National Roundtable Series for E-Learning

NELC ROUNDTABLE SERIES FOR ELEARNING

MEETING TWO: 14 JUNE 2023

SKILLS TRANSFORMATION THROUGH DIGITAL LEARNING

GOLA Report

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FORMAT AND PARTICIPANTS

SECTION 1. Format and participants

1.1 Introduction

This expert roundtable discussing skills transformation through digital learning is part of a series of meetings being organised and hosted throughout 2023 under the partnership of the Kingdom of Saudi Arabia's National E-Learning Center (NELC) and the Global Online Learning Alliance (GOLA). Reform of education systems and the continued growth of online learning requires constant vigilance of rapid changes in technology and with it a huge shift in skills development.

The NELC is the country's foremost authority to enhance trust in eLearning, responding to new trends in learning technologies that meet the Kingdom's Vision 2030 of being a global leader in human capital development. It is essential to stay informed of new trends and to provide information and resources to Saudi educational stakeholders. Hence, this series of roundtable meetings aims to convene a series of panels with experts in their field, from around the world, addressing the most pertinent questions around artificial intelligence (AI), online safeguarding, skills transformation, inclusivity in e-learning, innovation, open educational resources (OERs), online pedagogy and virtual learning environments.

The Global Online Learning Alliance (GOLA) has organised a series of video meetings for the world's education community. More than 3,000 officials from government, universities, and civil society have participated in a productive and collaborative manner to share ideas and make policy recommendations. The aim of expert panels in this series of meetings is to produce policy recommendations and discuss the technological developments impacting virtual learning environments.

The second meeting took place on 14 June 2023, titled:

Skills Transformation Through Digital Learning

This subject title raises the question of what kind of skills to focus on. In the modern digital, information-based economy, the outlook for skills in the job market now has a particular emphasis on:

Growing skills: analytical thinking and innovation; creativity & originality; technology design; critical thinking and analysis; complex problem-solving; leadership and collaboration; emotional intelligence

Declining skills: manual labour; memory; financial management of resources; management of personnel

Therefore the skills we are looking for are higher order thinking skills that include social emotional; design and critical thinking and technology skillsets

In this first section of the report we provide details of the format and participants, followed by details and findings of the discussion in section 2.

1.2 Format of Roundtable

The virtual roundtable format included six respected panellists with a moderator and a welcome from the Saudi National E-Learning Center.

Welcome & opening statements:	10 minutes
Panel discussion with audience Q & A:	85 minutes
Total meeting time:	95 minutes

Digital learning technologies can enable higher order thinking and support the demand for both STEM and soft skills as well as embedding machine learning into digital platforms to respond to the fast-changing demands of the jobs market. The audience were encouraged to type their questions into the chat and throughout the roundtable session these questions were interspersed with a variety of issues addressed, including:

How can industries identify the most critical skills needed for the workforce, and how can digital learning help address those skill gaps?

How can industries foster a culture of lifelong learning, upskilling, and reskilling, and what role can digital learning play?

How can industries collaborate with educational institutions and training providers to develop digital learning programs that meet the needs of the workforce and the industry as a whole?

What is the role of industries in developing digital content for upskilling and reskilling?

How does industry perceive micro-credentials and digital badging for upskilling and reskilling?

This represents just a sample of the questions and the floor was open for all panellists to freely express their ideas. A Self-correcting system is needed for ever-changing skills of the future. E-learning can be a major feature of lifelong learning.

Quality digital learning has become increasingly important in enabling successful skills development and transformation. Digital learning is a highly adaptable tool in bridging the gap between academia and industry – with data driven technology enabling institutions to deliver adaptive and personalised learning to meet student needs

1.3 Participants & Audience

We would like to thank all those for participating and providing such outstanding contributions.
It is an honour for the organisers to host such a distinguished panel of experts.

