



FullForce



**Why the world works better
when girls go to school**

with foreword by Tim Cook, Apple CEO





Foreword



BY TIM COOK,
APPLE CEO

Apple proudly joined Malala Fund as its first Laureate partner earlier this year, and we've admired Malala's transformative efforts for a lot longer than that.

People around the world came to know Malala first as a strong and inspiring spokesperson, a visionary for girls' education and a clear-eyed advocate for the economic potential of women unleashed. This report underscores another critical component of Malala Fund's transformative mission. Through rigorous, diligent and life-changing research and insights like those contained in this report, they are driving gender equity in education forward at the grassroots.

In Full Force: Why the world works better when girls go to school, Malala Fund shines a spotlight on the \$30 trillion in economic potential lost over a lifetime due to our unequal education system. If civil society took the fundamental step of guaranteeing 12 years of education for every woman and girl, every community would benefit, every sector would thrive, and every economy would grow.



 Recognizing that, ‘many of the students now entering the classroom will work in jobs that don’t currently exist,’ *Full Force* lays out a roadmap for how we must plan today to ensure that women can succeed in the jobs of tomorrow. 

It would be easy enough to end the story with this blunt statistic. In the pages that follow, however, Malala Fund pushes governments and private institutions alike to go further—even to see the future. Recognizing that, “many of the students now entering the classroom will work in jobs that don’t currently exist,” Full Force lays out a roadmap for how we must plan today to ensure that women can succeed in the jobs of tomorrow.

In challenging the G20—and, by extension, all of us in a position to choose our own leaders—to seize the opportunity of this moment, Malala Fund plays an essential role. With this report, they undertake the hard, thoughtful, and necessary work of pushing a movement forward. Their research is sound, their insights are valuable, and their recommendations are attainable. We would be very fortunate if policymakers follow their lead.

For our part, we at Apple will do what we can to help Malala and Malala Fund deliver more research of the remarkable caliber of Full Force. We are a better company thanks to the brilliant and talented women who help Apple change the world through our products, services and user experiences. And I have no doubt that, if the global community ensures that every woman has access to similar opportunities, a future beyond our imagining is possible.

Tim Cook





Executive Summary



In July 2018, the World Bank published research showing that women's lifetime earnings could increase by up to \$30 trillion if every girl received 12 years of free, safe, quality education. This is only the latest finding demonstrating that girls' education brings significant benefit to the global economy.

Yet, as this paper reveals, almost one billion girls and young women lack the skills to succeed in a rapidly changing labour market. The vast majority of these girls live in low- and middle-income countries and face a lifetime of under-employment, poverty and insecurity. And their untapped potential is going to waste, acting as a brake on global economic progress and sustainable development.

The Fourth Industrial Revolution (4IR) and the rise of digitalisation, "big data," automation, robotics and artificial intelligence are transforming the way we live, learn and earn. New jobs will be created, requiring technological know-how and a breadth of skills. Others, for example in administration and manufacturing, will disappear altogether.

The future of work will be different, and that means preparing girls today for the jobs of tomorrow. This requires reforming education systems *and* paying attention to the systematic disadvantages and discrimination that deny girls their right to education.

Around the world, girls remain less likely to start school than boys and face barriers to progressing and learning at every stage,

simply because of their gender. The poorest girls are left behind. This carries a high economic cost for the rest of the world.

The 2018 G20 agenda creates a new opportunity to address these issues. Argentina has placed Future of Work as a priority theme for its 2018 Summit and created the first G20 Education Working Group, which is mandated to work on education financing and skills for life and work.



Why do the G20's decisions matter? Together, this group represents around 90% of global GDP, encompasses developed and developing countries and includes the world's leading donors to the education sector. G20 countries are also home to around one-third of the world's out-of-school girls. By taking collective action, the G20 can reap rewards in their own countries, catalyse change in partner countries and make a positive difference in the lives of nearly a billion girls around the world.

This paper presents the economic case for investment in girls' education, offers practical, sustainable and measurable actions, and calls for the G20 to launch a specific initiative to ensure that education prepares all girls for the future of work.



Introduction

Argentina's G20 agenda recognises that today's children must learn the skills and knowledge required to flourish in tomorrow's economy, and includes education as a priority theme for the first time:

 The G20 should help ensure that technological change will not increase exclusion or social disintegration. Education is at the centre of this debate: the future will require substantial investment in training and updating skills. 

— PRESIDENT MAURICIO MACRI¹

Leaders must close the global education funding gap to ensure all children complete a full 12 years of free, safe, quality education and launch a specific initiative to prepare girls to participate in the future labour market. Failing to address the funding shortfall will force girls in poorer countries into precarious employment and insecure livelihoods. Not only would this be a tragedy for those left behind, but it would also be a waste of talent and hamper economic progress around the world. This paper does not examine the wider evidence and policy responses related to women's economic empowerment and labour force participation, but does draw links to these issues where relevant.

