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Executive Summary

The Fourth Industrial Revolution is here, and it is changing everything.

The Third Industrial Revolution (aka the digital revolution) is defined by electronics and IT, automated production, and advanced globalization. It has changed how individuals interact with each other, commerce, and whole communities. However, the changes we are beginning to see, and where we are heading as a result of the Fourth Industrial Revolution, are still hard to imagine and extremely challenging to address. With the convergence of disruptive technologies, including nanotechnology, artificial intelligence, robotics, genetics, and 3D printing, the exponential shift that the Fourth Industrial Revolution brings is altering almost every industry in the world. No part of society will be left untouched, including the education and workforce development sector's role in preparing people for the future of work in this new world.

The future of work and learning—and how these interact—permeate all aspects of society. However, the current system of education and workforce development, including skills training, is lagging behind the innovations of the 21st century to date and, without intervention, will continue to lag behind the rate of innovation in the future. While some education institutions, and individual programs within institutions, are adapting in response to workforce changes, the sector more broadly remains far too unresponsive to the shifting needs of students and workers. Issues such as affordability of postsecondary education and the misalignment between education and labor market needs also continue to persist. According to the World Economic Forum's Future of Jobs Report, by 2020 more than a third of the desired core skill sets of most occupations will be comprised of skills that are not yet considered

crucial to that job today.¹ Although this need for a paradigm shift in learning may seem apparent to many, competing viewpoints and siloed approaches to solutions has led too often to isolated pockets of innovation; not the system-wide transformation required for success.

This paper will highlight the changing nature of work and how societies must embrace new or hybrid learning models to allow individuals and economies to thrive going forward. Without a fundamental transformation in how we think about lifelong learning and skill development, individuals, communities, and whole economies will be left behind.

The research for this white paper has come from a meta-analysis of academic sources, discussions with leaders from across the learning spectrum at the D2L Executive Summit in 2016 and 2017, and from D2L's 18 years working with educators, academic institutions, researchers, students, technologists, and companies all dedicated to learning. This paper seeks to further the debate of the evolution of learning in the 21st century and how we can break down barriers and transform learning so that everyone has the opportunity to succeed, and economies are best positioned to prosper.

Preparing for work is not the only purpose of education, but it is nonetheless a topic policymakers, educators, academics, companies, and individuals all have a stake in. Given the dramatic shifts currently taking place as a result of the fourth industrial revolution, we would argue it is one of the biggest questions and opportunities of our time.

The Changing Nature of Work

To understand where we are going, we first need to understand some of the major trends impacting the world of work.

AUTOMATION AND AI

How it will change what we need to know to thrive in the 21st century economy.

According to the World Economic Forum, 65 percent of today's school children will graduate into jobs that do not yet exist.ⁱⁱ A study by McKinsey & Company suggests that by 2030 up to 375 million workers will need to switch occupational categories due to automation.ⁱⁱⁱ While the percentage of jobs that may be automated is debated amongst scholars (an OECD study places the average amongst 21 OECD countries at nine percent), the fact remains the same: AI and automation will have a profound impact on the future of work.^{iv}

Throughout history, physical work tasks done by humans have regularly been replaced by machines

as technology has evolved. With rapid advances in AI however, this is increasingly taking place not just in the physical space but in the cognitive realm.

The advances in automation in the 21st century will increasingly occur in areas of cognitive efforts not seen in the rote, mechanical aspects of 20th century automation.^v In other words, these will not just be low-skilled jobs often associated with automation. Real estate brokers, paralegals, accountants, and auditor's roles, in part or in full, could all be automated. The World Economic Forum suggests that, "As entire industries adjust, most occupations are undergoing a fundamental transformation. While some jobs are threatened by redundancy and others grow rapidly, existing jobs are also going through a change in the skill sets required to do them."^{vi}

Example 1

The rise of automation affects all types of jobs; not just low-skilled occupations. Deloitte reports that over 56 percent of functions within the UK financial world could be automated and similarly over 100,000 legal jobs in the UK could be automated within the next 20 years.^{vii} ROSS Intelligence, a Canadian start-up, is working to eliminate the rote work involved in law practices. Services like ROSS Intelligence are cost saving measures that can increase productivity but will replace tasks more commonly associated with middle class jobs.

