



# Higher Education Digital Transformation in Latin America and the Caribbean

December 2021

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# ABOUT THIS REPORT

This report presents findings from a study into digital transformation in higher education across Latin America and the Caribbean and provides early insights into how institutions are considering their future in light of the impacts of COVID-19.

This study was completed by HolonIQ with the support of the Inter-American Development Bank and IDB Lab. The purpose of this research was to gain an 'on the ground' view of the key issues facing higher education institutions across Latin America and the Caribbean, and to better understand the impact of COVID-19 on their institutions, their approaches to digital transformation and their vision for the future.

The research, which involved almost 100 institutions across 14 countries, serves as a 'temperature check' for digital transformation in higher education in the region, including the key challenges, capabilities, approaches and needs. These insights contribute to a global picture of the strategic shifts in higher education and how institutions are planning for their future.

It is clear that digital represents an important part of the future of higher education in LAC, but also serves as a touchstone for deeper issues related to the role and relevance of higher education, 'what good looks like in higher education, and the implications of changing learner demographics and needs.

This exploratory study identifies a number of themes and issues which provide insight for those considering digital transformation and serves as a starting point for further research as higher education continues to evolve in LAC.

Sincere thanks to all those who contributed to this project.

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# Methodology

This report draws on a number of data sources and the expertise of education leaders and practitioners across the region.

**Public Research & Data** - Public research reports and data from government and non-government institutions was consulted in the preparation of this report, providing important context for EdTech in the region.

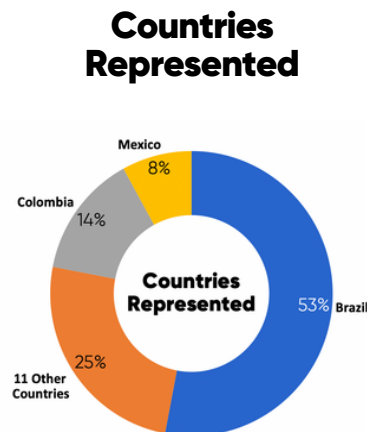
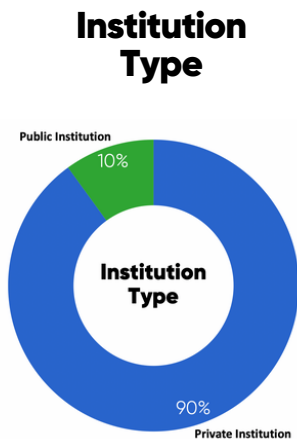
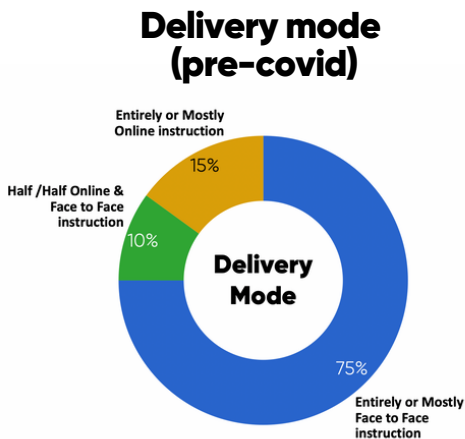
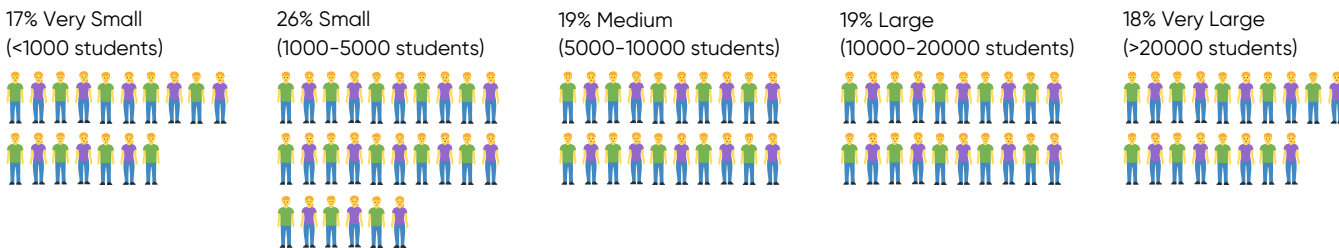
**Stakeholder Survey** - 73 institutions from 14 countries in LAC were represented in the survey. Over half (53%) were from Brazil, followed by Colombia (14%), Mexico (8%), and a broad spread of institutions from Argentina, Chile, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Perú and Uruguay.

**In-depth Interviews** - The project team conducted 16 in-depth interviews in September and October 2021 with leaders and stakeholders from universities and institutions of higher education in the region. The interviews provided additional context for digital transformation at universities and brought to life results from the Stakeholder Survey.

**Proprietary Data** - The project team drew on data from HoloniQ's Impact Intelligence Platform, which included analysis of thousands of market developments related to higher education and workforce training in LAC.

## Institutional Demographics

### Institution Size



"We should leverage what the pandemic brought. It brought a socially complex topic – questioning the role of universities in the change and support of learning and re-thinking the ecosystem at regional and global level".

Vice Chancellor, HE Institution, Colombia

# EXECUTIVE SUMMARY

Higher education (HE) institutions are re-evaluating how learning is designed and delivered. For many, the biggest challenges will be internal change. Others are re-thinking the role of higher education altogether.

As higher education institutions continue to monitor immediate and ongoing impacts of the COVID-19 pandemic, they are facing many choices. Some have been able to take advantage of opportunities arising from disruption, building on foundations which were already in place. Others are focused on recovery and re-building before they consider future development and innovation. All agree that the future is heading in a different direction than pre-COVID and that digital transformation is a key part of the future.

## **Institutions are optimistic, but aware of the challenges to come.**

There is a surprising degree of positive sentiment among higher education institutions, despite the devastating impacts felt across the region from the global pandemic. Institutions are aware that the experiences of students and the world of work during the pandemic are likely to have changed assumptions and attitudes towards different kinds of learning experience, breaking down barriers but also creating new expectations of education providers. Some are already making moves to respond to these evolving challenges; others will need time to recover, adjust and plan strategically for change across the institution.

## **Higher Education in LAC will not return to pre-pandemic norms.**

It is clear that COVID-19 has acted as a catalyst for change in both higher education and in the world of work. At institutions of higher education across Latin America and the Caribbean, there has been a shift in thinking about what is needed going forward, with greater emphasis on digital and blended delivery. Very few expect a return to previous delivery models in the same formats as before.

## **The advantages of accelerated innovation through COVID were not distributed evenly across HE.**

As with many aspects of the pandemic, its impact was felt in different ways across higher education institutions, and in different countries in the LAC region. Those who were already in a strong position with favourable policies, digital product and program development were able to leverage strategies and infrastructure already in place, responding quickly and relatively seamlessly. They are now looking to build on the experience and plan for future scale and innovation.

Institutions with less developed digital programs and capabilities have had to focus more on survival than development during this time. Whilst there may be some optimism about the future, they are more likely to look to the return of pre-pandemic and traditional models for growth, rather than digital innovation.

"Face-to-face is important in the student's education process, but we will format different products to suit this new reality, like the hybrid model - there will be no going back for students."

## Digital transformation is identified as very important, and currently a key capability gap.

Higher education institutions in Latin America and the Caribbean know that 'digital' and online learning will be critical to the future of their institution, from marketing and recruitment to program delivery and learner experience. Whilst digital transformation is assessed as 'very important' by 3/4 of higher education leaders surveyed for this report, only 1/4 rated the digital maturity of their institution as 'very high' - revealing a 'digital capability gap'. This will need to be addressed if universities are to meet expected future needs in digital.

## Higher education institutions are re-thinking student experience, but within traditional frameworks.

With continued pressure on student access, enrolments and retention, institutions are seeking to understand learner needs and expectations across the whole learner journey to support recovery and future growth. There is openness to new ideas and optimism about the potential for digital solutions to emerging challenges. At the same time, the majority of institutions remain anchored to degree programs and traditional, formally accredited credentials. There is awareness of new and alternative models, but for the most part, these do not form a large part of future strategic plans.

## Institutional change presents the biggest challenge to digital transformation.

With digital transformation well underway in higher education, driving and managing institutional change is a constant. Identifying technology solutions is just the beginning; the bigger challenge is to bring stakeholders along and build digital maturity in attitudes and capabilities as well as systems and processes.

Successful digital transformation requires a cross-functional, whole-of-institution approach, supported by careful change management, consultation and strong leadership. For many, digital transformation has been a reactive response to changing external circumstances, which now needs ownership across the institution and ongoing support to build capability and sustainable solutions.

## Increasing awareness of workforce and employability needs now demands action.

Changing workforce needs and student employability are noted as key challenges by institutions; many are aware that governments and employers are demanding more relevance and efficiency from higher education to respond to key skills gaps, especially in emerging areas and digital industries.

Many are still looking to traditional graduate employability models and career services for solutions. Some are fostering stronger partnerships with industry to facilitate better opportunities for graduates; only a few are focussing earlier in the learner lifecycle to aspects of program design, skills building and work integrated learning.

"Beyond being a traditional institution, we are becoming a platform where we connect our students, alumni - we want to integrate this network of collaborators and become a hub for interconnectivity."



# Context for Higher Education

# Higher Education in Latin America & the Caribbean

"We still have a long road to travel before having universal access to higher education in Latin America and the Caribbean. This is despite the fact that access has more than doubled in two decades."