Welcome

Zeid Alraqeeb
Senior International Relations Specialist, National eLearning Center (NELC)

Expert Panel

Dr Hajar Binasfour
Deputy Director General, Customer Success, National eLearning Center

Ahmed Al-Qutaimi
Senior Manager, SABIC Learning

Prof Cheryl Foxcroft
Emeritus Professor of Psychology, Nelson Mandela University

Danilo Leite Dalmon
Youth, Literacy and Skills Development Division, UNESCO

Dr El Iza Mohamedou
Head of the Center for Skills, OECD

Prof Pavel Luksha
Director and Founder, Global Education Futures

Dr Binasfour is a skilled expert in transforming upskilling and reskilling through digital learning. Dedicated to provide exceptional customer experience and success, and enabling institutions to design and deliver national level initiatives. Ahmed Al-Qutaimi a mechanical engineer, qualified from KFUPM, has more than 20 years' experience in the petrochemical industry. He has worked across disciplines and has led the SABIC Learning function since 2018 to improve learning initiatives. Prof Foxcroft has a PhD in Psychology with 4 decades in academia at Nelson Mandela University. From January 2020 she took up the position of DVC: Learning and Teaching and is now an Emeritus Professor at Nelson Mandela University. Prof Foxcroft is a longstanding member of the Admissions Committee of Universities South Africa. Danilo Leite Dalmon Danilo is a collaborator at UNESCO's section for Youth, Literacy and Skills Development, focused on digital technologies applied to TVET. Recently, he contributed to the report "Enhancing TVET through Digital Transformation in developing countries". Danilo holds a master's degree in international comparative education from Stanford University and is currently a PhD student at Kobe University. Dr El Iza Mohamedou holds a PhD in Economics and is the Head of the OECD Center for Skills which supports countries to achieve better economic and social outcomes by taking a whole-of-government approach and engaging with stakeholders to develop and implement better skills policies. Pavel Luksha is the founder & director of Global Education Futures initiative, aimed at catalysing the transformation of educational ecosystems at a global scale. Recently, he led the Peaceful Futures initiative, the Education group of Global Leadership for 21 Century initiative by UN Geneva Office, the Future Skills R&D Alliance of WorldSkills International, and the BRICS Skills Development Working Group.

Moderator

John Glassey
Chief Executive Officer, Brains Global and GOLA

The Audience

A special thanks goes to the over 900 people who joined the virtual roundtable meeting to here the thoughts of our expert panel and pose their own questions on the subject of skills development. This excellent attendance demonstrates the enthusiasm and desire to understand latest trends amongst educators, learners, policy makers and professional in the Kingdom of Saudi Arabia.

The NELC is mandated to develop regulations and quality standards in the field of e-learning. One of the key initiatives of NELC is the FutureX platform. This is a platform of innovation that enables partner institutions to offer world class online learning experiences to stakeholders.

DISCUSSIONS

SECTION 2. Discussion

This part of the report on the roundtable discussion is written under the titles of broad issues raised and findings along with further editorial input, rather than a mere chronological transcript of the meeting. Here the sub-headings are divided as:

Introduction to the Topic

Digital and Information Literacy

Industry and the Career Life Cycle

Lifelong and Transformative Learning for Future Skills

2.1 Welcome & Introduction to the Topic

Zeid Alraqeeb welcomed guests, referring to how digital learning has emerged as a cornerstone for successful skills transformation in the fast-paced world we live in. E-learning serves as a pivotal bridge spanning the skills gap that often exists between academia education and the demands of industry. Furthermore, digital technologies have empowered educational institutions to deliver adaptive customised learning experiences that meet the unique needs of every learner.

The technology and automation that we have seen in the past has replaced non-skilled jobs through automation, but now we are seeing how technology is replacing a lot more jobs of the middle classes, even for even skilled jobs. If we look at the recent developments in artificial intelligence. If you are a copywriter or a designer, then such tasks can be done in a few seconds using “Mid-Journey” or “Dall-E” artificial intelligence programmes. If you are an accountant, there are accountancy software programmes that can do these jobs. We still need people, in these areas, but the whole point of this is how the world is moving so quickly, that it is very hard to have a long term perspective on the nature of jobs of the future. Therefore, the skills we develop now and the skills in young people and skills that people can develop through lifelong learning, have to have an element of future proofing and must be able to adapt. We need multiple skills that can prepare us for many different circumstances. So the purpose of this meeting is to better understand how digital learning can address the skills gap between education and industry, the impact of digital learning on lifelong learning, the need for reskilling and the criteria for effective implementation of digital learning solutions from the point of view of both the teacher and the student.

