Digital Skills for Tomorrow

What has enabled Hong Kong (SAR of China), the Republic of Korea and Singapore to rise to the top of the rankings in digital skills? How can other countries catch up? The UNESCO report *Managing tomorrow's digital skills* seeks to answer these questions by looking at populations in countries that have particularly high-level digital skills.

The results of five international comparative surveys show that factors involved in acquiring digital skills vary by generation. Across the board, however, ICT equipment, such as computers and Internet access, are a precondition to provide the necessary digital infrastructure. But this should not lead to a false conclusion. Access to devices is not the decisive factor determining whether a population acquires digital skills.

The ePIRLS study, which ranks Singapore highest in terms of digital skills, showed that students using a computer every day at school to prepare papers had higher levels of digital skills than their peers; students just accessing online information during the same period showed slightly lower scores. The conclusion is that the purpose for which digital skills are practised matters most in the development of such skills from an early age.

For adults, education levels are a factor. Among adults with higher-education qualifications, 15 per cent did not have computer experience, while 80 per cent of adults with less than upper secondary-school qualifications did not have relevant experience, as seen in the example of the Republic of Korea.

Along with factors such as ICT school curricula, ICT training of adults at the work place, and essential ICT infrastructure, functional literacy and numeracy skills are also at the foundation of acquiring digital skills. Student populations in the Programme for International Student Assessment (PISA) who scored highest in online reading skills also showed good results in hard-copy reading. Adult populations in the Programme for the International Assessment of Adult Competencies (PIAAC) showed a strong correlation between literacy and numeracy competency and problem-solving skills in technology-intensive environments.

PISA and PIAAC both assess populations in terms of literacy and numeracy levels. PIAAC offers a good starting point, covering a range of factors that influence the development and maintenance of skills, such as education,

social background, engagement with literacy and numeracy, as well as information and communication technologies. The effort to monitor young people and adults' skills development under Sustainable Development Goal (SDG) 4 specifically intends to measure the *functional* ability to use information to communicate and express oneself.

SDG Target 4.4 aims at increasing the proportion of young people and adults who have ICT and digital literacy skills; SDG Target 4.6 seeks to ensure literacy and numeracy skills among all young people and a significant proportion of adults. Achieving one target will likely influence achieving the other.

To support efforts in monitoring and achieving SDG 4, during the *Fourth Meeting of the Global Alliance to Monitor Learning* in November 2017 the UNESCO Institute for Statistics explored creating target-specific frameworks measuring a continuum of literacy and numeracy skills, as well as ICT and digital literacy. Those frameworks are meant to provide guidance for governments and non-governmental organizations to address developing functional skills that are needed to succeed in an increasingly digital world.

Specifically for SDG target 4.4 on the *percentage of youth and adults with a minimum level of proficiency in digital literacy*, the Global Alliance to Monitor Learning (GAML) has proposed A Global Framework to Measure Digital Literacy and narrowed its definition by reviewing more than 40 digital literacy frameworks:

> *Digital literacy is the ability to access, manage, understand, integrate, communicate, evaluate and create information safely and appropriately through digital devices and networked technologies for participation in economic and social life. It includes competences that are variously referred to as computer literacy, ICT literacy, information literacy and media literacy.*

For other countries to catch up with Hong Kong (SAR of China), Republic of Korea and Singapore, the proposed global framework on digital literacy can serve as a guide taking into account very different contexts and needs to formulate policies, interventions and assessments of digital skills.

To achieve the best conditions for the development of digital skills, UNESCO's publication suggests that two types of public policies must be taken into account: policies that create a supportive framework; and sectoral policies for basic and further training.

The full analysis and list of recommendations can be found in Managing tomorrow's digital skills - what conclusions can we draw from international comparative indicators?