Example 2

In the U.S., a late 2016 report from the Obama Administration indicated that up to 3.1 million U.S. drivers working today could have their jobs automated by autonomous vehicles. This includes truck drivers as well as Uber and delivery drivers.^{viii}

Change is happening quickly. Towards the end of 2017, the U.S. company Tesla launched their first electric transport truck, with an auto-pilot mode, and support for platooning multiple vehicles together on the highway.^{ix}

Example 3

To compete in the new economy of the 21st century, China has unveiled its "Made in China 2025" policy; a government initiative to introduce more automation and robots into the Chinese labour force.^x Foxconn, the multinational Taiwanese electronic manufacturing firm, plans to automate a third of its workforce by 2020.^{xi}



These changes are happening faster than most of us realize. We will all feel the impact in some way. Exacerbating the pace of change is that, on mass, skill development by workers is not keeping pace. The sheer number of soft and technical skills already required by most modern companies is exploding. At the same time, the technical skills employees do have are becoming outdated more quickly. We have crossed well over a threshold where timed obsolescence for skills is far shorter than the careers of most people.

The implications for the “middle class,” who have largely shifted from manufacturing-economy to knowledge-economy jobs in recent years, are especially significant. High and low skilled jobs have seen an uptick in the distribution of available jobs but the proportion of middle skilled jobs have decreased on average by seven percent across OECD countries within 20 years.^{xii} This hollowing out of traditionally middle-class jobs is a global phenomenon that will only be exacerbated by AI and automation.^{xiii} Either we adapt or watch as many of the traditional middle-class jobs—both physical labour and now cognitive skills—are automated in part or in full.

SUMMARY

1. The Fourth Industrial Revolution is putting cognitive jobs at risk, in part or in full, due to automation and the rise of AI and other technological advancements.
2. As job functions evolve in this new paradigm, skill sets are relevant for shorter and shorter periods of time.
3. The increase in AI and automation requires ongoing upskilling and reskilling in order to move humans up the value chain.

QUESTIONS FOR CONSIDERATION

- Can people adapt to increased automation, and do so fast enough?
- Will new types of jobs be created to match the rate of loss to automation?
- How should students and employees prepare for jobs we do not yet know will exist, and the constantly fluctuating demand for skills?



THE GIG ECONOMY: AN EMERGING SKILLS MARKET

How it affects the future of the workforce and forces us to rethink upskilling and reskilling.

The labour force and how it interacts with the world has changed. This is no better evidenced than by the shift from traditional employment to the on-demand employment of the ‘gig economy.’

A third of the U.S. workforce is comprised of freelance workers and some estimate it to grow to 43 percent by 2020.^{xiv} During the last decade, gig economy occupations grew to represent an additional 9.4 million individuals; over the same period, the U.S. economy grew by only 9.1 million new jobs^{xv}—meaning gig economy jobs represented basically all job growth. In both the U.S. and Europe, there are an estimated 162 million people participating within the gig economy; roughly correlating to 20 to 30 percent of the working population.^{xvi} The international gig economy is currently growing at approximately 14 percent annually.^{xvii} If the trend in job growth continues to skew towards gig-type jobs, a large portion of the workforce could essentially become self-employed.

This shift represents an opportunity for many workers, but the flexibility also comes at a price. Where the traditional employment structure has provided workers with a degree of certainty, opportunity, and protections, those within the gig economy framework are generally on their own. Seen as independent contractors, gig workers have less social protection in the form of rights, are responsible for their own training and skill development, face weaker or less obvious career advancement opportunities, and are struck with greater insecurity about their financial positions. With skills being their most marketable commodity in a highly competitive marketplace, gig economy workers will find it essential to adapt quickly and continually enhance their skillsets to meet the needs of the labour market on an ongoing basis.

The **gig economy** refers to the shift away from traditional employment where workers are full-time employees of one employer to an economy where people are freelancers—working on contracts for multiple employers. The terms ‘platform economy’ or ‘on-demand economy’ are also widely used in some jurisdictions.

SUMMARY

As the gig economy grows, ongoing, lifelong upskilling and reskilling will be essential for the gig worker to continue to have marketable skills and see a pathway for professional growth.