Francesc Pedró, Director of the UNESCO International Institute for Higher Education in Latin America and the Caribbean

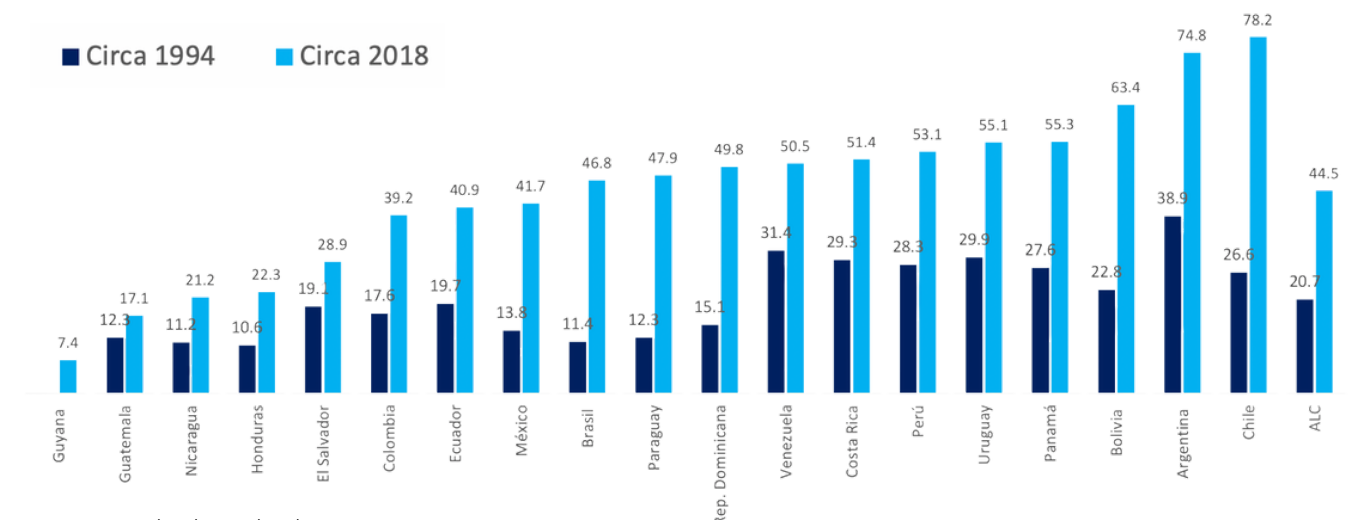
There are approximately 30 million students studying 60,000 programs at 10,000 Higher Education (HE) institutions in Latin America and the Caribbean. It is a hugely diverse region with significant differences between countries in terms of public versus private institutions, regulation and funding, the local economic situation, the impact of the COVID-19 pandemic and how it is being managed in each economy.

Access to higher education continues to be a focus in the region and there has been significant progress in participation with gross enrolment rates more than doubling since the mid 1990's (1994: 20.7%; 2018: 44.5%) However, this is largely driven by increases in secondary education graduation rates, an expansion in the number of higher education institutions and programs, (2,300 new HEIs and 30,000 new programs, with 25% of current HEIs and 50% of current programs created since the early 2000s), demand-side policies such as student loans and scholarships as well as an increased spend on education as a proportion of GDP.

Higher Education systems across LAC face considerable challenges related to equity - access to higher education is below 10% in the lowest income percentile compared with 70% in the highest ones and disadvantaged ethnic groups are 15% less likely to access higher education. Weak quality assurance systems, poor student retention and misalignment to workforce needs are also key issues in LAC HE.

COVID-19 has exacerbated issues in the higher education systems in LAC and, while most institutions were completely unprepared for the immediate move to digital and longer term implications, many are also embracing the opportunity for digital transformation.

## Gross enrolment rate (%) in Higher Education LAC (1994 and 2018)



Source: IDB, Levy (1995), CIMA (2019)

## Participation in Higher Education has risen substantially with high proportion of private institutions and expanded supply.

The higher education system in LAC has grown exponentially over the last two decades, with gross enrolment ratios more than doubling between 2000 and 2018, giving the LAC region the third-highest average HE enrollment rate globally after North America (86%), Europe and Central Asia (70%). Brazil, Chile, Colombia and Venezuela have led enrollment rate increases with growth of over 30 percentage points over 15 years.

Secondary & HE level enrolment rates increased dramatically in recent years, but dropout and repetition rates have also risen. Almost 80% of the increase in enrolment rates in higher education in LAC can be attributed to increased graduation rates in secondary education, rather than increased entry rates among secondary graduates.

Increasing government spend on education as a proportion of GDP has contributed to a massive expansion and diversification of institutional supply in higher education, with many new institutes and thousands of new programs offered.

In Latin America, enrolment in private HE institution's account for almost half of all enrolments. In Brazil, Costa Rica, El Salvador, Honduras, Nicaragua and Peru, it is over 60%. 80% in Chile and Paraguay.

## Increased supply and participation has not led to material improvement in outcomes.

Despite more institutions, programs and enrolments, the region has not seen a material improvement in core economic areas such as productivity, closing the skills gap or graduate employment.

Completion rates remain a significant challenge and are likely to be exacerbated by the impact of COVID-19. Only Mexico and Peru have a higher education completion rate near that of the US (approx. 65%) and the pandemic's disruption to learning and assessment is likely to delay student transition and graduation even further. As in other parts of the education system globally, students from low-income backgrounds, who are more susceptible to dropping out, will be disproportionately impacted.

Sources: IADB; OECD; UNESCO; World Bank

## There has been limited digital adoption until recently.

With the exception of Brazil, Colombia, and Mexico, the incorporation of technologies into tertiary education systems in the region remains low and has primarily focused on improving administrative processes rather than instructional strategies or learning processes.

LAC has lower rates of digital technology adoption than similar countries in the OECD generally. With the price of technology in LAC among the highest globally, there has been a reluctance from institutions to mandate or incorporate digital delivery in teaching and learning.

## Equity and access issues persist in higher education.

Women's participation in HE is high, having increased from a gross rate of 19% in 2000 to 41% in 2018. However, enrolment of women in STEM degrees lags behind, translating directly to disadvantage in jobs and lower earning capacity.

University enrolment also tends to increase with the rise of GDP per capita, with those in urban areas 22%-35% more likely to attend higher education than their rural counterparts, exacerbating disadvantage for people in lower income brackets in rural areas. Moving to online or distance learning through the pandemic further exacerbated this disadvantage for lower income families that are also less likely to have stable access to internet or technology devices at home.

"Many students have unstable connections or devices that can't support some technology or platform. We have to make it accessible."

Senior Executive, HE Institution, Mexico

"The educational institutions that have not managed to update themselves will unfortunately disappear. As many sectors will continue to evolve - I think that the biggest change will be lifelong learning".

CEO, HE Institution, Colombia

## **LAC has a severe skills gap and HE qualifications are not clearly linked to workforce needs.**

Latin America and the Caribbean reportedly has one of the most severe skills gaps globally, with employers in the region experiencing greater difficulty filling positions than in other parts of the world. At the same time, those with higher education qualifications find it hard to get jobs in their studied occupation.

Higher education leaders identify that the top challenge for preparing students for future employment is building relevant job skills, however the structure of degree programs has not changed, sometimes taking 5-6 years to complete.

Higher education, traditionally a 'supplier-led' model, is struggling to ensure that the content and format of its programs are relevant to today's learner and tomorrow's workforce.

## **Fast-growing occupations are in digital and services.**

As economies and work changes, so do skills needed in growth areas. In LAC, occupations related to the digital economy and services are fastest growing and demand for advanced digital skills, such as web and software development, data analytics and application development is also increasing.

These structural shifts in jobs and skills require new types of education, delivered in new ways that allow for constant updates throughout a career. Traditional higher education models are not set up for either and must 're-tool' in order to stay relevant.

## **COVID-19 may be catalyst of change for a chronically under-trained workforce.**

Persistent skills gap and an inadequately trained workforce in LAC has been an issue in the region for over a decade and represents a major constraint to economic development.

The COVID-19 pandemic, which has been devastating for both education and jobs, may prove to be a catalyst for significant change in higher education and a re-alignment of the education-work nexus in the post-secondary sector.

# Strategic Shifts in Higher Education Globally

"The most impactful trend is a high-quality distance education model, with great interaction, with a more personalized learning experience, the usual degree combined with micro degrees."

Dean, HE Institution, Brazil

Through its work with higher education institutions globally and analysis of a vast amount of market data, HolonIQ has identified 4 key drivers for change, or 'strategic shifts' which are likely to have the greatest impact on higher education in a post-pandemic context. These changes will be the 'form' of the university education product (the degree program) and the way in which that product is delivered to market (digital or face to face), the shape of the industry in which universities are located and who are its competitors, along with the changing customer (learner) profile and their evolving needs.

## **Strategic Shift 1 - New Credentials**

New forms of credentials are gaining acceptance and becoming codified within national qualifications frameworks.

## **Strategic Shift 2 - Education-Work Nexus**

There is increasing pressure, from students, employers and governments, for greater integration between learning and work.

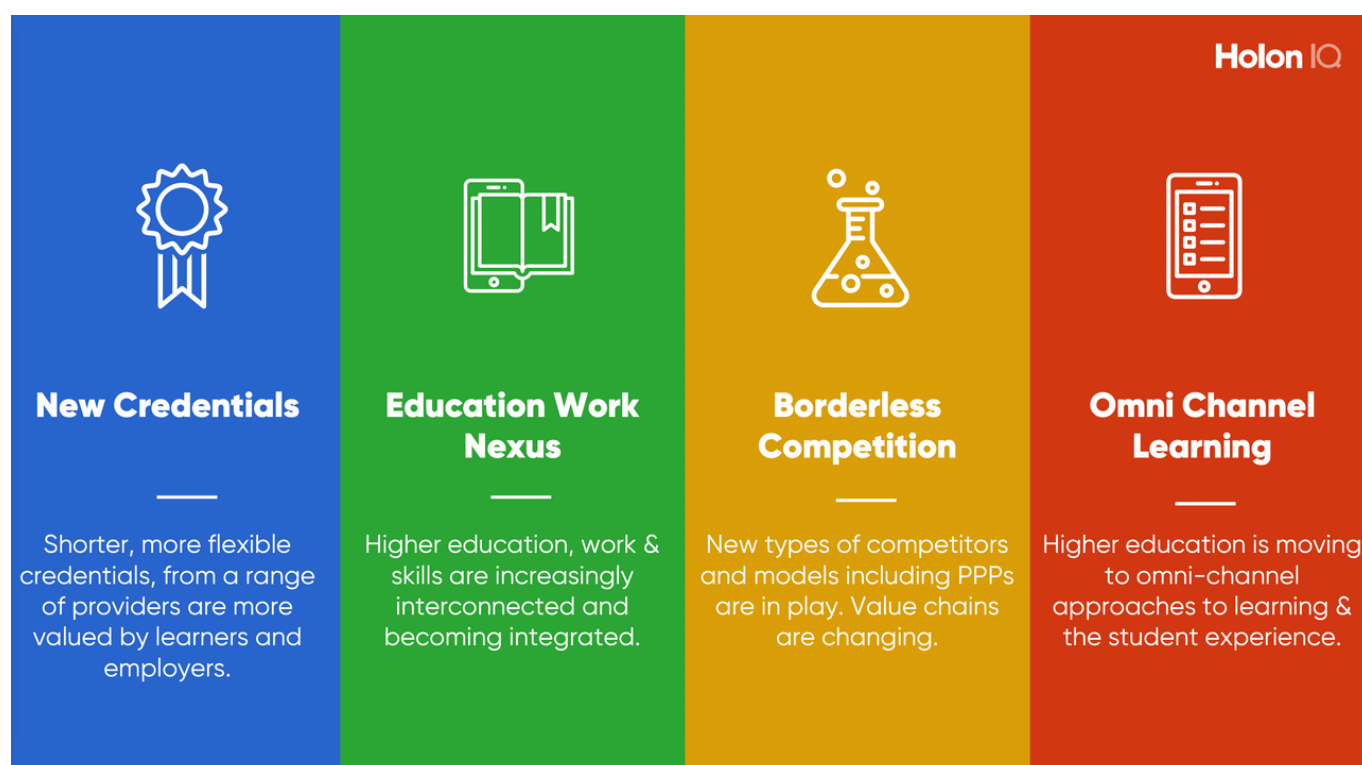
## **Strategic Shift 3 - Borderless Competition**

Education is increasingly delivered and recognised by a range of non-traditional providers.

