



2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

Transforming Education towards Equitable Quality Education to Achieve the SDGs

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Submitted on March 15, 2019

Revised on March 31, 2019

Abstract

Schooling systems face some limitations in providing quality education for all. The gap between the dominant and the marginalized in access to education is getting wider, and accessing education does not guarantee real learning. Furthermore, in this rapidly changing world, delivering quality education does not only mean raising cognitive knowledge but also equipping learners with socioemotional skills. Many researchers find the development of socioemotional skills requires care in early childhood development. STEM education is also vital, considering that SDGs will never be achieved without taking full advantage of advanced technology.



Challenge

In the era of the MDGs (Millennium Development Goals), we saw significant progress in access to education. Globally, gross enrolment rates were 89% at the primary level and 66% at the lower secondary level respectively in 2015 (UNESCO UIS). However, there are still 264 million primary and secondary age children and youth not in school (UNESCO GEM2017). In addition, UNHCR (2016) reports that 3.7 million out of six million refugee children are out-of-school.

Furthermore, even if children attend school, their learning is far from satisfactory. Many children cannot read a simple sentence or manipulate simple calculations in mathematics even after some years of schooling (learning crisis¹). Thus, in the present era of SDGs (Sustainable Development Goals), immediate action is needed to raise the quality of education, while reaching all those children in difficult situations.

The era of SDGs also marks a rapid transformation in society, politics and economy accelerated by new technologies and globalization. However, the common vision of education policy remains mostly unchanged: education must provide the opportunity for all people to gain the knowledge and skills that are necessary for them to have a quality life and become responsible citizens, and to actively participate in and contribute to society. The changing nature of society necessitates changes in what education delivers and how this is done, where global citizenship, interpersonal relationships, and respect for the natural environment become more valuable.² Schooling systems should support “skills” being expanded from a traditional cognitive perspective (acquisition and use of academic skills) to the inclusion of non-cognitive “socioemotional skills.”

Socioemotional skills can be gradually developed from early childhood, thus attention to early childhood development (ECD) has recently increased. Nevertheless, only 42% of children in low-income countries have access to

¹ The “learning crisis” gained global attention in the course of developing the SDGs, and now it has become the most dominant agenda (UNESCO 2014, World Bank 2018, UNICEF 2018).

² OECD (2018a) and OECD. (2018b).



some sort of organized learning one year before the official primary entry age, while this reaches 93% in high-income countries (UNESCO GEM2018). Quite often, ECD is an opportunity limited to richer families to prepare their children for primary school as a part of basic education. That is, ECD is not regarded as an opportunity for all young children to acquire the necessary skills including socioemotional skills.

Advanced technology is imperative for achieving the SDGs. The quality of STEM (Science, Technology, Engineering and Mathematics) education, however, differs greatly among and within countries, as evidenced in international comparative studies such as PISA and TIMSS. This means that fewer children in low-income countries get a chance to become an engineer, a scientist, or a doctor. Thus, the advancement of technologies may not benefit people worldwide equitably.

G20 educational policy-makers are challenged to transform our schooling systems. Leaving these challenges unresolved poses a risk for current and future generations, as they will find complex difficulties in realizing and enjoying sustainable development.

Proposal

In this policy brief four possible transformations are proposed. First, we will discuss the remaining issues relating to access to education and the growing concern over its quality. Second, to further enhance the quality of education, the proposal to strengthen non-cognitive skills, especially socioemotional skills, is explored. Third, based on the fact that socioemotional skills need attention in the early years, a way to establish a quality ECD system is proposed. Lastly, this brief proposes to strengthen STEM education to utilize technology as a mean of achieving SDGs.

1. Reach the excluded and provide quality learning that is aligned to their life needs

Global enrolment indicators are generally improving. However, the number of



out-of-school children worldwide has not been decreasing in recent years, and it is estimated there are still 264 million children out of school (UNESCO GEM2017). In emergencies such as conflicts and natural disasters, educational provision is crucial but often resources are too restrained to prioritize such events. For instance, in Syria, the access rate to primary and lower secondary education was 94% in 2009, but due to conflict, this has declined to 60%, leaving 2.1 million children and adolescents without access to education. In the case of natural disasters, Nepal experienced a series of earthquakes in 2015 and its schooling system was devastated, leaving 34,500 of 55,000 classrooms assessed as unsafe for use, endangering over a million children (UNESCO GEM2015).

Furthermore, there are several groups of children who are marginalized due to their gender, ethnicity, and/or disabilities. Public education systems are most often designed to meet the needs of the most dominant group in society, generally the ethnic majority in a particular country. UNICEF (2015) found that children from marginalized social groups are two to three times more likely to be out of school in Bolivia, Ecuador, India, and the Lao People's Democratic Republic. In addition, children with disabilities are less likely to enroll in school than their peers without disabilities. There is a study that shows that a child with a disability is more than 50% less likely to attend school than their able peers in Malawi (UNICEF 2015).