QUESTIONS FOR CONSIDERATION

- What skills do students need to develop to be more resilient to changes in the workforce?
- How can ongoing skills development be more flexible, accessible and relevant?



DEMOGRAPHIC SHIFTS IN THE LABOUR FORCE: MILLENNIALS, AN AGING POPULATION, AND RETIREMENT

Along with a rise in self-directed, gig-economy work, a dramatic change in the socio-demographic makeup of the labour force in many countries is causing a major experience and skills gap. As the “baby boomer” generation (individuals born between 1946–1964) is at retirement age, the workforce is now primarily populated by the youngest generation with the least experience. In the United States for example, “millennials” (individuals born between 1980–2000) became the largest part of the workforce in the first quarter of 2015.^{xviii}

For a variety reasons, many older employees are working longer, past traditional retirement age. This is resulting in longer working careers, exacerbating the problem of quickening skills obsolescence.

Such a wide age range of employees creates challenges for employers to address both the lack of skills in the younger workforce and the increasingly outdated skills of their existing workforce. Millennial workers tend to be more transient—58 percent admit they expect to leave their job after three years or less.^{xix} Given that it often takes three to five years to bring a professional to full productivity, this paradigm shift poses a serious risk for employers.^{xx} Likewise, devoting resources to building training and professional development programs for older workers who are close to retirement is a difficult investment for employers.

The education sector, the private sector, and governments all have a role to play in addressing this shift. The education and workforce development system must adapt to serve the growing needs of a transient workforce that will be increasingly responsible for their own training and professional development.

Employers also have some responsibility in education and training. They need to play a meaningful role with the education sector in designing and building the programs that will serve their needs as they seek to turn temporary workers into long-term employees and upskill as well as reskill their existing workforce. Not engaging in this process brings another significant, non-monetary cost to business—loss of continuity and institutional knowledge.

Governments also have a stake and role to play by ensuring workforce development programs are supporting working learners, especially individuals in vulnerable positions. In this new world of work, it will not suffice to wait to reskill people only after their jobs, or industries, have become obsolete.



SUMMARY

1. Millennials are job transient. Building institutional knowledge and job loyalty is becoming increasingly difficult for employers.
2. Employees are working longer. Coupled with skills becoming obsolete more quickly, neither employers nor employees can expect skills to stay relevant throughout careers.
3. Building a modern learning company provides a strategic advantage in the ability to attract, retain and develop top talent, and outperform the competition in this new skills race.

QUESTIONS FOR CONSIDERATION

- If individuals are working longer in a fast-changing skill environment, can employers expect “ready-made” graduates prepared for 40 years of work?
- What role should employers and the private sector play in ongoing workforce development?
- How can governments shift workforce development programs to support upskilling and reskilling, especially of vulnerable workers?

Each of the above shifts have only been explored on the surface. They have, and will continue to, significantly alter the labour market, requiring policy makers and practitioners to rethink education and skills development to prepare workers for the jobs of tomorrow and the constantly fluctuating demand for skills.

Challenges with the Current State: The Value, The Skills Gap Problem & The Risk of Not Adapting

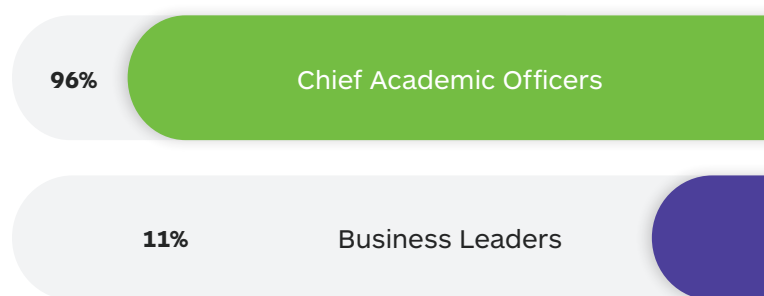
The current system of education and skill development is not accessible or affordable for many and is not producing the right skills to meet labour market demand. As a result, employers are facing challenges in filling jobs and the impact on economic competitiveness is significant.

