



Responses from the Global South

CHALLENGES FOR SCALE LEARNING: A LATIN AMERICAN PERSPECTIVE

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1. INTRODUCTION

This paper offers a perspective from Latin America on the paper “How could digital learning at scale address the issue of equity in education?” by Laurillard, Kennedy, and Wang (2018). Experiences in the region challenge the initiative by considering observations on large countrywide project implementations. In preparing this paper, the author conducted an informal consultation survey with experts on large public education systems in Latin America; their views have been collected and appear throughout the paper (Escorcía, 2017).

The initial consideration departs from a regional scenario, with frustrations and social misconceptions, and moves to explore barriers on connectivity and affordability. Scale projects are usually public, and do not always favor investments in teacher development, which impacts on equity and quality.

Online learning is affected by local misconceptions and barriers. In the Latin American region, although government grants are more likely to be directed toward technology rather than teacher development, the slow quality assurance and accreditation processes

hinder the successful utilization of such technology. Moreover, the introduction of Massive Open Online Courses (MOOCs) raises issues on the cost, sustainability, and appropriate learning and teaching models required to optimize these resources. The cultural view of the importance of teachers in society is also relevant, as well as the improvement of the scientific design of viable cascade replication models.

Both the opportunities with innovative technologies and the challenges for sustainable scale models call for a larger prospective view by creating a higher level institutional response. One proposal is an international coalition of cooperation agencies and governments focused on raising issues related to teacher professional development in the Global South.

2. REGIONAL SCENARIO

This paper is guided by the overall objectives proposed in Laurillard et al. (2018) and contextualized to the Global South countries. Specifically, it will focus on understanding how digital learning can be used at scale, and to what extent it can achieve equity and quality in the region.

Of great relevance to Latin America is the issue of educational equity. Although many educational advancements have been observed in the region in the past decades, there is much to be improved when it comes to access to quality education for certain sectors of the population. If utilized correctly, the scalability and accessibility of online learning addresses these issues. However, social misconceptions, local barriers, investment diversion, and other factors threaten the proposals of Laurillard et al. (2018) and require incorporation of complementary considerations.

2.1 Expectations and Frustrations

During the last decade, most Latin American countries implemented programs to incorporate technology into their educational systems, which resulted in additional spending for technology infrastructure, capacity building, and content development. However, student performance in standardized international tests conducted by the Inter-American Development Bank (IDB) remained below average (Arias, 2014).

One reason why such programs fail is the poor preparation of users of such technology, especially the teachers. They are trained using outdated and inappropriate materials and methodologies, and yet are expected to successfully implement interactive education using blended methodologies.

Further, the lack of a long-term vision for the implementation of such programs resulted in insufficient support activities to ensure success. Regrettably, aside from a study from IDB that showed 26 member states created 20 projects from 2006 to 2012 resulting in the provision of almost 10 million portable computers, not many studies were done to monitor and evaluate the success of

such programs, particularly in recent years, when digital learning has proliferated in the region.

The initiatives in Latin America are mainly implemented for political reasons. Donating computers and gadgets to their constituents as part of electoral campaigns are low-hanging fruit for politicians to bring to their localities a sense of hope for a better future.

Recently, the availability of affordable innovative technologies, and the recognition of the need for new skills for the digital economy, have been adding pressure to governments to continue investing in digital learning. New applications, platforms, and multimedia content attract the attention of authorities, students, and families. This can become an opportunity, on condition that innovative technologies are accompanied by stable support programs such as innovative teacher development.

Although equity is considered the main goal, most of the existing programs are not designed for large-scale implementation under long-term strategies. This lack of vision diminishes the opportunity for success and the achievement of learning outcomes to improve national goals.

2.2 Observations on Higher Education

The report “E-learning in higher education in Latin America” (Organisation for Economic Co-operation and Development [OECD], 2014) summarizes the regional situation.

Face-to-face education is the primary mode of delivery of learning, with 65% of universities using it. Meanwhile, 19% use digital learning methods, and 16% feature a hybrid model (both face-to-

face and distance learning). Most universities have, or are expanding to include, digital learning.

In terms of equity, access to education by excluded groups has increased. In universities, 68% report that digital learning is available to people in rural areas, 53% are offered to women, 50% to low-income groups, and 38% to people with disabilities.

In terms of accreditation, only 30% of universities have all their programs accredited by national authorities, 19% report that some of their programs are accredited, and the remaining 50% have no accredited programs.