Part One

Part One of this report reviews the latest research on the link between girls' education, gender equality and stronger, more inclusive growth. It features recent World Bank research, launched in partnership with Malala Fund, showing that women and girls could gain up to \$30 trillion in earnings by completing secondary education.

Part Two

Part Two presents new data insights highlighting the challenges girls face as they transition from education to the workforce. It shows that almost one billion girls and young women are missing out on vital education and skills necessary to succeed in a rapidly changing labour market, the vast majority in low- and middle-income countries.

Part Three

Part Three presents recommendations for the G20 to mobilise new resources and to partner with developing countries, labour, business and education stakeholders to launch an initiative to increase girls' completion of 12 years of education and ensure they learn the skills needed for future work.





Part One

THE ECONOMIC CASE FOR GIRLS' EDUCATION

There are two great equalizers in life: the internet and education. 🌐

— JOHN CHAMBERS, FORMER CISCO CEO

Research points to a substantial growth dividend if women had the same economic opportunities as men. A study by McKinsey found that eliminating gender gaps in society could add at least \$12 trillion per year to global growth.² Other benefits of gender equality include stronger business performance, greater national competitiveness and reduced income inequality.^{3,4}

The World Economic Forum identifies gender equality in work as one of the most important goals of our time.⁵ The International Monetary Fund cites increased female labour force participation as a global economic game changer.⁶ In 2017, the G20 declared that sustainable and inclusive growth is dependent upon women's equal access to the labour market, property, quality employment and financial services.⁷ Earlier this year, Canada's G7 Presidency identified gender equality as a cross-cutting priority for all areas of the G7's work and appointed the first Gender Equality Advisory Council.⁸

Beneath headline agreements, there is little consensus — and even less action — around the necessary set of policy responses. As this paper will show, we cannot hope to achieve strong and inclusive economies without unlocking the potential of millions of girls denied 12 years of education.

1.1

The current landscape for girls' education

Despite progress in closing the gender gap in school enrolment, girls remain less likely than boys to ever enter the classroom. There are five million more girls than boys out of school at primary level.⁹ In total, more than 130 million girls are out of school across primary, lower and upper secondary levels.

In poorer regions, a significant gender gap remains at secondary level.¹⁰ In West Asia, 20% of lower secondary school-aged girls are out of school compared to 13% of boys. In sub-Saharan Africa, the figure is 36% of girls compared to 32% for boys.¹¹ The gaps are still larger when considering income. In sub-Saharan Africa, the poorest girls remain most likely to never attend school, relative to boys and richer girls.^{12,13} Of those girls in school, 290 million girls around the world are not able to read properly by the end of lower secondary education.¹⁴ These challenges also affect G20 countries. Member countries India and Indonesia have some of the highest numbers of out-of-school girls. G20 countries together account for approximately one-third of the 130 million out-of-school girls.¹⁵



THE HIGH COST OF NOT EDUCATING GIRLS

In its 2018 report, *Missed Opportunities: The High Cost of Not Educating Girls*, the World Bank estimated the economic impact of denying girls an education in over 100 developed and developing countries. It also looked closely at the economic cost of girls missing out on secondary school in 18 developing countries.

The study found that **if every girl around the world received 12 years of quality education, lifetime earnings by women could increase by \$15 trillion to \$30 trillion globally.** Women with primary education earn 14% to 19% more than women with no education at all and those with secondary education earn almost twice as much. Girls with secondary education become women who are more likely to participate on equal terms in the labour force, lead healthier and more productive lives and be decision-makers at home and in their communities. Primary school education is not enough. To fully reap the benefits of educating girls, governments need to invest in 12 years of quality schooling for all.



1.2

Girls' education — the foundation of inclusive and sustainable growth

Although research for many decades has shown the benefits of educating girls, recent evidence suggests the returns on investment are strongest when girls can complete secondary school.¹⁶ A study of 100 countries showed that simply increasing the share of girls completing secondary education by 1% increases economic growth by 0.3%. The IMF also found a clear link between girls' education and economic diversification (the variety of goods that a country produces and exports).¹⁷ And now a major study by the World Bank documents the high cost of not educating girls in terms of lost human capital (see box).¹⁸

1.3

Girls' education contributes to greater equality at work

Higher levels of education also help to close the wage gap between men and women.¹⁹ While women continue to earn less than men across all levels of education, that gap is smallest for women with upper secondary education.²⁰

Educated women see the change not just in increased earnings, but in the nature of work that they do. Secondary education improves women's prospects of getting a paid job with a contract. This matters because these jobs are more secure and long-term, and may have additional benefits like paid maternity leave.²¹ Being in formal employment also improves women's negotiating power in the household.²² These factors contribute to greater gender equality in society at large, in turn leading to stronger growth.²³

If a society educates all its girls through secondary level, it is more likely to reap the benefits of inclusive growth. Although decision-makers at national and international levels are spending more time addressing the issue of girls' and women's economic empowerment, they are spending less time, energy and money understanding the critical role education has to play or developing an agenda for action. The evidence set out above shows that this is a costly omission.

