

So many jobs, so few qualified workers

FIXING THE EDUCATION DISCONNECT

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Digital skills are now essential for most skilled jobs in all industries, and even the world's most advanced countries have major gaps. As a result, labour shortages exist alongside high youth unemployment in many countries.

Daniel graduated from a university in Manila with a bachelor's degree in computer engineering. Five months later, he's still looking for a job. The only offers he's getting are for minimum-wage jobs that don't match his field of study. He isn't alone—many technical graduates in the Philippines, as well as in other countries around the world, are having a hard time getting jobs in their chosen fields. And yet companies in the Philippines say they can't find enough qualified candidates for technical jobs, according to a recent study.¹

Around the globe, employers lament that it's hard to find workers with in-demand technical skills. In many cases, there's a mismatch between the skills employers need most and the skills that are readily available in the labour market. Accenture found that in India, only 25% of technical graduates are considered employable.² In Europe, two-thirds of Information and Communication Technology (ICT) companies report that skills mismatches are a serious issue for them.³

But the problem goes far beyond the technology sector and the ICT function. Digital skills are now

essential for most skilled jobs in all industries, and even the world's most advanced countries have major gaps. As a result, labour shortages exist alongside high youth unemployment in many countries, while mid-career workers who don't update their skills are being left behind in a rapidly changing, technology-driven world.

THE NEW WORLD OF WORK

In 2015, Klaus Schwab, executive chairman of the World Economic Forum, introduced the term “Fourth Industrial Revolution” to describe the current wave of technological innovation. The fourth revolution is all about communication and connectivity. It’s blurring the lines among the physical, digital, and biological worlds, and it has the power to “transform entire systems of production, management, and governance.”⁴

The third revolution, which began in the mid-20th century, has already had a profound impact on the world of work. Basic digital literacy and proficiency in programmes like Microsoft Word and Excel

are required for good jobs in every business function, as well as in education, healthcare, and government. Digital technology has displaced millions of workers and made many jobs obsolete. But it has also generated many new jobs and created more flexible ways for people to work and learn. In the United States, 57 million people—36% of the workforce—are part of the “gig economy,” and 46 million of them are doing freelance or contract work as their primary form of employment.⁵

Now emerging technologies like AI, robotics, and the Internet of Things (IoT) are further changing how human beings work, learn, and interact with one another. The pace

of change is faster than ever before, and workers, firms, educators, and governments are finding it difficult to keep up. In this new environment, there’s a strong need for skilled workers in fields ranging from computer programming and web design to cybersecurity and big data. And workers who can combine technical skills with uniquely human skills that can’t be automated—like empathy, creative thinking, negotiating, and problem solving—are in high demand everywhere.



The 4 Industrial Revolutions:

1. **Industrial Revolution**
mechanised production (1780-1840)
2. **Technical & Scientific Revolution**
created mass production (1870-1970)
3. **Digital Revolution**
automated production (1970s-present)
4. **Communication & Connectivity Revolution** (21st century)



85 million skilled jobs

will be vacant because of a global talent shortage in 2030—equal to 11% of the world's total workforce

(source: Korn Ferry)



133 million new jobs

may emerge globally by 2022

(source: World Economic Forum)



54% of all workers

will need significant reskilling by 2022

(source: World Economic Forum)

An acute labour shortage

Employers on every continent are desperate for qualified workers because the skills they need to drive innovation, productivity, and growth don't match the skills that are readily available. As more and more tasks are automated, the skills shortages will get even bigger. That's because automation tends to eliminate middle-skilled jobs while creating new high-skilled jobs. The net result is a pool of workers who are overqualified for low-skilled jobs but underqualified for the highly specialised jobs created by new technologies.

In the Middle East and North Africa, nearly 40% of employers said skills gaps are a major obstacle to growing their businesses, according to research by the World Economic Forum.⁶ A Manpower Group study found a similar situation in Latin America, where four in 10 companies said they have trouble finding workers with the right skills,⁷ and an even more extreme talent shortage

in Japan, where 86% of firms said the same. In an Accenture survey, 60% of C-level executives in Brazil said growing skills gaps were their top workplace issue.⁸

Emerging technologies are changing the jobs that need to be done:

- providing tools that make some workers more efficient
- replacing some human roles with machines
- creating new roles for people who have the right skills to extract value from the machines

Globally, there's already a massive shortage of AI and data analytics experts. People with expertise in app- and web-enabled markets, IoT systems, and cloud computing will be in high demand as more and more companies adopt those technologies. Creative technical skills are also highly valued, especially in user experience design

Emerging technologies are changing the jobs that need to be done.

and industrial design. And demand is growing for creative skills like character design, 2D animation, motion graphics, photo retouching, and vectorial design.

But in EU, 37% of workers lack basic digital skills, according to research by the European Commission.⁹ And in the world's less developed countries, the "digital divide"—the gap between participants and non-participants in the digital economy—is even bigger. It's clear that effective solutions must begin by building the foundational skills workers need to be part of a modern workforce.



An evolving education landscape

Amid all the concern over skills gaps and labour shortages, it's become clear that traditional educational systems are struggling to prepare young people for the world of work.

"In our interactions with Ministers of Education and their teams around the globe, one of the most frequently expressed concerns deals with how digital technologies influence the world of work," wrote Rita Almeida, Jennifer Poole, and Carlos Corseuil on the World Bank blog.¹⁰

It's difficult for schools, which are often under-resourced to begin with, to foresee which skills will be most needed in the workforce a few years down the road. And many teachers lack basic digital skills. There's an urgent need in most countries to train teachers on how to integrate technology into the curriculum.

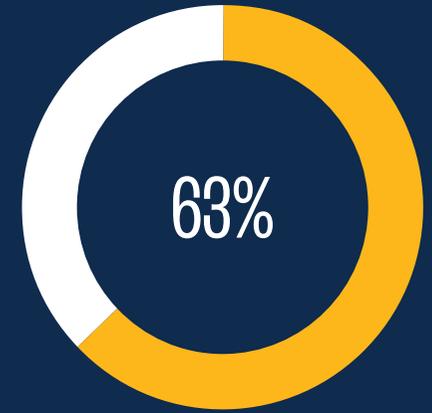
But the challenge doesn't end there. The changing nature of work means people at all career stages need to learn new skills. Reskilling and upskilling are not a one-time event, but a lifelong process.

Around the world, people of all ages are adopting a "do-it-yourself" approach to education. Micro-credentials, such as technical

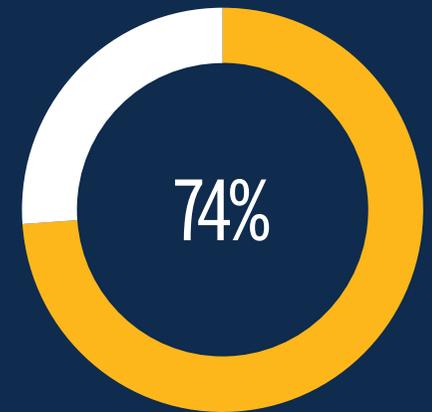
certifications, are helping to fill the gap between the academic curriculum taught in schools and the practical skills students will need when they enter the workforce. Certification programmes are also an attractive option for mid-career professionals who need to refresh their skills.

