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REPORT ON UNIVERSITY & GOVERNMENT ONLINE MEETING – 25th August 2021

EDUCATION – ENTREPRENEURSHIP – EMPLOYABILITY: THE CRITICAL
ROLE OF INNOVATION IN HIGHER EDUCATION IN CLOSING THE
SKILLS GAP IN THE MENA REGION

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FORMAT AND PARTICIPANTS

SECTION 1.

Format and participants

1.1 Introduction

The purpose of this private video meeting for university and government officials, organised in partnership with Coursera, was to discuss the important concern of closing the skills gap between education and vocation in the MENA region. University leaders and government officials speak of the need to ensure students are better prepared for jobs of the future and the critical role that innovation in higher education plays in this. Participants were encouraged to discuss the actions and policies of their institutions and ministries, and to make recommendations where appropriate.

This special online meeting of university and government from 12 Middle Eastern & North African Countries to discuss skills transformation in higher education was designed as an interactive video meeting whereby all participants took part in moderated small break-out groups. This allowed everyone to converse in private, have good time to express their own thoughts and to discuss recommendations in higher education that contribute to student employability and entrepreneurship.

During the private break-out sessions of the meeting, officials were encouraged to address the following issues:

Policy: What recommendations would you make in producing a comprehensive online learning policy giving a robust framework that covers the important technological and pedagogical requirements for successful learning?

Entrepreneurship: To better embed skills and innovation that promote entrepreneurship and create future jobs, do we now need to ensure that students have a wider range of soft and emerging digital skills by giving them additional learning options other than their main curriculum?

Skills: How are you meeting the challenge of reducing the discrepancy between the changing world of work and the teaching of 21st century skills for success among youth?

Assessment: With more remote learning, what are the challenges regarding online assessment and practical, hands-on learning? Have you decided



any new evaluation strategies for students in the coming academic year?

Industry: What resources should the university provide in giving students a range of skills that match the needs of employers?

Student Engagement: Completion rates for students studying online in many countries are considerably lower than face-to-face. Hence, what training and upskilling of faculty members is required to deliver online courses that is engaging and up to date with industry requirements, so students do not disengage, and we avoid high drop-out rates?

1.2 Executive Summary

Our opening speakers discussed the importance of skills development and the clear consequences of the Covid pandemic in accelerating the move to more blended learning, with no return to business as usual. With more online learning being led by faculties we are seeing more asynchronous learning and deeper consideration of re-engineering education, whether that been in content or assessment. Governments in the MENA region are now taking account of the three types of circumstance in the academic program: face-to-face, blended and fully online. What is critical is that we must now invest in the development of mindsets, skillsets, and the higher order thinking of students, as well as making sure that we build self-correction into the system to ensure adaptation to future technological disruption. In Morocco, they have built a consortium of universities to utilise the Coursera platform. The commitment there is for good governance, innovation, inclusivity and incorporating more soft skills into student learning such that they are better prepared for the jobs market. The following are not exhaustive, but 16 important issues drawn from the break-out rooms in this meeting:

1. Covid is an accelerator for digital transformation and in the last 18 months, universities have had to adapt quickly with no

playbook.

2. The higher education sector has adapted quickly to online learning but there have been signs of a drop in standards, especially in the assessment of more technical courses.
3. Infrastructure is a major concern for the universities. Capacity building, ICTs, digital facilities, and training are all requiring substantial investment to meet the expectations of digital transformation.
4. Assessment remains a major concern. We need to take a considered evidence-based and hard look at assessment, as online learning has exposed how methods of evaluation need redesigning.
5. Higher education institutions have noticed, how some grade averages have gone up with online assessment – raising concerns over cheating.
6. Interaction and student engagement remain serious challenges for online learning. The technology needs to improve but also the nature and form of pedagogy needs be adapted specifically for online education.
7. Technology is not yet mature enough for smart education, but once it is then the system will be more flexible for both students and professors.
8. We are seeing a major generational shift where young people have very different job and career expectations to their parents.
9. Young people may be digital natives but that does not make them digitally literate. There is a need for improved mentorship in online educational resources such that students do not fall to the lowest common denominators of social media and gaming.
10. Employers are telling universities that students do not arrive with the right skills. This is part of the skills gap and closing it requires greater collaboration between all stakeholders – industry, education, and government.
11. It is also not just a matter of the skills gap but the speed of change in this discrepancy due to rapid technological changes.
12. Can entrepreneurship be taught? This is an ongoing debate and although certain traits such as creativity and persistence may not be learnt, universities work hard to provide a wide range of new skills for students to be the next generation of innovators and entrepreneurs.

13. A robust online learning policy framework is required both at the national level and within each higher education institution.
14. Online learning policy needs to be considerate of the pedagogical and technological requirements of higher education, quality assurance and accreditation, inclusive and with a code of practice needed for both students and academic staff.
15. Universities must develop their own e-learning policies in harmony with their development of online courses, content, and assessment.
16. Critical to any policy development is to have inherent self-correction built into the system as we cannot be overhauling policy all the time. There needs be adaptability and resilience built in.

1.3 Format of Video Conference and this Report

In section 1.4 we list the one hundred and seventeen participants of this video meeting on skills transformation in higher education. The most immediate lesson of online video conferencing is to ensure that every participant has a voice. Small groups are essential. So, after opening statements the event was broken into small groups each with a moderator to take notes and support the conversation.

Prior to the break-out rooms there were two opening statements from: HE Dr Mamoun Al-Debi'e, Secretary General of the Jordanian Ministry of Higher Education & Scientific Research; and Prof Aawatif Hayar, President of Hassan II University of Casablanca, Morocco. Although all discussions were recorded and transcribed for the purpose of this report, none of the quotes or what was said during the private break-out rooms is made attributable to any one person.



The following was the video conference format:

Part A: Opening statements from: HE Dr Mamoun Al-Debi'e and Prof Aawatif Hayar.

Part B: Twelve break-out groups were formed, each with a moderator to record discussions and take note of the key points raised.

Part C: All participants returned from their break-out groups. Closing statements were provided by Anthony Tattersall, Vice President of Enterprise, EMEA, Coursera and Dr Fawzi Baroud, Assistant Vice President for Information Technology, UNESCO Chair on Open Educational Resources for Access and Success, Notre Dame University, Lebanon.

The total time of the video meeting was 110 minutes.

After introducing the participants in 1.4, the format

of this report is structured around the policy issues and non-attributable quotations. The participants hold senior positions in universities and government from multiple countries and expressed what they are experiencing as well as their own recommendations. In this report we have done our best to identify the main subjects taken from what participants said to provide a disseminated report that flows as follows:

Covid Accelerates Online Learning

Infrastructure

Online Pedagogy and Assessment

Skills Transformation and the Generational Shift

Employability, Entrepreneurship, and Innovation

Policy Recommendations



1.4 Participants

We would like to thank all those for participating and providing such outstanding contributions. The opportunity for them to openly converse in small break-out groups provides us with a discerning judgement on the key issues and immediate policy recommendations. It is an honour for the organisers to host such a distinguished gathering of educators and policy makers. Everyone committing their time during this ongoing period of uncertainty is a true testament to their desire to ensure strong decision making around the future of higher education. Participants are listed by country, alphabetically:

BAHRAIN: Dr Gurmullah Alghamdi, Rector, Arab Open University

EGYPT: Prof Maged Ghoneima, Advisor to the Deputy Minister of Higher Education for Innovation & Entrepreneurship, Marketing & Business Development Manager at the Innovation Support Fund (ISF), Professor at Ain Shams University, Ministry of Higher Education and Scientific Research

EGYPT: Dr Abeer Elshater, Advisor to the Deputy Minister of Higher Education. Professor of Urban Morphology, Ain Shams University, Ministry of Higher Education and Scientific Research

EGYPT: Dr Zeinab Amin, Associate Provost for Assessment and Accreditation, The American University in Cairo

EGYPT: Dr Rachel S Awad, Senior Director, Academic Affairs Projects, The American University in Cairo

EGYPT: Dr Aziza Ellozy, Professor of Practice and Associate Provost for Transformative Learning and Teaching, The American University in Cairo

EGYPT: Dr Omar Ramzy, Director of the Centre of Excellence & Dean, Faculty of Business & Economics, Heliopolis University

EGYPT: Moamen Ghanem, Deputy Executive Director, Centre for Sustainable Development, Heliopolis University

EGYPT: Dr Lamis Ragab, Vice President, New Giza University

EGYPT: Dr Hoda Yousry, Director of Molecular Biology Laboratory, Principal Coordinator of Erasmus project "Technology-based Entrepreneurship for supporting sustainability in MENA Region, Suez Canal University

HUNGARY: Adam Collis, Education Content Director, Global Online Learning Alliance. *Moderator*

IRAQ: Dr Alaa Abdulhasan Atiyah Alzwghaibi, Counsellor, Ministry of Higher Education and Scientific Research

IRAQ: Prof Ahmed M H Al-Ghaban, President, University of Technology

IRAQ: Prof Kossay Alahmady, President, University of Mosul

IRAQ: Prof Moneer Hameed Tolephih, President, University of Baghdad

IRAQ: Dr Mudhaffar S Al-Zuhairy, Chancellor, Alfurat Alawsat Technical University

IRAQ: Prof Mushtaq Talib Salih Al-Neda, President, University of Anbar

IRAQ: Prof Nameer Al-Sudany, President, Ibn Sina University of Medical and Pharmaceutical Sciences

IRAQ: Prof Saad Shaheen, President, Basrah University

IRAQ: Prof Yasir L Hassoun Almansoori, Chancellor, University of KUFA

IRAQ KRG: Dr Dawood Atrushi, President, University of Duhok

JORDAN: HE Dr Mamoun Al-Debi'e, Secretary General, Ministry of Higher Education & Scientific Research. *Opening Speaker*

JORDAN: Dr Wasim Halasah, Director of Scientific Research and Innovation Support Fund, Ministry of Higher Education & Scientific Research

JORDAN: Dr Nouh Alhindawi, Director of Information Technology and E-Transformation Directorate, Ministry of Higher Education & Scientific Research

JORDAN: Yousef Zoubi, Projects and International Cooperation Unit, Ministry of Higher Education & Scientific Research

JORDAN: Renad Nofal, Projects and International Cooperation Unit, Ministry of Higher Education & Scientific Research

JORDAN: Prof Riziq Alsayyed, Director, Open Education Resources and Blended Learning Centre, University of Jordan

JORDAN: Prof Menwer Attarakih, Director, Accreditation and Quality Assurance Centre, University of Jordan

JORDAN: Prof Ferial Abu Awwad, Director, Centre of Tests and Data Analysis, University of Jordan

JORDAN: Dr Ashraf Bany Mohammed, Director of Innovation and Entrepreneurship Centre, University of Jordan

JORDAN: Prof Khitam Mousa Ay, Assistant Dean for E-Learning, Faculty of Science, University of Jordan

JORDAN: Reem Alfayez, Assistant Dean for Student's Affairs, King Abdullah School II for Information Technology, University of Jordan

JORDAN: Dr Ayman Harb, Assistant Professor of Hospitality, Entrepreneurship and Management, University of Jordan

JORDAN: Dr Rima Al-Hasan, Assistant Professor of Operations and Innovation Management, School of Business, University of Jordan

JORDAN: Dr Adiy Tweissi, Director of E-Learning Centre, Princess Sumaya University for Technology

JORDAN: Prof Mohammed S Ibbini, Vice President, Jordan University for Science & Technology (JUST)

JORDAN: Prof Ismail Hmeidi, Dean, ICT Faculty, Jordan University for Science & Technology (JUST)

JORDAN: Prof Mahmoud H Alrefaei, Dean, Graduate Studies, Jordan University for Science & Technology (JUST)

JORDAN: Prof Sayer I Al-Azzam, Dean, Pharmacy Faculty, Jordan University for Science & Technology (JUST)

JORDAN: Prof Tariq Mukattash, Dean, Deanship of Research, Jordan University for Science & Technology (JUST)

JORDAN: Dr Muhannad Quwaider, Acting Chairman of Department, Computer Engineering, Jordan University for Science & Technology (JUST)

JORDAN: Prof Shadi A Jawarneh, Director, Information Technology & Communication Centre, Jordan University for Science & Technology (JUST)

JORDAN: Prof Qutaibah Khatatbeh, Director, Academic Development & Quality Assurance Centre, Jordan University for Science & Technology (JUST)

JORDAN: Dr Mohammad Alsmadi, Director, Centre of E Learning and Open Educational Resources, Jordan University for Science & Technology (JUST)

JORDAN: Dr Muneer Masadeh, Professor of Computer Science, Jordan University for Science & Technology (JUST)

JORDAN: Dr Omar Al-Zoubi, Assistant Professor of Computer Science, Jordan University for Science & Technology (JUST)

JORDAN: Dr Ahmad Alaiad, Assistant Professor of Information Systems, Jordan University for Science & Technology (JUST)

JORDAN: Dr Omar Meqdadi, Assistant Professor Department of Software Engineering, Jordan University for Science & Technology (JUST)