## **Strategic Shift 4 - Omni-Channel Learning**

The hard lines between digital and face-to-face learning are blurred. Students expect flexibility to move between modes as it suits them.

## 4 Strategic Shifts in Higher Education



## Institutions in LAC align most with Strategic Shift 4, Omni-Channel Learning.

When asked about the impact of trends on their institution, the two top responses - hybrid, personalised and adaptive learning - underline a focus on more immediate issue of servicing their student needs and experience with digital or online solutions (Omni-Channel Learning). Institutions are not focusing on, or aware of the impact of other competition for students, (providers or other credential types) entering the competitive landscape.

## Institutions are focusing on internal transformation, rather than broader market shifts, new credentials or partnerships.

Broadly speaking, higher education institutions are looking to current program structures for digitization and growth, rather than focusing on new models and credentials. Degree programs are the 'currency' of value, and efforts are focused on recovery and future solutions based around these traditionally accredited product structures.

Emerging alternative credentials are given much less importance compared to other regions around the world. For institutions in LAC, micro-credentials, OPM, Bootcamp and MOOC models are not expected to have a significant impact on institutions compared to more 'immediate' trends like hybrid and personalised learning.

## Delivering high quality online and blended experiences is a focus.

Online, blended and hybrid learning modes are very much part of current and future thinking for institutions. Acknowledging the challenges of technology access for all, many have seen benefits in widening access and flexibility for learners, and are certain that there will be no return to learning in its previous traditional forms.

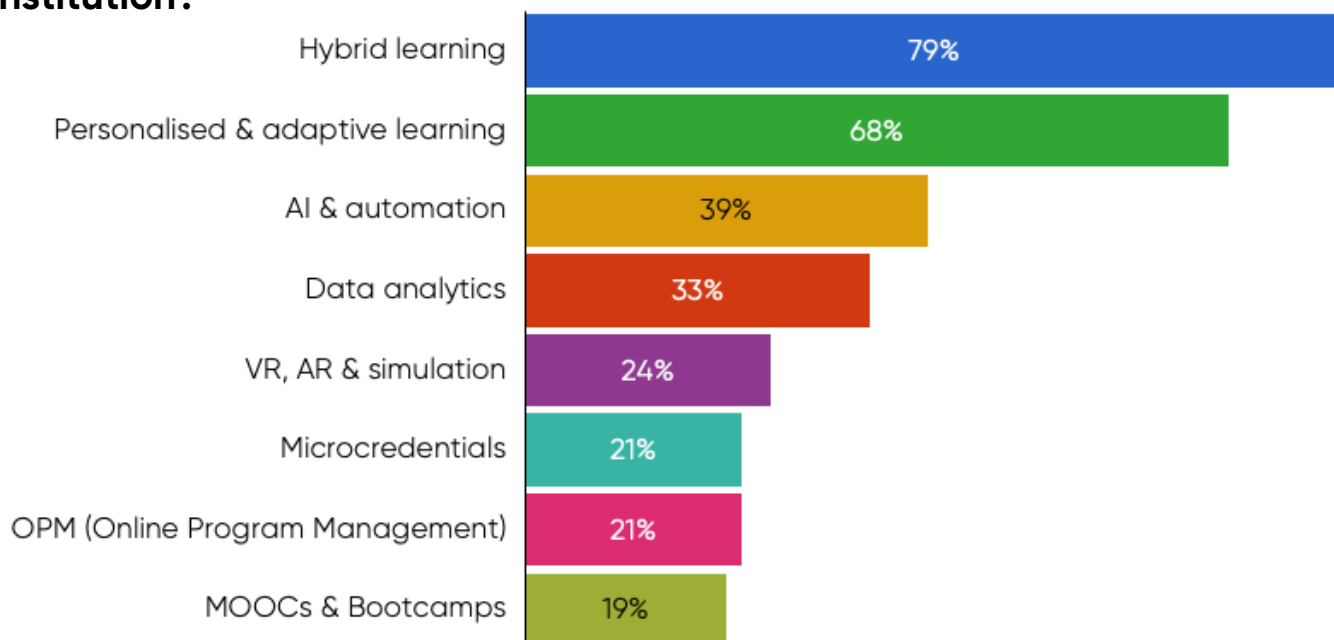
## Data and analytics will impact institutions' future success.

Better use of learning data, and the integration of artificial intelligence was identified by almost 40% as an area that will impact their institution. The practice of using data to inform learning design, student intervention, and even product decisions is generally not well developed in higher education, but will need to be developed to deliver better outcomes in the future.

## Strategic Shift 4, Education-Work Nexus is top of mind, but solutions are in early stages.

Work and employability are top of mind for many institutions, but solutions are still in early stages. Universities are thinking of becoming more actively a hub for employability and extending their services more formally into student placement. The challenges of deeper integration between industry and higher education are not lost on institutions and, for now, the bundled degree program remains intact.

## Which digital trends will most impact the future success of your institution?



# Key challenges for institutions in LAC

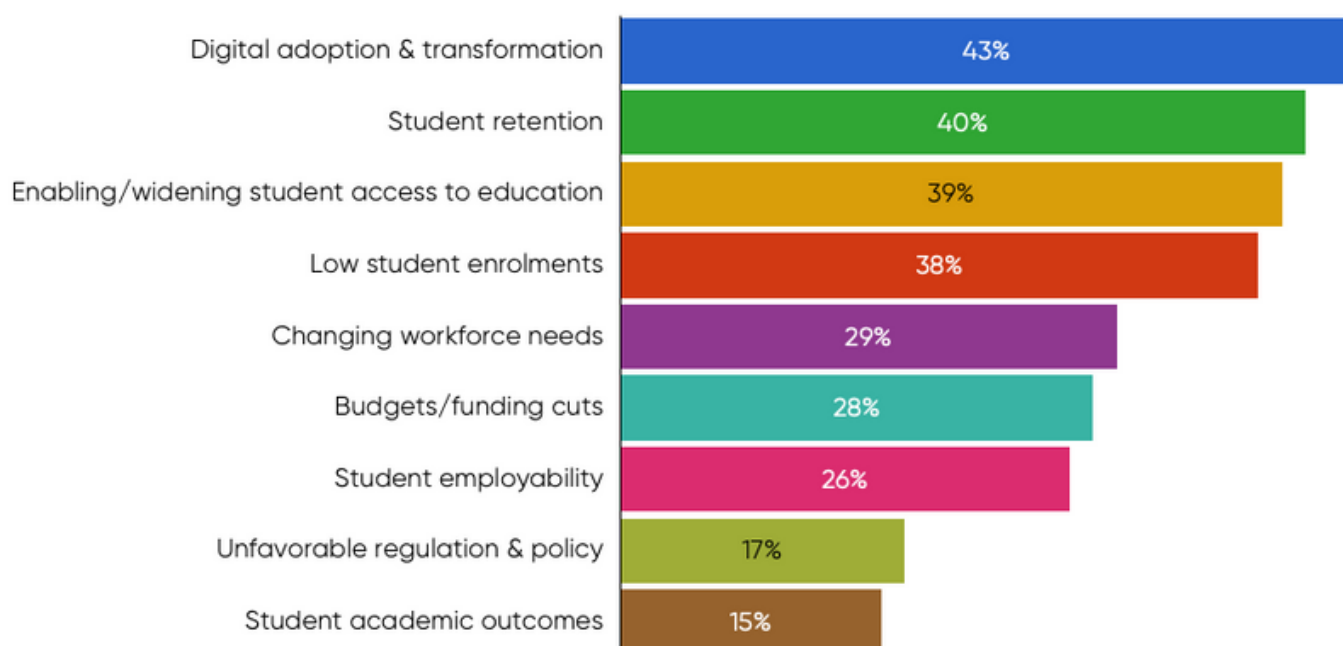
"We are lacking a pedagogical structure that aligns to a new reality post-pandemic, where the student is not quite close to universities as they used to be."

Dean, HE Institution, Colombia

Higher education leaders are in no doubt about the magnitude and the diversity of the challenges ahead for their institutions. Digital adoption and transformation is top of mind, with a need for strong leadership and a connected approach across the institution. Digital transformation strategies are also competing with shorter-term tactical priorities and immediate needs as institutions continue to re-build and recover from the impacts of COVID-19, which have been felt at many levels of the organisation.

These immediate needs are also reflected in perceived challenges relating to student access, low enrolments and student retention in higher education institutions. With direct impacts on the bottom line, there is a clear imperative to understand and quickly respond to changing student needs and expectations. In some cases, this is prompting a re-evaluation of the student experience across the whole learner journey.

Institutions are also aware of increasing pressures from governments, employers and learners to provide solutions to workforce skills gaps across the region. Changing workforce needs bring new expectations of education providers to track trends and respond with relevant programs, with different learning modes and delivery formats. Challenges here are not only with the traditional careers services and industry relationships but also in the design of programs and work-integrated aspects which prepare students and facilitate employability in a changing world of work.



"It is always possible to do better, to reach a new phase of what we call data-driven. It is necessary to have patience and persistence, collecting data and improving the student's journey is essential."

Dean, HE Institution, Brazil

## **Digital transformation remains the top priority.**

Digital transformation challenges are different for everyone, but the topic is high on the strategic agenda at institutions across the LAC region. In some cases, digital strategies are still emerging and compete for attention and funding with many other institutional priorities. Others are implementing digital solutions in some stages of the learner lifecycle, with particular challenges in some areas more than others.

Institutions in more advanced phases of digital transformation are connecting digital strategy across the whole learner lifecycle. Challenges for these institutions include how to scale successful strategies, where to deepen capability and where to expand into new models and innovations.