The 2019 Pearson Global Learner Survey found that learners are relying less on traditional educational institutions. "The learners in our survey embrace technology and online learning," Pearson reported. "They also want more vocational education, soft skills training and bite-size learning over the course of their lifetime."¹¹

Around the world, people of all ages are adopting a "do-it-yourself" approach to education.



63% believe colleges and universities aren't teaching the right skills



74% say those institutions should offer better options for working adults

(source: 2019 Pearson Global Learner Survey)

A GROWING SKILLS GAP

While digitisation and automation are disrupting labour markets in every part of the world, those global trends aren't the whole story.

In each region the problem looks somewhat unique because of demographic trends, as well as other social and economic factors.

Europe

Europe has several advantages that could help it solve the skills gap issue, including high education levels, high Internet penetration—88%, compared to a global average of 55%¹²—and high labour mobility within the EU. Some European countries also have an established apprenticeship model that helps young people transition from school to work.

But Europe also faces a special challenge because of its aging population. The median age across

the region is 41.7 years.¹³ As labour shortages become more common over the next decade, there won't be enough younger workers to replace those who are aging out of the workforce.

Currently, youth unemployment is a problem across much of the region. In many countries, the unemployment rate for people under 25 is double or triple that of the general population.

Although most Europeans have access to the Internet, many still lack basic digital skills, as noted above.

Finland ranks highest in terms of digital literacy (78%), while Bulgaria ranks lowest (29%).¹⁴

The Organisation for Economic Cooperation and Development estimates that in Europe, 80 million workers are mismatched, meaning they're either underqualified or overqualified for their current jobs.¹⁵ That number is likely to increase as more companies adopt technologies that reduce the demand for middle-skilled jobs. France, the UK, Ireland, and Portugal have lost a higher share of middle-skilled jobs than other EU countries, and Russia currently has





the biggest surplus of middle-skilled workers on the continent.

By 2030, Korn Ferry predicts that every country in Europe will have a shortage of high-skilled workers and a surplus of low-skilled workers.¹⁶ Across the region, there's a huge opportunity for governments, employers, and schools to work together to better prepare younger workers and retrain older workers for the millions of high-skilled jobs that will be created over the next decade.

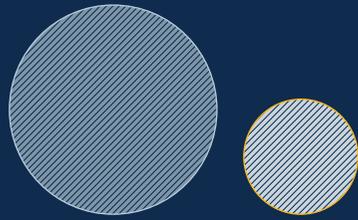
With high youth unemployment rates and aging populations, Europe needs to do more to prepare younger workers and retrain older workers for the millions of high-skilled jobs that will be created over the next decade.

Unemployment in selected countries of **EUROPEAN COUNTRIES**

FRANCE	Median Age	42
Youth Unemployment		10.4%
Overall Unemployment		9.1%
GERMANY	Median Age	46
Youth Unemployment		6.5%
Overall Unemployment		3.2%
GREECE	Median Age	46
Youth Unemployment		14%
Overall Unemployment		18.1%
ITALY	Median Age	47
Youth Unemployment		19.4%
Overall Unemployment		9.2%
POLAND	Median Age	42
Youth Unemployment		10.1%
Overall Unemployment		3.3%
RUSSIA	Median Age	40
Youth Unemployment		14.6%
Overall Unemployment		4.5%
SPAIN	Median Age	45
Youth Unemployment		11.9%
Overall Unemployment		14.7%
SWEDEN	Median Age	41
Youth Unemployment		6.1%
Overall Unemployment		6.8%
S. UK	Median Age	39
Youth Unemployment		11.2%
Overall Unemployment		3.8%

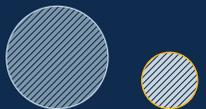
Internet penetration in select countries of
AFRICA & THE MIDDLE EAST

NIGERIA: 56%



Population: 206.1 M
Internet Users: 111.6 M

EGYPT: 49%



Population: 100.4 M
Internet Users: 49.2 M

SOUTH AFRICA: 53%



Population: 58.6 M
Internet Users: 31.2 M

KENYA: 82%



Population: 52.6 M
Internet Users: 43.3 M

MOROCCO: 62%



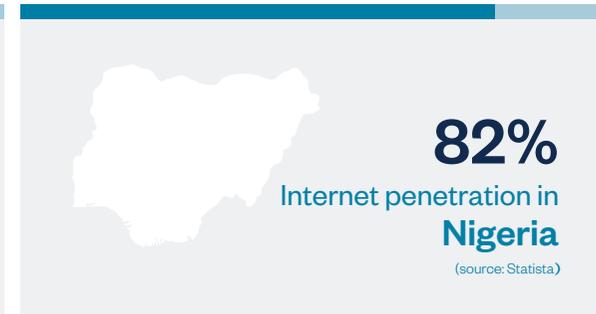
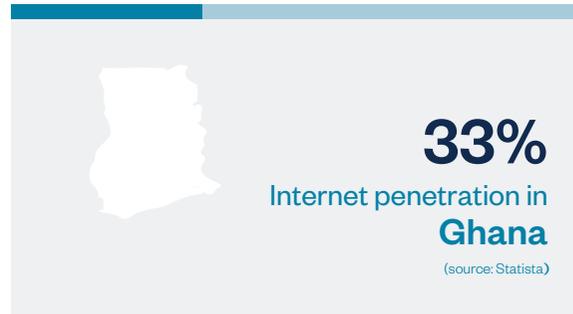
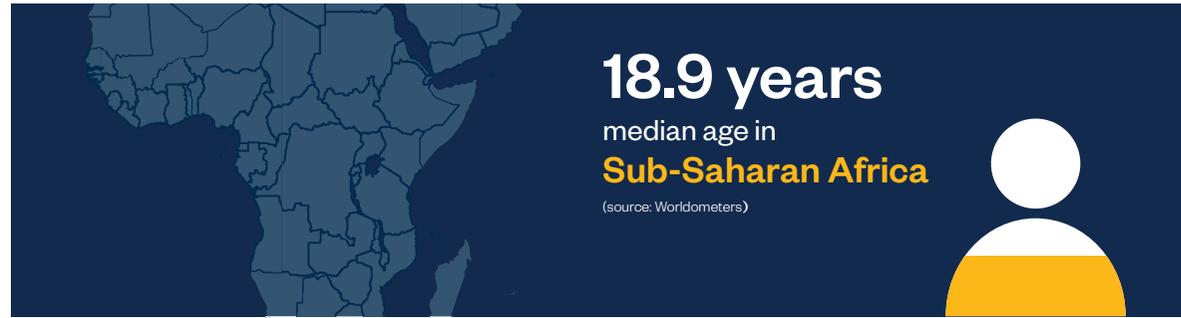
Population: 36.5 M
Internet Users: 22.6 M

GHANA: 33%



Population: 30.4 M
Internet Users: 10.1 M

(source: 2019 Pearson Global Learner Survey)



Africa & The Middle East

In stark contrast to Europe's aging populations, Africa has a median age of just 19.4 years.¹⁷ The countries of the Middle East also have some of the world's youngest populations.