JORDAN: Prof Harith Abbas, Professor of Educational Technology, Arab Open University Jordan

JORDAN: Dr Mwaffaq Ootom, Director of International Relations and Projects, Yarmouk University

JORDAN: Dr Yousra Harb, Associate Professor of Technology and Entrepreneurship, Yarmouk University

JORDAN: Dr Mohammad Ibrahim Daoud, President's Advisor for eLearning, German Jordanian University

JORDAN: Britta Kähler, Director, Office for Industrial Links, German Jordanian University

JORDAN: Lu'ay Al Hasasneh, Research & Teaching, Economics Department, Faculty of Business and Administrative Sciences, Hashemite University

JORDAN: Dr Sulaiman Weshah, Assistant Professor, Al-Balqaa Applied University

JORDAN: Sultan Qadomi, Vice President, Khawarizmi University Technical College

JORDAN: Suzan Qadomi, Executive Manager, Khawarizmi University Technical College

JORDAN: Iman Al-Ateeq, TVET and Higher Education Associate Project Officer, UNESCO

JORDAN: Reem Bsaiso, Head of Middle East, Brains Global

KUWAIT: Prof Omar Al-Jarrah, Vice President for Planning and Development, Arab Open University HQ

KUWAIT: Prof Mohammad Tawalbeh, Dean, Faculty of Education and General Studies, Arab Open University HQ

KUWAIT: Dr Fayiz Aldhafeeri, Professor of Learning Technologies, Training and Development, Director of Educational Training Centre, Kuwait University

KUWAIT: Nathalie Bouldoukian, Director of Quality Assurance and Institutional Advancement Department, American University of the Middle East (AUM)

LEBANON: Dr Fawzi Baroud, Assistant Vice President for Information Technology, UNESCO Chair on Open Educational Resources for Access and Success, Notre Dame University

LEBANON: Prof Maha Aboul Ela, Dean of Academic Development and Quality, Beirut Arab University

LEBANON: Prof Ali El-Zaar, Director of the Centre for Entrepreneurship and Director of the Centre for Professional Education, Beirut Arab University

LEBANON: Dr Sally Hammoud, Consultant & Lecturer, Lebanese American University

LEBANON: Gabriel Deek, Vice President of the Lebanese ICT Federation (ALMA) and President of the Internet Society (ISOC), Lebanon Chapter

MOROCCO: Prof Aawatif Hayar, President, Hassan II University of Casablanca. *Opening Speaker*

MOROCCO: Khalid Lahyani, assistant to the President, Hassan II University of Casablanca

MOROCCO: Dr Chris Taylor, Vice President for Academic Affairs, Al Akhawayn University in Ifrane

OMAN: Dr Sharifa Al Harthy, Director of the National Innovation Strategy, Ministry of Higher Education, Scientific Research, and Innovation

OMAN: Dr Zahra Al Rawahi, Director of Innovation Capacity Building, Ministry of Higher Education, Scientific Research, and Innovation

OMAN: Prof Armin Eberlein, Deputy Rector for Academic Affairs, German University of Technology (GUTech)

OMAN: Prof Anupam Srivastav, Associate Dean - Academic Affairs, Middle East College

OMAN: Qais Al Juma, Head, Career Services, Alumni and External Affairs Department, Middle East College

OMAN: Yahya Al Balushi, Assistant Head, Department of Electronics & Telecommunications Engineering, Middle East College

QATAR: Dr Tamer M Khattab, Professor of Electrical Engineering, Director of Teaching and Learning Centre, Qatar University

QATAR: Dr Siham Al-Amoush, Senior Faculty Development Specialist, Qatar University

SAUDI ARABIA: Dr Abdulrahman Alogaily, Doctor of Instructional Design, Development, and Evaluation and Faculty Member in the Department of Instructional Technology at the College of Education, King Saud University

SAUDI ARABIA: Dr Hamdan Alamri, Consultant for The Saudi National e-Learning Centre and Assistant Professor of Learning Design and Technology, King Saud University

SAUDI ARABIA: Dr Khalid Alasfor, Assistant Professor in Instructional Technology, King Saud University

SAUDI ARABIA: Abdullah Aljably, General Director eLearning & Training Centre, Technical and Vocational Training Corporation (TVTC)

SAUDI ARABIA: Eng Ali Al-Shehri, Development Supervisor in eLearning & Training, Technical and Vocational Training Corporation (TVTC)

SAUDI ARABIA: Dr Ahmed Al Khateeb, Associate Professor of Applied Linguistics and Language Learning, King Faisal University

SAUDI ARABIA: Dr Sultan A Alshmimri, Director General, General Directorate of Awareness, King Abdulaziz City for Science and Technology

SAUDI ARABIA: Dr Turki Saad Al-Zahrani, Assistant Professor, Educational Technology Department, University of Jeddah

SAUDI ARABIA: Dr Mohamed Al-Adsani, Assistant Professor College of Education - Special Education, Imam Abdulrahman Bin Faisal University

TUNISIA: Dr Halima Mahjoubi, Vice-President of Scientific Research, Technological Development and Partnership with the Environment, University of Tunis El Manar

TUNISIA: Dr Hanene Boussi, Member of the Project Management & Technology Transfer Office, University of Tunis El Manar

UNITED ARAB EMIRATES: Aalya Mesmar, Smart Learning Specialist, Ministry of Education

UNITED ARAB EMIRATES: Dr Essa Al Bastaki, Chancellor, Dubai University

UNITED ARAB EMIRATES: Prof Zaid Baqain, Provost, Mohammed Bin Rashid University of Medicine and Health Sciences

UNITED ARAB EMIRATES: Prof Ramesh Jagannathan, Vice Provost for Entrepreneurship, Research Professor of Engineering; Managing Director of StartAD, New York University Abu Dhabi

UNITED ARAB EMIRATES: Prof Sameh Ghwanmeh, Chancellor, University of Fujairah

UNITED ARAB EMIRATES: Prof Mulhim Al Doori, Dean, College of IT, University of Fujairah

UNITED ARAB EMIRATES: Dr Corrien Van Belkum, Dean, College of Health Sciences, University of Fujairah

UNITED ARAB EMIRATES: Hugh Martin, Registrar and Chief Administrative Officer, The British University in Dubai

UNITED ARAB EMIRATES: Dr Khaula Al Kaabi, Chief Innovation Officer, United Arab Emirates University

UNITED ARAB EMIRATES: Nicola Bettio, Executive Director - Applied Research, Innovation and Entrepreneurship, Higher Colleges of Technology

UNITED ARAB EMIRATES: Dr Tarek Roshdy, Dean of Academic Support Services, College of Economics and Management, Al Qasimiya University

UNITED ARAB EMIRATES: Dr Wael Bazzi, Dean of the School of Engineering, American University in Dubai

UNITED ARAB EMIRATES: Prof Sahel Alouneh, Professor, Cybersecurity Program, College of Engineering, Al Ain University

UNITED ARAB EMIRATES: Zaher Srour, Higher Education Partnerships, Coursera. *Moderator*

UNITED KINGDOM: Anthony Tattersall, Vice President of Enterprise, EMEA, Coursera. *Closing Speaker*

UNITED KINGDOM: Mike Howard, Partnerships Director, Coursera. *Moderator*

UNITED KINGDOM: Kerry Houchen, Partnerships Director, Coursera. *Moderator*

UNITED KINGDOM: Michael O'Neill, EMEA University Partnerships Director, Coursera. *Moderator*

UNITED KINGDOM: Pedro Moura, Partnerships Director, Coursera. *Moderator*

UNITED KINGDOM: Natalia Burbano, Marketing Manager, Coursera. *Moderator*

UNITED KINGDOM: Melanie Sutcliffe, Marketing Manager EMEA, Coursera. *Moderator*

UNITED KINGDOM: Natasha Davidson, EMEA Chief Marketing Officer, Coursera. *Moderator*

UNITED KINGDOM: Alex Garnier, Sales Development Representative, Coursera. *Moderator*

UNITED KINGDOM: Louay Dayoub, Coursera-for-Campus Consultant, Coursera. *Moderator*

UNITED KINGDOM: John Glassey, CEO, Brains Global. *Host*

UNITED KINGDOM: Claire Urie, Head of Government & International Relations, Brains Global

UNITED KINGDOM: Victoria Tate, Head of Education Partnerships, Brains Global. *Moderator*



DISCUSSIONS

SECTION 2.

Discussion

2.1 Opening Statements

The opening statements were provided by HE Dr Mamoun Al-Debi'e, Secretary General of the Jordanian Ministry of Higher Education & Scientific Research; and Prof Aawatif Hayar, President of Hassan II University of Casablanca, Morocco.

HE Dr Mamoun Al-Debi'e

The Secretary General spoke of his appreciation to all meeting participants and his wishes that the outcomes and recommendations are translated into action on the ground. The Jordanian government acted swiftly in response to the Covid pandemic, along with stakeholders in the higher education sector, not just to lessen the impact but to rise to the challenge. For university students there was an abrupt change from the campus-based face-to-face teaching to students be able to learn fully online.

For Jordanian higher education institutions, they were not starting online learning from scratch. The country start preparing for e-learning in the 1980s and throughout the 1990s. By the turn of the millennium, universities in the country were making significant investments in ICTs. In fact, in 2000, HH King Abdullah launched the "Like IT" program which stimulated tertiary institutions to prioritise computer skills and e-learning capabilities.

Now we see many faculties using a variety of different digital learning platforms, mainly asynchronous, through which they deliver material and implement online activities across their courses. Nevertheless, the pandemic did provide the Jordanian authorities an opportunity to think about education both in terms of the aftermath of Covid and in also, regarding the re-engineering of education, whether it be content, assessment or skills development.

The Higher Education Council (HEC) has a wide brief to face the future with concrete actions and smart solutions – too many to enumerate here but in summary there have been three key initiatives. The first is a nationwide action plan for embedding online learning and full blended learning in the higher education system. A committee formed by the HEC started implementing this in January



2021 – for the purpose of enabling the Jordanian higher education institutions to meet the post-Covid era with a robust plan of online learning for the future. Although everyone cherishes campus-life, it is clear that we cannot just rely solely on face-to-face education. According to this plan, all academic programs will be hybrid, encompassing three types of learning: fully online; blended and face-to-face. Furthermore, a critical component of this plan is to properly structure online learning such that it fits the medium. Ultimately, the aim is to enable students to acquire the vital IT and digital skills necessary for employability in the 4th industrial revolution.

The second decision of the HEC is to encourage tertiary institutions to restructure their foundation programs and the main non-specialisation courses such that students from all fields of knowledge are enable in skills and entrepreneurship, innovation, creativity, research, and concrete projects. The skills that students will master from the foundation package are expected to empower them to face post-graduation with confidence and courage.

Finally, the third initiative is to demand from the higher education institutions that they upgrade the academic and applied programs they offer – both at undergraduate and graduate levels. In doing so there should be a particular focus on meeting the needs of the learners, the needs of employers and industry, and the wider needs of our society, locally and internationally.

Prof Aawatif Hayar

The opening statement of Prof Aawatif Hayar is in conjunction with the presentation as per appendix A.

Hassan II University of Casablanca is the largest university in Morocco with over 125,000 students, with about 20,000 laureates each year and a second campus in the City of Lusail, Qatar. The university

prides itself in research with over 120 accredited laboratories and eight thematic research centres. In 2019, the university started a strategy called 5i, based on digital transformation with five pillars (*slide 3*).

At the centre is “i-governance” which is about managing an academic organisation based on collecting and analysing data. Second is to promote “innovation” in education, pedagogy, and research. This proved very important during the pandemic, when during lockdown it required the university staff to develop innovative techniques as well as developing their own digital platform for e-learning. The third “i” is the “insertion” of students into the job market by incorporating soft skills, because traditional course focus mainly on knowledge attainment. The university identified soft skills as being of critical importance in enabling students to find their direction after graduation.

“Internationalisation” is the fourth component as reflected in Hassan II University of Casablanca’s investment in the Qatar campus, with a continuous strategy to connect the university with other tertiary institutions around the world. Finally, “inclusion” is the commitment to promote citizenship and ensure an equal chance for all students.

The digital platform of the university is called “i-UH2C” (*slide 4*) which has been developed since the beginning of the pandemic, that offers e-learning, remote working, a soft skills platform, and language skills. So, for example, students can benefit from learning foreign languages without having to pay any subscription fees. This was also part of a global agreement that was negotiated by the Moroccan Ministry of Higher Education. Furthermore, the university has subscribed to the Coursera platform so that their students can benefit from learning soft skills and civic skills; again, this is free to the students.

The situation in Morocco, due to Covid, remains challenging, especially in large urban areas like Casablanca with a high number of people affected. Accordingly, the September semester will start remotely, but the university has developed hybrid learning so that they can switch to small groups in a synchronous mode. Now 125,000 students can simultaneously access remotely to their courses. Another benefit they have found from Coursera is that the professors can develop their own professional content for their courses. This has proved to be an important factor because the academic staff has switched from 0% e-learning to 100% e-learning in just a matter of three to four months.

