TRANSFORMING LEARNING THROUGH THE USE OF EDUCATIONAL TECHNOLOGY:

Challenges and Opportunities in Latin America

Working Group on Innovation and Technology in Education

Latin America is facing an education crisis. More children and young adults are attending school than ever before, but an alarming number of them drop out early or graduate without the requisite knowledge and skills. Experts are increasingly concerned that young Latin Americans are unprepared to be productive workers and informed citizens in a changing global labor force. This crisis is largely due to the lack of innovation in schools as teachers continue to use ineffective pedagogical practices and outdated teaching tools.

To date, the incorporation of technology into schools has had a limited impact as its introduction has focused excessively on equipment and hardware without fundamentally altering learning processes. The need to explore radical and sustainable methods to innovate how education systems operate and children learn is urgent— and can be addressed by harnessing the transformative potential of information and communication technologies (commonly known as ICTs).

The *Working Group on Technology and Innovation in Education* has the *mission* of contributing to the formation of an education innovation ecosystem in which public and private sector actors collaborate to generate creative, technology-based solutions to Latin America's learning and teaching challenge. The group has chosen to focus on

three critical areas: (1) transforming learning experiences to motivate students and enable them to develop the skills they need to be successful; (2) improving the effectiveness of teachers using the opportunities offered by new technologies, and (3) improving the efficiency of educational management systems.

> **The incorporation of technology into schools has had a limited impact due to excessive focus on equipment and hardware without fundamentally altering learning processes. This report focuses on how to ameliorate those learning processes using technology.**

This report summarizes the results of the second meeting of the Working Group, on September 19th, 2019 in Washington, D.C. This meeting was dedicated to the first item on their *agenda*: the role of technology in transforming the learning experience, the opportunities that exist for implementing solutions at scale, and the public policy challenges that must be resolved for these opportunities to materialize for students.

The traditional teaching model does not allow learners to develop many *21st century skills*. Conceived for another era, it is based largely on rote memorization, active instruction by the teacher and passive reception of knowledge from the student. In this model, students are unlikely to develop their own initiative and creativity, or learn to collaborate with others, among other examples.

The use of educational technology is fundamental to transform the learning paradigm in today's classrooms for three primary reasons. The first of these is that technology is increasingly present in the world, and the jobs of today and tomorrow are ever more tied to and dependent upon these tools. It is only by using technology that people can develop their digital skills. In addition, younger generations are part of the technological revolution; they have grown up with technology, including as a central component in their educational context.

> **Technology democratizes access to content and instruction by breaking down barriers such as teacher shortages or geographic location. When used properly, it can encourage personalized and active learning.**

Technology also democratizes access to content and instruction by breaking down barriers such as teacher shortages or geographic location. Finally, when properly used, technology encourages personalized and active learning, extends learning outside of formal contexts, and facilitates the development of new skills related to the needs of the world today and in the future.

Building an ecosystem that facilitates the transformative use of educational technologies at scale

The *use of educational technologies*—implemented as part of a transformation of educational models—has the potential to improve the teaching and learning experience in and out of the classroom. Around the world, we are increasingly seeing successful educational innovations with digital technologies. However, in Latin America we do not yet see systemic technological changes. Instead, many initiatives remain stalled at the pilot stage or limited to small-scale experiences.