Student selection and information literacy needs to be a competency such that their skills at distinguishing quality feeds content back into the knowledge society. A well-defined digital skills curriculum should introduce productivity, creativity, programming, communication, collaborative tools and some artificial intelligence. The digital space is awash with misinformation, so what skills do learners need to distinguish between the huge variety of sources of information? When considering the development of digital capacities it should be conceptualised as part of a broader suite of literacy development. What we need is capacity development on the part of the lecturers and their new competencies, and capacity development on the part of the students and their digital literacy. Quality assurance is critical. E-learning solutions should have quality assurance tests with recommendations from government that give guidance to test for functionality, adaptability, navigation and engagement.

2.2 Digital and Information Literacy

When we talk about skills, intelligence is certainly at the core of what needs to be done. So it is about gathering the data on the skills mixture of people, the task allocation and updating standards. It is essential to identify the critical skills that then allows for better development paths. One thing we are seeing is the advancement of artificial intelligence and accordingly that skills have a shelf life. So the hard skills that are linked to technical knowledge have a shelf life in the sense that as the technology advances the requisite skills need to change. So, critically, it is the development of soft skills that is really essential one, because that is the best way of redeploying and future-proofing.

According to UNICEF, about 68% of youth are not on track to develop digital skills, along with large disparities between high and low income countries, and also gender gaps favouring boys. The OECD has a digital work policy survey which shows how important it is to have digital literacy integrated within the national curriculum. Teachers must also be supported to develop their own digital literacy and continue developing and leveraging the technology in their pedagogical approach, so we can I pick up on that 68% figure. What the advancement of AI has told shown us is that the human-machine interaction will become of greater importance. Going above the basic digital skills has a lot to do with information technology literacy. It has a lot to do with that ability to process information as well, to be a really strong prompt engineer, because we are now asking the machine to perform tests. So it is also critical to focus on the vulnerable groups to try to avoid increasing the digital divide.

The issue of digital literacy is brought into even sharper focus in what is happening in the post-pandemic period. To what extent have we built on some of the lessons as academics have wanted to get back to a reasonable degree of face-to-face teaching as quickly as possible. Now it is very interesting to listen to the students reactions, because now we have a different student coming to university now where they have been learning much more online and have developed certain capabilities. They learnt to self-manage and settle themselves into a pattern. Now we go and disrupt that pattern bringing back in-classroom learning. Some students even comment now how face-to-face learning is boring and may even not live up to expectations given the online experiences of students. Student want to see the fancy digital stuff. They want more AI and even play a role in developing the digital learning technologies.

This brings us to the question of the quality of e-learning. The impetus for the online work is that teachers need to make decisions about what is best taught online and what is best taught face-to-face. How do you enhance the quality of what is being taught? You need to give students a high quality learning experience in whatever spaces they find themselves. What we learned in the pandemic was the extent to which students managed to find their own way, to cope with uncertainty, deal with the anxieties and figure out how to do so many lessons in a week. Students were thrown into the deep end and have developed better as self-regulated learners, accelerating their own digital competencies.

As we look at literature around the world addressing digital and information literacy, many educational institutions are saying that we have to assist digital competency annually for incoming learners, and for teaching staff. There are many instruments and frameworks, that can be utilised to perform assessments of digital literacy, but it is not enough just having the frameworks there also needs to be opportunity for teaching the practical application of these new competencies. Digital learning possibilities need to be pitched at the level where the person is, rather than wanting everybody to reach a certain standard straightaway. This is a mirroring effect in terms of once you start working on the pedagogical side of digital learning, one needs to be careful that there are those who are just competent at a certain level and then can do certain things related to that. So we need to have tiered training structures, and that is where the digital space is just so much easier to work in. This requires more work, especially in the teaching profession where there is anxiety over which frameworks are best adopted.