These experiences of Hassan II University of Casablanca have now been shared with the other universities in Morocco via the Moroccan Higher Education Consortium (*slides 5 & 6*). This has promptly resulted in 10 more universities signing an agreement with Coursera. Step-by-step they are aiming to create a virtual university in Morocco with local content. Another interesting feature of the platform is the ability to follow the skills development of students with analytics, enabling the university to identify the areas in which students are strong and where they are not so good and may need additional support. This is very important to the university to reduce drop-out rates and help young people better prepare for the jobs market. The university is commitment to transformation – to be a smart, green, and inclusive higher education institution.

2.2 Covid Accelerates Online Learning

A common sentiment amongst participants is that the responses to Covid in higher education have been based on immediate experiences and the need to fulfil both institutional and societal demands. There is no playbook for educators in a pandemic and so what we have witnessed in the last 18 months has not really been methodical or systematic. Universities, as well as the rest of the education sector, need a framework implementing the best practices in online education, that incorporate the wider community elements, strategies that work and a considered approach to which technologies should be adopted.

Fundamental to the success of shifting online, as experienced during the pandemic, has been the universities and academic staff ‘getting creative’. The adoption of a digital pedagogy and the move away from face-to-face teaching is a vitally important issue in terms of upskilling and capacitating academic staff. Another area which universities will need to address is the risk assessment for which the register will clearly need to be altered as online learning and assessment is introducing a whole new set of risks.

Digital transformation in higher education started gaining momentum in 2019, but with normal campus-based teaching there was still a scramble amongst professors of what to do. At first things were not very well coordinated but within a few weeks, things got better, and the universities were able to use tools that were already installed. The spring 2020 semester proved a rapid learning experience both for the ministries of higher education and the universities

For those institutions with longer experience in online education, such as the Arab Open

University, the adaptation was a lot easier. That said, challenges around assessment remain. Tutor marked assignments, posted online, may contribute 20% of the grade weighting, but still on-campus examinations are a major part of completing the course. Even the most sophisticated technology to monitor or proctor students is far from being 100% secure in stopping cheating. One solution is to have more assessment involving critical thinking. But how do you define critical thinking? It varies from discipline to discipline.

In Oman they have the Oman Research and Education Network – OMREN, which was started a decade ago and in recent times has introduced both online learning and the technologies of the 4th industrial revolution to support students and researchers. The onset of Covid meant accelerating use of the program, electronic libraries and leveraging new technologies such as blockchain and artificial intelligence. All universities and higher education institutions are aligned with this platform, which is also recommended by the Arab League to connected researchers across the region – forming part of the Arab States Research and Education Network, ASREN.

For universities in the UAE, the onset of the pandemic did not mean starting from scratch because the government had already a well-established policy for developing the knowledge-based economy, leveraging information technologies. Universities have been using digital learning technologies at large scale and accordingly they have developed several online programs and run many final electronic examinations – three or four years prior to Covid. Their experience is that a robust technological infrastructure needs to be supported with continuous training programs to keep everyone up to date with the ever-changing technology landscape.

In Saudi Arabia they have noticed how the load on the internet has increased dramatically. The Saudi Arabian King Abdulaziz City for Science and Technology (KACST) has been mandated to undertake the planning and implementation of the Saudi Academic Research and Innovation Network, SARINET, which includes the capacity to open up internet speeds to universities.

The University of Jordan started considering teaching some courses using a blended approach in 2016 and over the last few years have expanded into about 200 instructors who were able to use their experience when the pandemic hit. In January 2021 they started putting into action the plan for inclusion of e-learning and blended learning in all courses.

This included training in online education for faculty members. It remains a considerable challenge in how to deal with the logistics of such a large university with the demands of hygiene and social distancing. Like all universities, considerable time and effort has gone into planning and scheduling, especially for practical courses where face-to-face teaching is essential. For those who have spent most of their life teaching using traditional methods, getting used to a new, virtual environment is a huge adjustment that requires ongoing institutional support.

During the Covid pandemic, some acknowledged how they could do slightly lower standards, especially with the assessment of those being tested in the practical and technical courses. How to structure evaluation of practical subjects in a blended learning environment needs input from governments and the accreditation authorities. In the case of technical education, many of the programs demand practical, in-person training, and this has still meant bringing students back to campus but split into smaller groups. Fundamental to the success of shifting online, as experienced during the pandemic, has been the universities and academic staff 'getting creative', inspiring creative online pedagogy and then bringing students on campus for a short, concentrated period for the necessary practical work.

The shift to a blended approach in higher education is in the context of how Covid has accelerated digital transformation and how the universities are now looking at the re-engineering of courses, accounting for a balance between academia and social-emotional learning. So, universities are now having to consider their own administrative policies to ensure effective organisation and procedure along with a quality policy that maintains the institutions standards, meeting national and international



accreditation requirements. Digital transformation should not come at the expense of quality. Several participants pointed to national differences and the need to avoid falling into a “one size fits all”, especially for blended learning policies; but all countries will have a new generation of digital learners with new competencies. Teaching and pedagogy are very different with online learning and preparations need to be made accordingly.

2.3 Infrastructure

An interesting feature of this meeting was how many participants spoke of infrastructure and for academic staff in universities this has clearly been a challenging issue over the last 18 months. Capacity building of faculties, ICT infrastructures and the digital facilities available to students are all part of what universities are having to do to develop their digital education policies. Furthermore, there is a need to invest in the technical support for students and to have appropriate learning spaces. All of which requires additional support staff and defining new financial models that incorporate blended learning. In doing so the institutions need to answer what are the modalities they wish to teach – how much of blended will be online and how much will be face-to-face? Leading onto graduation, this cannot be achieved without quality assurance and how assessment is designed from newly formed online courses.

Designing an online course takes a lot of effort and resources – the infrastructure, instructional design and means of evaluation. The most resource-intensive area is the training of faculty members in how to teach online, design lessons, develop online courses and master the art of digital interaction and engagement. Supporting faculty members becomes an essential ongoing part of the infrastructure to ensure that academic quality is maintained.

Many of the university officials referred to how their institutions now have specific departments responsible for expanding small scale online operations to a bigger scale that can cope with turning traditional courses into the online format. This includes designing and implementing modes of delivery between synchronous and asynchronous. One challenge is how to transition labs into remote learning labs, especially in engineering courses. In an engineering faculty purchases devices to be delivered to student's homes so they can conduct experiments at home and then return the equipment, sanitised. This also becomes a risk management operation for the faculty, so thought needs to be put into how to substitute such devices with virtual labs which then means adapting the curriculum to have virtual solutions. One of their ideas in transforming the labs

into a new format was inspired by the labs provided by Coursera and hence, exchanging ideas in a meeting such as this is highly valuable. Any success in designing virtual labs needs to be accompanied with ongoing training for faculty members and the Covid pandemic offered up the additional challenge of how to effectively deliver good training online.

The experience of Basrah University in Iraq was the need for a very large infrastructure for electronic learning. Yet once the infrastructure and training were in place then they suggested to the ministry of higher education to separate the university into two groups – one of which being an electronic university to produce blended learning and the theoretical aspects of e-learning. The separation of physical and virtual learning has allowed them to expand their reach and serve a wider community, which has proved beneficial in a populous region, in the south of the country. The digital virtual university extends access to education to more learners in the population.

On the whole universities in the Gulf region had an element of advanced warning at the beginning of 2020, such that by the time their respective governments had told them to move online, they had at least managed to give basic training to their academic staff. An immediate challenge at the beginning of the pandemic raises an important issue in drafting an online learning policy – that is the practical element of courses. For example, in applied geosciences, field trips and laboratory work are difficult with social distancing. Certainly, what was very sharply noticed by professors was the lack of student engagement and with that the necessary strategies to improve interaction. What may help is consistency for students and teachers with uniform technological tools. For now, we have a very wide choice of education technology, and it can be challenging for students to know which tool is used by which professor.

In Saudi Arabia, the Technical and Vocational Training Corporation (TVTC) is specifically focussed on skills development and working with industry partners, such that the colleges are in tune with the current needs of the market. They have learnt that robust investment in technology helps in being ready for many of the problems that world throws up – including pandemics. With the infrastructure in place, then we can be successful from day one. For technical curricula it is critical to work closely with industry partners that results in a win-win for both college and company.

With concerns over the digital divide, in Morocco, the government negotiated with the telecommunications



2.4 Online Pedagogy and Assessment

Educators are saying they have never spoken so much about assessment as they have done in the last year. It remains a major conundrum as a necessary requirement of blended learning will mean major shifts in the types of assessment that can robustly grade students online. Any reforms to the system of evaluation and a shift towards continuous assessment is a huge undertaking. Covid has seemingly acted as a catalyst, pointing to the need for more formative assessment that is fitting with the demands of blended learning. Such assessment needs to be flexible, to be learner-centric, focussing on ensuring that the student has both learnt the skills and the ability to apply them. An important question remains: can formative assessment be fully objective in the way summative exams are? Many educators are still adamant that summative assessment gives the clearest picture of whether a learner has achieved competencies or not. That said, the general feeling is that the way forward will be more project-based continuous assessment in tertiary education.

operators such that access to the IP addresses of the universities is free. Students do not pay when connected to servers inside in the country but for educational platforms located outside of the country then students may have to pay a fee. The country has been very keen to ensure inclusivity and that internet access is zero-rated for education.

In Jordan they already have a national centre for e-learning that supports faculty members who can cascade knowledge back into their higher education institutions. The universities already have the basis of a blended learning system, yet their remains lots to do in integrating e-learning across all courses. The cultural aspects are important because social change is slower than technological change. External bodies can play an important role in evaluating the progress of implementing e-learning systems in universities. This also gives a measure of confidence to parents and students. At the University of Jordan, prior to Covid about 10% of the courses incorporated blended learning, but now they are approaching 100%. All courses are now delivered online, but there is a noticeable difference in quality from course to course. The pandemic has clearly accelerated e-learning and now time should be taken to properly assess the effectiveness of implementing blended learning across all the different faculties.

Universities have already spent a great of money on digital resources and further subscriptions to online journals and e-books can prove costly. The drive for many is to direct the academics to open access resources and make use of journals and content that are available without any copyright restrictions. Academics should know how to develop their own open access resources to upload and share with colleagues on digital platforms. Even though there may be differences between countries, the post Covid landscape could well lead to better international collaboration with shared technologies and the leveraging of regional purchasing power with the edtech industry.

Universities are finding that the choke point is how to support and accompany professors in the delivery of online education. They are trained and experienced in giving lectures in front of the classroom. Attempts to mirror such lectures online in a synchronous manner are not fulfilling pedagogical outcomes. In the face-to-face environment a lecturer may try and eke out some interaction with the students, by asking questions, but are often faced with little response. Online, the teacher-student interaction is worse if just trying to transpose the lesson from the lecture hall. The professors need fresh training in how to deliver content online and to test a variety of formats with different timings – a short lecture, followed by a short exercise, followed by encouraging students to visit an online educational resource and then another exercise. Hence, a lesson design that is very different from the normal on-campus format.

The challenges of online assessment are being borne out in the data universities are evaluating now. For example, institutions have reported how the grades achieved during the first examination results of 2020, broadly reflected pre-Covid results in 2019. But in 2021, effectively the second year of remote learning and assessment, in many cases degree grades have gone up, which seems to indicate that students have become adept at cheating. So, for the time being, at institutions like Dubai University, the decision is to keep exams on-campus. To go to online learning without changing the design of courses, then it is just simply moving from the physical to virtual environment without adapting pedagogies and

advancing education. Any such re-engineering of tertiary education will need to incorporate more asynchronous learning.

One of the participants spoke of the future role of “edutainment”. With the uncertainty in what types of jobs will exist in the future, then there is a need to have flexible curricula that can adapt and keep pace with the rate of technological change. If we are also considering asynchronous education, i.e., flexitime in learning, then it is worth considering the combination of technology and entertainment, utilising artificial intelligence, virtual and augmented realities, and the internet of things. This is about encouraging and attracting the next technology-savvy generation that instils in them the love of learning – edutainment will play a crucial role. Regarding the huge variety of edtech tools, the key issue is how to align those tools with the objectives of course modules. Many educational resources are free and open, yet faculty members may not know this so training them in accessing open educational resources is necessary to best leverage what is on offer.

Many have used the pandemic as an opportunity to embrace the tools of online learning and soon finding how little they knew of what is available. There are some very productive tools that can change education permanently and if an institution does discovery and evaluation of the technological tools, they can put themselves in the position of choosing the tools they identify as being the best for their purpose. The university then feels confident in its decision of which e-learning or video platform, or which social annotation tools are used across their entire virtual learning environment.

A notable problem in Egypt, as in the other Arab League countries, has been language. The leading learning platforms are designed and built in English and of course the internet along with its educational resources is dominated by English language services. Now the universities have access to a wide choice of different tools by developing their own or acquiring tools and building upon them to fit the local situation. In the case of Egypt, they had existing policy that limited distance learning in higher education, so the lawmakers needed to make amendments in response to Covid. Things may have not gone smoothly but the last 15 months has helped digital transformation in Egypt's education sector. Educators have been committed to making a difference and taking concrete steps to achieve results.