## **Challenges continue for student access, enrolments and retention.**

Whilst student enrolment numbers may not have fallen as much as expected during the COVID-19 pandemic, challenges around student access, low enrolments and retention are still top of mind for many. Institutions see student needs and expectations changing, breaking down barriers to online learning but also raising the bar for quality and delivery.

Higher education leaders are aware that the whole 'customer experience' for students may need to change, from marketing and recruitment processes to learning design, learner experience and career outcomes. Attracting and retaining students in a competitive global landscape is a daunting prospect for some.

## **Enabling student employability in a changing world of work.**

Connecting higher education and work is more important than ever, with increasing pressure from employers, governments and learners themselves. Challenges noted here are diverse, from tracking and understanding fast-moving industries and reflecting new skills in products and programs, to student and employer expectations for internships, placements and career outcomes. Many institutions are re-thinking what is needed for better industry engagement and to provide the right opportunities for graduating and lifelong learners.



# Digital Transformation

# Digital Transformation in Higher Education

"It's not about having the latest technology or buying devices – digital transformation starts with mentality and it should be to transform the educational institution."

Dean, HE Institution, Colombia

Across the world, higher education institutions are grappling with the short-term demands of providing effective online learning for their current students, as well as building a future model for education that aligns with their purpose and values, and which services the future needs of society.

That future is likely to be digital at the core, more integrated with industry and jobs, and set within a much more competitive global landscape of educational options.

Transformations of this sort are generally very difficult as the traditional university model is challenged at many levels, including how core offerings are conceptualised, designed and delivered, the role of faculty, and mechanisms for supporting students.

Higher Education institutions in Latin America and the Caribbean are focused on supporting their students and keenly aware of the imperative to connect better with the knowledge and skills needed for the future, as well as support a better 'digital student experience' today.

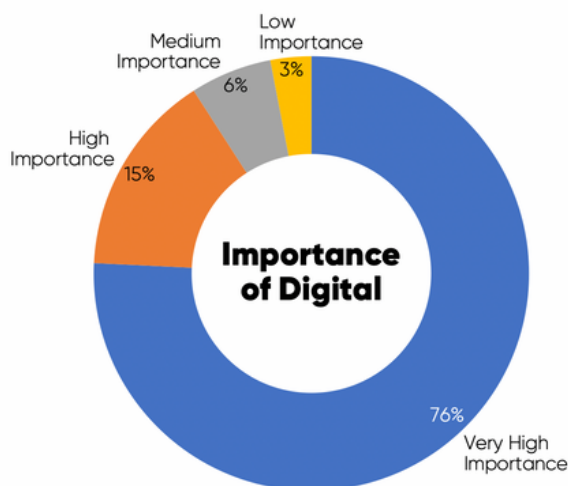
Digital transformation is identified by higher education leaders as being more about people, culture and organizational change than technical implementations, and most if not all, are already on a transformation journey.

Accelerated by the pandemic, the imperative for change is well recognized, however, barriers related to digital capabilities and organizational culture remain. There are opportunities for institutions to learn from each other's progress and experiences with digital transformations, both from the region and globally.

# The importance of digital. Current State Assessment.

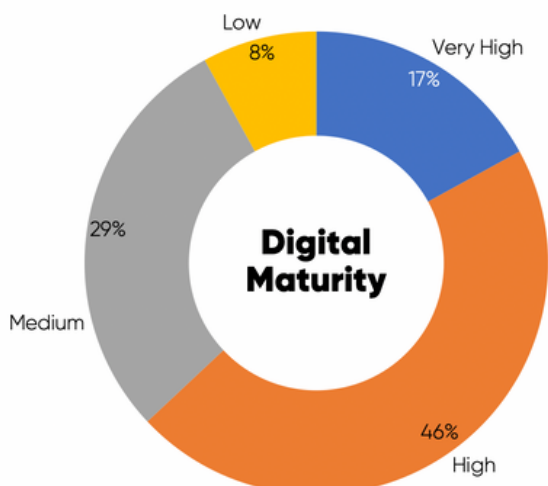
**90% of institutions rate digital and online learning of high or very high importance to the future of their institution.**

How important is digital and online learning to the future of your institution?



**However, an assessment of digital maturity identifies a 'digital capability gap' for institutions.**

How would you rate the overall digital maturity of your institution?



Almost all respondents identified that digital and online learning was of very high (76%) or high importance (15%) to the future of their institution. This focus cut across institutional size, geography and whether or not their institution delivered predominately online or on campus prior to COVID.

The results clearly show that higher education institutions in Latin America and the Caribbean know that 'digital' and online learning will, in one way or another, be critical to how their institution operates, how it delivers educational programs and experiences, and how it interacts with learners in the future.

At the same time, institutions have assessed their digital capabilities less highly than the importance of digital to their institution, revealing a 'capability gap', which will need to be addressed if universities are to meet expected future needs in digital.

The group of institutions that assessed their digital capabilities as 'very high', all rated digital as of 'very high' importance to their institution. Each of these institutions also identified that their university was either the same or better off than prior to COVID, indicating resilience to external change among this small group. Notably, two-thirds of this group were predominantly delivering programs in face-to-face formats prior to COVID, meaning that these universities already had inherent digital capabilities which could be rapidly deployed for online delivery, or very quickly 'built, partnered or bought' digital capabilities in order to service students through COVID.

Conversely, for those institutions that assessed their digital skills as medium or low (37%), almost all (89%) teach mostly face to face, and 40% indicated they are in a worse position than before COVID. For this group, the digital capability gap is wide, with 60% rating their capabilities as medium or low, but digital and online learning as 'very important' to the future of their institution.

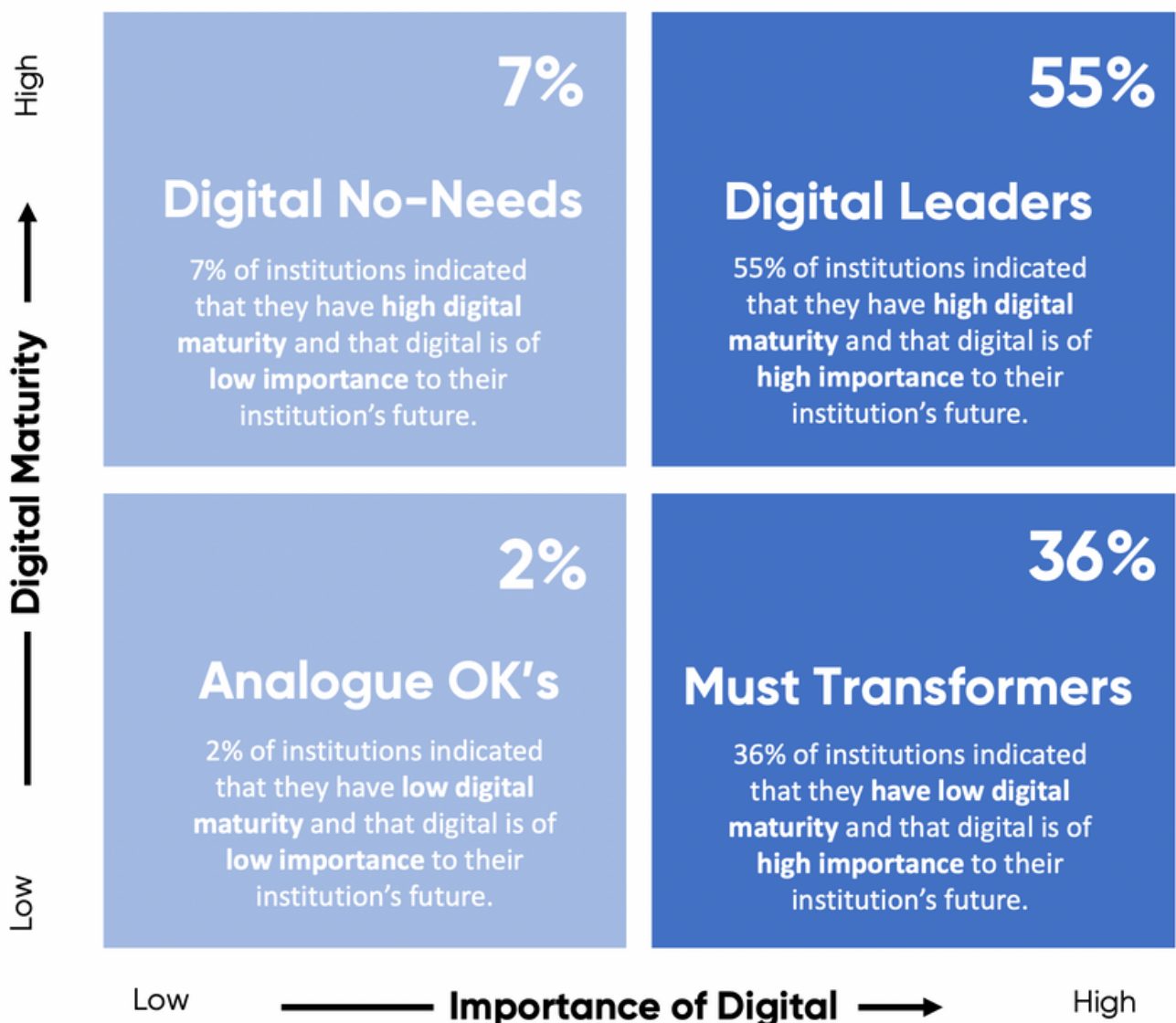
# Digital Maturity and Importance Matrix.

When overlaying the importance of digital alongside the digital maturity of institutions, an interesting picture emerges with the top right quadrant being those institutions with high digital maturity and digital need (Digital Leaders).

Somewhat surprisingly, 60% of the Digital Leader group delivered wholly or mostly face to face prior to the pandemic, indicating that they were already building out digital capabilities, or are overestimating their institutions' digital maturity.

Nonetheless, this Digital Leaders group potentially represents a cohort of mentors, guides and supporters for other institutions with less mature digital capability.

The lower right quadrant of the matrix (Must Transformers) consists of institutions that have identified digital as of high or very high importance to their institution's future, along with a lower digital maturity. The Must Transformers make up over one third of the total and have the largest gap to fill with respect to digital transformation.



# Barriers to Digital Transformation.

"I see discussions of digital transformation where the focus is on technology rather than culture, which is not the case. To implement real Digital Transformation, it must be built from the inside out."