According to *The Dialogue*, as part of the Programa Regional de Educación (PREAL, 2016), several Latin American countries adopted MOOCs on a larger scale. Mexico and Brazil are two of the 10 countries worldwide using them the most. The main recognized platform in Spanish, MiriadaX, launched in 2013 by Red Universia and Telefonica, provides free service to more than 1,232 universities in 23 Latin American countries. A learning analytics strategy is being planned to help design the future service stages.

Key organizations promote the use of MOOCs in this region. Of note is the IDB alliance with EdX, which created the IDBx platform that delivers online courses in 20 countries. The approach adopted is a promising business model for future large-scale digital learning options (PREAL, 2016).

2.3 Misconceptions in the Region Impacting Online Learning

The social and institutional acceptability of online learning in Latin America is challenged by misconceptions about the nature, opportunity, and value of the program. Although the benefit associated with online learning is now evident in the region, a forward vision is required, not just to compare the new paradigm with the traditional offering, but to acknowledge the fact that these new learning models are key success factors in innovation-driven digital economies. Online learning should be viewed as a transition from massive knowledge consumption into a more collaborative construction of knowledge.

Another misconception in this region is the impression that online courses are of lesser quality than traditional courses. Employers and entrepreneurs are hesitant, if not unwilling, to hire graduates from online services. Uninformed members of society have the impression that online options are only for failed students who have been rejected by the traditional system. This social view reflects a local condition impacting the proposals of Laurillard et al. (2018), and deserves extended consideration.

A preliminary identification of the most common misconceptions is summarized in Table 1, which presents both positive and negative perceptions regarding online learning.

VALUE	SEEN AS	NOT SEEN AS
Positive	<ul style="list-style-type: none"> • Managed better by digital natives • Low cost for students • Low investment for institutions 	<ul style="list-style-type: none"> • Connected to future economy skills • Continuous updating opportunity • Significant effort and discipline
Negative	<ul style="list-style-type: none"> • Socially isolated setting • Substitute for local teachers • Only for the poor • Low quality option 	<ul style="list-style-type: none"> • Enforcing a local culture • Time for education, but rather for amusement

Table 1. *Misconceptions regarding online learning*

Many available options for online learning bring to the region operation models and content originally designed for another culture. Similarly, negative observations are made on how young people, when using connected devices, dedicate long hours to entertainment instead of learning options, as is the case with social networks.

Further, experience and evidence redefine common erroneous perceptions that digital natives are better at online learning settings than digital immigrants. However, studies show that although an initial edge is observable, the gap becomes insignificant when content, assignments, discipline, and performance are taken into consideration (Latin American Educational Communication Institute [ILCE], 2006). Some years back, there was a misconception that online learning is free or a very low-cost option. Offers in the market

for quality learning, however, do not support the idea. Higher education (HE) institutions offering online learning options have realized how expensive infrastructure and service costs can be, especially for tutoring and support.

3. ONLINE LEARNING BARRIERS IN THE REGION

The four factors listed in Table 2 below have been identified as the main barriers to high-quality online learning in Latin America. They involve issues dealing with broadband and device availability, teacher development on digital subjects, the social perception of digital learning options, and the lack of innovative content and materials for digital strategy.

CONNECTIVITY INFRASTRUCTURE	TEACHER DEVELOPMENT	SOCIAL ACKNOWLEDGEMENT	MATERIALS DELIVERY
Coverage and bandwidth	Sense of ownership	Business acceptance	Development factories
Device provision	Development time-space	Family and community expectation	Innovative content
Affordability and accessibility	Innovative strategies		
Digital skills	Replication and cascade models		
	Follow-on and accompaniment		

Table 2. *Barriers to high-quality online learning in Latin America*

3.1 Connectivity Infrastructure

3.1.1 Coverage and bandwidth

Leaders in Latin America believe the communications infrastructure is the main barrier preventing the provision of high-quality online learning. A technical note issued by IDB states that fixed and mobile broadband penetration in the region is lower than that of OECD members (Garcia, 2012).

Of critical importance is that coverage is very unequal depending on location and socioeconomic conditions. Coverage requires high investments to spread over the difficult topography prevalent in the region. Marginal communities are generally least covered by broadband services. An expert from Costa Rica consulted for this paper stresses symmetric access as a barrier. That means conceptualization of the service should not only be in broadcast terms but also the allowance of strong return channels for active, frequent, and heavy-loaded interaction.