Are the conditions in place that would enable large-scale educational transformation? Will technology reach all students and classrooms equally? What are the main challenges and opportunities in this process? These questions bring us to the challenge of having effective, stable, and established public policies to enable educational transformation.
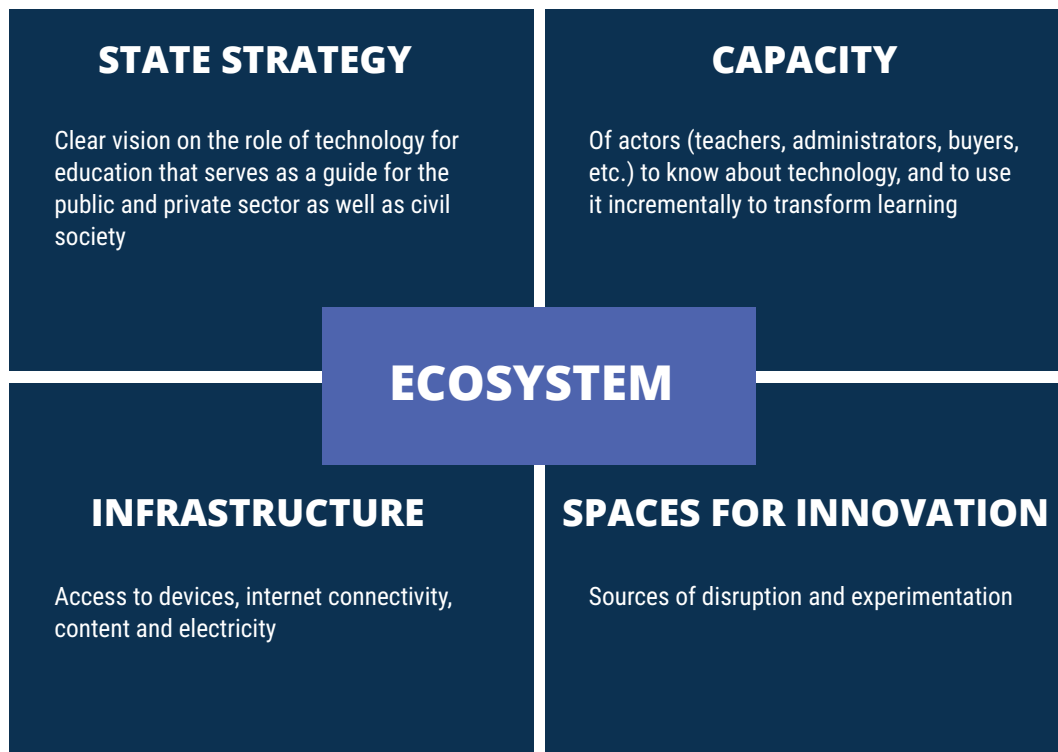
The challenge is multifaceted as it demands actions in a variety of different dimensions, such as the existence of a long-term strategic vision, building human and institutional capacities (as well as infrastructure needed for their implementation), and the spaces for innovation that facilitate creativity and dynamism. In other words, it is necessary to build an *EdTech Ecosystem* that makes possible this much-needed educational transformation (see Figure 1).

State strategies to scale-up the effective use of educational technologies

A critical step for scaling up educational technologies is a clear national vision that guides the decision-making within the education system and engages all relevant actors in the public and private sector, civil society, foundations and universities. This vision must have a high level of consensus and be expressed in a long-term strategy document that includes specific and measurable objectives, a concrete action plan designating responsibilities and resources, as well as the institutional commitment to support it.

Once these conditions are met, and in order to implement a coherent national vision, it is imperative to have an institutional structure that can guarantee continuity in the implementation of the plan, protecting valuable knowledge, long-term goals and budget resources particularly from changing government priorities. Achieving this most likely requires creating an entity that has sufficient administrative autonomy and permanence, as well as the necessary links and coordination mechanisms with key officials of all relevant ministries such as the Ministry of Education, of ICT, of Innovation, etc. The examples of

FIGURE 1: AN ECOSYSTEM FOR THE USE OF EDUCATIONAL TECHNOLOGIES

STATE STRATEGY	CAPACITY
Clear vision on the role of technology for education that serves as a guide for the public and private sector as well as civil society	Of actors (teachers, administrators, buyers, etc.) to know about technology, and to use it incrementally to transform learning

ECOSYSTEM

INFRASTRUCTURE	SPACES FOR INNOVATION
Access to devices, internet connectivity, content and electricity	Sources of disruption and experimentation

Plan Ceibal in Uruguay and the Programa Nacional de Información Educativa (National Educational Information Program in English), operated by the *Omar Dengo Foundation* in Costa Rica, serve as inspirations.