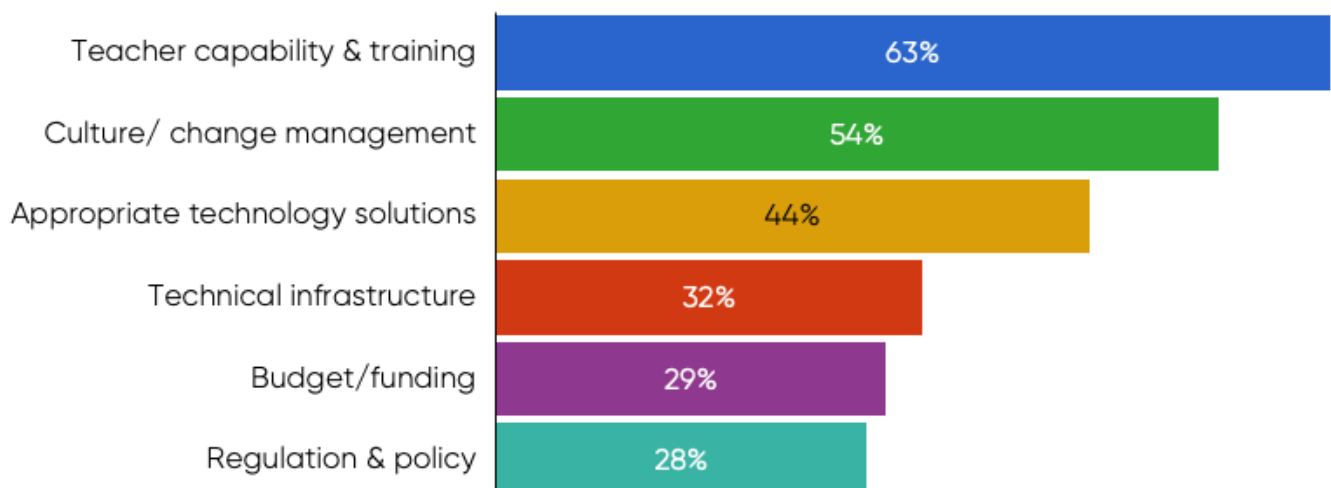
CFO, HE Institution, Brazil

The critical role of faculty and staff in any digital transformation effort cannot be underestimated and has been highlighted by LAC higher education leaders with two thirds calling out teacher capability and training, and over half identifying culture and change management as the biggest barriers to improving digital and online learning at their institution.

The identification of these top two barriers highlights that undertaking organizational transformations, particularly digital, which threads through all levels of an organization, its processes and mindset, is primary a 'human' rather than a 'technology' issue.

However, technology is part of a digital transformation and institutions have identified that the right technical infrastructure is required along with the appropriate technology solutions. Knowing which technology platforms or tools fit best with which instructional or learner need is a critical component to achieving good outcomes in a transition to digital, and this in turn requires staff knowledge and skills in order to be able to appropriately assess educational technologies.

## What are the top barriers to improving digital and online learning at your institution? (multi-choice response)



# Context plays a role in barriers to digital.

"Before the pandemic we were strengthening tech infrastructure and multi-modality. We worked with the Ministry of Education to register online programs. These initiatives supported the implementation of remote learning".

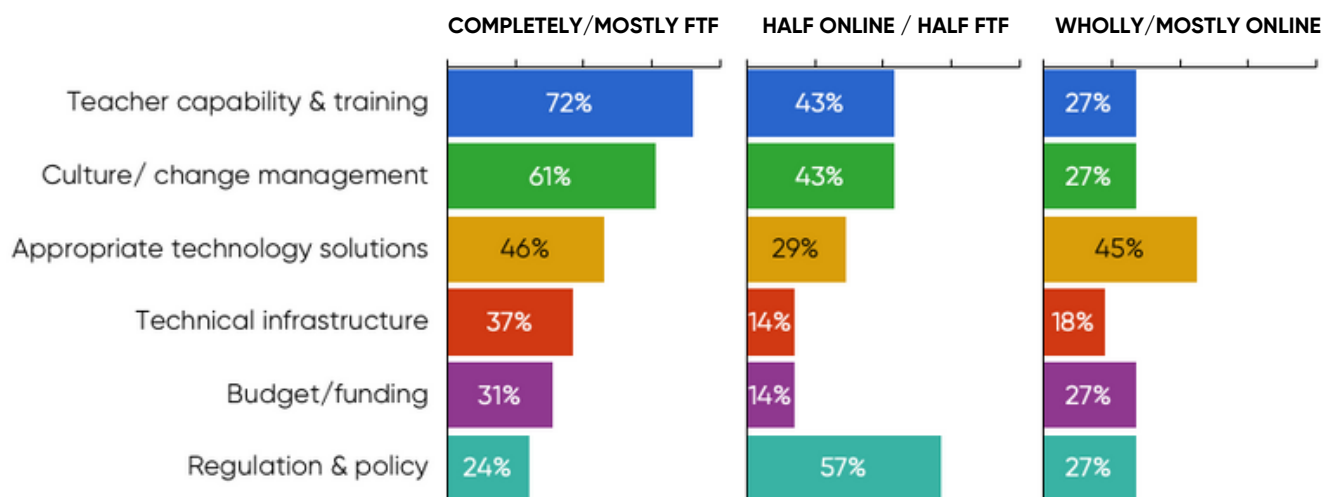
Vice Chancellor, HE Institution, Colombia

Context matters when it comes to identifying barriers to digital with those institutions that were mostly or fully teaching in face-to-face mode prior to the pandemic identifying capability and organizational culture as top barriers.

However, for institutions that were already delivering in an online format, identifying appropriate technology solutions was the top barrier to improving online learning. This is indicative that decisions about EdTech tools and technology solutions need to be continuously monitored and updated for online environments.

The middle group of institutions that delivered half online and half face-to-face prior to the pandemic had yet another profile when it comes to barriers for digital. Perhaps in 'mid transformation', these institutions identified regulations and policy as their greatest barrier, perhaps alluding to the difficulty often experienced with regulatory 'red tape' when it comes to getting individual programs approved for online delivery.

## What are the top barriers to improving digital and online learning at your institution? (by delivery mode pre-pandemic)





# A Framework for Digital Capability development.

The Higher Education Digital Capability Framework (HEDC) is a learner-focused, practical and flexible approach to mapping and measuring digital capability in higher education institutions.

The Higher Education Digital Capability framework is an open source taxonomy that identifies four core dimensions along the learner lifecycle: Demand & Discovery (DD), Learning Design (LD), Learner Experience (LX) and Work & Lifelong Learning (WL). Within these are sixteen capability groups or 'domains', with more than 70 capability blocks adding a further level of detail.

Informed by academic research and with input from higher education leaders globally, the HEDC Framework offers an overarching view for institutions to map and measure digital capabilities across the learner lifecycle, ultimately to support practical and sustainable approaches to digital services and online learning.

The framework has been used by institutions globally to self assess and benchmark digital capability and support their transformation efforts. It is designed to allow flexibility and interpretation in context, with some institutions using all capability blocks whilst others focus on a more specific set of capabilities applicable to their individual context.

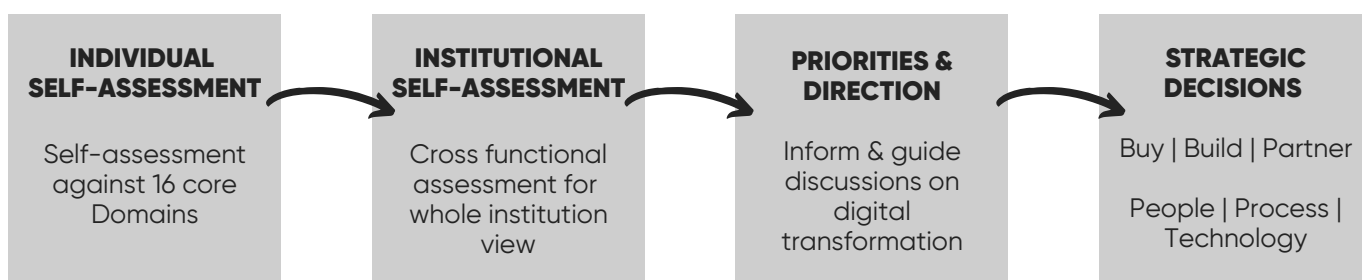
## Higher Education Digital Capability Framework (HEDC). An open-source framework to support higher education digital transformation.