Many have found cultural resistance and even some fears towards online learning with concerns over whether the students are getting “value for money”

and how effective the teaching is. Gradually, as we see all universities improving the quality of online teaching, investing in training, and integrating more digital tools there is wider cultural acceptance. The major challenge remains in assessment and how to differentiate between students. Online proctoring and the use of new artificial intelligence tools puts more demand on the financial resources of the institutions.

Online learning still has many wrinkles to iron out and universities have had to deal with complaints from both students and academic staff. It also changes the role of the professor who need to become more of a facilitator and guide – pointing learners to the best and most appropriate educational resources. Universities are working hard to account for the feedback from students and professors. This may involve leveraging new innovations such as virtual labs to compensate for the loss of practical hands-on learning time. In fact, academic staff have noticed that students have become more observant and critical in virtual lab settings and are now enjoying such virtual learning environments.

Interaction using e-learning platforms has plenty of scope for improvement. The question of engagement during online lessons is very interesting. On the one hand the lecturer does not have the advantages of seeing students arrive in the class, watching their body language and getting a feel for their level of engagement in the subject. On the other hand, in the digital environment, there are a different set of measures. Proper use of the data can give an objective measure of response times, involvement in online chat and the answering of questions. The professors in this meeting still feel that the online learning platforms need to be enhanced and with so much educational technology available there certainly needs to be better integration between all the types of software. Integrating Moodle and Teams can be complex, for example.

One of the key issues around online learning is the question of engaging the learners and creating interactivity. With the sudden need to switch to online lessons, many have been ‘learning on the job’. One speaker reflected how the format of this meeting (small break out groups) was what worked best in their experience. When you create breakout groups online you eliminate some time wasting and can be more attentive to the individual students. Small online lessons seem to create strong team bonds amongst the participants. It is not just the intellectual engagement but the human engagement that is essential in making an online lesson work. That said, effective online teaching requires much

more planning and more effort than the traditional classroom set-up using the same material.

Many participants concurred that, in the future there will be far more emphasis on continuous assessment, though there is still a great deal of uncertainty of what that looks like. Summative assessment has the advantage of being standardised, whereas continuous, project-based evaluation will be much harder to set criteria for international standards. In a globalised world where the 4th industrial revolution predominates and is a determinant of what students need to learn, then who sets the benchmarks? Will artificial intelligence have a major influence on evaluation? This assessment conundrum will be a difficult problem for policy makers for years to come.

The general feeling amongst professors is that assessment will move to formative and project-based models in the coming years. Such continuous evaluation will then be able to utilise interactive digital content and with the possibility of integrating artificial intelligence we should see much more beneficial personalised learning systems. With the advent of new technologies such as AI and applications that are still yet to be invented, the key will be to develop higher order thinking skills in learners, so they are best equipped to deal with rapid change throughout their working lives.

A key observation is that currently the technology is not mature enough to deal with smart education. For example, virtual reality is still in very early stages, however augmented reality is becoming more mature and with the roll out of 5G and IP version 6 we will start seeing greater disruption in the ICT for education sector. The speed and low latency of 5G will make a huge difference in using the likes of artificial intelligence, robotics, remote laboratories, and other cutting-edge technologies. Once the technology is mature enough to deliver these then the education system will become more flexible – with flexibility for students, academic staff, and location. The learning system can effectively be live 24 hours a day. This may have a massive impact in the future in which the likes of a degree that may take three years could be completed in one year. This is the potential in the future, but there needs to be flexible government policies. Policies must be able to respond to a variety of different scenarios.

Dealing with complexities such as data privacies and digital footprints is something that requires ongoing education and mentorship. Students

need to be taught what sites are secure and how to recognise those that are not; how to manage their own personal confidential information and educators should be looking to enforce this culture of experience. These are cultural challenges as much as technical ones. Such cultural challenges will have a great deal of variance depending on geography. In some Middle Eastern countries for example, maybe more conservative families will not accept their girls and daughters participating in online video-based



activities. Clearly, there is a growing awareness amongst governments and universities as expressed in the meeting, whereby many are now educating pupils about their digital footprint and identity. For example, what a young person posts online today is recorded forever and may come back to haunt them decades later in their careers.

2.5 Skills Transformation and the Generational Shift

Some thoughts were given to generational differences, which need be considered when addressing the issue of closing the skills gap between education and work. Young people today are very different, often quite impatient, they are not willing to wait 20 years to develop a career step-by-step. This is why there has been a growing emphasis on entrepreneurship as combination of innovation and risk-taking.

Student mindset remains one of the most under-explored aspect of education strategy. Changing the mindset is like seeding the ground to enjoy the harvest later. Part of this involves changing the mindset of the parent body who are used to job security, whereas millennials will probably be changing their jobs multiple times in the future. Parents are yet to come to terms with that as they grew up in a different era. Leadership from the educational institutions is essential as digital transformation progresses and educators act to equip students with new skills and competencies.

Young people maybe digital natives who are deft of touch through social media, but this is very different from being digitally literate. Digital literacy is about making the students appreciate the scope and expanse of technology, from design to discovery, the digitally transformed world of the 21st century is boundless, and this means, above all, having robust and well-informed teaching of digital competencies. Such competencies are complex and currently there is no curriculum incorporating the digital world into social and emotional learning. The aim should be such that the student can disseminate for themselves and spot the online fake from fact. We often refer to Millennials, Generation Z (and now even Generation Alpha) as being digitally savvy but often their ability to navigate in the digitally world is not fantastic – and certainly not competency-based. So, there is a clear message from the policy making point of view of the need to balance between risk and opportunities presented by digital technologies.

Meeting the challenge of reducing the discrepancy between the changing world of work and teaching 21st Century Skills is a daily topic of discussion at universities. Feedback from companies is consistently that students are better prepared for the jobs market if internship or practical experience has been part of their course. Those universities that have international partnerships find that when students have the opportunity to attend an international campus or internship, they are more mature for real life after graduation. Companies put a lot of emphasis on collaboration and the ability to work as part of a team, in contrast to the solitary grades-based education system. Teamwork skills are a key element in closing the employability gap.

Employers have been telling universities that graduating students do not arrive from higher education with the right skills. Communication skills are often identified as a weakness, but we are now also seeing new emerging skills in artificial intelligence and cybersecurity which are becoming more relevant as necessary skills for business leaders. Thus, it is important to identify these skills from the world of work and then assessing what can be done at university, particularly regarding those skills that change so quickly. To be responsive, then universities need the support of industry to provide the feedback of which skills are lacking and accordingly how the institution can design relevant courses. After graduation, there are four potential outputs: post-graduate qualifications; professional certification; start-up entrepreneurship; and lifelong learning. The second output, professional certification, is an area in which the universities are well placed to align with industry and the demands of the labour market. It remains important that the

degree is the foundation.

One participant commented that it is not just a matter of the discrepancy between what is taught at universities and what is required of by industry, but also it is the speed of change in this discrepancy. This has heightened in the last couple of decades as the digital and technological age advances and major global manufacturers need more highly skilled engineers and technicians at a pace faster than universities are adapting curricula to produce the talent. It is a tricky problem. A university will generate a new group of graduates in four years' time and despite all their efforts, they will be four years behind what the industry requires. This points to the higher education sector needing to be agile, quick to adapt to socio-technological changes and developing the granularity of courses.

Some universities, like Heliopolis in Egypt, have utilised blended learning courses for the big faculties, while retaining face-to-face classes in the smaller faculties where social spaces are more manageable. The advantage of using ICTs is connecting internationally with other educational institutions allowing the university to think globally and act locally, which enhances the learning experience. Yet the field of ICT in education is full of ambiguity because it is so hard to determine the direction of travel. For example, some young people today do not want a lecturer but prefer a facilitator. With so much content and resources available online then the students need a facilitator they can engage with to search for resources and answers.

So, when is the digital learning tipping point going to happen? Now it has been forced upon us by the pandemic. Going forward is about people, their interactions, communication, and the appropriate use of technology – a real mix in terms of how to manage everything. All the existing research and study into university digital learning, never contemplated students would not be on campus at all. Apart from the face-to-face learning environment, university campuses are very well equipped. It remains that “student life” is an important factor for young people; the university experience is important in developing new peer friendships and enjoying a very wide variety of extra-curricular activities. Building relationships, becoming an adult, and learning to collaborate with others is very meaningful. So, although the sentiment is very much that we will never return to business as usual, one cannot throw the baby out with the bathwater. Universities represent the cutting edge of human development and a concentration of cultural strength for any country, so the move to a more blended model must not lose those exceptional

characteristics of higher education. Furthermore, it is the place that many young adults really start to learn about social responsibility – directly as a result of their own social interactions.

The discussion is not just about technology but the trends that are happening, demographic trends, the networked society and globalisation. Education is based on a linear model from basic education to higher education to the qualifications for specific jobs. But with the changing nature of jobs this linear model of standardised education and fixed curricula is becoming more outdated. There is now the potential for a real shift in the educational model that accounts for new skills alongside the development of robotics, AI, big data, and analytics. The question is how much our curricula and educational institutions can adapt to the changes, because already some of the teaching material is obsolete such that by the time a student graduates the previous requirements for their jobs have become obsolete.

Instead of a linear model, we should be thinking about more of a multi-disciplinary model with the cross-over of skills. Some refer to this as the consilience model that is non-linear education. There is a need to have skills and competency-based education rather than pure content. Such developments require greater collaboration, and that students and faculties work in a more collective manner using open educational resources. Historically there has also been an element of an elitist attitude towards online learning, especially amongst tertiary institutions where an online qualification does not have the value and cache of an 'on-campus' degree. Yet, with Covid as an accelerator, everyone is required to invest in online learning – which for the moment is more emergency learning than fully-scoped online learning.

In Qatar's Centre for Excellence in Teaching & Learning they work to support the academic staff in adapting their teaching practices to meet the necessary skills transformation for jobs of the future. This support has several pillars that include course design for new skills development, digital enrichment to help with the transition from face-to-face to online, how to help students be critical thinkers, and how to help the institutional capacity building. Students, for the most part, have no problem adjusting to the use of online education tools but effort is needed in ensuring they are engaged and motivated in using the appropriate online media.

2.6 Employability, Entrepreneurship, and Innovation

Several participants in the meeting commented how you cannot teach entrepreneurship in the classroom. Accounting, marketing, business administration can form part of a course curriculum, but these ingredients are not enough for the final recipe that makes an entrepreneur. Educators recognise and we are seeing strategies that incorporate bringing industry to the college, establishing internships, listening to feedback from companies of what skills and competencies are needed. In Oman they have also recognised that entrepreneurship needs competition, and success in the commercial world needs experience of failure. Learning to love failure may at first sight fly in the face of higher education, but in commerce we know that failure creates more innovation. Silicon Valley is littered with failed technology companies, yet it is the most successful technology cluster in the world. Failure is a key component of the journey for start-ups. The Middle East College encourages start-ups and competition between them. Even better if these young people can join international gatherings and start-up competitions interact with other entrepreneurs from around the world.

So, can we teach entrepreneurship? You can teach students how to write a business plan, how to create a budget and pitch their ideas – yet they still need more elusive talents of persistence and creativity. The approach of AUC in Egypt has been to create an ecosystem called "Venture Lab" that encourages entrepreneurship and skills which includes mentoring and putting them in entrepreneurial environments. Experiential learning is the key to skills development.

Of course, many universities have



within them schools of business that focus on innovation and entrepreneurship in providing the necessary tools, equipment, and mentors to support students in preparing for the jobs market. Innovation centres will cover areas like robotics and artificial intelligence with programs that organise academic fairs and product design as part of a mandatory curriculum. Often, we see business and accounting clubs that are very popular on campus, with a collaborative approach where students can enjoy working together on practical problems. Business and innovation centres then provide other employability skills to all students at the university, including offering workshops and developing communication skills.

For skills development, those universities that have business courses addressing entrepreneurship, innovation, and creativity there is also the social aspect. This means having community-based learning where we can go into communities and learn local and relevant ideas for entrepreneurship, i.e., developing social entrepreneurs. At Notre Dame University in Lebanon, they have designed a framework called “open badges”. Formal learning has grading but learning outside of the classroom and the formal curriculum can develop skills with their own form of accreditation. The university can assign to the open badge a set of criteria and competencies which are then awarded to students who can use it as an additional achievement to show employers.

In Saudi they have built innovation centres in their colleges around the country which help students identify what innovation is and entrepreneurship introduces new ideas to the economy. Such centres work closely with industry and the important experience for students is learning more about the work environment, meeting with people who have started their own companies and understanding business models. Bringing in practical experience and internship is essential, but also a closer understanding of the community helps develop social entrepreneurship. Focussing on engineers, for example, gives students the opportunity to see how their technical and theoretical studies have not just practical applications, but also community-wide relevance.