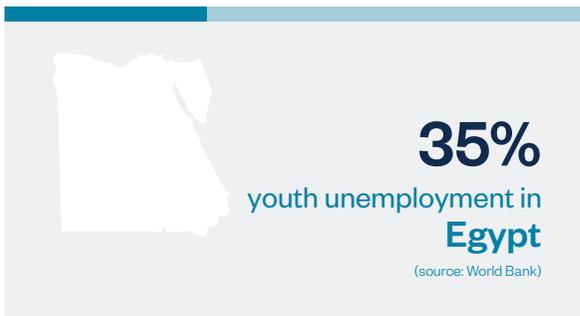
Youth unemployment is a major problem in the Middle East and North Africa (MENA), where almost 30% of unemployed people under age 25 are university graduates.¹⁸ MENA's labour markets tend to have low (but increasing) participation

by women and high (but declining) shares of public sector employment. Many people have informal jobs in the agriculture or service industries, especially in middle-income countries like Egypt, Tunisia, Algeria, and Morocco. Several countries in the region provide business process outsourcing (BPO) services for global companies. In Egypt, for example, 90,000 people work in the rapidly growing BPO sector.¹⁹ Sub-Saharan Africa is also plagued by high youth unemployment, and some countries also have high overall unemployment rates. South

Africa is a notable example, with 34% youth unemployment and 27% general unemployment.²⁰ Agriculture remains the largest sector of most African economies, followed by the services industry.

Nigeria has the highest Internet penetration in Africa, at 82%, while only a third of Ghana's population has access to the Internet.²¹ In Africa's most advanced markets, most web traffic comes from mobile phones.²²

Throughout Africa and the Middle East, there's a crucial need for policies and programmes to equip citizens with



digital skills, as well as the other hard and soft skills needed to build modern economies. Initiatives that foster entrepreneurship are a key part of the solution to the youth unemployment problem. A dynamic entrepreneurial culture would create local jobs and also connect largely untapped talent pools with a global economy that needs young workers—but only if those workers offer skills the global market values.

With some of the world’s youngest populations, high unemployment rates, and high levels of informal employment, the countries of Africa and the Middle East must convert their nascent talent pools into a modern workforce.

Unemployment in selected countries of
AFRICA & THE MIDDLE EAST

EGYPT	Median Age	25
Youth Unemployment		35%
Overall Unemployment		11.3%
GHANA	Median Age	22
Youth Unemployment		33.3%
Overall Unemployment		6.8%
ISRAEL	Median Age	30
Youth Unemployment		15%
Overall Unemployment		3.9%
JORDAN	Median Age	24
Youth Unemployment	N/A	N/A
Overall Unemployment		14.6%
KENYA	Median Age	20
Youth Unemployment		18.2%
Overall Unemployment		9.3%
MOROCCO	Median Age	30
Youth Unemployment	N/A	N/A
Overall Unemployment		9.0%
NIGERIA	Median Age	18
Youth Unemployment		24.5%
Overall Unemployment		6.1%
SAUDI ARABIA	Median Age	32
Youth Unemployment		25.9%
Overall Unemployment		5.9%
S. AFRICA	Median Age	28
Youth Unemployment		34.2%
Overall Unemployment		27.3%
TURKEY	Median Age	32
Youth Unemployment		33.5%
Overall Unemployment		11.9%
UAE	Median Age	33
Youth Unemployment		20.9%
Overall Unemployment		2.6%

Unemployment in selected countries of
ASIA PACIFIC REGION

AUSTRALIA	Median Age	37
Youth Unemployment		9%
Overall Unemployment		5.3%

CHINA	Median Age	38
Youth Unemployment	N/A	N/A
Overall Unemployment		4.4%

HONG KONG	Median Age	45
Youth Unemployment		5.9%
Overall Unemployment		2.8%

INDIA	Median Age	28
Youth Unemployment		48.3%
Overall Unemployment		2.6%

INDONESIA	Median Age	30
Youth Unemployment		27.9%
Overall Unemployment		4.4%

JAPAN	Median Age	48
Youth Unemployment		3.5%
Overall Unemployment		2.4%

NEW ZEALAND	Median Age	38
Youth Unemployment		12.6%
Overall Unemployment		4.8%

PAKISTAN	Median Age	23
Youth Unemployment		54.9%
Overall Unemployment		3%

PHILIPPINES	Median Age	26
Youth Unemployment		25.7%
Overall Unemployment		2.4%

SINGAPORE	Median Age	42
Youth Unemployment		5.3%
Overall Unemployment		3.6%

S. KOREA	Median Age	44
Youth Unemployment	N/A	N/A
Overall Unemployment		3.7%



Asia Pacific

The sprawling Asia Pacific region is extremely diverse. The more economically advanced countries have age profiles similar to those of Europe and North America, while countries like Pakistan, the Philippines, and India have some of the world's youngest populations.

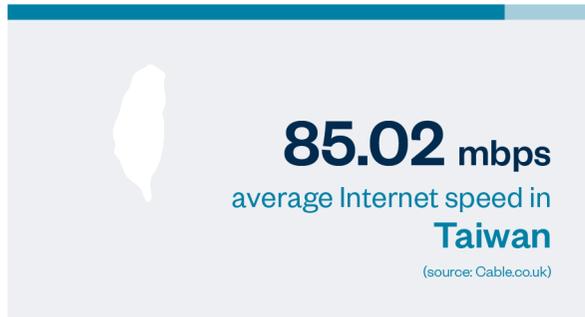
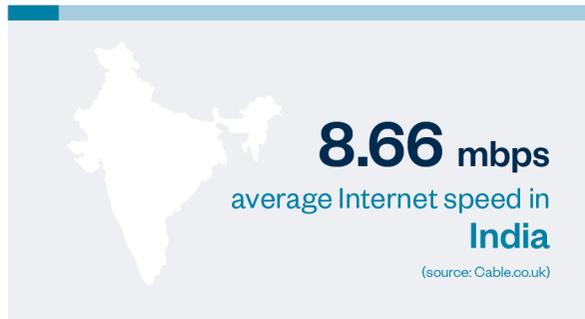
Asia Pacific may be the region where the digital divide is most obvious not just within the region, but also within specific countries. Among Asia's four biggest countries, Internet

penetration ranges from 94% in Japan to 41% in India, with China at 56% and Indonesia at 55%.²³

Several countries in the Asia Pacific region are among the world's digital transformation leaders—most notably Singapore, which topped the Economist Intelligence Unit's Asian Digital Transformation Index. Japan, Hong Kong, South Korea, and Taiwan also made strong showings in categories like 4G mobile coverage, fiber deployment, and average broadband speeds.²⁴ While India and the Philippines have relatively low scores in those categories, each has

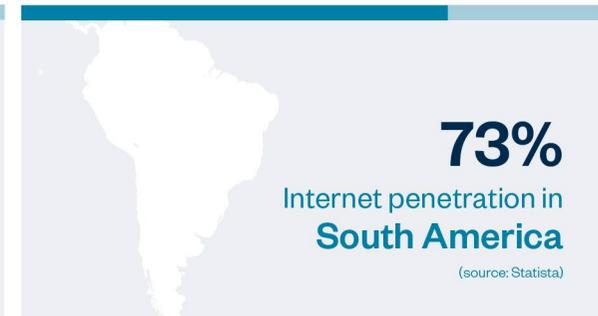
a rapidly growing tech startup scene and a BPO sector that employs at least a million people.