Most governments tend to react to coverage issues for inclusion reasons and urgently act to keep pace with global bandwidth growth. An observable trend in the region registers mobile broadband penetration growth at twice the rate of the fixed option. This creates opportunities to promote mobile online learning, but with a deep redesign in content and teaching strategies. This must be considered together with Laurillard et al. (2018) as suggested actions in mobile learning for the future.

3.1.2 Device provision

In addition to broadband coverage, access terminals are also mandatory. For public education systems, the preferred route is public bidding for netbooks, laptops and/or tablets, mainly for schools. Implementation of such programs demands large investments and should be designed to cover large student bases. Cost of ownership, maintenance, lifespan, and disposal

are the underestimated factors of most projects. Similarly, the route of choice for tertiary education institutions is to create computer laboratories to serve students on campus. Nowadays, however, students themselves must acquire the devices.

Mobile learning needs thoughtful consideration by formal education systems because smart phones show increasing acceptance and distribution. Recent technical features and the decreasing cost of devices allow for this option and enable the incorporation of the bring your own device (BYOD) model, which is implemented in schools and universities in Europe and North America. Therefore, smartphones as terminal devices to deliver online learning is another suggested consideration to be incorporated into Laurillard et al. (2018) as a viable scale option for the Global South.

3.1.3 Affordability and accessibility

Along with the connectivity infrastructure, ease of access is also a critical factor. The cost of the service needs to be affordable. However, several factors are involved in the tariff definition, and frequent public policy updates are prescribed under an equity approach.

Several Latin American countries have declared universal access to the Internet as a human right. In Panama, for example, the regulation states that a connection service should be available within a 500-meter range from a citizen. Because of its strategic relevance, bandwidth affordability should be regulated by national state policy. Although Laurillard et al. (2018) touch on the subject, stronger international policy and incentives are vital for this region.

Affordability becomes a key factor in the provision of high-quality online learning. It is also identified as a barrier to enrolment in HE. School teachers also consider affordability a hindrance, preventing their own access to HE via online services.

Nowadays, smart phones have become more affordable, easier to procure, and easier to manage than computers. On the other hand, they entail innovative conceptual approaches over traditional technology models. As mentioned in Laurillard et al. (2018), debate is anticipated on suitable student devices for mobile online learning.

In Latin America, accessibility to available online learning options has not yet been fully realized.

The Web Consortium states:

The Web is fundamentally designed to work for all people, whatever their hardware, software, language, culture, location, physical, or mental ability. When the Web meets this goal, it is accessible to people with a diverse range of hearing, movement, sight, and cognitive ability. (WC3, 2015)

3.1.4 Digital skills

If the service is available at an acceptable distance and affordable price, the user must still have the capacity to operate the system and derive its benefits. Teachers in technology-driven projects claim that training sessions are insufficient to allow a real mastering of the technology environment or to solve emerging technical issues. For HE, the situation becomes less demanding on digital skills but increases in complexity with the arrival of new applications, professional software, and content. Nevertheless, digital skills nowadays involve software applications and algorithms, and should be added to Laurillard et al. (2018) when considering student and teacher development.

Consequently, users need to be more critical of available digital learning options as the services need to be adjusted and redesigned based on impact and feedback. A Chilean expert consulted for this paper stresses that the lack of a critical position is a barrier to quality online learning because relevance is not being measured and future designs do not involve

users (Escorcía, 2017). As a result, the Ministry of Education in Chile is revamping all online courses for teachers by involving experts, new online environments, innovative content, and alternative platforms. This view is also supported by a Costa Rican expert, likewise consulted, who points out that interdisciplinary and inter-functional teams are required to ensure that redesigns are made under the emerging paradigm and are not a repeat of old methods (Escorcía, 2017).

3.2 Teacher development

3.2.1 Sense of ownership

In several public school projects in Latin America, the policy design approach has been top-down, reaching teachers with decisions made without their involvement, while the projects force on them an inception of a new culture, leading them to question their lifelong experiences as they confront unfamiliar technologies. This approach is tolerated but a clear sense of ownership is not developed. This lack of consultation with end users is an obstacle for teachers to getting engaged in the development of their own digital skills and transferring them confidently. Thus, the online learning project design should intentionally promote adequate involvement of teachers and instill a keen sense of ownership and belonging in them.