DEMAND AND DISCOVERY (DD)				LEARNING DESIGN (LD)				LEARNER EXPERIENCE (LX)				WORK & LIFELONG LEARNING (WL)			
PRODUCT STRATEGY	MARKETING PROCESSES	STUDENT RECRUIT.	ENROLMENT MGMT	CURRIC. DESIGN	DIGITAL CONTENT & C'WARE	SUBJECT MATTER EXPERTISE	TEACHING STRATEGIES	ACADEMIC ADMIN.	LEARNING & ACADEMIC EXPERIENCE	STUDENT LIFE	ASSESS. & VERIFY	WORK INTEGRATED LEARNING	CAREER PLANNING & PLACEMENT	INDUSTRY & BUSINESS ENGAGE.	ALUMNI & CONTINUING EDUCATION
1.01	2.01	3.01	4.01	5.01	6.01	7.01	8.01	9.01	10.01	11.01	12.01	13.01	14.01	15.01	16.01
MARKET INSIGHTS & TRENDS	STUDENT CRM	RECRUIT. EVENTS	COURSE SELECTION & GUIDANCE	DIGITAL DESIGN PRINCIPLES	DIGITAL CONTENT CREATION	DESIGNING FOR DIGITAL LEARNING	LEARNER NEEDS & ANALYTICS	FACULTY PROF DVLP	STUDENT PORTAL & LMS	ONBOARDING & ORIENTATION	TESTS & EXAMS	JOB SKILL BUILDING	EVALUATE SKILLS	INDUSTRY COLLAB & P'SHIPS	CONTINUING EDUCATION
1.02	2.02	3.02	4.02	5.02	6.02	7.02	8.02	9.02	10.02	11.02	12.02	13.02	14.02	15.02	16.02
CUSTOMER NEEDS	COMMS & CAMPAIGN MGMT	CHANNEL P'SHIPS	APPLICATION & ADMISSIONS	PROGRAM STRUCTURE	IMMERSION, SIMULATION & LAB	FACULTY EXPERTISE & SPECIALISMS	DESIGNING ASSESSMENT	FACULTY MGMT & SUPPORT	SYNCH. LEARNING	WELLBEING & MENTAL HEALTH	PORTFOLIOS & PRACTICAL	WORKPLACE SIMULATION & PROJECTS	CAREER PLANNING SERVICES	PROF & INDUSTRY ASSOC.	INDUSTRY MENTORING
1.03	2.03	3.03	4.03	5.03	6.03	7.03	8.03	9.03	10.03	11.03	12.03	13.03	14.03	15.03	16.03
COMPETIT. & ALTERNATES	MARKETING AUTOMATION	SCHOOLS & COMMUNITY OUTREACH	RECOGNIZE PRIOR LEARNING	LEARNING ENVIR. & PLATFORMS	DER & CONTENT LICENSING	SOURCING & MANAGING EXPERTISE	EXPERIENTIAL LEARNING APPROACHES	TIMETABLING & SCHEDULE MGMT	ASYNCH. LEARNING	STUDENT CLUBS & SOCIETIES	ASSESSMENT FEEDBACK	INTERNSHIPS & PLACEMENTS	CAREER & RECRUIT EVENTS	CUSTOMIZED PROGRAMS (B2B)	ALUMNI ENGAGE.
1.04	2.04	3.04	4.04	5.04	6.04	7.04	8.04	9.04	10.04	11.04	12.04	13.04	14.04	15.04	
NEW BUSINESS MODELS	SOCIAL MEDIA	SCHSHIP PROGRAMS	TUITION FINANCING	LEARNING DELIVERY MODELS	MANAGING INTEGRATED CONTENT	SPECIALIST INDUSTRY PARTNERS	DESIGNING GROUP WORK	RETENTION & LEARNING SUPPORT	INTERACTIVE LEARNING & SERVICES	VOLUNTEER & STUDENT L'SHIP	PEER & GROUP ASSESS.	STUDENT WORK	JOB APPLICATION SUPPORT	EDUCATION AS EMPLOY. BENEFIT	
		3.05		5.05			8.05	9.05	10.05	11.05	12.05	13.05	14.05		
		B2B RECRUIT. & P'SHIPS		ACCREDITAT			PERSONAL & ADAPTIVE LEARNING	REGULATORY COMPLIANCE	LEARNING RESOURCES	STUDENT VOICE & SURVEYS	BADGE & CREDENTIAL	ENT'SHIP & STARTUPS	JOB FINDING & GRADUATE PLACEMENT		
				5.06					10.06	11.06	12.06				
				CURRICULUM QUALITY MGMT					LIBRARY SERVICES	EXCHANGE PROGRAMS	GRADUATION & SUCCESS				



# Using the Framework to inform and guide strategy.

The Open-Source Higher Education Digital Capability (HEDC) Framework identifies the key digital capabilities required across the whole student lifecycle. The 4 Dimensions, 16 Domains and 70+ capability blocks can be used as a unifying structure for cross-institutional discussion, evaluation and benchmarking activities, and to guide strategic decisions on digital services and solutions.



Source: HolonIQ

## Identify, evaluate and benchmark digital capabilities.

The Framework provides a connected view across the whole learner journey for strategic discussions, supporting alignment and shared language across diverse functions and institutional specialisms. This process helps to surface and challenge assumptions and legacy ideas about digital strengths, gaps and priorities for the institution.

The self-assessment tool accompanying the framework can be used for individual reflection, institutional benchmarking and external benchmarking activities. Individuals rate digital capabilities in terms of current performance and future importance to the institution; when responses are aggregated across multiple functions and stages of the learner lifecycle, institutional capability gaps and opportunities can be analysed in a holistic way.

At a regional level, benchmarking shows that Institutions in LAC have traditionally been focused on the design and delivery of academic programs (Learning Design and Learner Experience) and know this area well. For digital futures, they have identified Demand and Discovery (finding students, understanding market demand) and Work and Lifelong Learning (jobs, internships, integration with industry) as areas most in need of improvement in terms of digital capability.

## Guide strategic priorities and decision-making for digital.

When capability gaps and potential opportunities have been identified, the framework and benchmarking can be used to inform and guide strategic priorities and decisions. Significant digital capability gaps in an area of strategic growth, for example, might inform a decision to buy or form a partnership with an external provider to grow or deliver that capability.

The Framework's whole-of-institution view also highlights the 'people' and 'process' requirements of transformation, aspects which are crucial to the successful implementation of digital solutions. More information at: [digitalcapability.org](http://digitalcapability.org)

The Higher Education Digital Capability Framework is a tool to trigger conversations about digital transformation.

# Assessment of digital along the learner lifecycle.

"We would like to offer digital experiences are engaging and relevant for students."

COO, HE Institution, Mexico

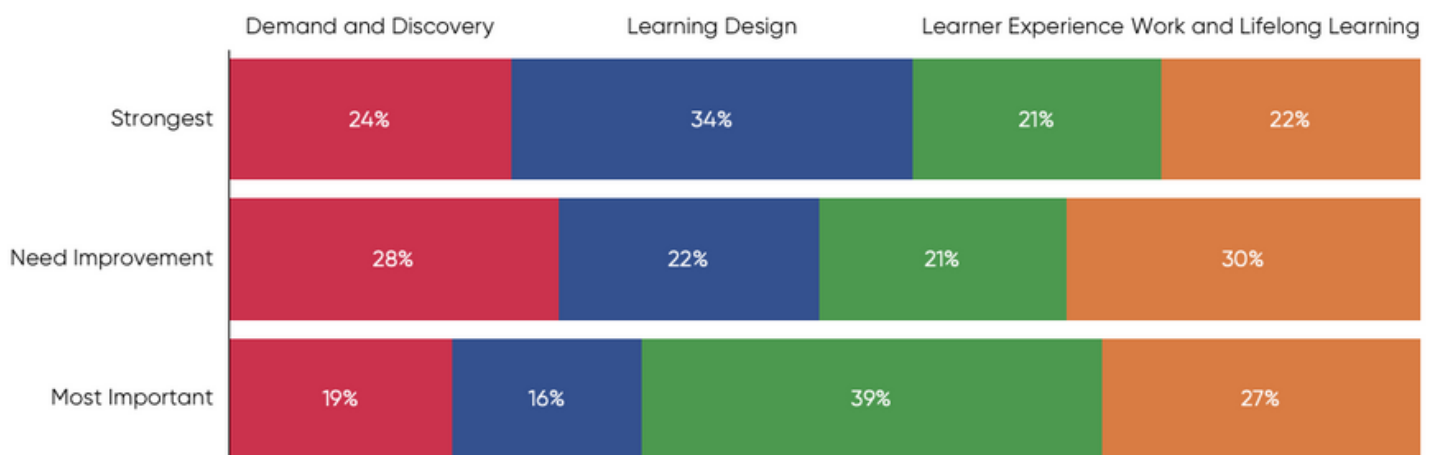
## Learning Design is strongest, and learner experience most important.

Institutions in LAC have identified Learning Design as their strongest area of digital capability, which matches sentiment from universities around the world, where the design and creation of education programs is central to the academic enterprise. However, institutions in LAC are concerned about learner experience in a digital future, and see this as a the most important digital capability to develop at their institution. Combined, learning design and learner experience represent 'core business' illustrating a clear focus on students and academic program delivery.

## Work and Lifelong Learning, Demand and Discovery in need of the most improvement.

Institutions in LAC have traditionally been focused on the design and delivery of academic programs and know this area well, but for digital futures, they have identified Demand and Discovery (finding students, understanding market demand) and Work and Lifelong Learning (jobs, internships, integration with industry) as the areas most in need of improvement in terms of digital capability.

**Which digital capabilities are strongest, need improvement, and which are most important to the future of your institution?**





# Support needed to build Digital Capabilities.

"To be able to serve in the digital revolution 4.0, we need 5.0 universities, faculty and staff."

Director, HE Institution, Ecuador

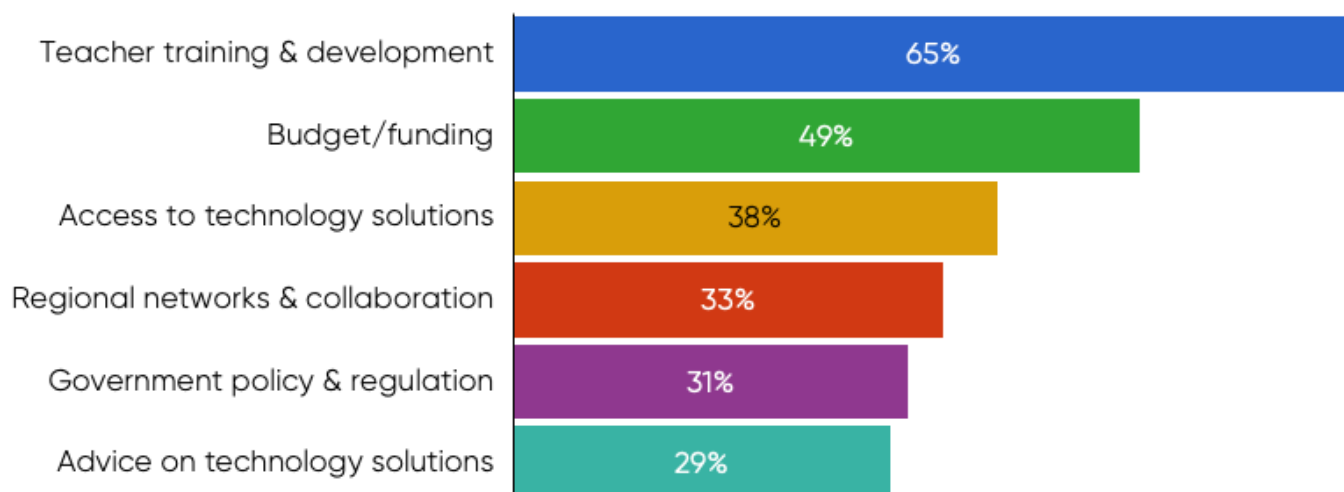
Institutions in LAC recognised that digital maturity requires development of digital capabilities across many areas simultaneously, and the base of this capability is the staff and faculty of the institution.

Two thirds of institutions identified teacher training and development as the most important support needed to improve digital maturity as people within institutions can have an impact across the whole lifecycle and in every business process.

Not surprisingly, funding remains important for many institutions whose budgets are already lean. Digital transformation requires sustained effort and dedicated resources, along with leadership focus and infrastructure improvement. All these elements need adequate capital to ensure efforts are not wasted.

One third of institutions identified the opportunity for regional networks and collaboration in order to learn from and support each other in building digital capability. Indeed, cross-institutional collaboration is a building block of the research enterprise at universities, and this accepted method of problem-solving could also be deployed to lift all institutions' digital maturity.