India is home to the world's largest nascent talent pool. By 2027, India will have more than 1 billion people between the ages of 15 and 64, and China's aging workforce will move into second place in terms of sheer numbers.²⁵ Out of all the countries in Korn Ferry's Future of Work study, India is the only one expected to have more skilled workers than it needs a decade from now.²⁶



As a region, Asia Pacific combines a large concentration of manpower—the region includes five of the world’s eight most populous countries—with significant expertise in digital transformation and technological innovation. The challenge will be to diffuse that knowledge, which is focused in places like Singapore, Melbourne, Tokyo, Hong Kong, Seoul, and Bangalore, throughout the entire region and across all levels of society.

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Latin America

With a median age of about 30 years,²⁷ Latin America faces some of the same challenges as emerging markets in other regions, including high youth unemployment.

The World Economic Forum reported that Latin America “shows the world’s widest gap between the available pool of skills and those demanded by firms—creating a major challenge in transitioning to a knowledge-based economy.”²⁸

About a third of young Latin Americans drop out of school without completing their secondary education. More than half of Latin Americans work in the informal employment sector, doing low-skilled work for low wages.²⁹ Of those with formal jobs, 30% spend most of their time doing routine tasks that are vulnerable to automation, according to research by Accenture.³⁰

Internet penetration is 73% in South America, 63% in Central America, and 51% in the Caribbean.³¹

The Latin American country that’s making the fastest strides in its digital transformation is Brazil, which boasts 2,700 technology startups and has almost as many smartphones as people.³² Most of the global technology giants have offices in São Paulo, and Chinese investors are pouring money into Brazil. But Brazil is also the country that has the most to lose if current skills gap trends continue. Employers there are already grappling with a severe shortage of high-skilled talent, and Korn Ferry predicts the country will have a



deficit of almost 16 million workers, across all skill levels, by 2030.³³

Throughout the region, from São Paulo's technology hub to the less developed islands of the Caribbean, there's an urgent need for technical and vocational training, apprenticeships, and upskilling programmes to convert the region's working age population into a fully engaged, modern workforce.

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Unemployment in selected countries of
LATIN AMERICA AND THE CARRIBEAN

ARGENTINA	Median Age	32
Youth Unemployment		22.5%
Overall Unemployment		10%
BRAZIL	Median Age	33
Youth Unemployment		29%
Overall Unemployment		12.2%
CHILE	Median Age	35
Youth Unemployment		18.9%
Overall Unemployment		7.4%
COLUMBIA	Median Age	30
Youth Unemployment		31.1%
Overall Unemployment		9.2%
COSTA RICA	Median Age	32
Youth Unemployment		23.9%
Overall Unemployment		8.2%
D. REPUBLIC	Median Age	27
Youth Unemployment		30.5%
Overall Unemployment		5.8%
ECUADO	Median Age	28
Youth Unemployment		26.1%
Overall Unemployment		4%
MEXICO	Median Age	29
Youth Unemployment		28.6%
Overall Unemployment		3.4%
PERU	Median Age	31
Youth Unemployment		20.8%
Overall Unemployment		2.9%

TACKLING THE SKILLS GAP

Government and Private Sector Initiatives

Around the world, national governments are putting programmes in place to help solve the skills gap issue. In 2015, Singapore launched its SkillsFuture programme, which reimburses adult citizens up to SG\$500 per year (about US \$350) for training courses in subjects like web development and design, cybersecurity, and entrepreneurship.³⁴ France launched a similar programme in 2020, offering 500 Euros per year to skilled workers and 800 Euros per year to unskilled workers.³⁵

In South America, several training programmes targeting young people are showing early success, like *Jovenes con Mas y Major Trabajo* in Argentina, *Jovenes en Accion* in Colombia, and *ProJoven* in Brazil

and Peru.³⁶ South Africa is starting to address the problem at an even earlier stage, by introducing subjects like coding and data analytics into the primary school curriculum.³⁷

International bodies and trade blocs are also tackling the skills gap problem. For example, the European Commission's Digital Skills and Jobs Coalition brings together companies, social partners, and education providers to build digital skills in Europe. The coalition targets students, workers, IT professionals, and all citizens.³⁸ The World Economic Forum is leading the ASEAN Digital Skills Vision 2020 initiative, which aims to train 20 million workers at small businesses in Southeast Asia.³⁹ Certiport is a partner in both of those efforts.

One Million Arab Coders, an initiative launched by Sheikh Mohammed bin Rashid Al Maktoum of the UAE, is teaching computer programming skills to young Arabs in several countries through a blend of online and offline courses.⁴⁰ A dozen global partners, including Microsoft and Oracle, are contributing to that effort.

In many cases, the private sector is taking the lead on large-scale digital training efforts targeting young people. Global technology companies, who need digitally savvy workers and consumers to grow their businesses, are investing heavily in training programmes around the world—often in partnership with governments and nonprofits.



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IBM funds about 200 public schools in 18 countries, where teenagers begin studying technical subjects in ninth grade and graduate six years later with an associate degree.⁴¹ Microsoft has committed to teach digital skills to 10 million youth in the Middle East and Africa,⁴² and Google has made a similar commitment to train 10 million African youth.⁴³ In India, Cisco aims to teach 1 million students how to design, build, secure, and maintain a digital infrastructure.⁴⁴

For educational institutions in the developing world, support from technology companies is critical. “It’s really important for the curriculum department to be supported by the technology companies because they cannot keep up with the standards of the curriculum if they are going to do that alone,” said Abdelmounaim Makhtari, EMEA regional manager

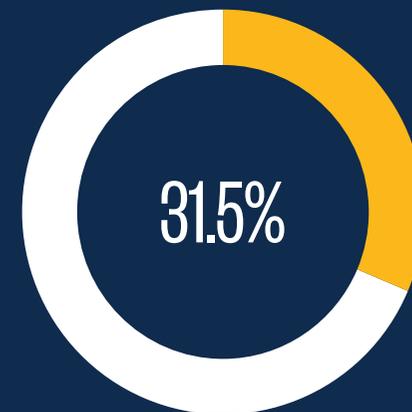
for Certiport. “So they’re prepared to work with Microsoft or Cisco or other companies to help them get access to the content, access to the infrastructure, if they can, and access to the latest technology for their students or their employees or their teachers.”⁴⁵

Efforts to reskill and upskill adult workers are usually led by employers or by workers themselves. Some big employers like AT&T and Boeing are making significant investments to train their employees. But people who work for companies that don’t invest in training are usually on their own.

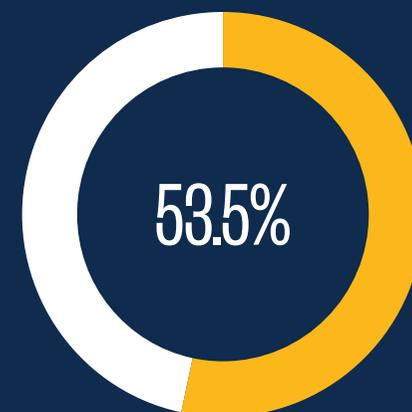
Many businesses aren’t seeing all the benefits they expected from automation, and research by Capgemini suggests it’s because they haven’t given their employees enough training to help them use

the new technology or transition to higher-value, non-automated tasks.