3.2.2 Development time-space

Investments in large projects favor technology over teacher development. Recognition of this barrier allows for dedicated actions to ensure high-level digital skills development for teachers.

Scale projects in several countries consider the three-week model expensive, and have reduced the training to one week at a training center with support via a call center or website, with no follow-up

at the school. This challenge needs attention, as the whole sustainability of the project is compromised.

3.2.3 Innovative strategies

Curiously, an unacceptable situation is observed when training teachers on how to use digital technologies to facilitate learning processes. The content materials for the courses are delivered using the traditional model and not a technology-based one. Success in this endeavor requires innovation in the following areas:

- Careful selection of the teach-to-teachers master group, identified as a key success factor by school teachers being trained to adopt innovations.
- High quality development of course materials to be used with innovative technologies. It is not enough to reformat outdated teaching materials.
- Ensuring the relevance and context-sensitivity of contents. Materials are prepared for widespread use, not to cover specific contexts or regional needs.
- Use of mobile technology to keep teachers updated. Surprisingly, when teachers get access to new devices, they do not use them for updating materials or practices.
- Redefining the support service for teachers. Experience suggests help desk tutors and online advisors need to be well-trained and available full time for the service.

3.2.4 Replication and cascade models

Experts in the region agree on the importance of a good replication model (Escorcía, 2017). In general,

a crew of instructors is prepared to deliver the training sessions to an initial group of teachers. The expectation is that this initial group will transfer the skills to a group of peers. In some cases, an additional level of replication is expected to cover more teachers in shorter timeframes. Some implementations use blended models for the purpose. The experts consulted observe that during public school implementations, teachers complain about two issues:

- Facilitators themselves do not understand the concepts, methodologies, or technologies well, and spread misconceptions through the replication chain.
- There is not enough support received. Consequently, training gaps remain unsolved (Escorcía, 2017).

Educational cascades are recognized as the critical issue for scale projects. Laurillard et al. (2018) highlight the need to use and refine the cascade. For this to succeed, sound proposals from education universities and international cooperation agencies for scientifically designed cascade operational models are required to avoid the disappointing results achieved by large projects in Latin America. A watchful approach should be taken and, as a strategic move, volunteers from local communities can be involved in monitoring cascade implementation.

3.2.5 Follow-on and accompaniment activities

Discussions with regional authorities on why large projects do not achieve the desired results point to the insufficient or inadequate implementation of follow-on activities and accompanying support processes.

In national scale implementations in several countries, depicted by their leaders at the time and identified by end users (teachers and students) as

a major success barrier, the inadequate process for accompaniment results in a “lack of confidence” on the side of teachers (Escorcia, 2017).

A more formal endeavor should consider:

- On-site coaching, particularly back at their schools after finishing training sessions
- Peer-to-peer assistance to develop clear methods to enable teachers for collaborative learning
- Support for virtual communities for sustainability
- Assistance platforms with careful design required to perform continuous service
- Specific digital support materials
- Quick response teams, which is regularly an underestimated key success factor

Long-term observations by the author, spanning more than 25 years, coincide with those from experts consulted from 12 countries (Escorcia, 2017) on how project directors recognize the elevated costs involved in implementing such a model, particularly for large projects. Beyond training logistics, if every teacher needs “in-school support,” the cost increases to a point that impacts on sustainability. Consequently, scale implementations demand wise and innovative decisions to create effective combinations of coaching and online support for this issue. Likewise, innovative technology is required to enable teachers to embed their expertise. Underestimating the relevance of follow-on and accompaniment activities can become a failure factor, and is therefore an issue to be considered in Laurillard et al. (2017).

3.3 Social acknowledgement

3.3.1 Business acceptance

A university president serving deprived communities in Chiapas, Mexico and consulted for this paper explains that by offering 14 online careers, enrolment in the university increased rapidly but, over time, decreased to concerning levels. The inquiry concludes that students who graduate from the said programs are consistently being rejected by local businesses for employment (Escorcia, 2017).

Common entrepreneurial beliefs define online learning as low quality and, worse, they see graduates as low performers who are not desirable employees for their business. Despite the university’s efforts to correct this perception, the enrolment rate continues to increase slightly but remains at a low level (Escorcia, 2017). Further, it is socially accepted that online options have a high dropout rate.