THE VALUE OF A DEGREE

The goal of obtaining a postsecondary degree for many students is to provide them with the necessary tools to thrive in the labour market. However, a 2013 McKinsey & Company study of youth, education providers, and employers in nine countries showed that while 72 percent of higher education institutions believe they prepare their students well for the workforce, half of students are not sure if their credentials improve their opportunities at finding a job.^{xxi} This disconnect can also be seen in the private sector where only 11 percent of business leaders 'strongly agree' that students have the vital skills for the labour market, compared to 96 percent of chief academic officers who believed their institutions were either somewhat or very effective at providing the necessary skills to students.^{xxii} While a post-secondary degree is still proven to be a career asset, the current level of disconnect between what employers want versus what is being taught must be addressed.

"Value" can also be considered in monetary terms. In the U.S., the average tuition has quadrupled in the past 35 years.^{xxiii} U.S. public universities had an average in-state tuition rate of \$9,650 USD per year in 2016, which quickly rises to \$20,090 when room and board charges are included.^{xxiv} Increasing tuition fees are not exclusive to North America either. Concerns about covering operating costs led the University of Witwatersrand in South Africa to propose a 10.5 percent fee increase in 2015

Do Students Have the Necessary Skills to Thrive in the Workforce?



Source: Michelle R. Weise. "Got Skills? Why Online Competency-Based Education is the Disruptive Innovation for Higher Education," Educause, last updated November 10, 2014. <http://bit.ly/2DbgNJC>

only to have to scrap it after student protests.^{xxv} In Europe, England outpaces the U.S with an average annual tuition cost of \$11,951 USD (£9,188).^{xxvi} Other European nations charge smaller fees but still struggle with ensuring operating costs are covered as the cost of delivery grows.

As tuition fees and student debt increase, students who want to learn and attend university or college are not seeing the usefulness of their credentials rise in tandem. The average earnings for an individual with a bachelor's degree fell 14.7 percent between 2000 and 2012.^{xxvii} This perceived lack of return for obtaining a degree should make many higher education institutions re-evaluate their value proposition and how they do business.



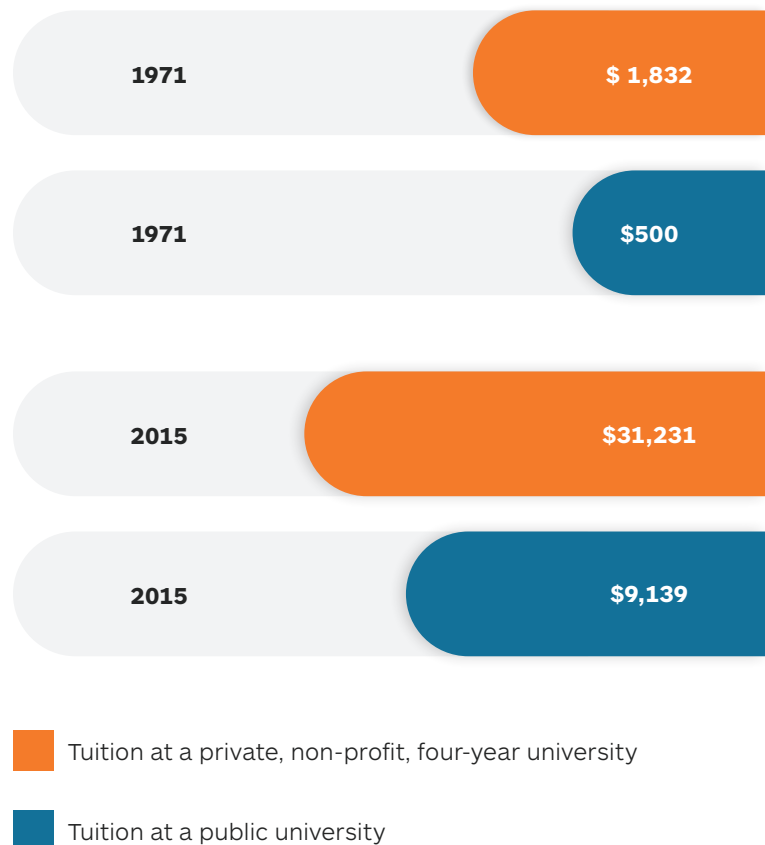
SUMMARY

1. Information is becoming more accessible, but a degree is becoming less affordable.
2. While costs increase, the promise of a degree leading to a good job decreases, as the skills developed are not connected to labour market needs.
3. Average earnings for degree holders have fallen nearly 15 percent between 2000 and 2012.