## What kinds of support does your institution need most in order to improve digital maturity?



"We need to learn about global trends and understand what are other institutions are doing. We need to generate networks with professors that are evolving, support them and provide reassurance that this is scalable."

Vice Chancellor, HE Institution, Argentina

## **People lie at the heart of digital transformation in higher education.**

Two thirds of all institutions identified that teacher training and development was needed in order to further develop the digital capabilities and maturity of their institution. The role of Faculty is paramount to any move forward as it relates to academic programs, student learning and the student experience.

There is a clear realization that the stakes are high – for universities, for academic staff and for students, and that there is no going back from digital transformation, as it will transform not only the university but the people as well.

## **Digital transformation challenges 'what good looks like' in higher education.**

Digital transformation challenges notions of 'what good looks like' for academic institutions, which has traditionally been modelled on face to face teaching and an expert-led model. Digital change can turn this on it's head and leaders have identified that digital transformation is not about content, but being positioned as a "digital institution", challenging deeply embedded notions of quality and identity.

## **Advice about, and access to the right technologies is needed.**

Over one third of institutions said that access to the right technologies is needed to support digital development. This is more of a gap for universities that traditionally taught face to face, as they now find the need to integrate tech solutions in many places along the student lifecycle and don't have deep experience in this field.

## **There is opportunity for collaboration and ecosystem support.**

A third of institutions identified the opportunity to learn from the experiences of each other and set up regional networks and collaborative efforts in order to support a 'lift' in the digital capabilities of all institutions. There is a role for a regional peak body or consortium of universities to work together on digital transformation as is seen in other geographies.

# Global Case Studies

# Global Case Studies

HolonIQ works with and supports Higher Education Institutions around the world who are on a digital transformation journey. Global Case Studies provide brief snapshots of the different ways that institutions are tackling these challenges and building digital capabilities all along the student lifecycle.

Each case study aligns with one or more digital capabilities identified in the four Dimensions of the Higher Education Digital Capability framework.

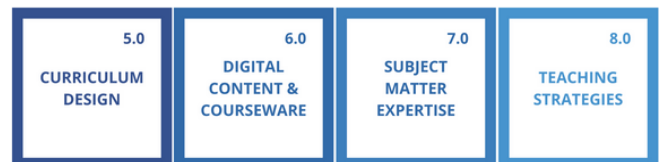
## DEMAND AND DISCOVERY (DD)

Puts institutional strategy, insights and customer (student) focus at the start of the journey and establishes the importance of data to connect and personalize the student experience at every stage.



## LEARNING DESIGN (LD)

Picks up the learner focus and outlines capabilities and emerging skill sets in designing for diverse needs, environments and modalities.



## LEARNER EXPERIENCE (LX)

Sits at the heart of the lifecycle to profile capabilities that support student life, community and wellbeing as well as learning experiences, academic progress and assessment.



## WORK & LIFELONG LEARNING (WL)

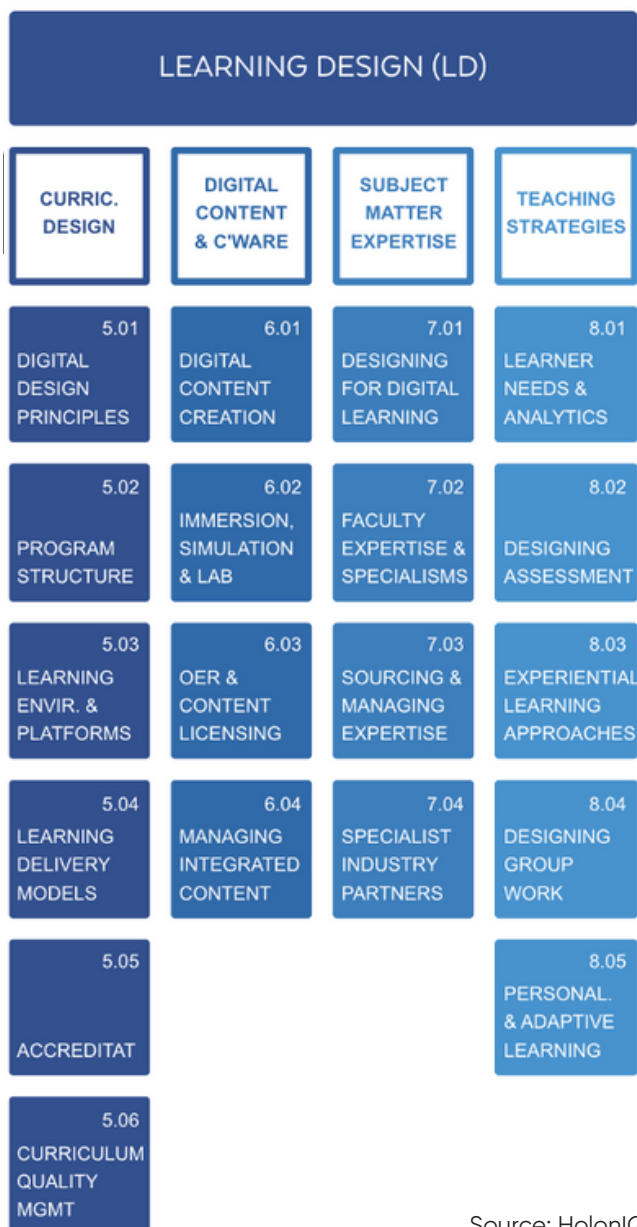
Completes the lifecycle and considers how learners can be supported as they choose and change careers throughout their lives with continued education needs.



# Case Study: Wawasan Open University

**CHALLENGE:** How can we ensure learning content continues to evolve for changing industries and future learners?

Open University (WOU) is a private university in Penang, Malaysia. In addition to its main campus WOU operates 4 regional centres in Ipoh, Kuala Lumpur, Johor Bahru and Kuching for 26,000 distance learners located in those cities.



Wawasan Open University (WOU) operates using an open distance learning model. This means that students engage mostly in asynchronous and self-paced modes, and faculty have the option to teach from anywhere. Even before the impact of COVID and global shifts to remote learning, WOU had recognised the opportunity to re-think how digital learning content is designed and delivered, to better meet the needs of current and future learners.

The University's learners are largely working adults, 83% of whom are below the age of 40. A majority of new students are 25-39 years old and come from diverse socio-economic backgrounds, from clerks, technicians and teachers to managers, engineers and heads of organisations. Their learning supports professional development and progression in global industries which are fast evolving.

Considering both learner demographics and the changing nature of IT & software engineering disciplines, Computer Science programmes at WOU required updates in both content and delivery models. The University's distance learning model needed to develop a new approach to teaching which could pull in content from many different sources to maintain currency and relevance for learners.





# SOLUTION.

Co-curated content partnership for a flexible curriculum and applied, real-world learning.

## PARTNERSHIP WITH LITHAN ACADEMY

Two degree programmes were created to align learning more closely with student and industry needs. These were:

- Bachelor of Digital Business (Honours)
- Bachelor in Software Engineering (Honours) (Application Development).

Keen to move fast, the team chose to partner with Lithan Academy, a digital learning and talent platform. Lithan could supply part of the curriculum content immediately, but would also help to curate content over time, for a flexible and regularly updated curriculum.

In practice, WOU faculty continues to create approximately half the curriculum (particularly in core and foundational subjects), whilst Lithan Academy curates content focusing on applied, real-world learning such as digital marketing tools, information security and digital commerce.

## A NEW LEARNING DELIVERY MODEL

A new School of Digital Technology (DiGiT) was established at WOU where the re-designed computer science programmes are delivered.

The learning delivery model is different from previous models used at the University. The programme starts with an intensive, modular approach to the first year ('WOU ProCamp' or professional training camp) which combines asynchronous learning (video and other interactive content) with group assignments which students work on together. Years 2-4 of the programme combine full-time work and part-time study, with a paid internship after the first year of study.



**BUY**

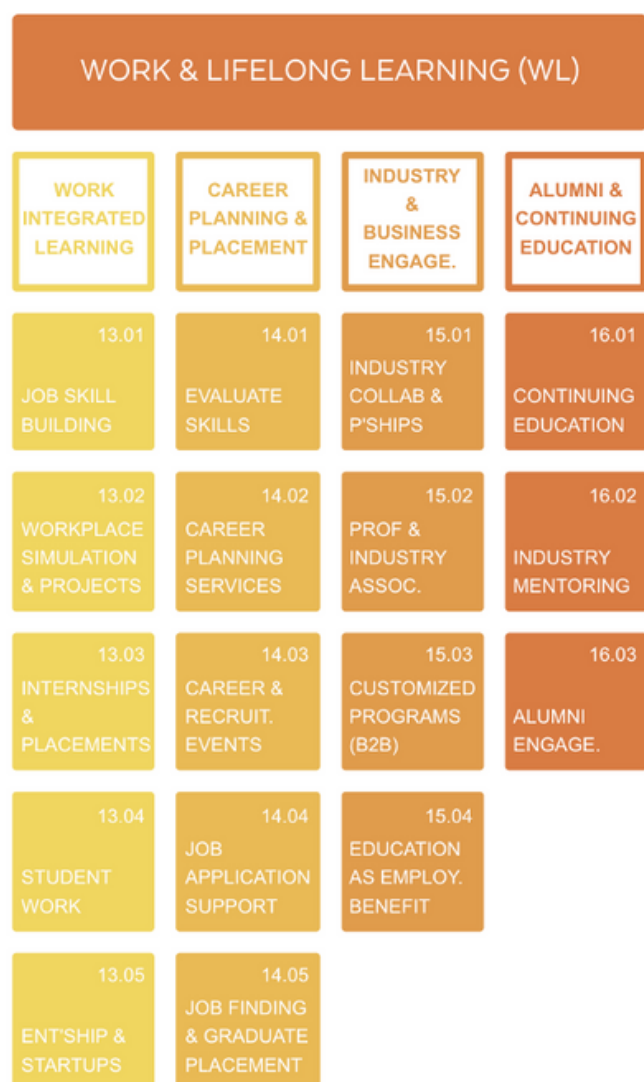
**BUILD**

**PARTNER**

# Case Study: Honoris United Universities

**CHALLENGE:** How can we ensure student access to international opportunities in a rapidly changing world of work?

Honoris United Universities is the largest Pan-African network of private higher education institutions with operations across 10 countries and 32 cities in Africa. More than 61,000 students are registered in the institution's network, learning on campuses, in learning centers, in blended and online modes.