To enhance the role of universities in fostering innovation it requires an integration of an innovating culture into academic programs and core syllabus. Achieving this culturally involves strong engagement with local communities and industries that can share their experiences and provide feedback into the academic programs. At the same time universities are cognisant of the fact that the university is an academic institution and not a business – many

professors are concerned that too much focus on professional skills will diminish academic excellence. Quality assurance thus becomes a key factor, especially with the greater use of e-learning.

In Saudi they note that programs relating to entrepreneurship are more common in the private universities, while the public universities are more grounded in long-established rules that may limit collaboration with some industry sectors. The relationships between academic and scientific research in universities and appropriate industry partners takes time to develop trusted partnerships. Thus, it is important to identify institutional gaps – knowledge gaps, motivational gaps, and organisational gaps – before implementing new plans and technologies. A university may invest millions in new technology but with a lack of motivation it is not properly used, so these gaps must be connected through ongoing training and professional development.

The University of Tunis El Manar has established a strategy to improve employability and skills transformation. Doing so has meant a detailed review of the learning outcomes of their curricula. Designing new curriculum has involved collaboration with the companies who will ultimately be the employers of the students. Integrating innovation and entrepreneurship has resulted in the establishment of many innovation centres and encouraging incubators within the university campus. The government in Tunisia has good projects in this regard and there is strong encouragement for students to take up internships which have a proven positive impact on employability and strengthening the confidence of young people.

At the UAE's Higher College of Technology, their approach to entrepreneurship also involves competitions in design and technology, the organising of hackathons, supporting and training students in an innovation space, but all of these are currently extra-curricular activities. Universities in the region have also managed to bring elements of social entrepreneurship into their curriculum. Not forgetting that promoting entrepreneurship is very high on the political agenda in MENA countries, who wish to see less reliance on public sector employment.

2.7 Policy Recommendations

The environment now created by the Covid pandemic has given an opportunity amongst universities to address the requirement of a having a robust online learning policy framework. Digital disruption is further accelerating the need to devise

policy that includes hybrid learning and how are we going to evaluate students. Such a policy framework is complex, with a need to account for the role of faculty members, the role of students and the infrastructure required. As well as the question of how to best assess students, there is also the need for higher education institutions to self-evaluate their course delivery and content. Furthermore, universities have professional qualifications that have statutory requirements, so they have had to do a lot of negotiating with the regulatory and professional bodies to ensure they fulfil statute.

To fulfil both pedagogical and technological requirements we need to ensure the infrastructure is ready and teaching staff are provided with the necessary training to move online. This must be done in compliance with accreditation requirements. Teaching and assessment practices must be accessible to students with disabilities and any student code of conduct must be fit for purpose for blended learning and teaching because the current code is mainly set for face-to-face and proctored examinations. Academic integrity must remain paramount whether learning online or in the classroom.

Any digital online learning policy should incorporate the student-centred teaching philosophies of the universities. The steps required in delivering digital transformation require the institutional support of both students and faculty members along with adopting a learning management system and the design of online lessons. Good quality online education requires individual student attention, so it is the university's mission to invest in and promote student learning that enhances their development. Faculty members require continuous support to allow them to provide effective and dynamic online instruction through a variety of academic approaches, including professional development, specialised online training courses and responsive technical support.

Two important factors in determining online learning policy and implementation are the consideration of cultural factors and the personal dimension of students. How do students respond to the switch to online learning and what is the cultural impact? Some students may enjoy more online interaction, whereas for many there is the aspect of having that feeling of belonging to the university. Being an on-campus student is part of growing up that contributes to a young person's social experience. That association with a university and the experiences it offers is something we carry through our life and the online learning experience does not have this cultural uniqueness.

In terms of formulating online learning policy, governments should lay the groundwork with a regulatory framework and with the financing of infrastructure. The latter can be done in partnership with the operators and the education technology industry to reduce the burden on public sector purses. The regulations need to cover a wide brief of safeguarding learners online, protecting privacy and data, the design of online pedagogies, online codes of conduct and not forgetting the important role of the family. Creating a conducive learning environment in the home is not easy and puts further pressure on parents, so the regulatory framework needs to offer families guidelines and means of support from within the community.

Any successful framework needs capacity. Adapting to online education and learning off-campus requires capacity building amongst stakeholders from teachers to assessors to instructional designers and technicians. Two approaches to designing this instructional strategy were suggested: firstly, designing lessons with ready-made edtech and software; secondly designing lessons using the technology itself as a learning tool. The designing of lessons using ICT tools can help improve higher order thinking. Integrating different software enables students to explore and layer independently, then teaching staff can focus their instructional strategies on more problem-based learning. Furthermore, it would help if teaching styles can be incorporated into instructional materials as many of the current designs are hard for teachers to apply because their methods have not been integrated into the edtech design.



Accompanying national frameworks is the need for universities to develop their own e-learning policies. The institution has responsibility over student privacy and confidentiality and must have robust digital learning policies that range from software standards to appropriate use of email. Such in-house frameworks for e-learning give the higher education institution the opportunity to include clear guidelines covering assessment and the standards expected in online examinations.

One sentiment spoken about is the opportunity for higher education. The necessity of universities now developing more online courses means they can then be offered to a wider population and perhaps those who are unable to physically attend on-campus. Online education has the power to make the world a smaller place. As mentioned by Secretary General Al-Debi'e, the plan in Jordan is to continue with the blended learning model and not return to business as usual. Universities and governments have gone through a lot of trial and error, not just on the delivery of material but on the specific design of online lessons, involving innovation in their pedagogical approach. We will never go back to business as usual, but careful consideration is needed in specific areas of practical education, from engineering to medicine and all the vocational courses requiring "hands-on learning".

A fundamental question is one of self-correction. We cannot be overhauling policy all the time, so must find a way to ensure adaptability and resilience into the education system. One way this can be done is to introduce lifelong learning which can then positively contribute to a country's national human resource development. The way to do this is to create a culture of lifelong learning, affected through policy and action. Such a lifelong learning policy is not just something that happens at the university level, it also needs to translate the work life. We recognise that such cultural changes cannot happen overnight. The expectation is that it will take a decade or two before fully manifesting itself, but such an approach is certainly worth investing in. Learning how to learn is going to be a key enabler. With big changes there always comes resistance, so an effective approach is to supplement first and then supplant the change as people adapt.

Many believe that the Covid pandemic can be seen as a huge opportunity for higher education systems to modernise. Decisions around distance learning are now easier and the use of technology in education gives students the mindset to be ready for the 4th industrial revolution. Even though we were not prepared for the pandemic, in education it has revealed itself as an opportunity for students to develop themselves in ways that may not have happened so rapidly before, particularly regarding their own self-management, collaboration and developing 21st century skills. Equally the same applies to professors who have been forced to teach online even though they have not had any prior training. Of course, this has highlighted the need for greater investment in teacher training and building capacity in digital literacy.

Every country has come up with policy guidelines for

blended from the highest authority in the ministries of education and higher education, but there is also the inherent character of the institution that needs to be accounted for. For example, some colleges have, for a few years, implement a "flipped learning" approach where the conventional notion of classroom-based learning is inverted: students are introduced to the learning material before class with lecture time then being used to deepen understanding through discussion with peers and problem-solving activities facilitated by the lecturers. The philosophy is that learning must be student-led. So, where they had this in, say for example Middle East College Oman, the sudden move to online at the beginning of the pandemic was less disruptive. Some fine-tuning was required but the program structure was in place and from the beginning they already had around 40% of assessment online, with quality and academic integrity already secure.

From this flipped learning approach to a fully blended learning course program, there is then the need to improve the quality of interaction with students online and what type of learning material encourages the most productive online engagement. The questions the higher education institution then needs to answer are what improvements can be made to learning materials, how can we better design online lessons, what can be done to improve interaction with the teacher, and how can we improve the learning environment where some peer-to-peer interactions take place?

When designing policy frameworks it requires a technology audit – the availability and type of platforms, the appropriateness of content, the design of software, the cost, privacy, and copyright – all provisions that need placing within a framework while ministries of education are working in parallel to start a new academic year, with the added pressure of urgently implementing blended learning. Any framework needs benchmarking, the defining of criteria that can measure student achievement and success. In utilising software, for example, understanding the program per se is not important but producing something of value by using the software as a tool is how we can assess achievement.

At the national policy level, any frameworks should also include codes of practice for working with industry and private sector stakeholders. As well as key operators such as the telecommunications operators, the digital technologies, the platforms, devices, and software are all provided by private sector companies who own the intellectual property. For the good of the education ecosystem, much deeper collaboration with the private sector is required. The telecoms operators have an important

role to play in embedding advanced security and monitoring systems into networks.

Policy makers also need to pay close attention to inclusivity. Fairness needs to be consolidated into assessment systems that ensures both the circumstances of Covid and the personal and social circumstances of the individual students do not prevent them from achieving their academic potential. This also highlights the need for greater inclusivity and the modification of standards to accommodate those learners with special needs. The challenge for policy makers and educators is keeping pace with the fast-changing and ever-evolving digital landscape of the 21st century.

2.8 Closing Statements

Closing statements were provided by Anthony Tattersall, Vice President of Enterprise, EMEA, Coursera and Dr Fawzi Baroud, Assistant Vice President for Information Technology, UNESCO Chair on Open Educational Resources for Access and Success, Notre Dame University, Lebanon.

Anthony Tattersall

The opening statement of Anthony Tattersall is in conjunction with the presentation as per appendix B.

We are now at an important time in the jobs landscape with skills transformation being a critical issue around the world. When we look at employability, a lot of the changes that we have been going through recently due to Covid, there is an acceleration of emerging trends around artificial intelligence, automation, and a shift in how organisations operate. History shows that when we see transformation in types of employment that it is the least educated who are hardest hit. What we are seeing now is the pandemic accentuating this as a significant challenge.

Lesser education impacting employability is not just a function of academic skills but also a result of the new business and technical skills required in the market. We are also seeing a huge impact from automation and technology. The jobs being taken because of automation are those at the lower income levels or lower levels of formal education. Therefore, this is the community most at risk.

What we are seeing with Covid is that it has accelerated many of these existing problems. The engagement of customers through virtual means has driven the digital transformation of automation with people embracing technology, which in many cases leads to cost savings. By 2030, across the MENA

region there will be about 29 million jobs at risk of being displaced due to automation. That is about 17% of all jobs currently in the region.

Equally we are now seeing a huge number of new job opportunities, predominantly requiring digital skills. As per the World Economic Forum data, the growing job sectors over the next five years are around technology, data analysis, data science, machine learning, AI, digital marketing, and process automation. A critical challenge is that new skills are needed to fill these roles. Many are skills not taught at academic level so there is huge investment from companies in having to rescale and upskill. That said, there is also the opportunity for educational institutions and governments to help facilitate the development of these new skills to both drive career outcomes for students and to help improve outcomes for businesses.

From Coursera's own global skills report (slide 5) we can see that as the general skills proficiency level increases, then the country benefits overall. Naturally, a higher profile of skills attracts more investment and creates more innovation, driving better overall economic performance. Hence, all stakeholders can contribute, from academia to government to industry. Looking over the next couple of decades (slide 6) we see as many more young people enter the labour force, the MENA region has the highest rates of youth unemployment at 27% on average and youth are five times more likely to be unemployed than their adult counterparts.

The future is clear, a higher share of professions is going to require university degrees or technical qualifications and skills. So, a core challenge for



the MENA region is addressing this potential skills crisis. There is broad recognition that the skills gap exists. Coursera has some strong insights into what is needed because of the platform's use across different populations. The large learner community on the platform allows Coursera to see the kind of skills that people are focused on. Furthermore, the work with university and industry partners helps Coursera understand what programs have been developed for students and what kind of skills businesses are rescaling.

The example by our opening speaker, Prof Aawatif Hayar, President of Hassan II University of Casablanca, gives good reference to how a wide consortium of universities in Morocco are bringing in more soft skills, addressing student drop-out rates and are improving employability outcomes. These programs contribute towards the skills that enable people to successfully complete their academic career as well as build some of the technical skill sets required to be successful in the world of work.

Coursera also partners with governments around the world to support wider programs for upskilling citizens to drive better economic outcomes for the MENA region by investing in skills development. If we look at what people are learning in the region (slide 12), we see the likes of business, computer science, data science and health leading the way. As we know, those hydrocarbon-based economies in the region are now working intensively to diversify their economies – to bring more innovation into their countries and to develop service-based, digital economies.

So, not just at the national level, but also at the individual level there needs to be continued investment in skills development such that students can leverage new skills to improve their employability. This cannot be a blanket approach but rather investing in the right skills that complement both academic excellence and the requirements of the jobs market. Furthermore, governments and higher education institutions have an opportunity to promote lifelong learning, especially as we see people going through more career transitions in the future. These are exciting and challenging times, and with the right approach, new skills development can make a huge difference to delivering better employability outcomes.