QUESTIONS FOR CONSIDERATION

- Can the value proposition of higher education be increased by making it more affordable, accessible and relevant?

The Rise in Tuition in U.S. Universities



Source: John Schoen. "Why Does a College Degree Cost So Much?" *CNBC.com*, last updated June 16th, 2016. <http://cnb.cx/1FCgMx4>

THE SKILLS GAP

As the cost of a postsecondary credential has risen, its real value in the workplace is increasingly questioned as employers report having trouble finding qualified candidates for open positions. This can be linked partly to a mismatch in credentials being earned versus those being sought after by employers, as well as outdated skills being taught for sought-after credentials. This skills gap has affected more than a third of international companies.^{xxviii}

According to a 2014 report from the European Commission, the skills gap has bottlenecked growth in key sectors: including healthcare, information technology, and engineering.^{xxix} While these sectors require very technical skills, even basic skills such as critical thinking and emotional intelligence are in high demand.^{xxx}

In the next few years, the skills challenges presented by various studies seem dire without action:

- In the UK, 21 percent of workers are in occupations likely to shrink or disappear by 2030 and need to reskill for the future.^{xxxi}
- 44 percent of Europeans between ages 16 and 74 do not have basic digital skills.^{xxxii}
- By 2020, more than a third of the desired core skill sets will be comprised of skills that are not yet considered crucial.^{xxxiii}
- 65 percent of children entering kindergarten in 2020 will end up in jobs that currently do not exist.^{xxxiv}
- With such a rapid production of information, nearly 50 percent of the subject knowledge studied in the first year of a four-year technical degree will be outdated by the time the individual graduates.^{xxxv}
- 65 percent of all jobs will require training after high school or a post-secondary degree.^{xxxvi}

SUMMARY

1. Employers increasingly feel graduates do not have the skills required for the labour market.
2. A constantly fluctuating skills market means employee skills are becoming outdated more rapidly and require ongoing training and development.

QUESTIONS FOR CONSIDERATION

- How can individuals gain the right skills at the right time, and on an ongoing basis to meet labour market demands?
- What barriers exist for schools to access labour market information to inform program development?

ECONOMIC COMPETITIVENESS

The necessity for change in education is not just a domestic issue for countries. To remain competitive in today's global environment, countries must produce students with the right skills to succeed in the global workforce. Countries emphasizing skills development and educational attainment tend to have a higher per-capita GDP. As an example, amongst OECD countries, Canada, Finland, and the U.K. have much higher post-secondary attainment rates than the OECD average and their GDP per capita is above the OECD norm.^{xxxvii} Postsecondary credential attainment rates are also on the rise and becoming more of a must have for employees than a nice to have. In OECD countries, the percentage of 25-64 year olds earning a postsecondary credential has nearly doubled since 1995 from 20 percent to 36 percent.^{xxxviii} The attainment rate of younger workers is even higher, and continues to grow, with an average of 43 percent for 25-34 year olds.^{xxxix}

While we are seeing an increase globally in post-secondary attainment, and the employment rate of those with degrees on average is around 84 percent, the skills associated with having a good quality job are drastically changing internationally.^{xi} Supporting the development of human capital is imperative for countries to prosper in the new knowledge-based economy. The lasting repercussions of not having an educated workforce are being felt in the economy.

Technology can be part of the solution to break down socio-economic factors that limit educational attainment. Distance and blended learning has allowed students to attend institutions with limited or no travel requirements. Computer adaptive assessments have helped students to pinpoint learning concepts they struggle with to provide targeted interventions and prevent students from falling behind or dropping out.

SUMMARY

1. Development of human capital is essential for countries to be competitive in the global, knowledge-based economy.
2. Jurisdictions that emphasize and invest in education and training outpace those that do not.

QUESTIONS FOR CONSIDERATION

- Are governments investing enough in education to ensure access for all students without incurring unreasonable debts?
- How can non-financial barriers to accessing higher education be reduced?

EDUCATIONAL INVESTMENT & GDP

Research suggests that an increase in 50 points on an average PISA (Programme for International Student Assessment) score results to 1 percentage point more economic growth in the long term.^{xii}

Countries that invest in educational attainment and quality, whether at the K-12 level or in higher education, see higher returns in economic growth.