The 2018 G7 Charlevoix Declaration on Quality Education for Girls, Adolescent Girls and Women in Developing Countries signals a hopeful shift in direction, placing a global spotlight on the contribution of education to a wider gender equality agenda. The declaration emphasises the need for girls and women to contribute to and benefit from sustainable growth. It also identifies elevated specific education interventions to prepare girls for the jobs of the future and pledge new funds in support.²⁵

The G20 can build on this positive start, expanding the political leadership required and engaging the wider stakeholders and partner countries associated with its processes. A G20 commitment to girls' education will complement the 2014 commitment to reduce the gender gap in labour market participation rates by 25% by 2025, the 2015 Skills Strategy for Developing and Using Skills for the 21st Century, and last year's EskillsforGirls Initiative. The recent G20 Education Ministerial Declaration and the Joint Education and Employment Declarations signalled the right trajectory:

 We share the view that equal access to inclusive, equitable and quality education within safe learning environments at all educational levels is essential to achieving the empowerment of girls and women. Furthermore, we encourage the high participation of women in Science, Technology, Engineering and Mathematics (STEM).²⁶ 

The following section presents new data insights and analysis to demonstrate why now is the time for the G20 to invest in 12 years of education for all girls as part of a wider agenda for economic growth and gender equality.



Beyond the classroom:

making the economy work for young women

While this report focuses on the role of education, leaders must also work towards reforms in the wider economy and society for young women to maximise their economic potential. The UN Secretary General's High-Level Panel on Women's Economic Empowerment identified seven drivers of change:²⁴



-  Tackling adverse norms and promoting positive role models
-  Ensuring legal protection and reforming discriminatory laws and regulations
-  Recognising, reducing and redistributing unpaid work and care
-  Building assets — digital, financial and property
-  Changing business culture and practice
-  Improving public sector practices in employment and procurement
-  Strengthening visibility, collective voice and representation





Part Two

EDUCATING GIRLS FOR THE FUTURE OF WORK

 We must train our
children for jobs that
don't yet exist. 

— PRESIDENT MAURICIO MACRI²⁷



Technological change is creating dramatic shifts in the way we live, learn and earn — digitalisation is the most recent phase in the transformation of labour market.^{28 29} Developments in robotics, big data, the “internet of things” and artificial intelligence are driving a “Fourth Industrial Revolution” (4IR).³⁰

The 4IR has profound implications for girls’ and boys’ learning. Education systems must adapt to reflect the demands of a competitive, knowledge-based, technology-driven economy and society.³¹ And now more than ever, girls’ education must not only be relevant, but also free of limiting gender stereotypes.³²

The future of work will see changes in both the kinds of jobs people do and the tasks involved in everyday work. Many of the students now entering the classroom will work in jobs that don’t currently exist.³³ Fast-paced social and economic change means that it is not clear exactly what skills children will need to be constructive citizens or thrive in the future world of work, so skills will need to be adaptable and learners will need to be flexible.³⁴

Accordingly, employers’ requirements from the workforce are rapidly evolving.³⁵ Research from Organisation of Economic Cooperation and Development (OECD) countries shows that large numbers of youth lack competency in the information-processing and digital skills that are increasingly needed in the labour market, while low-skilled workers will bear the brunt of the impact of automation.^{36 37}

With this as our starting point, Malala Fund commissioned new data insights from the Institute for Development Studies to shed light on how well girls are being educated for the future labour market, one that will be defined by ever greater levels of digitalisation, automation and uncertainty.

We found that almost one billion girls and young women are missing out on vital education and skills, the vast majority in low- and middle-income countries.