Dr Fawzi Baroud

Dr Fawzi acknowledged the good work that Coursera are doing in enabling skills transformation and development. What is important to consider in the higher education sector is the wide differentiation

of institutions in the region. There are public, private, non-profit, technical institutes, independent colleges, open and virtual universities. Many have historical ties that rely on curricula and teaching with a foundation in the British, American, French, or German systems and this impacts on the cultural positioning of the institution. Many of these are just “diploma mills” – places to get qualifications and accreditation but are lacking the necessary diversity for the MENA region.

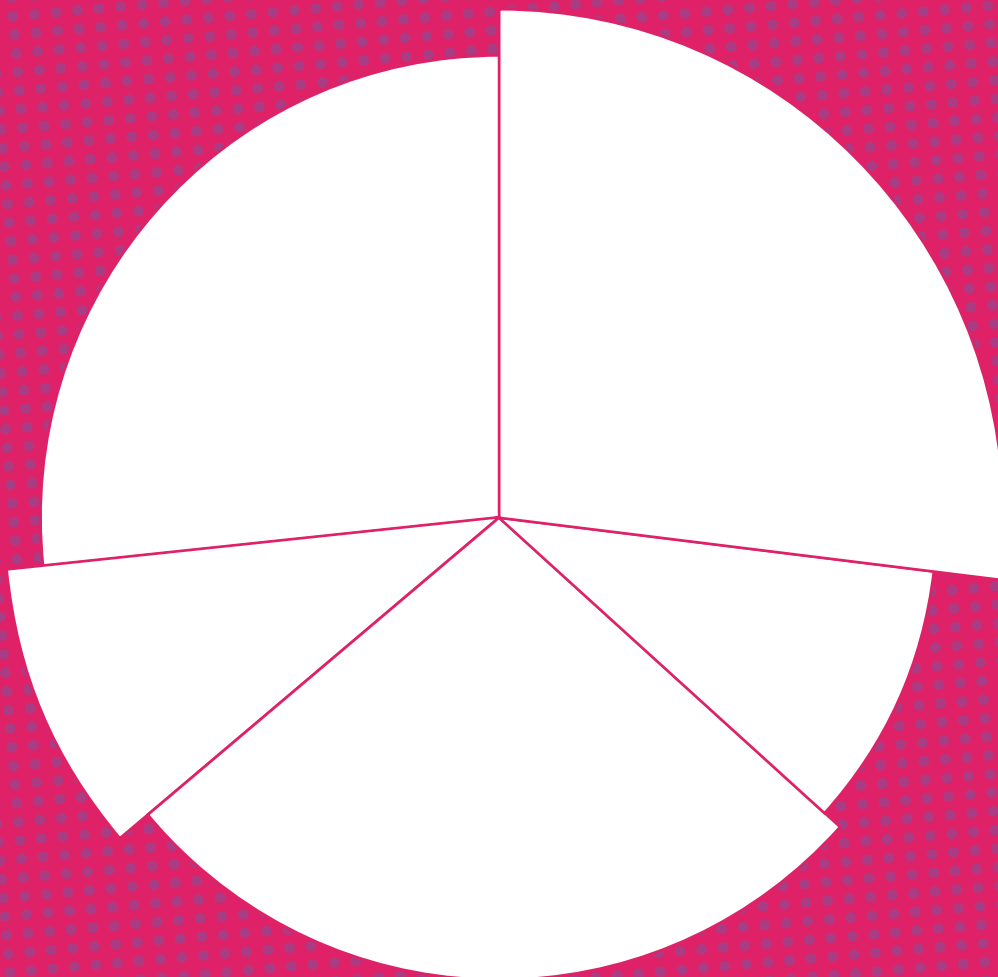
In the higher education sector in the region there needs to be far more emphasis on 21st century skills, developing new competencies. Education policymaking should be evidence-based and there needs to be a greater emphasis on network building for a sustainable knowledge-based society for the region. If we look at the wealth of existing research papers on what employers need, we find that they are mostly satisfied with the basic skills of literacy and numeracy but are dissatisfied with regard to more complex skills that are associated with personality traits, business awareness, self-management and problem solving.

Also, in the Middle East and North African region, the age of the working population and jobs required, means a rethinking of the development model. Higher education curricula and existing training systems in many of the institutions are not in line with the needs of the labour market – leading to a significant skills mismatch. Therefore, governments in the region need to urgently address this mismatch through a holistic approach that reforms the education system and considers the overhauling of the curriculum. For example, this may involve including more creative and critical thinking, raising competencies in technology and engineering, and certainly investing more in teacher training facilities.

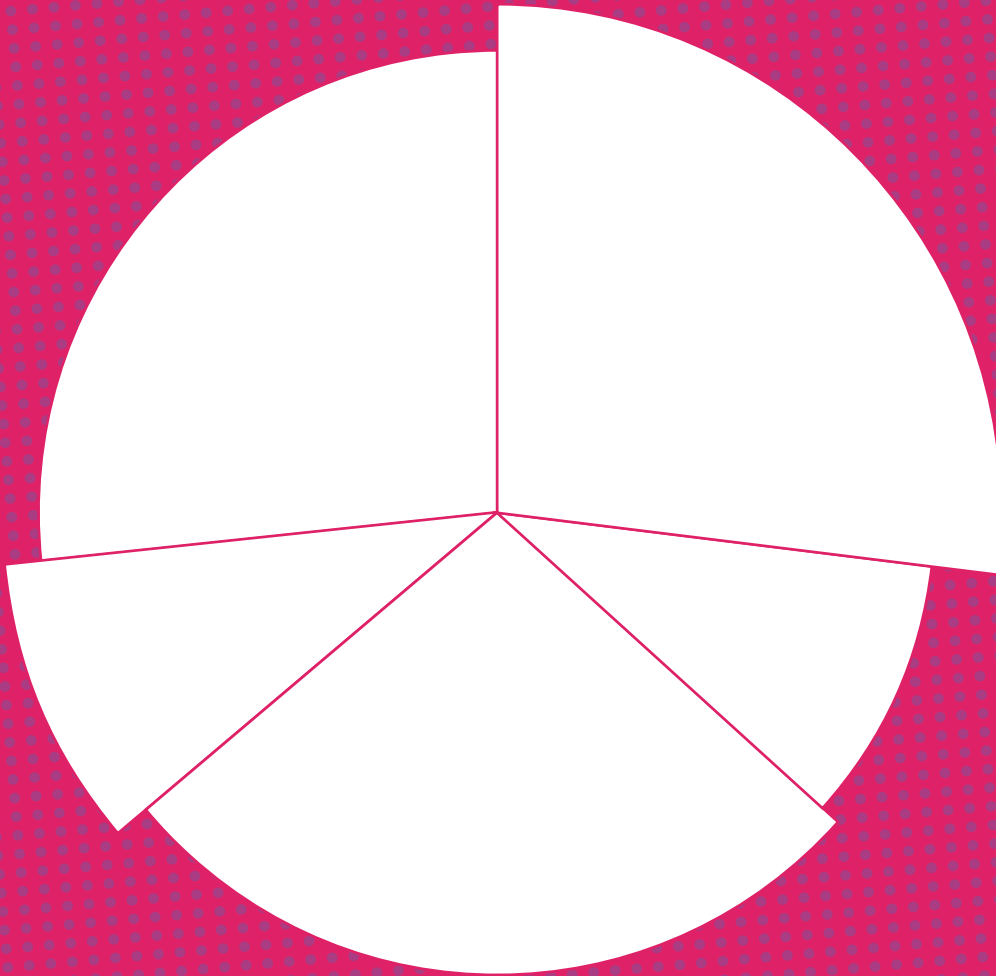
It is important to encourage far greater involvement from industry and the business community in the design and delivery of curricula, such that what we teach is far more relevant to the market. Such a policy can be supported with greater investment in career counselling and guidance. Higher education needs to transform existing didactics – away from knowledge acquisition to giving students the necessary tools for lifelong learning. In practice, are we seeing this transformation in the education landscape? A question for all to consider.

- End -

For further details or copies of this report, please contact john.glassey@brains.global



APPENDICES



APPENDIX A

جامعة الحسن الثاني بالدار البيضاء
جامعة الحسن الثاني بالدار البيضاء
UNIVERSITÉ HASSAN II DE CASABLANCA



UH2C Skills transformation

A smart university in a smart city

Pr. Aawatif HAYAR
Président of Hassan II University of Casablanca

25 August 2021

UNIVERSITE HASSAN II DE CASABLANCA
August 2021

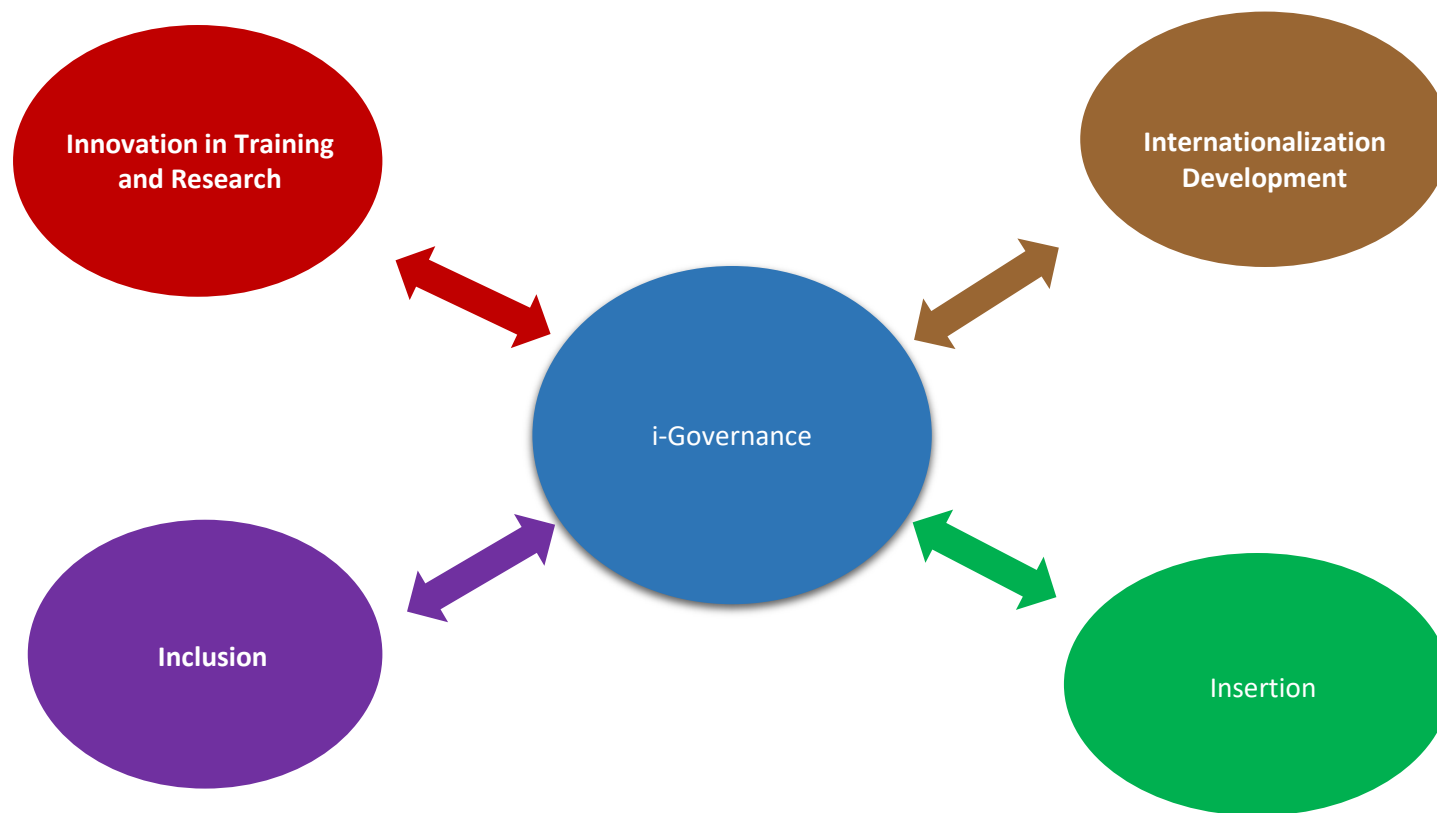
Hassan II University in figures

18 university establishments spread over 6 campuses in the two cities of Casablanca and Mohammedia :

- **123 261** Enrolled students expected in 2020-2021
- **19 036** Laureates en 2019-2020
- **582** Students at the Lussail-Qatar campus
- **399** Initial training courses in 2020-2021
- **4 100** Students enrolled in continuing education planned in 2020-2021
- **120** Continuing training courses planned in 2020-2021
- **123** Accredited laboratories
- **8** Thematic research centers
- **4** Competence centers
- **2** Technological platforms
- **1** Observatory
- **10** Doctoral Studies Center
- **47** Doctoral training
- **953** Administratives and Technicals
- **2 264** Teacher-researchers



UH2C 5i Strategy



Innovation in Pedagogy

Course space



La présente série vise la maîtrise des notions de la représentation avancée des données à travers la manipulation des listes, tuples et dictionnaires ; en mettant l'accent sur les notions de liste en compréhension et des fonctions anonymes.