“Among organizations that use a lot of automated processes, those with full-scale upskilling programmes report higher levels of productivity,” Capgemini reports. A separate study by Capgemini found that “48% of all employees and 58% of employees with digital skills have invested in developing digital skills with their own money or on their own time.”⁴⁶ Research by Pearson Vue confirms that many workers are willing to pay for training out of their own pockets.⁴⁷



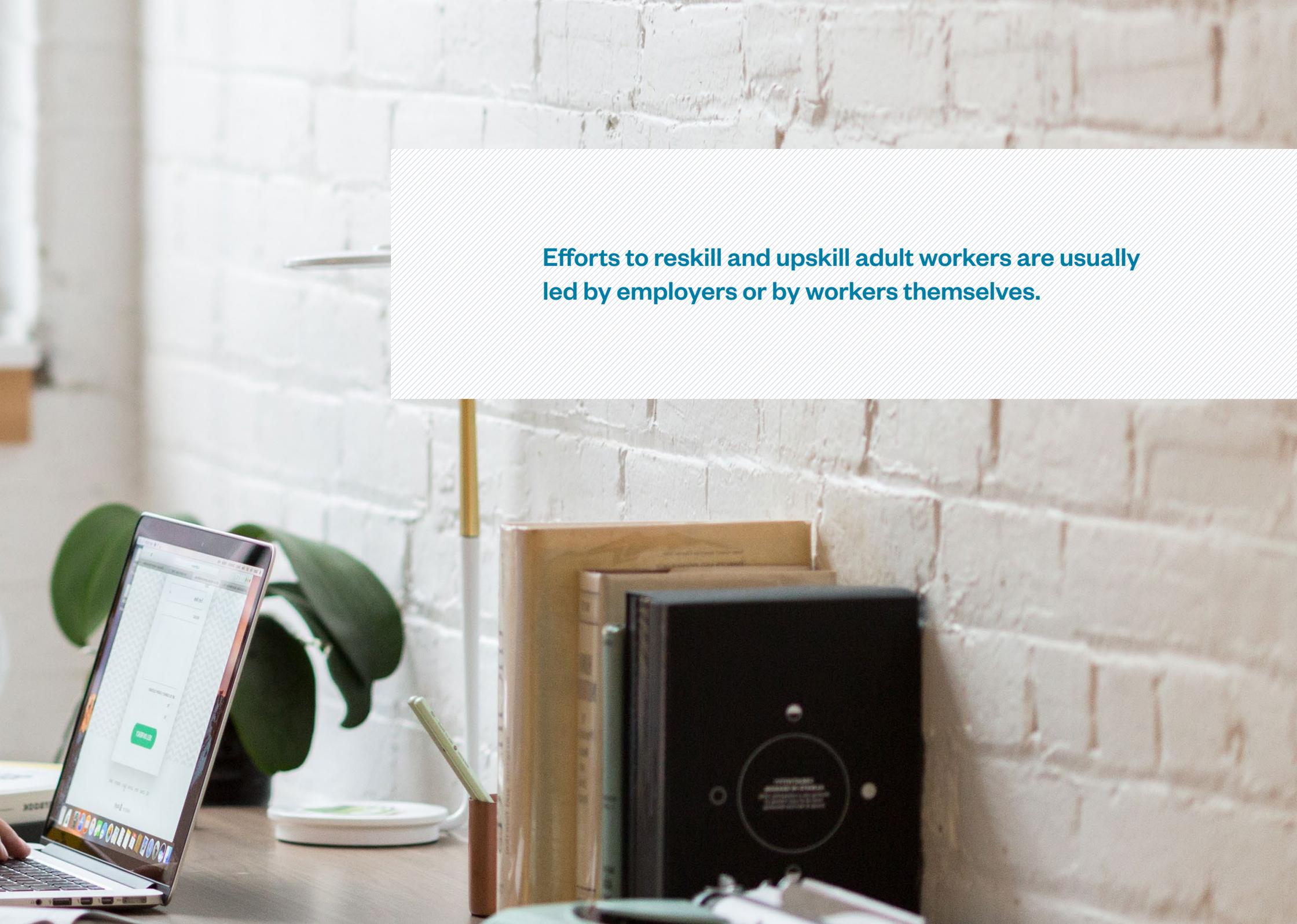
31.5% said they paid for most recent certification themselves



53.5% said their employer paid for most recent certification

(source: Pearson Vue 2018 Value of IT Certification Survey)



A photograph of a desk setup against a white brick wall. On the left, a laptop is open, displaying a web application with a green 'SEND' button. To the right of the laptop are several books, a pen holder with a green pen, and a small potted plant with large green leaves. The scene is brightly lit, suggesting a modern, organized workspace.

Efforts to reskill and upskill adult workers are usually led by employers or by workers themselves.

DRIVING RESULTS

The Value of Certification

In countries with high youth unemployment rates, helping young people get jobs is a top priority for national and local governments. Certification programmes are an ideal solution because they can be implemented on a large scale.

Around the world, workers at all career stages are embracing a flexible, self-directed approach to learning. Online learning, short courses, and micro-credentials—including certificates and certifications in specific subjects—are helping workers to quickly gain job-related skills. Many employers are even accepting certifications in lieu of a college degree. And some colleges catering to working adults offer “stackable” certifications that add up to an associate or bachelor’s degree.

Value for governments

Governments often support technical certification programmes because they make students more employable. In Austria, for example, Enterprise Training Center (ETC)—a private training and certification company—is certifying students in about 100 secondary schools on Microsoft technology. The programme is

endorsed by the Federal Ministry of Education, Science, and Research. Students and their parents pay for the certification exams. ETC also provides free training seminars for teachers.

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Industry certification: Real-life results

In a global survey of more than 10,000 people who earned a technical or business certification, 90% reported they would recommend certification.

The age distribution of the survey respondents shows certification programmes are attracting a large number of mid-career professionals: 43.5% were between the ages of 35 and 54. Forty-one percent were in the 25-34 range, while only 8.5% fell in the traditional student age group of 18-24. Most of the respondents held a college degree (76.6%), including 38.2% with master's degrees, and many had completed several certifications—the median number earned was 4-5.

Of those who participated in an instructor-led training course, 48.5% said the course was held at their place of employment, 31.4% at a commercial training center, and 13.4% at a school, college, or university.

(source: Pearson Vue 2018 Value of Certification Survey)



In Egypt, candidates for many government and private sector jobs are required to have two certifications: IC3 Digital Literacy and Microsoft Office Specialist (MOS), which demonstrates proficiency in Word, Excel, and PowerPoint. Applicants for technical roles are also expected to have advanced certifications. All Egyptian university students get the IC3 and MOS certifications, usually during their first term.

In Morocco, the national government has partnered with CertiTrain Limited to train and certify more than 160,000 teachers on Microsoft technology. The goal is to empower them to effectively integrate Word, Excel, and PowerPoint into the curriculum across a wide range of subjects. Similar teacher certification programmes are happening in other countries around the world.