The institutions which form part of the Honoris United Universities network are distributed across Africa, encompassing 40+ nationalities with diverse cultures and backgrounds. In some regions, learners have only recently left school; in others, learners are working adults with established careers.

Employability is a big focus in the region and learners have high aspirations for global career development. Internships are mandatory at many institutions in the Honoris network; placements must offer valuable opportunities for learners to develop relevant, work-ready skills for an internationally-focused job market.

When the COVID pandemic began, digital transformation was already underway across the whole student journey at Honoris. As the world of work adapted to remote and distance models, the team prepared to challenge traditional approaches to internships, envisaging a 'digital career center' for Honoris institutions to better suit the needs and ambitions of today's learners.

# SOLUTION.

A global virtual internship platform, aligned with the broader digital transformation journey.

## VIRTUAL INTERNSHIPS

With many other aspects of the learner experience moving to virtual, it was important for any solution or partner to be aligned with the approach to digitalisation at Honoris and the whole student journey.

Honoris chose to work with global platform Virtual Internships, an edtech startup established in 2018. Since launch, Virtual Internships have established a large and diverse network of partners, with host companies in more than 70 countries and participants from 125+ education institutions worldwide.

Time to market was also important in the decision-making process; working with Virtual Internships meant the team could move fast and implement the solution much more quickly than building an in-house product, for example.

## AN EVOLVING VALUE PROPOSITION

Partnership with Virtual Internships is considered to be more than a transactional process. As the menu of services offered to learners through Honoris Career Centers evolves, Virtual Internships becomes part of the value proposition, too.

"We do see Virtual Internships as partners; all our campaigns are co-branded and we're able to work together to blend our expertise and leverage each other's strengths"



**BUY**

**BUILD**

**PARTNER**

# Case Study: Tecnológico de Monterrey

**CHALLENGE:** How can we improve the enquiry and enrolment experience for students?

Tecnológico de Monterrey is a private, non-profit, independent institution with 26 campuses across Mexico. One of only 45 universities in the world to be ranked with 5 QS Stars, it is widely recognized as one of the most prestigious universities in Latin America.



The institution would regularly receive more than 14,000 enquiries from students during their undergraduate registration period, requiring a team of 10 people to respond to and support these questions. Analysis of conversations from undergraduate registration between August-December 2020 revealed the majority of these queries focused on enrolment.

While a first generation Q&A bot had been in operation for two years, it was a simple Q&A design and not very responsive or intuitive. Student feedback indicated that the bot could not answer questions unless they were formulated in specific ways, and it offered answers which were too general. Responses were not immediate, and the bot could not track its interactions with the same student over time.

AI functionality was identified as a way to create a better experience for students during enrolment, allowing the team to handle a greater volume of questions and better support staff to focus on more complex enquiries.



# SOLUTION.

An AI-enabled virtual chat assistant, connected to the university's information systems.

## VIRTUAL ASSISTANT (CHATBOT)

A 2nd generation Virtual Assistant was launched, connected to the Student Information System and financial systems, which provides real-time answers to students based on their digital identity. The bot is accessed via the student portal, with data drawn from a range of systems to enable personalized responses.

To select the Chatbot building tool, the team reviewed options and selected the Microsoft Azure AI platform, an end-to-end ecosystem that allowed for integration of infrastructure, data and AI services strategies. The platform functionality was especially important for language (text analytics, natural language understanding), vision (identifying and analyzing content within images and videos) and the ability to learn from interactions.

Three main stages brought the Virtual Assistant to life:

- 1** Construction and development: Enabling the bot on the platform and connecting cognitive and integration components.
- 2** Creating and feeding the knowledge base: This is the starting point of learning, so the bot can offer the services for which it was designed.
- 3** Design and feeding conversational flow: This stage gives life & interactivity to the bot and forms the basis for its 'personality'.



# **Future Visions for Higher Education**

# Higher Education and Workforce

Despite an increase in government spending on education and skills programs over the past 10 years, the LAC region lags many peer nations in closing the skills gap and adequately preparing children and adults with the skills they need to thrive, and be productive. Government policy and initiatives all across the learner lifecycle, from early childhood to adult learners, are critical to ensuring a workforce capable of dealing with future challenges.

Globally, the need for higher education to produce graduates able to address workforce needs is greater than ever, however there is a persistent mis-match between the format, content and pedagogy of higher education learning, and what is urgently needed by adult learners, employers and industry.

Higher Education institutions in LAC recognise this mismatch and are developing initiatives to create stronger ties to industry. However, generally they are not looking too far outside the traditional paradigm of the degree program format or at opportunities to partner in order to address this issue.

Meanwhile, new sources of competition for working adult learners are already taking market share in the lifelong learning and adult up-skilling/re-skilling segment. MOOC and online short course providers, bootcamp models, and technology companies are all in the market with career-relevant offerings. Global brands are operating in LAC and in some cases in partnership with universities located inside or outside the region.

If higher education institutions are to remain relevant, they must go beyond offering 'online courses' and transform their offerings and their ways of operating to meet learner, employer and industry needs.

"The formal educational institutions that have not managed to update themselves will unfortunately disappear. As many sectors will continue to evolve - I think that the biggest change will be lifelong learning. This gives us the opportunity not to give a giant, official degree - but a micro degree. A profession suddenly is not for life."

# Institutions need closer alignment with workforce

## Higher Education outcomes must link better to industry needs.

There are persistent, long-established gaps between the needs of the workforce and what higher education institutions currently offer, resulting in major constraints to economic development.

The disruptive influence of COVID-19 has presented an opportunity for higher education leaders to re-think and re-design legacy structures which no longer serve students' needs. New approaches, engagement and partnerships can create better alignment between institutions and the world of work, and more fruitful outcomes for students.

## Programs that equip students with relevant workforce skills.

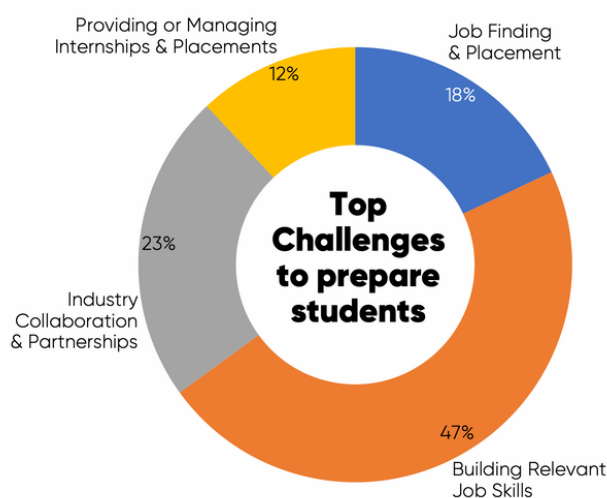
Economic and industry shifts are demanding new skills in areas of growth. Jobs related to the digital economy and services, for example, are fast-growing in the LAC region, with increased demand for advanced digital skills like data analytics, web and software development, and cybersecurity.

Institutions are struggling to update programs to ensure relevance to evolving workforce and learner needs. Many higher education leaders identify that the top challenge in preparing students for future employment is building relevant job skills, which speaks to core aspects of university decision-making and capabilities relating to new courses, curriculum and modes of delivery. Few feel prepared for the significant changes needed to respond to demand and ultimately to maintain relevancy.

"We're updating our portfolio of courses, with a greater focus on employability and entrepreneurship."

Interview Participant, HE Institution, Mexico

## What are the top challenges in preparing your students for future employment?



## Thinking outside the degree: new models and product structures.

These significant shifts in jobs and skills require new types of education, delivered in new ways that allow for flexibility and frequent updates throughout a career and lifetime of learning. Traditional, long-form higher education models are not set up for this, particularly in the LAC region where degree courses can be lengthy and prone to retention issues.

Whilst learning formats such as online, blended and hybrid models are being progressed at many institutions, new types of credentials are not yet receiving the attention and serious consideration seen in other regions around the world. Those institutions who embrace more agile, industry-aligned approaches may be well positioned for future success.



# Visioning digital futures for Higher Education

Higher Education institutions in LAC want to be digitally capable in the future and recognition of leadership and progress is an important element of this. One quarter of interview responses referenced rankings: "to be one of the top 50 institutions in the country" and "be strategically established as the #1 digital institution in the region". Quality of offerings is also important: "provide an excellent service based on technology" and "so strong that is comparable with an in-person program". These responses indicate that higher education institutions want to ensure that, should they go a digital route, they are not compromising on quality or the reputation of their HE institution. It also perhaps speaks to assumptions about the quality of online education.

When visioning the future, two thirds of interviewees responded with an 'internal orientation', focusing on processes for digitisation, "we will have a fully implemented technology strategic plan"; and the student experience, "to provide an excellent service based on technology", suggesting that institutions are currently facing tactical issues with respect to digitisation.

One third of interviewee responses were externally focused, referencing the market: "to become a hub for the labor market and providing a great student outcome, meaning employability", and learner control "where each learner can select the knowledge and skills they want to learn", however only a very small number mentioned new ways of achieving these objectives - "to be an innovative institution with the possibility to do multiple credentials", perhaps a sign that working outside current parameters is still very early in the conversation for many institutions in LAC.

## Digital solutions are needed that also enable access and equity.

Across the board, HE institutions in LAC identified that digital transformation is important, but can't be at the expense of access and equity. Designing remote learning models to be equitable and building multi-modal solutions, or truly hybrid models which offer access in flexible ways, was seen as critical for the future.

## Leveraging partnerships, networks and communities.

Institutions would welcome more opportunities and initiatives to support sharing of practice between existing HE networks and communities in the region, and internationally. There is greater opportunity for HE institutions to develop relationships and partnerships with commercial providers, technology companies, and other institutions to progress innovation.

## Designing programs that align and evolve with workforce needs.

The greatest challenge for HE institutions in preparing their students for the workforce is building relevant job skills. Reconceptualising higher education 'products', either alone or in partnership, is needed in order to make sufficient change to tackle this challenge. Additional models for HE institutions may include the integration of work within degree programs, the development of shorter, more flexible courses, or cooperation with professional qualifications.

## Building digital capability across the institution.

HE institutions need to embed digital capability in their 'DNA', including their practices and in their thinking. This will require attention to front and back of house processes all along the learner lifecycle, committed leadership and attention to change management. Faculty involvement, training and support is likely the most critical component in realising the potential of digital transformation.

"We definitely believe that the majority of students will be online, and then hybrid - we should have a best of both worlds mix."

Vice Chancellor, HE Institution, Mexico

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