Capacity for the effective incorporation of educational technologies

To implement a national vision and action plan for the transformation of the learning experience across the education system, there must be sufficient institutional and professional capacity at various levels of the system. If ministry officials, teachers, and directors do not have the capacity to make informed decisions and effectively use technology, even the best plans will not bear the expected results. Therefore, it is critical to strengthen the knowledge of decision-makers about effective procurement practices or the types of technologies that need to be implemented in the classroom. In addition, a crucial element in the successful implementation of any national EdTech vision is teacher training. In effect, the introduction of technology into the classroom will not lead to improvements in learning if the teaching approach is not also changed. It is likewise essential to implement a capacity-building system that is not only based on isolated training but on the need for continuous monitoring and support to teachers.

Infrastructure as a precondition to scaling-up educational technology

It is difficult to imagine a strategy that seeks to transform the learning experience for all students without ensuring connectivity in schools, regardless of their geographic location or the characteristics of students and their communities. Without connectivity—even if limited—the productivity of investments in devices and applications will be very low, and access to online educational resources will naturally be limited. Moreover, connectivity must increasingly be taken as a reality of today's world. Today's students will live in a connected and globalized future. Refusing to recognize this reality harms students and their ability to perform on an equal footing in the modern economy. Thus, efforts to universalize connectivity in schools must be an integral part of EdTech strategy and action plans that make up state policy in this area.

Latin America has been proactive in integrating technologies into schools, but structural problems persist, as well as deep inequalities between different social groups and geographical areas within countries. Achieving connectivity in schools should be a crucial aspect of any action plan. Resolving the connectivity gap requires that education ministries have greater leadership in the field,

not only through better and clearer information about schools that need services, but by building partnerships with other ministries and public and private institutions to implement the necessary solutions.

Continuous innovation in education for citizens of the 21st Century

The incorporation and use of technology as a tool to transform the learning experience is not a one-time event, but instead a dynamic process that demands a clear and well thought-out research and development agenda. Available technologies are constantly changing and therefore their application in the educational field must be adjusted periodically. Moreover, there is no model for education technology that will work for all students and in all contexts. It is therefore critical to have in place the mechanisms to promote research and development of educational technologies and thus contribute to the process of innovation in the sector.

This effort requires a systemic approach in which a variety of actors play an important role. To open up spaces for innovation, it is necessary to create more opportunities for small and medium-sized companies (even in their start-up phase) to enter the EdTech market. The establishment of innovation laboratories driven by ministries but which incorporate and welcome participation from diverse actors, is a promising model.

Conclusion

When considering educational technology and innovation in Latin America at the public policy level, the main challenge is less about what to do and more about how to do it. The emphasis, therefore, can no longer lie in finding a silver bullet (such as the distribution of equipment or the application of specific software), but instead in developing a systemic effort aimed at transforming the learning experience by making it more active and oriented to the acquisition of relevant competencies in which technology is an instrument and not an objective in and of itself.

This task requires educational authorities to play a strategic role in building recognition for the fact that a growth and development model must be based on the educational system in which it will be implemented. At the same time, carrying out this model will be impossible without the active participation of multiple actors, including companies, universities, and civil society organizations.

Teachers (and school directors) are essential actors in these efforts; without them, no EdTech strategy can be successful. Building and developing their capabilities should therefore be a key component of plans and strategies to scale-up technological initiatives. Recognizing this, the next step for the Working Group will be an analysis of how to improve the effectiveness of teachers using the opportunities offered by technologies.

Similarly, taking the transformative vision to scale will require more agile and efficient administrative and management systems that can generate and leverage information for decision-making at all levels. Again, the effective incorporation of ICTs into the management of school systems is a priority and will be an important aspect of the Working Group's future actions.

WITH THE SUPPORT OF:

AT&T Foundation

Discovery EDUCATION

Microsoft

OMIDYAR NETWORK

Pearson