INSIGHTS: FRAMEWORK AND METHODOLOGY

Whilst there is debate and uncertainty about the exact skills that will be necessary to thrive in the 4IR, the International Telecommunications Union (ITU) and UNESCO found that 90% of jobs within developed economies require some level of digital skills and that digital skills are just as crucial in developing countries.³⁸ In its 2016 *World Development Report*, the World Bank recommended that emerging economies prioritise the development of foundational digital skills to leverage these new opportunities.³⁹

Mastery of digital technologies is just one part of the picture. The jobs that are best-protected from automation are those that require uniquely human characteristics. Scholars and educators now recognise cross-disciplinary skills like problem-solving, creativity, critical

thinking, self-initiative, group collaboration and learning to learn as essential to success in higher education, modern workplaces and adult life. Sometimes referred to as “21st century skills” or a “breadth of skills,” they prepare learners to be adaptable to the rapid pace of change, the uncertainty, the unpredictability and the interconnectivity of the 21st century economy.⁴⁰

Working from the 2017 Broadband Commission report, Malala Fund offers the following framework for understanding how labour market trends impact girls’ and boys’ education.⁴¹ The below table shows the levels and types of education needed to learn various skills and competencies required for work and life.

Table 1

SKILL CATEGORY	COMPETENCIES	LEVEL AND TYPE OF EDUCATION REQUIRED
<div>1</div> <div>BASIC FOUNDATIONAL DIGITAL SKILLS</div>	<p>Accessing and engaging with digital technologies.</p> <p>E.g. connect to the internet; set up accounts and profiles; access information and resources; adjusting settings; managing files.</p>	<p>Primary education that delivers minimum proficiencies in literacy and mathematics.</p> <p>Some exposure to ICTs.</p>
<div>2</div> <div>GENERIC DIGITAL SKILLS</div>	<p>Using digital technologies in meaningful and beneficial ways.</p> <p>E.g. informational literacy; digital communication and collaboration; content creation; awareness of digital safety and rights.</p>	<p>Foundational learning outcomes as above.</p> <p>Secondary education with consistent exposure to ICTs.</p> <p>Compulsory study of STEM/STEAMD subjects.</p>
<div>3</div> <div>“21ST CENTURY SKILLS” OR “BREADTH OF SKILLS”⁴²</div>	<p>Complementary skills beyond literacy and numeracy.</p> <p>E.g. communication; collaboration; problem-solving; creativity; critical thinking.</p>	<p>Education that is relevant and empowering to girls and boys from early years through upper secondary.</p> <p>Significant shift in teaching and learning approaches at all levels.</p>
<div>4</div> <div>“HIGHER LEVEL” SKILLS</div>	<p>Using digital technology in empowering and transformative ways.</p> <p>E.g. ICT specialist skills to programme or develop applications and manage networks; proficiency in programming languages/ coding;⁴³ data analysis, processing and modelling skills.</p>	<p>Tertiary education and/or lifelong learning opportunities consistent access to digital technologies and strong STEM or STEAMD content.</p>



Basic foundational digital skills and generic digital skills can be seen in terms of a continuum from foundational to more complex skills. “21st century skills” or “breadth of skills” refers to a wider set of complementary skills that connect digital skills with interpersonal, intrapersonal and cognitive domains and are developed throughout the education cycle starting with the early years. This would in turn equip girls with a foundation from which to progress to “higher level” skills through tertiary education and/or life-long learning.

Using the above framework, the starting point for our analysis is the assumption that girls will need to acquire each of the first three skills categories during 12 years of formal schooling to be able to participate the future society and economy.

We then compare official education data on girls against the framework to see how many are completing 12 years of education. We adjust this figure upwards to take account of the likelihood of girls acquiring digital skills (based on survey data from the Web Foundation Women’s Rights Online project) and to take account of the number of girls aged up to 24. From this, we estimate that a total of 955.6 million (65%) girls and young women under the age of 24 are currently lacking key skills they need for life and work.

In lower-middle-income countries, this translates into 75% of girls under the age of 24, rising to 93% of girls in low-income countries. Figure 1 shows how these “left behind” girls are distributed in countries grouped by economic classification.