To tackle these challenges any possible policy intervention should be aligned with its context (where the educational transformations take place). There is no panacea that can be applied to all contexts. This is particularly true when remedial policies are meant for children in difficult circumstances or marginalized situations. The reasons why children do not attend school are usually quite contextually or individually unique. **G20 governments should fully examine their own contexts, look for good practices around the world and are encouraged to adjust their policy intervention, in a way that allows authorized discretion to front-line practitioners (teachers and local education officers, etc.), addressing the unique and diversified needs and life of the learners.**

To tailor policy interventions in order to reach to the excluded and marginalized children in an education system, advanced technologies can play a significant role. For instance, UNICEF, collaborating with Microsoft, is



developing what they call a “learning passport,” a digital platform that will facilitate learning opportunities for children and young people affected by conflicts and natural disasters. In Bangladesh, a Japanese NPO³ has introduced video recorded lessons and provides them to rural parts of the country. This supports students in rural area in access to high quality lessons, opening a way for those students to enter top national universities in Bangladesh. In addition, utilizing advanced technologies invites more private sectors to join hands. There are also many private companies trying to utilize new technologies to provide quality education to the rural part of developing countries. **G20 governments should encourage, support, and invest in such private, governmental, and non-governmental innovations to accelerate the process to achieve SDG4 – the provision of inclusive and equitable quality education for all.**

Issues of out-of-school children are often concerned with social, cultural, and political backgrounds, as seen in the cases of girls’ education and education for refugees. This is why all stakeholders should be involved in each step of policy intervention: planning, implementation, and evaluation. For instance, the Japan International Cooperation Agency (JICA) is implementing the project “school for all” that facilitates the involvement of parents in school management in many Sub-Saharan African countries. With parental involvement, schools start to use their budgets more wisely and effectively and teachers’ absenteeism decreases. Further, by having community members facilitate supplementary classes after formal school hours, students’ cognitive knowledge, reading and calculation skills are drastically improved. As seen in this good practice, the involvement of stakeholders as outsiders of traditional schooling systems can catalyze educational transformation. This in turn will have positive effects on the community as a whole. As such, **G20 governments should reform school governance in a way to invite and involve local communities on board, and turn them from silent bystanders into proactive collaborators who jointly pursue SDG4 achievement together with schools.**

³ e-Education



2. Education systems need to nurture non-cognitive skills (socioemotional skills), in addition to traditional cognitive skills such as literacy and numeracy

It is widely recognized that not only cognitive skills such as literacy and numeracy as well as also non-cognitive skills, or socioemotional skills, matter for children's success in the future. For instance, OECD has pointed out that socioemotional skills have "a strong impact on social outcomes and the subjective well-being" of children, and also "cognitive and social and emotional skills cross-fertilize" (OECD 2015b). In addition, the report mentions three important drivers of lifetime outcomes of children, namely perseverance, sociability, and self-esteem. These skills are, in fact, among the key factors that will determine children's future success.

G20 governments should consider how to foster the socioemotional skills of their youth in their respective contexts, and to transform the education system to this end. Actually, in many countries, national curricula already mention something about fostering socioemotional skills. The real challenge is how to implement the policies.

Thus, G20 governments should ally with global partners to look for good practices around the world and make such information broadly available. **Caution must be stressed however, due to the fact that socioemotional skills must function in very different social and cultural contexts. With this in mind, policy borrowing should entail a careful adaptation process to local contexts.**

Fostering socioemotional skills through education system is quite a new area of interest, and not much has been spoken and demonstrated in a "scientific" way. **As such G20 governments should promote research on education systems and practices that foster socioemotional skills. Areas of research may include which non-cognitive areas we should focus on at school and how effectively we can foster such skills while responding to the changing nature of societies.**

We should note that SDG4.7 mentions skills and attitudes needed to promote sustainable development, such as the awareness of global citizenship and the



appreciation of cultural diversity. **G20 government should promote education for sustainable development (ESD) and Global Citizenship Education (GCED) practices, because fostering socioemotional skills through education powerfully contributes to achieving SDG4.7, which has the fundamental role of achieving the entire set of SDGs by building the capacity of people.**

3. Include vulnerable groups in quality ECD.

ECD is undoubtedly important for children's success in the subsequent schooling system and in their future life. Nevertheless, why does access to ECD stay low at about 40% (UNESCO, GEM2018) in developing countries? This is because ECD is still seen as a kind of luxury. G20 governments should consider transforming ECD from a private luxury for richer people to an enabler for all children, including vulnerable and marginalized groups. Strong foundations are necessary for all learning and skills development, both cognitive and non-cognitive, in addition to motivation to learn. All of these skills and attitudes should be imparted at early ages (WDR 2018).