Alexandria University creates a generation of entrepreneurs

Egypt has one of the world's youngest populations, with a median age of 23.9 years. The government is the largest employer, but the public sector can't absorb all the university graduates. A culture of entrepreneurship is needed not just to create jobs for a large population of youth, but also to drive long-term economic growth.

"In Egypt the awareness of entrepreneurship is very low," said Dr. Walid M. Eid, an assistant professor at Alexandria University (AU).⁴⁸ That's why AU recently launched an entrepreneurship programme that is mandatory for all students. The goal is to teach students the real-world skills they'll need to start a business and also to shift their mindset: instead of looking for a job, they should go out and create jobs.

AU is now preparing all of its 160,000 students to complete Certiport's Entrepreneurship and Small Business (ESB) certification. More than 70 faculty members have been trained to teach the ESB course, which was delivered to students for the first time in 2019. The entrepreneurship programme also includes an on-campus venture lab where students can work on their business ideas and get hands-on mentoring and support.

In October 2019, the European Training Foundation awarded its annual Entrepreneurship Award to AU.

Value for employers

Employers gain many benefits from hiring workers with technical certifications. Employees who are proficient in Microsoft Office are more productive, spend less time trying to solve computer problems, and require less IT support. And workers with more specialized

certifications—in Adobe Creative Cloud products, for example—bring skills that help drive innovation and growth.

In Russia, a lot of employers train their own employees because the skills they learned in school don't match current job requirements. "We still have a real gap between business and education," said Irina Selezneva, an administrator at IT Hub College, a private technical college in Moscow.⁴⁹

The college is trying to fill that gap, offering training and certification in fields like web design, programming, cybersecurity, e-commerce, system administration, and digital modeling. After two to four years of coursework, students can graduate from IT Hub College with an associate or bachelor's degree as well as five to eight certifications.

Value for educational institutions

For schools and colleges, certification provides an external assessment that demonstrates the value of their teaching and training services. When schools offer students not just career-related courses, but industry-recognized certification, they garner a stellar reputation among employers, who often seek out the schools to fill jobs.

Partnering with a certification provider helps schools stay informed about the latest job market trends and keep their curriculum up to date. And certification providers can deliver training for teachers as well as students, as in the Austria and Morocco examples mentioned above.

Value for students and adult learners

For young people entering the workforce, technical and business certifications show they have skills that will help them to quickly start adding value in a new job. The students get unbiased feedback on how well they've learned the skills. For parents, who are investing in their children's education, it shows them a measurable return on their investment.

Students gain a sense of self-confidence that enables them to succeed in whatever path of life they choose. Lucia Acurio, who runs Grupo Edutec—a training and certification provider in Peru and Ecuador—said the parents she meets see the value of technical training for their children. The low-income parents value the certifications more than most

“because they know this is going to be perhaps the key piece of the opportunity to open for them.”⁵⁰

In 2018, Pearson Vue conducted a global survey of more than 10,000 people, including many adult learners, who had earned at least one technical or business certification.⁵¹ Participants reported many benefits from certification, including:

- Greater self-confidence in abilities (67.4%)
- Knowledge has been transferrable to real work situations (55.1%)
- Increased job satisfaction (40.5%)
- Higher quality work output (44.4%)
- Increased personal productivity and task efficiency (44.1%)

Certification launches tech industry careers in the Philippines

“I gained more confidence during my job hunt as a fresh grad as I included my Microsoft Technical Associate (MTA) certificate on my resume and got a job within the first month of looking for it. My managers have said that it was a great opportunity to have an employee who is MTA certified.”

– Sky Princena, Application Development Analyst, Accenture

“When my company saw that I'm Microsoft certified, it gave me a competitive advantage in my job application as a software developer. And they knew that I'm really capable to do my job.”

– Abby Kristine Llarena, Information Systems Engineer, Analog Devices

“The certification exams helped me a lot in measuring my current skills and improving myself for the career I wanted to pursue.”

– Jamilla Jyssa Mae Rendor, Software Engineer, Asahi Shipping, Co., Ltd.

SOLVING THE PROBLEM

How to Adopt a Certification Programme

A certificate programme works with a school's vocational education and training (VET) curriculum, giving students a competitive edge and providing employers with concrete evidence they can do the job. When schools and governments work together to implement a certification programme, it usually has a higher chance of success. Here's how to get started in three steps.

1. Develop a Plan

Create a committee that includes administrators, government officials, academic and VET staff, local business leaders, and area colleges that offer career training. Determine what industry certifications align with your existing curriculum and standards and also fill local needs. Plant the seed for partnerships with local businesses so that by the

time the first students receive their certificates, there will be a job or internship waiting for them—or an opportunity to continue advancing their skills at a local college.

But don't limit yourself to what's in your own backyard. Consider certificates in other promising fields that will allow students to broaden their horizons beyond the local market. A certificate provider can help you learn more about industry trends and the kinds of skills employers are looking for.

2. Examine Funding Options

While some countries have funding available at the national level, local governments are often a better source of support for VET programmes. In the United States, state governments are often willing to fund certification programmes because when graduates find jobs, they contribute to tax revenues,

helping many VET programmes to fund themselves. In Wisconsin, for example, taxpayers receive \$12.20 in benefits for every dollar invested in the technical college system.

If you're a school administrator, talk to local government agencies to see if they're interested in funding a pilot programme. Once the programme has launched and you have initial results showing its value, you'll have a better chance of getting long-term funding. If you represent a government agency, think carefully about your funding model, and remember that students are often more committed to the learning experience when their family helps pay for it.

In many countries, parents typically pay for technical certification programmes delivered through high schools and universities. Lucia Acurio of Grupo Edutec uses a flexible pricing model to make certification programmes available to students at all income levels in Peru and Ecuador. In some cases, local governments help fund the programmes. "We really encourage the government to charge

at least a small fee to each user. That model is much better than offering something to the citizens without charge," she said.⁵²

3. Choose a Certification Partner

It's important to select a certification organisation that employers respect. Choose one with a strong reputation and an outstanding track record in student placement and employer satisfaction. Make sure the programme offers staff training when necessary.

Certificate programmes aren't about teaching to a test, but about helping students solve problems with real-world applications. In today's world, that means having thorough knowledge of the software businesses use so that students can contribute right away when they start their first job. Considering that most enterprises use Microsoft

Office and the Windows operating system, students would be well-served to show up on their first day of work with a strong grasp of Microsoft technology. Those who go to work for smaller businesses could benefit from industry certification in QuickBooks Online, which has over 2.5 million subscribers.

In today's environment, schools can't rely on an academic education alone to prepare students for successful careers or post-secondary education. Having certification programmes can make a school shine, improving students' lifetime employment prospects, as well as raising graduation rates and lifting morale. At Certiport, we can collaborate with you to create a top-notch and measurable programme that works for your students and your budget.

Microsoft and Adobe championships build marketable skills

Each year, Certiport hosts the Microsoft Office Specialist (MOS) World Championship and the Adobe Certified Associate (ACA) World Championship. Students aged 13–22 are eligible to compete. In many countries, they compete first in a national competition and then the winners advance to the world championship. In Russia, for example, the national competitions are endorsed by the Minister of Education and attract more than 20,000 applicants each year, of which 8,000 are chosen to compete. Participants represent all 85 regions of Russia.

