skills, including information and communication technology (ICT) skills (e.g. social media, online research, computer programming and coding), is an area where stakeholders are pushing for better sex-disaggregated data because of its importance in preparing students for the future of work. There is currently no global agreement on how to define or measure ICT skills but some promising practices exist. For example, starting in 2017, UNICEF's Multiple Indicator Cluster Surveys (MICS) was expanded to collect data on nine different ICT skills among youth (aged 15 and above) that allow for sex-disaggregation, such as writing a computer program, transferring a file, or finding, downloading, installing and configuring software. SDG indicators 4.4.1 and 4.4.2 also track the percentage of youth and adults with ICT skills and minimum level proficiency in digital literacy skills, but they are not currently sex-disaggregated.

Gender-Responsive Education Infrastructure and Facilities

Administrative data for SDG indicator 4.a.1 on the proportion of schools with access to drinking water, single-sex sanitation and handwashing facilities, computers and the internet is available for less than 15% of countries worldwide despite its critical importance for providing students with effective and inclusive learning environments (UN Women 2018). For girls, access to clean water, basic sanitation, and hygiene (WASH) in schools has serious implications for their menstrual hygiene management and their ability to attend school during their periods. Relatedly, there are no global estimates on the number of girl absentees from school due to WASH.

Subjective Dimensions of Girls' Education

Girls' choice of specialization or field of study, their career aspirations, and their expectations regarding the economic returns to education are subjective and often culturally specific, and for these reasons, they are currently not systematically documented in international data. More methodological work is needed to identify robust and internationally standardized measures for capturing girls' subjective expectations and aspirations for their education, to help them achieve their goals.

WHERE DOES GENDER DATA ON EDUCATION COME FROM?

The main sources of gender data for education are **administrative data**, **household surveys**, and **national learning assessment surveys**. From these sources, there exists extensive sex-disaggregated data at most education levels for school enrollment, completion, and basic measures of education quality (e.g. teacher training and pupil-teacher ratios, school resources and infrastructure). Data on learning outcomes are less readily available and harder to compare internationally due to differences in countries' grade structures, curriculum objectives, and learning assessments.

Digital school administrative records are becoming more common in low- and middle-income countries and have the potential to provide more complete and higher frequency gender data on education than national learning assessments and other surveys. However, the utility of administrative records is only as good as the strength of the underlying data, and very few countries disaggregate administrative level data to account for inequalities based on age, location (urban/rural), disability status, or other relevant characteristics.

Administrative data also require standardization to facilitate comparisons between countries and over time. In many low- and middle-income countries, data management processes at the school and national level are under-funded, ad hoc, and of variable quality and timeliness (Custer et al. 2018). A 2019 report by Open Data Watch and Data2X found that 14 of 15 African countries studied were heavily dependent on internationally-sponsored surveys such as MICS and Demographic and Health Surveys (DHS) for a large share of their data on education indicators, yet these surveys are insufficient to inform local policies and programs as they only take place every three or five years and are not typically designed to be representative beyond the first sub-national level (e.g. region).

WHAT EFFORTS ARE UNDERWAY TO IMPROVE GENDER DATA ON EDUCATION?

Key actors providing guidance on gender data on education:

- Guidelines for SDG 4 data collection and assistance with data compilation and dissemination are provided by the **UNSD**.

- **United Nations Educational, Scientific and Cultural Organization (UNESCO)** oversees the Education 2030 agenda in the context of the SDG framework.

- Apart from the **UNESCO Institute for Statistics (UIS)**, **UNICEF**, **ITU** and **OECD** are also custodian agencies on individual indicators under SDG 4.

- **Global Alliance to Monitor Learning** coordinated by UIS is an initiative to support national strategies for measuring learning and to enable international reporting on SDG 4.

Some significant large-scale efforts are under way to collect, analyze, and disseminate sex-disaggregated education data, among them:

- To harmonize international data collection, **UIS** adjusts the education data it obtains from countries and cross-national learning assessments to account for differences in the grade structures of school systems, which is a significant source of national differences in education data.

- **The World Inequality Database on Education (WIDE)** brings together data from DHS, MICS, and other national household surveys and learning assessments from over 160 countries. Users can compare education outcomes between countries and between groups within countries, according to factors that are associated with inequality, including wealth, gender, ethnicity, and location. In 2018, the Global Education Monitoring Report and UIS partnered to jointly maintain and develop WIDE to support the monitoring of SDG 4, particularly target 4.5 on equity.

- The **Global Dataset on Education Quality** harmonizes international and regional assessments of learning across 163 countries and regions disaggregated by sex, socioeconomic status, location (urban/rural), language and immigration status, thus enabling greater precision and equity analysis (Altinok et al. 2018).

Organizations calling for, supporting, or using gender data on education include:

- **Global Partnership for Education**, which works with 70 developing countries to achieve inclusive quality education for all, including a focus on the poorest and most vulnerable girls and those affected by fragility and conflict. The group has been a vocal advocate and convenor for the better collection and funding of education data in the lead up to the 2019 High Level Political Forum on Sustainable Development.

- **Brookings Institution's Center for Universal Education** is also influential, using research and policy engagement to inform the global education agenda, advance learning metrics, and improve education resources and learning outcomes to reach girls and other marginalized groups.

- **Population Council's Girl Innovation, Research, and Learning (GIRL) Center** is harnessing the power of open data on education and other issues through its Adolescent Data Hub which connects key decision-makers with the evidence needed to maximize investment and transform the lives of adolescents, especially girls.

RECOMMENDATIONS

To track global progress and meet international goals, education stakeholders and custodian agencies must coalesce around globally agreed upon standards for measuring foundational educational proficiency in reading, mathematics, and ICT skills, let alone specific technical and vocational skills, transferrable skills, and socio-emotional skills.

To understand and address barriers to accessible and quality education, we need more robust, internationally comparable data on education that is simultaneously disaggregated where possible to account for inequalities based on sex, age, location (urban/rural), disability status, and other relevant characteristics. Existing datasets offering multiple disaggregation (e.g. WIDE and the Global Data Set on Education Quality) should be expanded to include a greater number of countries in support of eliminating data gaps.

To close gender data gaps on learning outcomes and digital literacy, investment should be geared towards expanding promising practices for data collection, particularly in developing countries. For example, the innovative work being done by MICS to measure youth ICT skills; OECD's work tracking socio-emotional skills; and work by the World Bank STEP program to measure job relevant skills in low- and middle-income countries are all notable contributions to closing these gaps.

Additionally, dedicated panel surveys using cell phone and social networking data to track girl's education experiences over time could provide rich sources of information on girls' access to WASH in schools, as well as their subjective expectations and aspirations for their education.

This brief is part of "Mapping Gender Data Gaps: An SDG Era Update." The full report can be accessed here: data2x.org/MappingGenderDataGaps.

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Appendix: Gender-Relevant SDG Education Indicators (10 total)

- 4.1.1 Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex (Tier II)

- 4.2.1 Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial wellbeing, by sex (Tier III for children 0-23 months and Tier II for children 24-59 months)

- 4.2.2 Participation rate in organized learning (one year before the official primary entry age), by sex (Tier I)

- 4.3.1 Participation rate of youth and adults in formal and nonformal education and training in the previous 12 months, by sex (Tier II)

- 4.4.1 Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill (Tier II)

- 4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated (Tier I/II/III depending on indice)

- 4.6.1 Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex (Tier II)

- 4.7.1 Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in: (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment (Tier III)

- 4.a.1 Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions) (Tier II)

- 8.6.1 Proportion of youth (aged 15−24 years) not in education, employment or training (Tier I)