Considering these situations, **G20 governments should first consider policy interventions to promote ECD for vulnerable groups.** As underscored by Urban et al. (2018) in the policy brief developed for T20 Argentina in 2018, early childhood development, education and care programs are one of the most effective policy tools governments can employ to impact both individual and collective (national) well-being and educational achievement. Providing incentives to socio-economically vulnerable groups to send their children to ECD services is one of the possible policy interventions. By so doing, repeating early grades, and dropping out of primary school can be reduced, because these children are usually a high-risk group in terms of dropout due to insufficient preparedness for schooling.

The foregoing discussion on access to education and the quality of education remains valid in the discussions on ECD. The quality of ECD is influenced by its context, and thus greatly varies. There should be, however, guiding principles for the quality of ECD. One of the most prominent guiding principles is to recognize the value of the interaction among children and between children and teachers. Children learn through interaction how to communicate with others, how to give a hand to others, how to mitigate conflicts, and so on, and



also learn through their interactions with teachers what their society values, and what is right and wrong. Therefore, the quality of ECD is highly associated with the abilities of teachers to create such opportunities for interaction. In Japan, this concept is called “learning through interaction/play” and is exercised in many kindergartens, which is carefully guided by the curriculum, and the significance of play within ECD has been advocated by international organizations worldwide (OECD 2015a). Thus, **G20 governments should examine how this concept of “learning through interaction/play” may apply in each country’s context and consider increasing the quality of ECD in addition to access to ECD for all.**

ECD deals with young children between the ages of zero to six, and especially between four and six. We should be aware that ECD has multi dimensions including care, welfare, and education. These should not be treated separately and policy interventions should be designed to generate synergies across them. For instance, in 2018, WHO, UNICEF, the World Bank, and many other international organizations developed a Nurturing Care Framework for ECD, which states the importance of a whole-of-government and whole-of-society approach that looks for mutually accountable partnerships between relevant sectors – health, nutrition, education, social welfare, child protection, and environmental health. Following this movement, **G20 governments should consider combining various ECD interventions to produce synergies among those interventions.**

4. Further accelerate STEM education to transform the world into Society 5.0

We live in what we call Society 4.0, where IoT (the Internet of Things) has just started to change industrial structure and automation is being realized by AI and big data analysis. However, we still have not fully integrated IoT into our society and not fully utilized it in a way that it makes all of our lives better, more equitable, and sustainable, leaving no one behind. Thus, further transformation is needed to establish a more sustainable society by creating a system which integrates cyberspace into physical space (the real world) in a way that human well-being is put at the heart of the transformation. To realize this next generation of society, the importance of STEM education is growing, because it lays the foundation for all the innovation.



To advance STEM at the level of higher education, a solid background is needed, and thus mathematics and science education at preceding stages of education is imperative and should get much more attention as evidenced in many developing countries. For instance, there remain many developing countries where many of the students in upper primary school or even in middle school still use their fingers to manipulate very simple math calculations, or do not have a correct understanding of the meaning of measurement units. **Therefore, G20 governments should immediately make policy interventions for STEM particularly in basic level mathematics and science.**

In addition, creativity, reasoning skills, and logical thinking are also imperative for success in STEM, and thus **G20 governments should also foster those skills by changing the nature of mathematics and science education in a way that cultivates the curiosity of children, motivates them toward choosing STEM subjects, and allows them to explore the many possibilities in this field.** Many reports mention this fact but they often do not suggest actual ways to change classroom practices. One good way, for instance in mathematics, is to challenge children to think more deeply by giving them provocative questions, and in science to introduce experiments/experimental learning, which show children actual objects instead of pictures on the wall. This means that we have to change classroom practices by changing teaching practices.

There also seems to be a preconception that STEM is for male students. However, we should encourage girls as well as boys to pursue STEM subjects, and there are several good practical policies in place around the world to achieve this (UNESCO 2017). In the UK at the secondary school level, the program called “Discover!” is an informal learning intervention designed to stimulate the imagination and interest of girls. It offers participants the chance to act as scientists and encourages them to explore new career opportunities. In Ghana (UNESCO 2017), the first Science, Technology and Mathematics Education (STME) Clinic was established by the Ghanaian Education Service in 1987 to help improve girls’ enrolment and achievement in related subjects in secondary and higher education institutions. These clinics help to get rid of the negative perceptions girls might have about women scientists by having them as role models. Learning from those good practices, **G20 governments should encourage girls’ education in STEM around the world.**



Endnotes

Human beings are born to be learners: to know the unknown, and to be able to do the unable-to-do are our natural joys. Education is a basic human need and a right. It facilitates the enhancement of human security and human capital too. To truly realize such universal values of education, we should transform how it is delivered, so that we can stop the social exclusion that begins with exclusion from education. Our shared mission among politicians, education policy makers, and practitioners, including international partners, is to allow no exclusions and to invite everyone to the quality learning.

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