3.3.2 Family and community expectation

When the choice is possible, families prefer to enroll students in a face-to-face setting instead of a virtual one. Families, like businesses, share a perception of digital platforms as having low quality. The online option is usually chosen because it is less expensive or is the only available option at a specific location. Not helping in attracting communities to the online option are further misconceptions observed:

- Education for the deprived in marginal communities
- Low quality option for the poor or for low performers
- No bilateral commitment (students drop out, provider not raising quality)

3.4 Materials delivery

3.4.1 Development factories

Content quality is not mentioned as a barrier to online learning as often as it should be. This issue seems to be a stronger barrier than expected. The following related issues are considered for project sustainability:

- *Content development factories or networks.* Scale implementations investment and quality should drive the production of material for digital settings, giving attention to the provision of a global or a local context.
- *License rights.* As scale implementations emerge, local authorities demand newer negotiation methods with vendors about rights and intellectual property. Cases under special view are license rights for large communities of users or extended time lengths.
- *Licensing negotiations.* With the emergence of new licensing models like the Open Education Resources (OER), alliances between countries may improve the negotiation capacity for content or applications specially for large scale public bids.
- *OER*, as mentioned, is becoming an interesting option for scale implementations. National experiences, however, signal considerations to be made on quality and updating issues.

3.4.2 Innovative content

There is a perception that content and materials used in digital platforms are not as innovative as the technology used for their transmission. This issue demands thoughtful consideration, through the following ways:

- *Incorporate virtual reality and simulations into digital training materials.* Content development should use as much as possible updated methods and technologies to facilitate training. Virtual reality is an option becoming widespread and suitable for learning how to use digital devices.
- *Use mobile options for training.* In recent times, the availability of mobile devices for students, teachers, and families has increased, turning into a powerful study tool by themselves.
- *Create virtual communities of learners.* Most online learning options already include the creation of learning networks, but it is not sufficiently emphasized and sustained. Even more important are those communities created by school teachers for their own peer-to-peer support under large implementations.

4. POLITICAL INVESTMENT: TECHNOLOGY - TEACHER DEVELOPMENT

4.1 Equity in electoral campaigns

Most regional projects related to technology for learning are public initiatives driven at the presidential level. In general, these projects offer technology for students as part of ambitious goals in education reforms, capacity development, and equity.

The visibility of the hardware part of the investment drives most of the spending, leaving limited resources to cover teacher development and deployment operations. Unfortunately, this is repeatedly the case in Latin American countries.

It has been very difficult for decision-makers to fully understand the lack of desired effects. Several project leaders observe that even with the most formally designed projects, using tools to get quick results means technology deployment to communities takes precedence over medium-term teacher development.

In many cases, those initiatives are part of electoral campaign promises. Although they commit to the inclusion and equity of access to modern technology for the majority, the said goals are not really achieved.

Regarding scale projects, during a consultation held by the Instituto Latinoamericano de la Comunicación Educativa in 2016 in Mexico, leaders from Argentina, Chile, Costa Rica, and Uruguay suggested inviting international independent agencies to give advice on scale project design and investment distribution. This may also help maintain continuity after changes in administration.

If the potential of emerging technologies is to be realized to help develop complex thinking strategies, creativity, innovation, collaborative learning, and many others, then the project

design and investment distribution should be fully reviewed, and authorities need to ensure a proper balance among these factors to achieve the goals.

4.2 Competency or collaboration in the HE ecosystem

For universities, investment in technology-based services is driven by either competition between institutions, the expansion of the student base, or participation in alliances. An ecosystem where competency or collaboration is determined is defined by three factors:

- *Extra-territoriality of the offer.* National boundaries of the service are vanishing under offerings made from abroad, in many cases with quality and cost advantages.
- *Curricular flexibility.* This is a key factor in recent times, allowing modular study plans that can be adjusted in terms of time or by election of contents and paths.
- *Ease of access.* This is another key factor in Latin America, particularly in remote areas or deprived communities. It is becoming a serious social equity action.

Digital economy requirements will demand that universities network and cooperate with each other to design and implement innovative online learning methods.

4.3 Short in-service training instead of deep reform

A major concern of analysts is why, for so many years, investment in teacher development has been devoted to in-service training while almost no formal effort has been dedicated to supporting education universities,

departments of education, and schools for teachers to ensure new cohorts graduate bearing digital skills and a new generation of educators emerge with proper skills already in place. Consequently, a global coalition of international organizations and national authorities has been proposed to face this issue.