Séance de Travaux Pratiques

7 décembre 2020, 14:00 - 16:00

Caché pour les étudiants

Avant pause

Séance de Travaux Pratiques

7 décembre 2020, 15:45 - 17:45

Caché pour les étudiants

Après pause

Librairies Python

Ce dossier renferme les documents 'Aide' réalisés par certains étudiants dans le cadre du devoir portant sur l'utilisation des bibliothèques :



Enjoy!

Chapit4_Séance_3

12 décembre 2020, 21:30 - 22:30

i-UH2C platform

Portail

i-UH2C

Système de gestion des plateformes de formation "E-learning"

LISTE DES PLATEFORMES

- Faculté des Sciences et Techniques - Mohammedia
 - Formation Doctorale
 - Master en Sciences et Techniques
 - Filière d'ingénieur
 - Licence en Sciences et Techniques
 - LST Génie des Télécommunications
 - LST Techniques d'Analyse et Contrôle Qualité
 - LST Physique Appliquée
 - LST Génie de l'Eau et de l'Environnement
 - LST Mathématiques Appliquées
 - DEUST MIP
 - LST Informatique, Réseau et Multimédia**
 - LST Génie Mécanique
 - LST Génie Electrique et Informatique Industrielle
 - LST Chimie Appliquée

Digital work space

i-UH2C

PLATEFORME I-UH2C (NOUVELLE PLATEFORME E-LEARNING)

UNIVERSITÉ HASSAN II DE CASABLANCA

PLATEFORME LOGHATE@UH2C

UNIVERSITÉ HASSAN II DE CASABLANCA

PLATEFORME LOGHATE@UH2C (FOLLOWUP)

Plateforme de télétravail

PLATEFORME DE TÉLÉTRAVAIL

CE

Compétences & Entrepreneuriat

Plateforme de l'Entrepreneuriat des Sciences et Technologies de l'Université Hassan II de Casablanca

PLATEFORME CLE

moodle

PLATEFORME MOODLE (ANCIENNE PLATEFORME E-LEARNING)

OUTILS APPRENTISSAGE

ACCÈS MATLAB

ACCÈS COURSERA

ACCÈS MAHARA

Dashboard

E-LEARNING

M KHALIL

EN LIGNE

UTILISATEURS

PARAMETRAGE

PLATEFORMES

STATISTIQUES

2613 ENSEIGNANTS

128218 ETUDIANTS

43 PLATEFORMES

109417 SESSIONS

Nombre User/Profils

Admin	92
Enseignant	2613
Etudiant	128218
Superviseur	16

Nombre Users/Faculte

ENCG	3823
ENG	1176
ENGAD	111
ENGAN	1133
ENSEN	1272

Nombre Users/Diplôme

CP	500
DEICG	3462
DMI	3678
DIHAD	101
DIUD	826

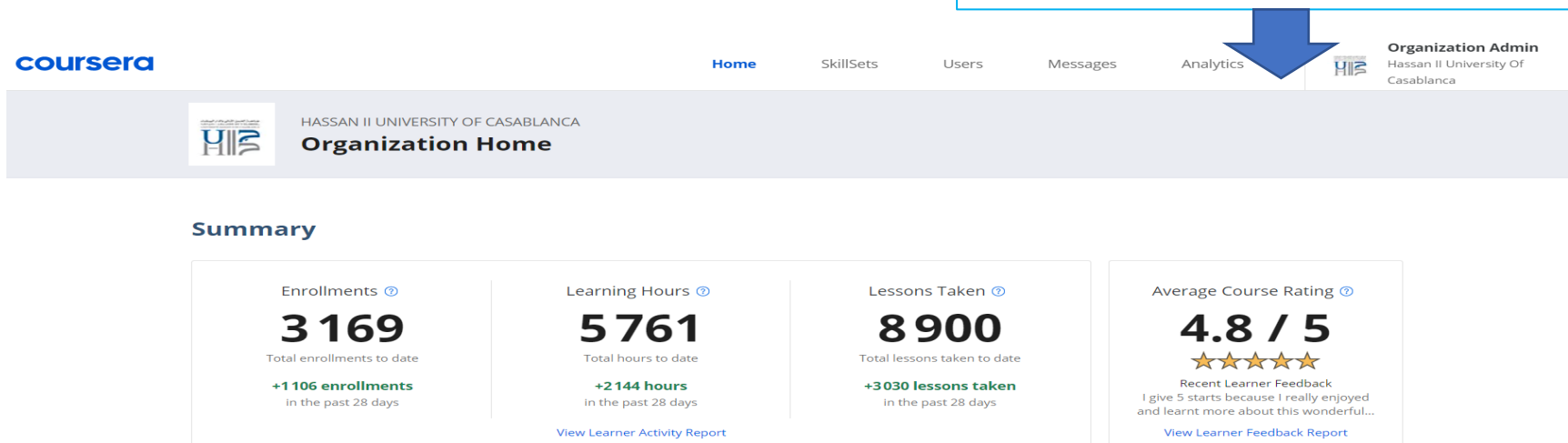
Nombre Sessions

2020-11-23	12233
2020-11-22	7227
2020-11-21	5070
2020-11-20	11866
2020-11-19	16716

Consortium partnership Ministry of Higher education Morocco / Coursera for Campus

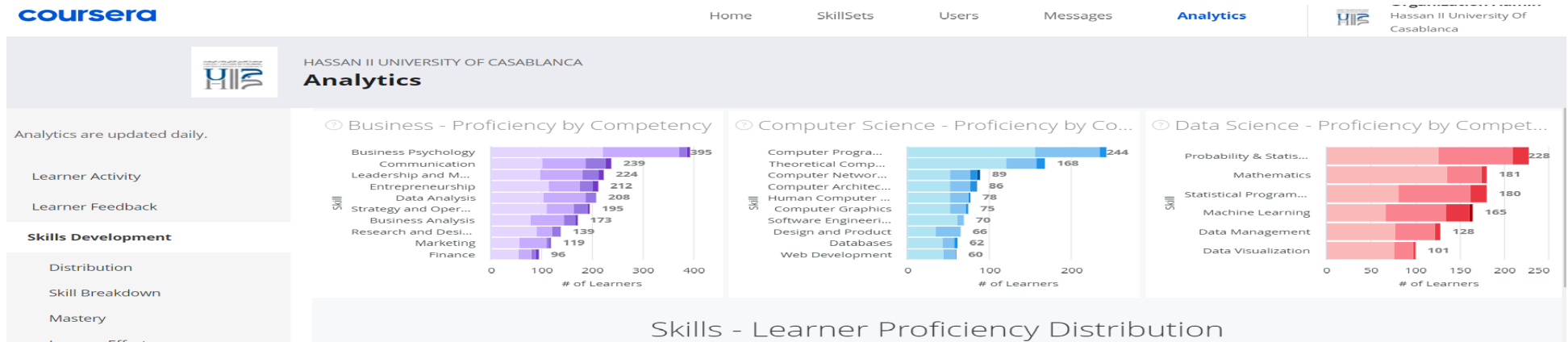
- Memorandum of Understanding and contracts signed between Ministry of Higher education of Morocco (14 Moroccan Universities) and Coursera in 18 June 2021
- Hassan II University of Casablanca has already started offering its students courses available on coursera
- Initial access was given to PhD students
- All students of the University can take the course “Learning how to learn”
- Bachelor students can take courses on coursera from the start of the academic year (civic skills, life skills, study skills and professional skills, language skills, emerging skills)

a virtual space to see and follow statistics on
coursera



Consortium partnership with Coursera for Campus

Measure Soft Skills : Skill Development Dashboards include tracking for 16 soft skills, including Change Management, Collaboration, Emotional Intelligence, Influence, Negotiation and Storytelling



Add SkillSets to our program and help focus our learners toward job based goals core to our university's objectives

What are SkillSets?

SkillSets are job-based learning programs that leverage world-class courses from top universities and companies, hands-on learning, and skills insights derived from Coursera learners at over 2,300 top employers.

With dozens of SkillSets currently available, you can confidently prepare students with the in-demand skills necessary to secure today's high-growth jobs. Within a given SkillSet, students will take courses and projects tailored

Software Engineer

Softw

6 Skill

Secur

Softw

Softw

Softw

AI-Aware Professional

Softw

3 Skill

Softw

Softw

Softw

Data Engineer

Data - Reskill

6 Skills

Target level / score

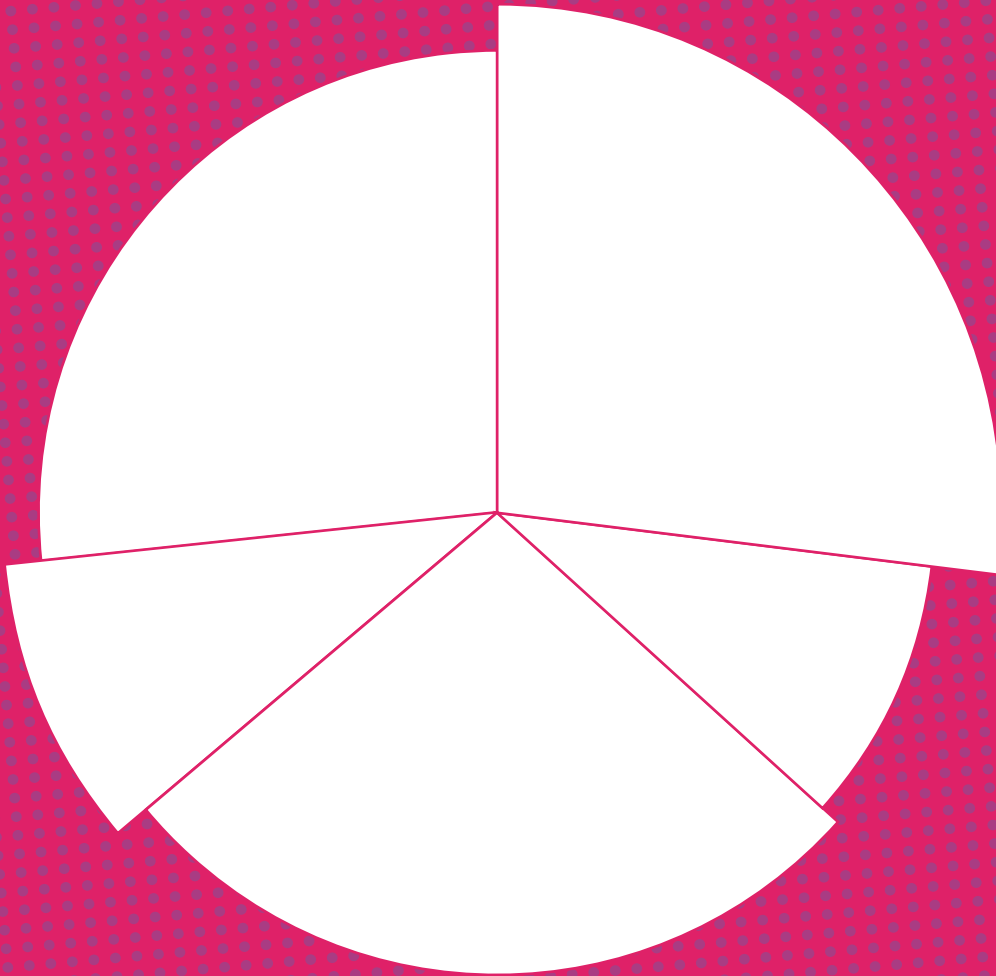




جامعة الحسن الثاني بالدار البيضاء
ⵜⴰⵎⴰⵏⵜ ⵏ ⵙⵓⵔ ⵏ ⵓⵏⵉⵔⵓⵔ ⵏ ⵙⵓⵔ
UNIVERSITÉ HASSAN II DE CASABLANCA