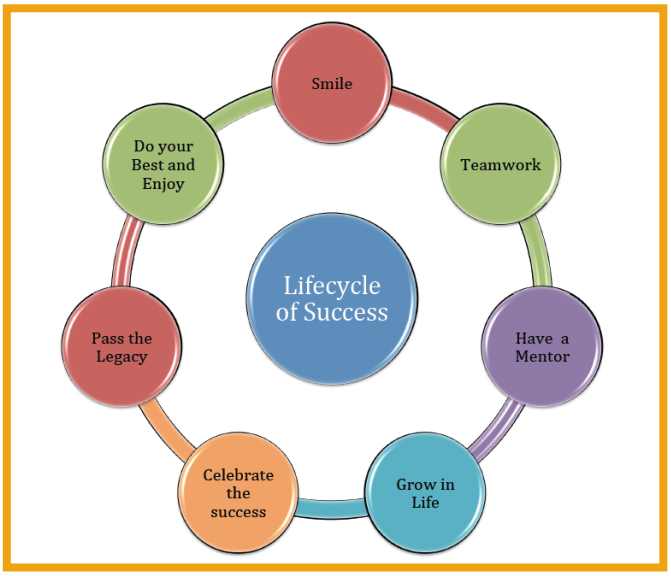
2.3 Industry and the Career Life Cycle

Industry now recognises the need to accelerate the development of digital and information skills, especially in the post-pandemic period. We have seen in Saudi Arabia and other countries as E-learning increased, companies have not paused workforce training or learning, but shifted to online and virtual learning. In industry, the basic requirement is to identify the critical skills, thus linking with job roles and business needs. There has been a traditional way of conducting learning and training to develop people in the workforce. Digital learning has played a major role in shifting and developing people during the pandemic. Many executives in industry identify the needs of the business based on clustering. That is, clustering the business from technical to supply chain to human resources to finance, such that developing jobs requires the mapping of skills needed. So based on that one can easily ask to map the learning content to the requisite skills and from there better define the job roles.

An important point to reflect on is the shortening shelf-life of skills. In fact, this is one of the trends that is very strongly observed. So we can see that careers might have lasted for decades in the past maybe 50 to 40 years. But nowadays, most of the in-demand hard skills emerge, thenthey flourish, and disappear within 15 years. So the full lifecycle of a career is less than the productive lifecycle of a human. So then inevitably means that throughout life, we will have several turning points in our careers to discover our new callings, our new roles. That is the new normal for people that are learning today. Furthermore, part of the conversation around future skills is of course, now seeded with a conversation about new technologies such as artificial intelligence that are disrupting creative jobs that used to be seen as an impenetrable fortress. Once we would have said that the computer will never do anything creative. But nowadays, we see that computers can create amazing art, they create text, they create music, images and many other things.

So we do see that penetration is happening, and something is massively changing. One idea is that when we have a more digital society then more programmers are needed. Now we see that software is writing software. And there will be more of it in in the coming years as this software is improving faster any human is capable to advance on a similar timescale. Of course, there will be even more disruptions. We will see quantum computing, we will probably see artificial general intelligence – even more disruptive than anything we have seen before. So, biotech, robotics, the Internet of Things, all are becoming our part of our reality, which means that perhaps 90% of the jobs we know now will be disrupted in the coming two or three decades, many of jobs will become obsolete. This returns to being a big question for all of our educational training systems. What are we preparing humans for? Because this rate of transformation has never been seen in human history. This brings in the question of future-proofing and having a framework of those core skills and competencies that will be required over a series of cyclical disruptions.

Many in industry see the pandemic as a good point for digital and online learning. Business is readily cognisant of the early stage skills required for operational activities and is now addressing how to respond to disruption while ensuring the new generation acquire a wider range of soft and information-based skills. We are witnessing industry now promoting a self-learning culture to adapt to the digital transformation, while making sure that the workforce is equipped with the necessary tools. This means that digital learning pedagogies and technologies are becoming more of a baseline for



industry to ensure that there is not an increasing gap between education and work.