How Education and Skills Development Needs to Shift

Over the last few generations, as skills have grown more complicated, there has been a steady increase in the amount of time people have spent in school and preparing for the workforce. However, when in-demand skill sets are evolving at such a rapid pace and increasing in complexity all while their relevant lifespan is decreasing, it is no longer likely that the traditional pattern of attending school for 20 years then working for 40 can continue to be the norm for most jobs and professions. A lifelong approach to learning is quickly becoming the rule rather than the exception.

Education institutions, non-traditional education and training providers, and companies all have a role to play in developing a lifelong pathway for learners. The new technologies that are disrupting the workforce and demanding new skill sets can also be leveraged to provide these new opportunities for learning.

Primary and secondary schools also play a critical role in preparing students with the soft skills necessary to create the foundation for lifelong learning, such as critical thinking, problem solving, and teamwork. This report however, focuses on the role of postsecondary education and the workforce development system.

NON-TRADITIONAL STUDENTS ARE THE NEW NORMAL

Higher education was established to serve a particular student type—straight out of secondary school, studying full-time, and residing on or near campus. As an example of how the student body

has shifted, in the U.S. the National Center for Education Statistics puts the number of students fitting that “traditional” definition at only 26.2 percent of learners.^{xiii}

This phenomenon is not isolated to the U.S. In 2010, 60 percent of part-time students and 13 percent of full-time undergraduate students in Canada fit into the non-traditional student mold.^{xiii} In the U.K., 30.2 percent of undergraduate students would also be considered as non-traditional.^{xiv} The OECD reports that in 2013, 51 percent of adults over the age of 24 participated in adult education; formalized or otherwise.^{xiv} As the notion of lifelong learning and upskilling becomes more prevalent, universities and colleges around the world will see a rise in mature students.

Meeting the needs of these students requires rethinking the traditional program model. Part-time, working students are not necessarily able to sit in a classroom every Tuesday and Thursday for two hours in mid-morning for a semester. Those same students may also be seeking to learn a particular skill rather than earn a full degree—a four or even two-year program may not be the right fit for them.

Similarly, students with existing skills from their careers or previous study should be able to apply such pre-existing knowledge towards their credential. Such policies can work to make postsecondary education more accessible and appealing to the broader population.



BUILD THE VALUE PROPOSITION

Higher education must redefine its value proposition for students and employers. The “value” to date has largely relied on the premise that earning a degree is enough to secure a good job. In a world where having a postsecondary credential is rapidly becoming the rule and not the exception, such a generalized value proposition is out of date. A 2016 OECD report puts the average postsecondary credential attainment level for 25–34 year olds at 42 percent compared with just 26 percent of 55–64 year olds.^{xlvi} Across the full spectrum of 25–64 year olds, postsecondary credential attainment was 36 percent in 2016—a 12-point jump from 2001. In 11 OECD countries, today’s attainment rate is 40 percent or more.^{xlvii} Despite the growing ubiquity of the postsecondary credential, the skills gap continues to persist.

Increasingly, programs and credentials must be developed with the needs of the labour market in mind while also building upon both the skills sought by employers in the moment and the soft skills that will endure and transcend jobs. The ability for programs to regularly and rapidly revise curriculum and instructional materials based on changes to a given industry or occupation’s required skill set is critical to justify the cost and time commitment for students and workers.

An opportunity exists today for higher education to rethink, with input from employers, the skill components of degrees typically sought for given career fields. For example, an aspiring mobile app developer pursuing a computer programming degree should be required to learn marketing and design skills in addition to the straightforward programming knowledge. This kind of “mixed skillset” credential would be far more valuable for both the student and potential employers. As AI and machine learning advance, and automate or replace entry-level programming skills, the student will still be marketable in the workforce and able to reskill in another area of expertise.

While individual institutions have been making strides over the last few years to improve the value proposition of some of their programs, the change of pace has been slow and has left both employers and students feeling a disconnect over the effectiveness of many postsecondary education options.