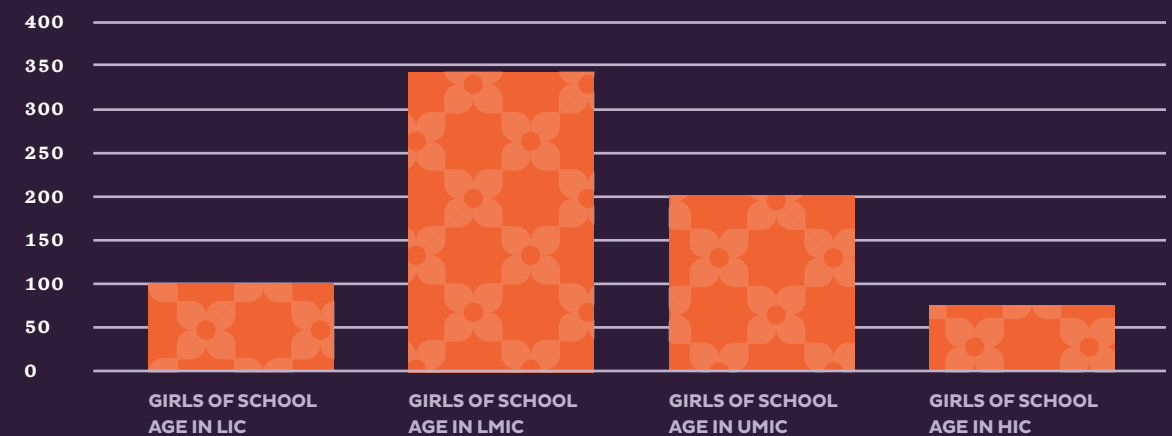
Fig. 1

Girls left behind by region in percentages

KEY
LIC: LOWER-INCOME COUNTRY
LMIC: LOWER-MIDDLE-INCOME COUNTRY
UMIC: UPPER-MIDDLE-INCOME COUNTRY
HIC: HIGHER-INCOME COUNTRY



Girls left behind by region in millions



The future for the one billion?

Girls in low- and middle-income countries without the skills highlighted above will see their options narrow as routine, non-complex jobs become less and less available to them. They will find themselves even more reliant on informal employment, manual labour, household-based enterprises and small-scale agriculture.⁴⁴ Even in those fields, their opportunities will depend to some extent on mastery of new technologies, for example to gather relevant information on prices and market conditions, or to access work through “gig” platforms.^{45 46} This leads to the conclusion that girls without the requisite education and skills will likely face a lifetime of precarious work, limited economic opportunity and household poverty.

2.1



Digital skills

Teaching girls and women digital skills could reduce the global gender pay gap by 21% and get 91 million more women into paid work.⁴⁷ Increasing women's access to and use of the internet in developing countries would generate \$13–15 billion in economic growth. But there is a marked digital gender gap, especially in poorer regions of the world.^{48,49} In the least developed countries, women are 33% less likely than men to use the internet, which means only one in seven women in these countries are using the internet compared to one in five men.

Lack of education is perhaps the single biggest obstacle to closing the gap.⁵⁰ “Not knowing how” to use the internet was the barrier most widely cited by poor, urban women in a recent study.⁵¹ Women with primary education or lower are six times less likely to be online than those who have completed secondary school.⁵²

The digital divides discussed above extends to internet access in schools. UNESCO statistics from 2016 show that 100% of primary schools in European countries such as France, Norway and the Netherlands provide some access to ICTs for pedagogical purposes. Data coverage in poorer countries is less extensive but in India the figure is 10.9% and in Indonesia only 1.93%.⁵³

In sub-Saharan Africa, there is no systematic data collection for ICT in education in Angola, Benin, the

Central African Republic, Congo, the Democratic Republic of Congo, Djibouti and Somalia.⁵⁴ However where data exists, it paints a troubling picture. Ratios of students to devices tend to be very high, especially at lower levels of education where they frequently exceed 100:1.⁵⁵ Internet connectivity for schools is scarce in most countries.⁵⁶ And use of ICTs in education is further constrained by unavailability or rationing of electricity.⁵⁷ Research also shows that countries are not providing teacher training in ICTs, community digital literacy training or collecting data to monitor progress in these areas.⁵⁸

2.2

Breadth of skills

The breadth of skills that girls need for the future labour market implies a significant shift in pedagogies and curricula. Official bodies do not collect internationally comparable data on these areas. However, studies reveal growing awareness at national level among education decision-makers of the need to adapt and there is some evidence of changes at the policy level, including in poorer countries.^{59,60}

Data gathered by Brookings across 152 countries provides evidence of a shift toward a broader focus beyond literacy and numeracy. Of these countries, 76% refer to a breadth of skills in national policy documents, 47% in their curriculum and 37% in their education vision or mission statements. Communication, creativity, critical thinking and problem solving are the most frequently cited skills.⁶¹

How well these commitments are translating into practice is another matter. Education systems — especially in poorer countries — are bureaucratic, under-resourced and slow to change. Teachers in overcrowded classrooms



with few resources lack both the motivation and skills to adapt their lessons.⁶² The result is over-reliance on teacher-centred approaches and rote learning.⁶³ These techniques are ill-suited to fostering a breadth of skills among learners.



2.3

Gender responsive education

Modernising education systems alone will not ensure that girls can flourish in changing labour markets, if the reforms are gender-blind. For education to be truly transformative, teaching and learning should also help both girls and boys to challenge dominant social norms around gender.⁶⁶ To date, there is little sign that gender issues are being considered in the debates about workforce development for the 21st century. Teacher training in gender sensitivity and gender-responsive pedagogies are equally vital in preparing girls for the future of work and life.⁶⁸

STEM, STEAM OR STEAMD?

To work in creative, technical, top-tier occupations, workers need education in STEM subjects (science, technology, engineering and maths).