The challenges now is really how to bridge that gap and how to accelerate the use of digital learning and e-learning with the outcomes of developing core and soft skills. This means also having to develop the technical and functional skills required when investing in e-learning. This requires industry to develop its own content. Currently in the market one can find supply chain content or human resource content or the necessary frameworks for financial education. But when it comes to industry-specific functional skills, such as chemical engineering for example, then that requires dedicated people to develop new digital content. In this regard, industry will protect much of that content to avoid giving advantage to competitors. E-learning content, by its very nature, is not confidential so industry can help with subject matter experts and greater collaboration to promote digital learning. There has to be much greater collaboration with industry, if we are going to get this right. We need the collaboration between industry and academia to better preparing for the real world of work.

The world of work has now changed with people moving from one career path to another, and thus acquiring new skills to adapt to change. This development is accelerating in line with the expansion of e-learning. People now have the tools to assist themselves, such as adaptive learning where anyone can start from the point they know. This then allows for the option of the movement from career to another. This can be viewed as a positive sign for industry, particularly through the upskilling and reskilling of people who can then redeploy from one business to another. Such development no longer requires attending physical classrooms.

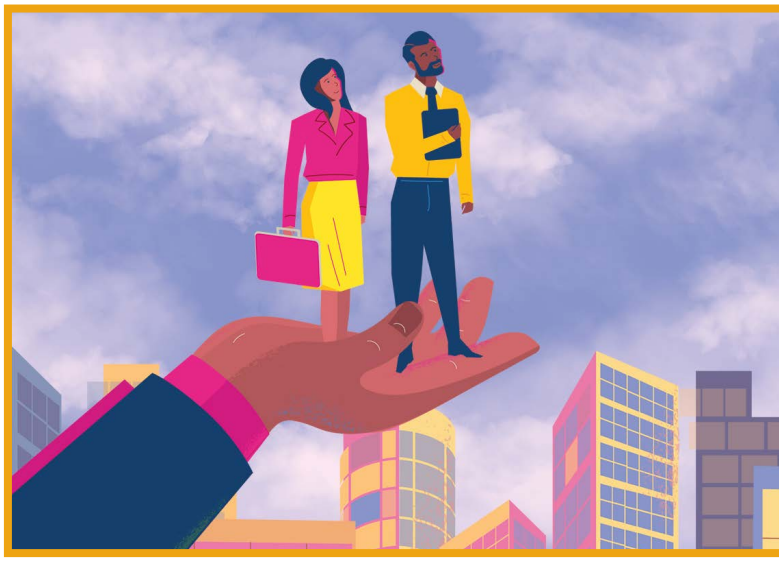
2.4 Lifelong and Transformative Learning for Future Skills

We as humans need to become lifelong learners. We need to be open to new opportunities, we need to be open to make decisions be disciplined. And so, can we create learning environments that are supporting this because traditional learning environments can be quite dull. They are irrelevant to how we humans learn. So we need to create what we call learning ecosystems, many interconnected spaces, both physical and online, connected together in seamless human experience. So part of the role of digital learning platforms is actually to do that. It is not only about AI, the potential of the Metaverse is incredibly promising, because this is about creating all kinds of artificial imaginary worlds. For example, in learning something such as surgery or a technological skills that requires expensive equipment, we are seeing extended realities used lot in the medical field. The potential of virtual and augmented reality is enormous. It has to be coupled with AI because a lot of scenarios probably will not be played by other humans but by bots. This can be embedded into digital learning platforms.

The work of UNESCO especially highlights lifelong learning opportunities. We see that existing, highly skilled people have more access to learning opportunities throughout their lives, because they have better access to resources and new technologies. So highly skilled people have much more opportunity to learn throughout their lives, when we compare to low skilled workers. UNESCO is trying to promote that everyone should have should have such opportunities to learn throughout their lives. In low and middle income countries there is a much lower completion rates for learning at the upper secondary or senior high school level. This is a big problem as the disadvantage is then accentuated when needing to bring in digital competencies and higher order skills.