It is recommended that one of the actions to consider in Laurillard et al. (2018) is to give attention to education schools as a clear priority and an opportunity for leadership. In this regard, UNESCO developed the ICT Competency Framework for Teachers, aimed at providing, for every country, a minimum standard for teacher education in the digital era (UNESCO, 2011).

A reinvention process for education schools needs to:

- *Provide intensive support for digital skills development to education schools faculty and directors.* This is a key factor as for many years, the approach has been to provide two-week courses for teachers once they are in active service, not before at the education school.
- *Redefine the curriculum to incorporate digital concepts.* Education schools, even today, keep a traditional curriculum for teacher development not involving extensive use of innovative technologies. Governments then attempt to remedy the situation by training teachers on digital skills when they are in active service.
- *Create advanced laboratories.* The initiative demands for governments and technology developers to join forces in providing education schools with the most advanced technology, eliminating the practice of donating outdated devices.
- *Certify digital skills for every graduated teacher.* Improved practices are suggested

in addition to traditional methods by enabling teachers at the education schools with certification for digital mastery as part of the professional service.

Short in-service courses may then be focused on updating already resident digital skills. Even today, the strategy for large projects dedicates one week, two at most, to massively train teachers on technology and to redefine the learning process. The expectation on the teacher is to instruct a group of peers under a cascade modality. As noted, these decisions need to be reviewed considering a more solid scale process. Follow-on and accompaniment processes must also be incorporated.

4.4 Underestimations

Failure or insufficient achievement of national project goals originates in severe underestimation of other key factors in addition to teacher development. In an ideal model, part of the investment goes to technology, to teacher development, and to:

- *Digital materials and content development.* Publicly funded projects tend to fail by underestimating the challenges of developing content that incorporate updated approaches to design, organization, and delivery.
- *Detailed medium-term operational planning.* Experiences in Latin America are falling short on resource provision right after the two or three years of implementation, creating a sustainability problem difficult for the next administration to support.
- *Detailed logistics deployment and local alliances.* The complexity of public scale implementations is frequently underestimated, evidenced by the lack of a detailed deployment strategy supported by budgetary provisions.

- *Definition of evaluation metrics and traceability.*
After so many years of implementation of technology-based projects, only recently have there been longitudinal studies that trace trajectories and achievements. This needs to be embedded in the scale project design.
- *Flexibility in program modes and online to formal accreditation.*

5. QUALITY ASSURANCE NOT YET IN PLACE FOR ONLINE LEARNING

5.1 Business no longer interested in traditional accreditation

As mentioned previously, local business employers are still demanding formal diplomas awarded by face-to-face HE institutions. Meanwhile, multinational corporations and international organizations have announced that university certificates are no longer required for innovative jobs (Nisen, 2014; Jiménez, 2017). This gives rise to the idea that specific advanced certifications will be provided by corporations themselves. This favors the corporate universities, which are in direct competition with HE institutions.

Additionally, questions have arisen regarding the independence of certification agencies particularly when they belong to government administrations. A new phenomenon in business is taking place as education is no longer viewed as a tool for getting a job but to promote entrepreneurship and self-employment.

From the point of view of public school project leaders and university directors, Latin America still requires focus to strengthen quality assurance. Ten Latin American countries created a quality assurance network to develop international cooperation programs between accreditation agencies. The network includes Argentina, Bolivia, Brazil, Chile,

Colombia, Mexico, Paraguay, Uruguay, and Venezuela (<http://www.edu.mercosur.int/es-ES/>). In an assembly held in April 2017 in Colombia, agencies agreed on regional international accreditation standards mainly required to enable distance education programs to become recognized in each country. The network follows the guidelines from the National Mexican Council for Accreditation and from the European Association for Quality Assurance in Higher Education (ENQA).

Regarding accreditation issues, most countries already have government institutions in place to review the performance of HE institutions and to provide official accreditation. Moreover, in some countries, university associations take responsibility for accreditation. For example, in Mexico, there is a National Association of Public Universities and Institutions for Higher Education (ANUIES) and a Federation of Mexican Private Institutions of Higher Education (FIMPES). Both these organizations have assistance programs for universities and peer review processes to help improve the accreditation.

Meanwhile, Colombia has a public institution that is totally devoted to supporting HE institutions, the Colombian Institute for Promotion of Higher Education (ICFES). The ICFES provides long-term approaches for accreditation while another organization, the Colombian Association of Universities (ASCUN), promotes international alliances and standardization. They created minimum quality standards which prevent the permanence of institutions that do not meet certain conditions from providing quality service. Promotion of self-assessment is also recognized as part of the inception of a culture for quality assurance.