Champions at the national and international levels report that the competition has sharpened their skills and helped them land internships, jobs, and admission to prestigious universities.

Here's what three winners said about the competition and how it helped launch their careers.



Waqas Ali

Pakistan

After winning the Microsoft Office Specialist national championship and participating in the world championship for two years in a row, in 2015 and 2016, Ali was offered an internship with Microsoft in Hong Kong. During his internship, he used his expertise to show small and midsize businesses the benefits of Microsoft Cloud (Azure) and also

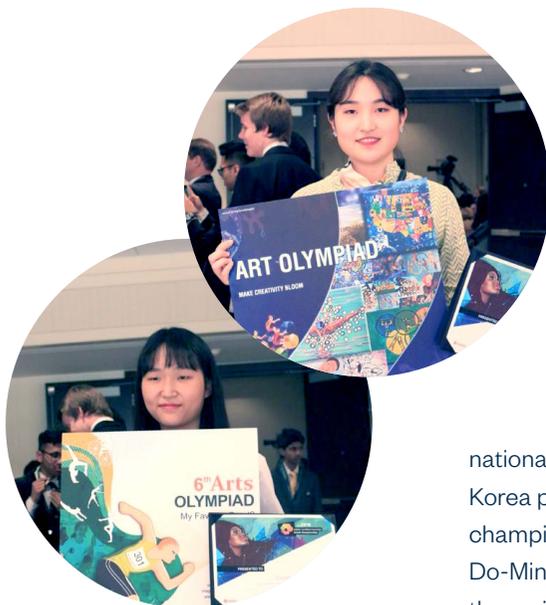
worked on “cutting-edge stuff like facial recognition systems and chatbots.” He went on to receive a full scholarship from the University of Hong Kong, where he’s currently studying computer engineering. Ali said the Microsoft certifications he earned as a teenager “were the start of something which drastically changed my life.”

Boris Lammertse

Netherlands

Participating in the Adobe Certified Associate world championship in 2017 helped Boris launch a successful freelance career. As a student at the Graphic Lyceum in Rotterdam, he developed a passion for graphic design. “When I discovered that Adobe Illustrator works with vectors instead of pixels, a world opened for

me! So I was very interested in the programme and wanted to know everything about it,” he said. Boris described the world championship as “a life-changing experience.” His social media posts after winning the Dutch championship prompted several job offers, but Boris chose to join the gig economy instead. “I now have enough work to be a full-time freelance graphic designer.”



Lee Eun-Jae & Bae Do-Min

South Korea

In 2016, two Adobe Certified Associate national champions from South Korea participated in the world championship: Lee Eun-Jae and Bae Do-Min. Eun-Jae said preparing for the regional and world championships “was the greatest experience I ever had so far to improve my design

skills.” She credits the competition with helping her get a job as a graphic designer at OGam Interactive. Do-Min now works as a graphic designer at Love Young-Ran, an advertising agency that serves beauty brands. She said her certification helped her to differentiate herself from other job candidates. “I got the job offer at Love Young-Ran, and I think I was able to prove my skills because I was AOA certified.”



To find a Certiport Solution Provider in your area, visit www.certiport.com.

THE CERTIPORT ADVANTAGE

Certiport is the global leader in certificate education. Certiport is part of Pearson—the world's leading learning company. Many industry-leading companies partner with Certiport to develop and deliver their certifications and provide learning materials.

We closely monitor business trends and update our offerings as needed to provide students with the latest skills employers are looking for.

With Certiport, you'll get a range of services from certificate development and implementation to staff training and programme management. We deliver more

than three million exams each year to the secondary, postsecondary, workforce, and corporate technology markets.

Our instruction is available in 26 languages and we'll give you access to a network of more than 14,000 testing centers in 148 countries.

Our offerings include:

- Adobe Certified Associate
- Apple App Development with Swift
- Autodesk Certification
- Communication Skills for Business
- Entrepreneurship and Small Business
- EC-Council Associate
- IC3 Digital Literacy Certification
- Quickbooks Certified User
- Microsoft
- Unity Certification

ENDNOTES

1. Bernie Cahiles-Magkilat, "Rising employment gap, skills mismatch hound local IT industry," Manila Bulletin, May 23, 2019, <https://business.mb.com.ph/2019/05/23/rising-employment-gap-skills-mismatch-hound-local-it-industry>, accessed November 20, 2019.
2. Accenture, "Fueling India's Skills (R)evolution: Harnessing the power of technology to bridge the growing skills gap," November 27, 2018, https://www.accenture.com/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Local/in-en/PDF-1/Accenture-fueling-indias-skill-revolution.pdf.
3. "Skills mismatches: EU businesses are losing millions, and will be losing even more!" July 24, 2018, <https://www.eesc.europa.eu/en/news-media/press-releases/skills-mismatches-eu-businesses-are-losing-millions-and-will-be-losing-even-more>, accessed January 30, 2020.
4. Klaus Schwab, "The Fourth Industrial Revolution: What It Means and How to Respond," Foreign Affairs, December 12, 2015, <https://www.foreignaffairs.com/articles/2015-12-12/fourth-industrial-revolution>, accessed October 29, 2019.
5. Shane McFeely and Ryan Pendell, "What Workplace Leaders Can Learn From the Real Gig Economy," Gallup, August 16, 2018, <https://www.gallup.com/workplace/240929/workplace-leaders-learn-real-gig-economy.aspx>, accessed January 14, 2020.
6. "The Future of Jobs and Skills in the Middle East and North Africa: Preparing the Region for the Fourth Industrial Revolution," World Economic Forum, May 2017, http://www3.weforum.org/docs/WEF_EGW_FOJ_MENA.pdf.
7. 2018 Talent Shortage Survey, Manpower Group, <https://insights.manpowergroupsolutions.com/2018-talent-shortage-survey>, accessed November 15, 2019.
8. Armen Ovanessoff, "Latin America's new skills mandate: Are we ready to act?" Accenture Blog, April 5, 2018, <https://www.accenture.com/us-en/blogs/blogs-latin-america-new-skills-mandate>, accessed November 15, 2019.
9. Digital Economy and Society Index Report 2019, European Commission, <https://ec.europa.eu/digital-single-market/en/desi>, accessed January 14, 2020.
10. Rita Almeida, Jennifer Poole, and Carlos Corseuil, "Are Brazilian workers equipped to succeed in a digital world?" World Bank Blog, October 21, 2017, <https://blogs.worldbank.org/latinamerica/are-brazilian-workers-equipped-succeed-digital-world>, accessed November 15, 2019.
11. The Global Learner Survey, Pearson, September 2019, https://www.pearson.com/content/dam/global-store/global/resources/Pearson_Global_Learner_Survey_2019.pdf.
12. Internet World Stats, <https://www.internetworldstats.com/stats4.htm>, accessed January 20, 2020.
13. Worldometers, <https://www.worldometers.info/world-population>, accessed October 28, 2019.
14. Digital Economy and Society Index Report 2019, European Commission, <https://ec.europa.eu/digital-single-market/en/desi>, accessed January 14, 2020.
15. "Getting Skills Right: Assessing and Anticipating Changing Skill Needs," OECD Publishing, 2016, <https://doi.org/10.1787/9789264252073-en>, accessed October 28, 2019.
16. "Future of Work: The Global Talent Crunch," Korn Ferry, 2018, <https://www.kornferry.com/institute/talent-crunch-future-of-work>, accessed November 15, 2019.
17. Worldometers, <https://www.worldometers.info/world-population>, accessed October 28, 2019.
18. "The Future of Jobs and Skills in the Middle East and North Africa: Preparing the Region for the Fourth Industrial Revolution," World Economic Forum, May 2017, http://www3.weforum.org/docs/WEF_EGW_FOJ_MENA.pdf.
19. Ibid.
20. World Bank Open Data, <https://data.worldbank.org>, accessed November 22, 2019.
21. "Number of internet users in selected countries in Africa as of June 2019, by country," Statista, <https://www.statista.com/statistics/505883/number-of-internet-users-in-african-countries>, accessed November 22, 2019.
22. "Africa: distribution of online traffic 2019, by device," Statista, Apr 30, 2019, <https://www.statista.com/statistics/685188/african-countries-online-traffic-channel-share>, accessed November 22, 2019.
23. "Number of internet users in selected countries in the Asia-Pacific region as of January 2019, by country," Statista, <https://www.statista.com/statistics/265153/number-of-internet-users-in-the-asia-pacific-region>, accessed November 20, 2019.
24. "The Asian Digital Transformation Index 2018," The Economist, December 2018, <http://connectedfuture.economist.com/wp-content/uploads/2018/12/ADTI-whitepaper.pdf>.
25. Accenture, "Fueling India's Skills (R)evolution: Harnessing the power of technology to bridge the growing skills gap," November 27, 2018, https://www.accenture.com/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Local/in-en/PDF-1/Accenture-fueling-indias-skill-revolution.pdf.
26. "Future of Work: The Global Talent Crunch," Korn Ferry, 2018, <https://www.kornferry.com/institute/talent-crunch-future-of-work>, accessed November 15, 2019.