Equally teachers should have opportunities for lifelong learning, which can certainly be leveraged through digital learning. Teachers need to have access to resources and the opportunity to learn how to use digital and how to teach and create new pedagogies in the digital environment. Then they will be able to teach their students how to use their digital devices to learn. It is essential for countries to overcome the problem of access to technology or the digital infrastructure and connectivity. So a proper digital learning framework needs to have another layer of capacity to learn, not only for the students, but for the teachers also. And lifelong learning central to this.

It is important to appreciate that the development of the digital landscape that we are now living through is one of job disruption and not job destruction, because at the same time there is the creation of new jobs. The modern day career transitions really stands apart because of the pace of change that we are seeing compared to previous technological shifts. So lifelong learning needs to be accessible and allow for the development of skills that are both highly valued and interchangeable between jobs. There is still a lot of work to be done on the employer side. A lot of employers still use academic qualifications as the entry point, or the leverage to move from one place to another. To be a lifelong learner, one must find the time to do it, to know the right course to take and to recognise the added-value when applied to the workplace.



For transformation of our systems to match with the transformation of the society around us then we are at an important point of inflection. For example, take social media. Do social media systems, their databasing and information management carry out some form of summative assessment of people better understand behaviour? No they don't. They actually have a constant tracking of behaviour on their platforms. Facebook already knows your choices better than some of your close relatives. Now, these models of assessment of human assessment have advanced much further, often to target us with advertising and other ways of "monetising". So our online presence and the choices we make, creates a holistic representation of who we are and what kind of behaviour we manifest. Hence, the whole of online learning is the assessment space. We do have to not separate these two, but actually, both formative and summative are happening at the same time. Let us say the general markets perspective is that we have to divide these two types of assessment. But we do don't. They do not have to be different. We can now have assessment which first helps students learn, yet at the same time, as students learn, it becomes both the feedback and the

representation of who the student is and what they are capable of.

Now, if we create a platform that exists, for the whole system of employers as well as education, then actually becomes a crucial depository of data that helps lifelong learning. So we can build on top of our competencies and when we go into a job we continue learning which is then reflected on our personal profile. One can imagine some kind of passport of learning, and some countries are now actively experimenting with this kind of solution. If we imagine some kind of passport that is given to us at birth and we build on top of that a digital passport to follow our competencies throughout the whole life, then that becomes the future of assessment.

The NELC of Saudi Arabia has developed the FutureX platform. FutureX is an integrated lifelong learning ecosystem, which brings in both providers and consumers together, to meet the market demand for upskilling and reskilling. The FutureX platform boasts in having the world's best platform integrated into its ecosystem – the meta platform. One may call it a platform of platforms. Beyond being a content aggregator, the platform brings in key value propositions to its stakeholders by providing financial and operational efficiency. This enables institutions to offer recognised flexible learning pathways, stackable micro-credentials, alignment to national and international competencies and educational frameworks, comprehensive learner records and single sign-on with national SSL integration. So in FutureX, there are over 27,000 courses offered from more than 20 national and international partners, including 1,200 professional certificates and more than 300 specialised programmes. Now the completion rate is over 82%, which is far above the global average for online learning, which is around 15 to 20%.

If there is a need to design a programme with a blend of soft skills and technical skills, one can start with the metadata engine, look up the skill sets required and then pick the best courses that match ones needs – thus designing a flexible learning pathway for learners. The NELC believes that knowledge sharing is the key for continuous development of high quality content, encouraging institutions to share over 14,000 open educational resources (OERs) that have reached over 300,000 people. Furthermore, if there are certain international platforms, like Coursera or edX or LinkedIn, then the teacher or the instructor can choose different courses from multiple platforms. After that, the teacher can assign a learner pathway, leading to students obtaining certification from the NELC. This certification is accredited with multiple number of entities such as the Ministry of Human Resources in the Kingdom.

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