Studies have shown that girls appear to lose interest in STEM subjects with age, suggesting that interventions in early education are needed to sustain girls' interest in these fields.⁶⁴ Although gender differences in science and mathematics achievement have decreased, women are still significantly under-represented in STEM occupations in most countries.

Innovation and creativity are the keys to capturing the best opportunities that new technologies can offer, leading some educators to promote the inclusion of Arts (STEAM) and Design (STEAMD) into traditional STEM curricula. The idea is that doing so will teach students to think critically and use engineering or technology in imaginative designs or creative approaches to real-world problems while building on students' mathematics and science base.⁶⁵



2.4

How will this impact girls entering the workforce?

Women's labour force participation is already lower than men's everywhere in the world, because of discrimination in the workplace and because women shoulder a disproportionate burden of unpaid care.⁶⁹

The rate of unemployment tends to be higher for women than for men in most countries except in North America and East Asia. In countries with more conservative gender relations, gender gaps in the labour market are wider than in more egalitarian societies.⁷⁰ These inequalities are also seen in the lives of young people in some developing regions. Whilst gender differentials in youth unemployment rates are small at the global level and in most regions, in the Middle East and North Africa the unemployment rate of young women exceeds that of young men by as much as 22% and 20% respectively.⁷¹

Will the changes in the workforce exacerbate or ameliorate these trends? A study of the European labour market shows that the growth of flexible work might result in increased female employment, since women are more likely to work in non-standard employment, with lower wages, making them a more attractive source of labour.⁷² There is also speculation that the prevalence of women in some professions that cannot easily be automated, such as care-work for an ageing population, will continue to provide opportunities. The downside is that expansion of these forms of employment will not necessarily lead to the creation of secure and adequately paid jobs, due to the nature of the work offered.⁷³

At the same time, some jobs that offered girls and women the chance to enter the workforce will rapidly disappear. In recent years, in countries such as the Philippines, the business process outsourcing (BPO) industry flourished and women made up 59% of the workforce in this sector. But many of these jobs — 89% of salaried call centre staff in the Philippines BPO sector — are at high risk of job losses due to automation.

Similarly, women workers in the garment manufacturing industry in Cambodia, the Philippines, Vietnam, Thailand and Indonesia are vulnerable to displacement by “sewbots” capable of producing goods in dramatically shorter time than people.⁷⁴



If governments want to realise the economic gains on global GDP that come from more women working, they must provide girls with a quality education that will help them develop the skills they need to adapt to a constantly changing labour market.

2.5

The challenge for education systems

Beyond delivering the basic of 12 years of school, education systems should be updated to ensure that girls acquire the technical knowledge, personal capabilities and cross-disciplinary skills they need for life and work in the 4IR. This twin-track approach ensures that education is high-quality, gender-responsive and relevant to the modern economy.



Table 2: Twin challenges for transforming education systems

ALL GIRLS IN SCHOOL AND LEARNING FOR 12 YEARS	GETTING READY FOR THE FUTURE OF WORK
<ul style="list-style-type: none">Ensuring access to appropriate, well-equipped, girl-friendly schoolsRemoving fees and reducing other cost barriers for poor girlsEnsuring safety of girls on the way to and in schoolsInvesting in good teachers who teach well and have positive attitudes to girl learnersRecruiting female teachers (in socially conservative contexts) and promoting women to leadership positionsIncreasing communities' commitment to girls' education and education qualityEnsuring that the transition to adolescence does not cause girls to drop out of schoolIncorporating life skills and comprehensive sexuality education into curriculaOffering extracurricular opportunities for girlsAdopting and enforcing a code of professional ethics that explicitly addresses gender-based violence in schoolsEnsuring that education content — including curricula, textbooks, pedagogy and classroom practices — are gender-sensitiveCollecting and using gender-disaggregated data, as well as data on other forms of education disadvantageCommitting to regularly review progress on gender equality in education	<ul style="list-style-type: none">Encouraging school leaders to look at where — in their current curriculum — there are already explicit opportunities to teach a breadth of skills alongside subject areasProviding pre- and in-service training to teachers to enable them to adapt their practice to be one of facilitator rather than instructorRevising teacher and student assessments to recognise acquisition of a breadth of skillsConnecting schools and ensuring that virtual and physical classrooms are technically well-equippedRevising curricula and training teachers in digital skills and literacyEnsuring equality of access to and use of technology and digital learning resources by both boys and girls, upheld in school policies and teacher assessment frameworksIncentivising girls to take up STEM/STEAM/STEAMD disciplinesInvesting in education and capacity building initiatives that increase women and girls' digital skills and confidenceTraining teachers, educators and other local leaders to use digital tools and understand the benefits of delivering digital skills training to women and girls in their communitiesEnhancing opportunities in STEM professions for female students



Part Three

REALISING EDUCATION'S TRANSFORMATIVE POTENTIAL — A G20 AGENDA FOR ACTION

This year's G20 identified the Future of Work as a priority issue. As the above evidence demonstrates, the rapid pace of change already risks leaving almost a billion girls behind. Our world cannot afford to miss out on their potential — sustainable and inclusive growth depends on ensuring that the future workforce comprises and maximises the talents of all.