Because change is a constant in the HE ecosystem, authorities must provide smart and quick regulatory policies that do not necessarily result from traditional quality assurance and accreditation processes. That is why regional associations are looking to the creation of Common Knowledge Spaces for HE promoted

by UNESCO and the Association of Latin American Universities (UDUAL). As an illustration, almost all distance university programs in Mexico are affiliated with the Common Space for Distance Education. Membership in this association provides for mutual promotion of their offerings, and more importantly, opportunities to collaboratively create MOOC services.

The pressure on the accreditation system arises from online education programs now being offered from different countries, and the student demand for official validation of studies from local authorities, a process that today is bureaucratic, cumbersome, and slow. The local validation of foreign programs requires deep analysis of the conditions provided for the studies, equivalence with local, approved benchmarks, and the process to fill academic gaps.

It is difficult to grant credits for online courses in the region, as Laurillard et al. (2018) suggest, more so transferring them to regular programs.

This complex problem requires innovation and speed from authorities. The offer of MOOCs, for example, is growing rapidly and is intended to provide a borderless service in ranges of thousands of students. The 2017 university rankings report noted that:

The pace of change has been slow everywhere, but with a few notable exceptions; Latin America has been particularly slow to join the global discussion of new strategies for active learning, hybrid learning, competency-based learning, peer instruction, and more. Universities are limited by degree recognition and accreditation processes that are firmly entrenched in the past and often act as checklists that force conformity. (Reisberg, 2017, p. 117)

The report *Future of Education and Skills: Education 2030* states the relevance of regional accreditation systems using innovative approaches:

Establishing multidimensional learning framework with a common language could also enable countries to explore recognizing student outcomes that are not yet measured but are critical in navigating in time and social space and shaping their own future. Countries are confronted by an array of new needs and requests, which often leads to 'curriculum overload'. Transformation is often disrupted by political cycles or competing objectives, which hinders the sequencing of reforms. (Taguma, 2017)

6. LOW INVESTMENT IN TEACHERS

6.1 Cost of teaching and support

Opinions from analysts in the field recognize that there is no clear understanding of the relationship of the cost of teaching and the benefits for learners. The implemented projects in Latin America are evidence of the underestimation of the cost of teachers, and how investment goes to technology instead.

Studies about this relationship of perceived value on the side of the user and cost of service on the side of teachers are not widely available. The issue becomes difficult in settings like the operation of MOOCs where authorities and students still believe that the cost of teaching is low and the number of beneficiaries is high.

6.2 Unattended MOOCs

It is interesting to consider recent questions around the MOOC, with some critics arguing:

- MOOCs represent a return to the old educational television paradigm as a full broadcast, unless a strong and mature support service is put in place.
- Under MOOCs, monitors and aides are not professors.
- Demand feedback: tradition of no teamwork, very few visits to colleague's classes, few meetings to agree on common teaching objectives and standards
- Lack good directors: schools are driven by non-prepared directors (executive and leadership capacity), and decision-making does not involve teacher participation

For online learning projects at scale, the number of teachers required represents a cost that affects sustainability. Many services decide just to hire tutors and support personnel, knowing in advance that they are inadequate and insufficient. Students perceive a lack of attention in the online learning service. It is recommended that this be added as a practical issue for MOOCs in Laurillard et al. (2018).

7. LACK OF RESPECT FOR TEACHERS AFFECT ONLINE LEARNING

In a 2009 visit by the author to the Normal School of Finland, it was observed that only the best professionals who have taken a two-year masters course to learn pedagogy can interact with youngsters of the secondary school. Being an educator grants respect and recognition from the entire society.

Conversely, the public perception in Latin America of teachers is not high. The OECD Teaching and Learning International Survey (TALIS) report (cited in OECD, 2014) states that teachers:

- Face difficult labor (contracts and salaries), social (relations with parents, communities, government, unions, and students), and learning (professional evolution opportunities) conditions
- Require better preparation at the initial stage (perceived as low-level profession), coaching (low experience transfer), and professional development (not even considered HE level)

- Require self-criticism: in some cases, teachers show satisfaction on the job even in the face of low performance, as exposed, for example, by OECD Program for International Student Assessment (PISA) results.