27. Worldometers, <https://www.worldometers.info/world-population>, accessed November 15, 2019.
28. David Herranz Acebuche, "Latin America has the world's biggest skills gap. Apprenticeships could close it," March 31, 2017, <https://www.weforum.org/agenda/2017/03/latin-america-has-the-world-s-biggest-skills-gap-apprenticeships-could-close-it>, accessed November 15, 2019.
29. Angel Melguizo and Carmen Pages-Serra, "In Latin America, companies still can't find the skilled workers they need," World Economic Forum, March 30, 2017, <https://www.weforum.org/agenda/2017/03/in-latin-america-companies-still-can-t-find-the-skilled-workers-they-need>, accessed November 15, 2019.
30. Armen Ovanessoff, "Latin America's new skills mandate: Are we ready to act?" Accenture Blog, April 5, 2018, <https://www.accenture.com/us-en/blogs/blogs-latin-america-new-skills-mandate>, accessed November 15, 2019.
31. "Internet penetration in Latin America as of January 2019, by region," Statista, <https://www.statista.com/statistics/934738/penetration-rate-internet-latin-america-region>, accessed November 15, 2019.
32. "Brazil's Growing Tech Industry Creates Strong Demand for Skilled Workers," Worldwide ERC, August 19, 2019, <https://www.worldwideerc.org/news/brazil-s-growing-tech-industry-creates-strong-demand-for-skilled-workers>, accessed November 15, 2019.
33. "Future of Work: The Global Talent Crunch," Korn Ferry, 2018, <https://www.kornferry.com/institute/talent-crunch-future-of-work>, accessed November 15, 2019.
34. Rajeeb Day, "Why Europe Is Facing a Digital Skills Crisis," Entrepreneur, June 25, 2018, <https://www.entrepreneur.com/article/314954>, accessed November 20, 2019.
35. "French workers to get up to 800 euros of job training annually," Reuters, March 5, 2018, <https://uk.reuters.com/article/uk-france-reform/french-workers-to-get-up-to-800-euros-of-job-training-annually-idUKKBNIGH299>, accessed November 20, 2019.
36. Monica Flores and Angel Melguizo, "Latin America has the biggest skills gap in the world. Here's how to bridge it," World Economic Forum, March 13, 2018, <https://www.weforum.org/agenda/2018/03/latin-america-has-the-biggest-skills-gap-in-the-world-here-s-how-to-bridge-it>, accessed November 15, 2019.
37. Bianca Wright, How South Africa is tackling the growing tech skills gap, CIO.com, September 4, 2019, <https://www.cio.com/article/3432217/how-south-africa-is-tackling-the-growing-tech-skills-gap.html>, accessed November 22, 2019.
38. The Digital Skills and Jobs Coalition, European Commission, December 21, 2018, <https://ec.europa.eu/digital-single-market/en/digital-skills-jobs-coalition>, accessed October 28, 2019.
39. "The private sector steps up, pledging to train millions of youth in ASEAN to unlock the region's digital potential," World Economic Forum, August 16, 2019, <https://www.weforum.org/our-impact/the-private-sector-steps-up-pledging-to-train-millions-of-youth-in-asean-to-unlock-the-regions-digital-potential>, accessed November 20, 2019.
40. One Million Arab Coders, <https://www.arabcoders.ae>, accessed November 22, 2019.
41. "P-TECH: when skills meet opportunity, success happens," IBM, <https://www.ibm.com/thought-leadership/ptech/index.html>, accessed November 22, 2019.
42. Khaled Abd El Kader, "Making the benefits of technology accessible for youth in Egypt," Daily News Egypt, October 11, 2018, <https://www.dailynewsegypt.com/2018/10/11/making-the-benefits-of-technology-accessible-for-youth-in-egypt>, accessed November 22, 2019.
43. "Google hopes to train 10 million people in Africa in online skills: CEO," Reuters, July 27, 2017, <https://www.reuters.com/article/us-alphabet-africa/google-hopes-to-train-10-million-people-in-africa-in-online-skills-ceo-idUSKBN1AC29W>, accessed November 22, 2019.
44. "Cisco commits to bridge the digital skills gap in India," CIO, July 30, 2019, <https://www.cio.com/cisco-commits-bridge-digital-skills-gap-india>, accessed November 20, 2019.
45. Abdelmounaim Makhtari, personal interview, November 4, 2019.
46. "Upskilling your people for the age of the machine," Capgemini Research Institute, 2018, <https://www.capgemini.com/research/upskilling-your-people-for-the-age-of-the-machine>, accessed October 25, 2019.
47. 2018 Value of IT Certification, Pearson Vue, <https://home.pearsonvue.com/voc>, accessed October 25, 2019.
48. Dr. Walid M. Eid, personal interview, November 4, 2019.
49. Irina Selezneva, personal interview, October 31, 2019.
50. Lucia Acurio, personal interview, November 15, 2019.
51. 2018 Value of IT Certification, Pearson Vue, <https://home.pearsonvue.com/voc>, accessed October 25, 2019.
52. Lucia Acurio, personal interview, November 15, 2019.

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