If leaders want to avoid a future in which too many girls are locked out of the modern labour market, too many workers lack necessary skills and economic growth is slow, they must act now.

National governments and their education stakeholders are best placed to drive the policy changes outlined above; and countries' own resources will provide the bulk of the financing required to make them a reality. Because of its membership, its collective wealth and its mandate to ensure global growth, the G20 can play a pivotal role in ensuring that all girls are prepared for the rapidly changing labour market. It should do this by committing to adequately invest in this most effective of economic development strategies, whilst also creating new channels for international cooperation on girls' education and the future of work.



3.1

Closing the education financing gap

3.1.1 Domestic financing

All countries need to ensure that their financing of education is sufficient and capable of meeting the challenge of getting all girls in school and learning. The International Commission on Financing Global Education Opportunity recommends that low- and lower-middle-income countries allocate 6% of GDP to education and that upper-middle-income countries allocate 6.3% of GDP to education, reaching these targets no later than 2030.⁷⁵

Not one of the eight lower- or upper-middle-income countries in the G20 with recent data available meet these spending targets. Those G20 countries with the highest proportions of out-of-school girls — like India and Indonesia — have some of the lowest percentage allocations.⁷⁶ **Malala Fund is calling on G20 countries with large girls' education challenges to lead the way in increasing their domestic financing to meet these targets and to ensure that the funding goes to gender-responsive education sector plans.**

The G20 should also support reforms in the global tax system to enable developing countries to expand their tax base to increase domestic budgets for education in low- and middle-income countries.

The G20 should also support reforms in the global tax system to enable developing countries to expand their tax base to increase domestic budgets for education in low- and middle-income countries.



Table 3: G20 governments' expenditure on education as a share of GDP

(Source, UNESCO Institute for Statistics)

COUNTRY	LATEST YEAR DATA
ARGENTINA	5.88%
AUSTRALIA	5.19%
BRAZIL	5.95%
CANADA	5.27%
FRANCE	5.52%
GERMANY	4.93%
INDIA	3.84%
INDONESIA	3.58%
ITALY	4.08%
JAPAN	3.59%
MEXICO	5.33%
REPUBLIC OF KOREA	5.07%
RUSSIAN FEDERATION	3.79%
SOUTH AFRICA	5.94%
TURKEY	4.37%
UNITED KINGDOM	5.63%
UNITED STATES	4.99%
NO DATA AVAILABLE FOR CHINA, SAUDI ARABIA	—



3.1.2 External financing

For poorer countries, aid will continue to play an important part in their financing of education. After six years flatlining, aid to education increased to \$13.4 billion in 2016 (the latest year for which data is available).⁷⁷ This is encouraging but remains inadequate: the Global Education Monitoring Report estimated the total external financing requirement is \$39 billion per year.⁷⁸

Moreover, scarce aid is not targeted appropriately towards countries that have the most pressing girls' education challenges. Using OECD figures, we calculate that the countries with the largest girls' education challenges received just a little over 10% of reported aid to education.⁷⁹ **Malala Fund calls on G20 donor countries to progressively increase their aid to 0.7% of GNI and allocate 15% of their aid to education, targeting their aid towards gender-responsive education plans in countries with large girls' education challenges.**

Of the G20 countries that report their aid to OECD Development Assistance Committee standard, at present only France meets the target at 15.2%, with Korea reaching 14.9%. Italy and Japan are lowest at 3.9% and 4.2% respectively. Moreover, many of those with higher allocations, like France and Germany, spend the majority of their aid to education on post-secondary scholarships and imputed student costs, most of which remains in the donor countries themselves. This emphasises the need to align aid to support equity and reach the most marginalised. **Malala Fund recommends an allocation of 70–80% of education aid in support of basic and secondary education, spent within poor countries themselves.**



3.2

Collective action led by the G20

Continuing to make progress on current trends is not good enough. Without a specific, focused effort on girls' education and the future of work, almost one billion girls will be left behind in the new global economy, trapped in the double jeopardy of economic and gender inequalities. Argentina's introduction of a G20 Education Working Group is therefore welcome and should be maintained by future presidencies.