7.1 Teachers' unions

National educational reforms recently announced by the governments of Chile, Colombia, and Mexico generated strong reactions from teachers, via unions, resulting in street demonstrations that were widely covered by the media. The public reacted with questions about the role of teachers and their status in society.

In general, unions of teachers are among the largest in the region, and society sees them as having political power. Unions have recently focused on professional development for its associates and have started to address the negative perception in an era of economic change powered by emerging technologies, resulting in changing jobs and skills for the future.

7.2 Better education and payment

As mentioned, teachers demand better economic compensation and better education for themselves. Unions struggle to obtain better payment for public servants, predictable career paths, and professional status from governments. Respect is part of the

equation, as a social acknowledgment of the profession.

An online learning system at scale may be designed with modern technology, innovative content, and frontier methods specifically focused on the needs of thousands of teachers while providing them with devices, connectivity, ease of use, and support. The Educators Confederation of the Americas, for example, declares that better educated teachers can gain well-deserved respect from society.

8. CHALLENGING FUTURE FOR DIGITAL LEARNING

The emerging digital economy and digital technologies allow the inception of the so-called “immaterial business.” These include Uber, Facebook, and Waze, which have high global market values and are driven by algorithms. These new kinds of enterprises own no properties, rendering their global service on rented facilities and vehicles, and on external contracts for jobs and operation. The product offering is intangible in nature, and by being digital, relies on user-owned devices.

These types of companies may thrive in the coming years with the advancement of technologies, including cognitive computing and artificial intelligence, virtual and augmented reality, and the Internet of Things, along with big data and cloud computing.

All of these depict a profile for new jobs in every economic activity, and a strong demand for new skills. Algorithmic and heuristic thinking, innovation, creativity, and design thinking are the most expected. As Laurillard et al. (2018) note, online learning at scale will also become a powerful tool to democratize the massive acquisition of those skills.

9. CONCLUSION

In agreement with the proposals of Laurillard et al. (2018), digital technologies and other factors allow for large-scale learning implementation in Latin America. Consideration of some challenging factors, such as misconceptions, identified barriers, investment diversion, slow accreditation, cascade replication models, and a lack of respect for teachers, is required if the national and regional responses to the initiative are to improve.

International coalitions are required to help countries reach sustainable projects for the future to deal with some of the challenging factors, such as:

- *Cascade model redesign.* International collaboration to scientifically design refined methods, innovative roles for technologies, and an optimal number of involved actors.
- *A deep review of education schools.* Specific online learning services for pre-service teachers, to generate cohorts with digital skills acquired in education schools instead of the traditional in-service training. This can also help raise the respect for teachers and give them an incentive for their involvement in online learning projects.
- *International accreditation system.* The creation of a coalition to help expedite the national processes to validate foreign studies, particularly from online learning, and to define equivalences between online certificates and regular on-site studies.
- *Coordination of international cooperation agencies* to carefully develop systems, contents, methods, and accreditation, to be used with mobile devices for online learning, beyond entertainment.

The prospective approach from Latin America calls for urgent actions from the region to accelerate the rate of exploration and adoption on innovative solutions, keeping pace with advancements in other geographies, but mainly to provide equity and quality for the learning options. The call extends to reformulate policy design and to devise the potential of digital learning at scale for the educational systems in the Global South.

The notion has been repeatedly mentioned; we already have the tools to enable real large-scale learning systems. To help reduce the access and quality gaps, we must scientifically design innovative replication and cascade methods, and we must care for digital content to be designed and delivered with imagination, and take advantage of digital devices. The challenge goes beyond a single local implementation; the need is for intelligent partnerships to yield innovative projects with the inner design for long-term growth.

An international coalition of cooperation organizations, governments, companies, and social agencies focused on technology inception, innovative methods and contents, and service at scale for the Global South is also required.

Although possibilities are open for all ages, themes, and geographies, it will be smart to initiate a teacher professional development service at scale to ensure early mastery of innovative digital tools and methods on the side of teachers, even before they enter active service in schools. Next generations will find natural the use of massive online systems for any purpose.

Having acted on the scale issue, energies can be devoted to the main issue of equity and quality, also deserving innovative approaches. The incorporation of emerging technologies like blockchain into a global accreditation system

can be considered, for example, to support massive courses being offered in any country.

Short-term observations still depict misconceptions and scientific difficulties for scale design, but they allow for mid-term optimism on addressing education issues to find the most impactful technologies and innovations, to ensure continuous progress in adopting them, and to stretch their reach.

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