EMBRACE NEW PEDAGOGICAL MODELS FOR THE 21ST CENTURY

To truly cater to today’s students and develop an education system to serve lifelong learners for careers that do not yet exist, higher education must break out of the time-based, “sit and learn” instruction delivery mold. Institutions that are serving today’s students and employers well have been embracing innovative instruction delivery models that are learner-centric, flexible, responsive, and adaptive.

EFFICIENCY IN COMPETENCY-BASED EDUCATION

A study of the CBE Texas Affordable Baccalaureate (TAB) program found that students completing its bachelor of Applied Arts & Sciences could do so more quickly and with savings in tuition and fees of up to 53 percent.

For example, competency-based education (CBE) models have allowed students to leverage their existing knowledge and skills to expedite the learning process and focus more time and energy on those skills which they lack. Students are then only able to proceed through a program if they demonstrate mastery of the required skill sets—however long (or short) that takes. The focus is not on demonstrating how long you learned, but what you actually know—a much more appropriate measure of learning.

Recommendations

As higher education leaders and policymakers think about how to prepare for the future of work, the educational system must be at the crux of any solution. An educational system designed to build tomorrow's workforce, must develop lifelong learners today.

MAKE EDUCATION AND TRAINING A PRIORITY FOR INVESTMENT

Investing in the development of an education system that is affordable, accessible, flexible and responsive is paramount—to ensure value and create a competitive economy. OECD reports have shown a correlation in credential attainment and per-capita GDP. Other research has also shown that an increase in 50 points on average on PISA scores results in one percentage point more economic growth in the long term.

THINK RESPONSIVE, FLEXIBLE, AND ADAPTIVE

Recognising that learner demographics are dramatically shifting, education systems must adapt to the reality of a post-traditional learner. Today's student body requires personalized programming that is designed to be learner-centric—delivered to them when they need it, where they are, and in a form that they can best utilize. Innovative models, including competency-based education, blended learning, and online education are proven models that can respond to the growing demographic of working learners. These models are only deliverable at scale through the use of technology.

Policymakers should re-evaluate policies and regulations that hinder innovative program design. In measuring quality or effectiveness of program design, the focus should be on assessing outcomes of programs rather than establishing program design components.

ALIGN PROGRAMS AND CREDENTIALS TO LABOUR MARKET NEEDS

The educational system must become more responsive to changes in the labour market, including regular examination of the relevance of program offerings and where to invest limited education resources. The use of labour market information, such as essential skills in demand, employment statistics, unemployment rates and wages and salaries, should be a foundational component of such regular examination.

On the student side, labour market information is an invaluable asset in academic counseling and advising services—ensuring informed decision-making by students as they chart their paths to the workforce.

The government's role in data collection and sharing is an essential component of making this shift possible.

RECOGNIZE THE SHIFT TO A SKILLS MARKET

Designing “hybrid” programs with skill sets from different fields will enhance the value of a postsecondary credential for students as demonstrable skill attainment is increasingly more desirable by employers. The creation of stackable credentials based on skill sets can be used to design programs for specific career fields and to retool them as labour market needs change.





In addition, a reinvention of the standard degree program is necessary to create easier on and off ramps to education for working students. A flexible program structure built on micro- and stackable-credentials would allow for and recognize rapid upskilling and reskilling.

LEVERAGE INDUSTRY AS A PARTNER

Including industry partners in the design and execution of educational programs is essential to ensuring alignment of skills taught to skills sought. Companies increasingly recognize they have a role to play in helping their employees upgrade their skills and stay competitive—whether that be partnering with institutions, providing the training themselves, or providing the flexibility to employees in seeking out training. Meaningful involvement of industry can also give additional validation to credentials—improving their value to students as well as employers not involved in the program.

Governments must also rethink existing workforce development programs to include a focus on working learners. With the ever-evolving nature of skills-in-demand, programs should support individuals to upskill or reskill “while working,” instead of waiting until massive shifts leave significant numbers unemployed. Supporting and incentivizing employer-based programs, while increasing support for, and removing access barriers to, post-secondary programs, are all part of the solution.

Closing

Our hope is that this paper will serve as a basis for dialogue and debate on how we must shift to ensure individuals are best prepared for the new world of work and the roles various partners have in making this shift possible.

We are forever thankful to the many customers, partners, mentors, friends and experts who constantly push our thinking, set examples, and chart new pathways forward.

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