In addition, Malala Fund urges that the G20 launch a new initiative focusing on the implications of the changing economy for girls' education. This would expand work already initiated by the G20 in its 2014 commitment to reduce the gender gap in labour market participation rates by 25% by 2025 and last year's EskillsforGirls Initiative. The initiative would fill critical gaps in knowledge and implementation by bringing together national policy-makers, the private sector, donors, civil society, labour and other stakeholders.

Key elements of a G20 initiative on girls' education and the future of work

This initiative would help promote and fund effective policies and practices on girls' education in low- and lower-middle-income countries, preparing them for jobs of the future and contributing to equitable, sustainable growth. The initiative would be built out from and coordinated between different elements of the existing international architecture, rather than creating new institutions.

1. Increased funding via a financing window available to countries with gender-responsive national education sector plans that aim to ensure all girls are able to complete 12 years of free, safe, quality education.
2. Knowledge sharing via a South-South cooperation hub aiming to facilitate learning between countries on cost-effective practices for marginalised girls' education, digital literacy, STEAM and school-to-work transition.
3. More and better gender disaggregated data via a data observatory dedicated to track progress on girls' education and their transition to employment, as well as identifying and filling current data gaps.
4. Follow up and review via annual reporting carried out jointly by the G20 Education, Employment and Development Working Groups and the Digital Economy Task Force, in coordination with national governments and relevant stakeholders.

Conclusions

The world has lost out on a possible \$30 trillion because girls aren't learning what they need. With almost one billion girls already missing the education and skills necessary to participate in tomorrow's economy, the future economic and human costs could be far greater.

The decisions and policies taken by leaders today will determine whether gender gaps in education and the labour market close or widen during the coming phase of technological disruption.

As the G20 prepares to meet in Buenos Aires to discuss the future of work, it is therefore vital that they heed the evidence in this paper and set out a course of action to match the ambitions that girls around the world hold for themselves.



G20 countries with large girls' education challenges should:

- Update their education strategies to be gender-responsive and relevant to 21st century challenges; and
- Increase their domestic financing of education to meet internationally-recommended targets (6% of GNI and 20% of budgets).

G20 donor countries should:

- Progressively increase their aid to 0.7% of GNI and allocate 15% of their aid to education with 70-80% of education aid allocated to basic and secondary education; and
- Improve the targeting of their aid so that it supports countries with large girls' education challenges to develop and implement gender-responsive sector plans.

The G20 should:

Launch a new initiative to ensure that education prepares all girls for the future of work. This should include:

- Increased funding;
- Knowledge sharing;
- More and better gender disaggregated data; and
- Follow up and review.

 We want girls
to take part
in creating the
technology that
will change our
world — and who
runs it. 

— MALALA YOUSAFZAI



Annex 1

METHODOLOGICAL NOTE

How many girls risk being left behind in the Fourth Industrial Revolution?

Underlying assumption: Girls need secondary level education and basic technological skills to prepare for the future of work.

For each region we calculated:

1. Number of girls of school age.
2. Number of girls that will complete secondary school using UNESCO data.
3. Number of girls 'left behind' by education (i.e. not finishing secondary school).
4. Number of girls that will go to university — we assume that they will have achieved a minimum standard of learning.
5. For those *with* secondary education, we adjusted the totals to include those “left behind” due to their lack of technological skills. We did this by reducing the figure for those with secondary education by 18%. This is based on survey data from the Web Foundation that found this to be the percentage of women with secondary education that don't know how to use the Internet; “Not knowing how” was the most common reason cited by poor, urban women – a finding consistent with other studies.
6. This provided a figure of 462.4 million out of a total of 711.9 total school age girls; or 65% of girls of school age.
7. We then applied this 65% figure to demographic data for all girls and young women, based on Index Mundi data. This provided a figure of 584 million girls in the 0–14 age range and 371.6 million girls and young women in the 15–24 cohort.
8. Summing these numbers provides a figure of 955.6 million girls and young women between the ages of 0–24.



Annex 2

FOOTNOTES

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Acknowledgements

WRITERS

Lucia Fry, Barry Johnston and Philippa Lei

EDITORS

Farah Mohamed, Taylor Royle and Tess Thomas

RESEARCH

Paul Atherton (*FabInc Consultants*),
Becky Faith (*Institute of Development Studies, University of Sussex*),
Kevin Hernandez (*Institute of Development Studies, University of Sussex*)
and Matteo Valenza (*FabInc Consultants*)

REVIEWERS

Christina Kwauk (*Brookings Institute*),
Sonia Jorge (*Web Foundation*),
Nanjira Sambuli (*Web Foundation*),
and Stéphane Dubois (*Chatham House*)

DESIGN

Hannah Orenstein and Jonathan Haring

This report was produced with support from Echidna Giving.



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FUND