Thank you for your attention





APPENDIX B

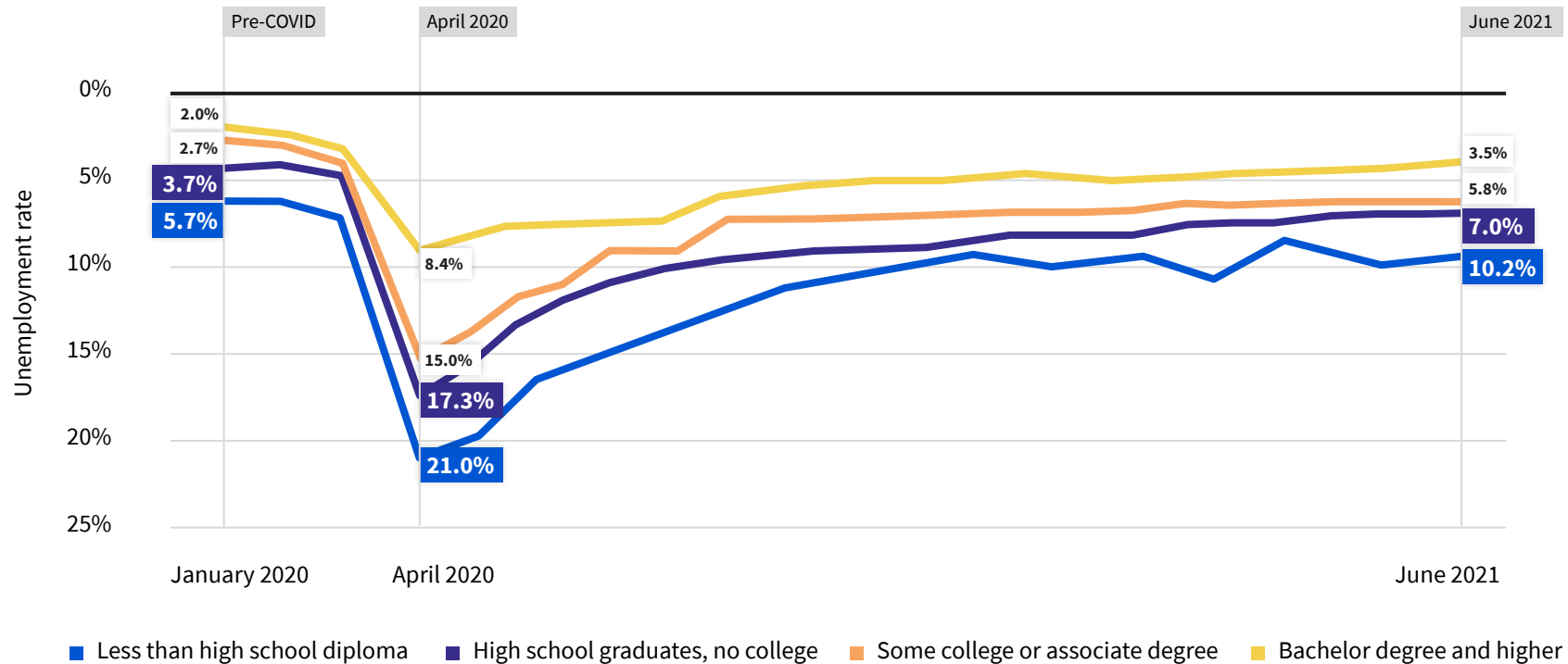
Closing the employability gap in MENA

With digital and emerging skills

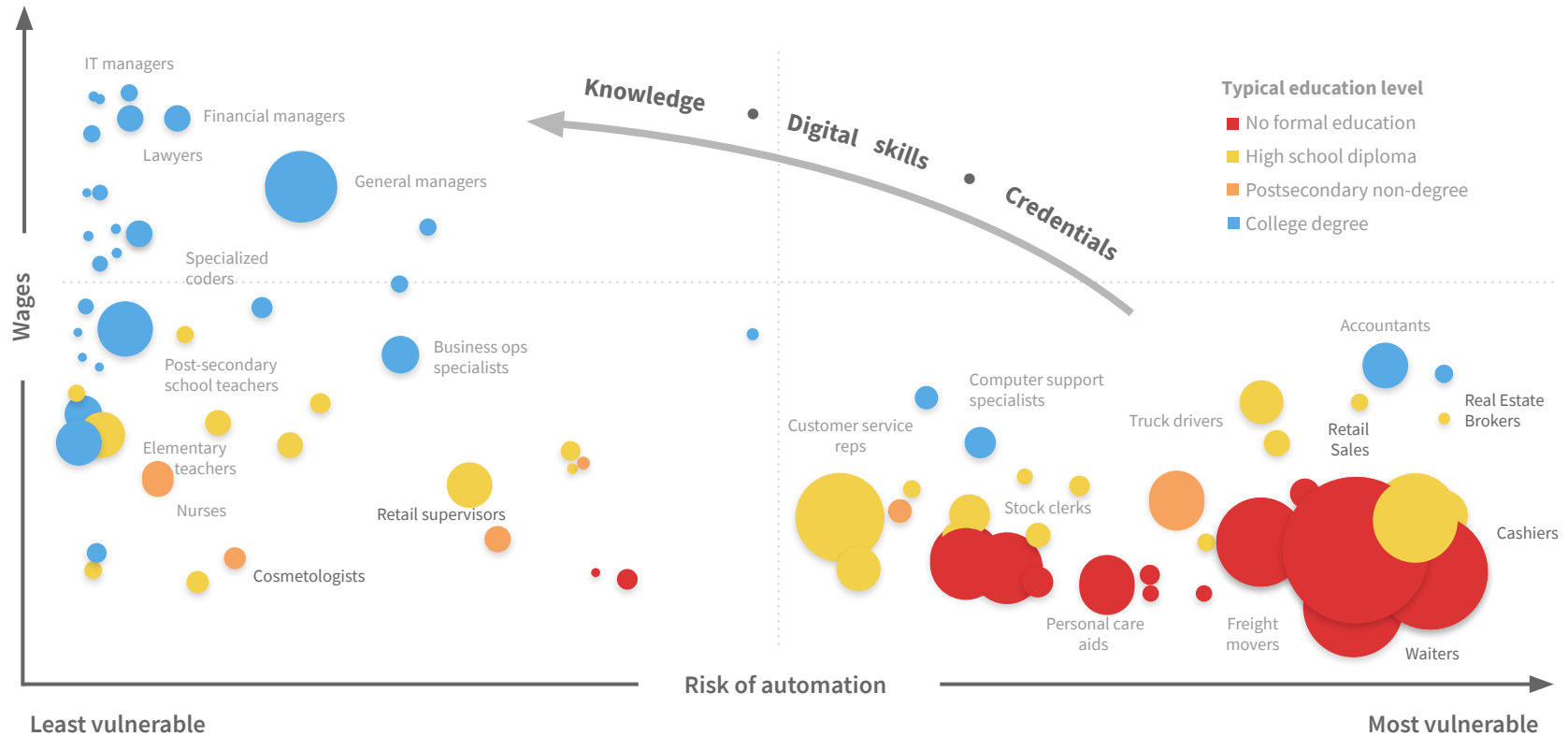


Anthony Tattersall
VP of EMEA, Coursera

Less educated workers hit hardest by unemployment



Low-skilled jobs are at risk of automation



Emerging job opportunities **require digital skills**

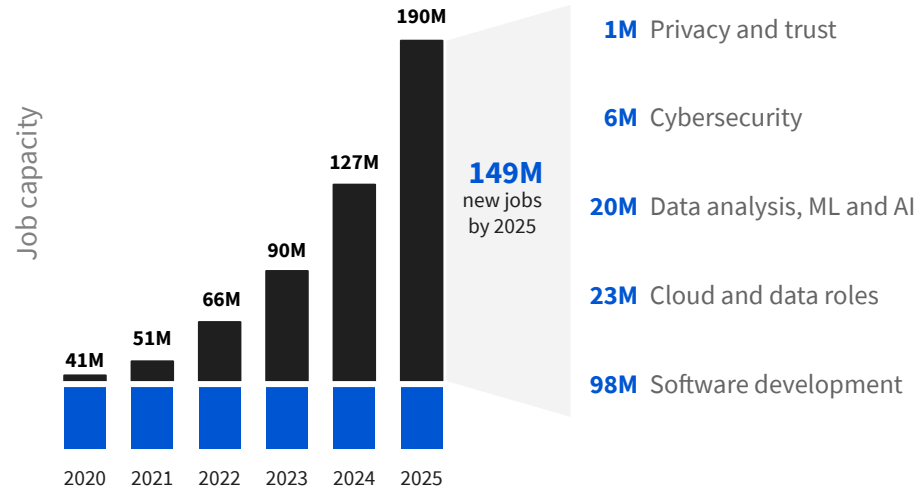


Top 5 jobs with increasing demand

- 1 Data Analyst and Scientists
- 2 AI / ML Learning Specialists
- 3 Big Data Specialists
- 4 Digital Marketing and Strategy Specialists
- 5 Process Automation Specialists



Digital job capacity from 2020-2025



A country's skill proficiency is associated with increased economic output and a strong GDP per capita

"A typical learner could have lost one-third of a school year of learning during the (Covid) crisis. They estimated that this would reduce learners' lifetime incomes by about 3%, and lower a typical country's GDP by an average of 1.5% over the remainder of the century."



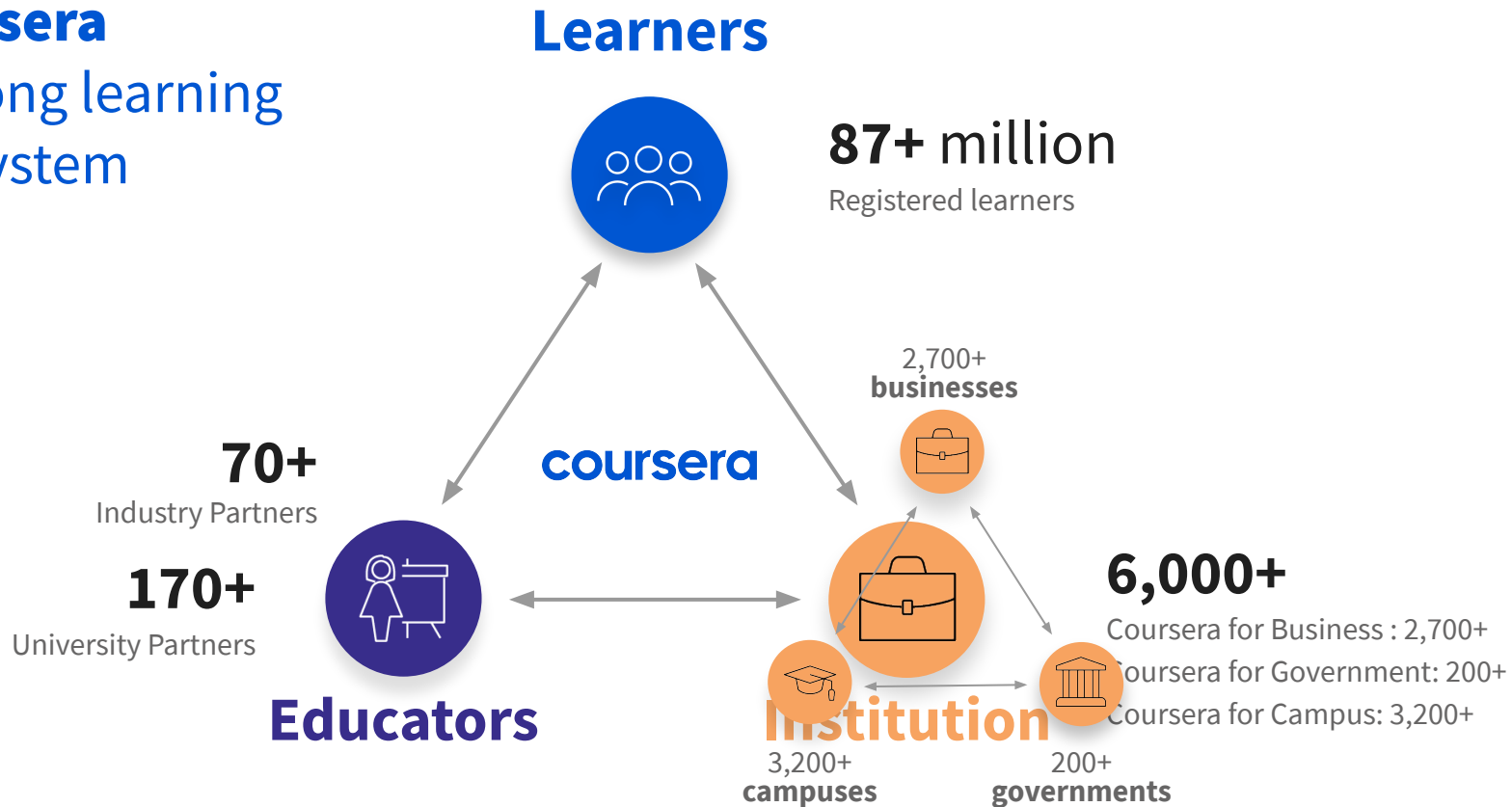
*“Over the next two decades, around **127 million young people are expected to enter the region’s labor force.***

*(However) the **MENA** region has the **highest rate of youth unemployment** in the world (exceeding 27% on average) and youth are five times more likely to be unemployed than their adult counterparts*

Institutional collaborations addressing the global skills crisis

Coursera

Lifelong learning
ecosystem



Upgrading a national higher ed system



Kingdom of Morocco
Ministry of National Education, Vocational Training
Higher Education and Scientific Research

PROBLEM

Switching public universities to the four-year bachelor system to lower student drop-out rates and enhance student employability

SOLUTION

Launching the new curriculum using skill-first content on Coursera – namely due to its popularity with students during COVID

15,000

learners reached
during COVID

100,000

enrollments
during COVID

320,000

students in next
four years



4,000+ higher education institutions served worldwide

Selection of Coursera for Campus customers in MENA



FOR CREDIT

Standalone



FOR CREDIT

Blended learning



NOT FOR CREDIT

Multi-disciplinary learning



Coursera partners with **100+ governments worldwide**

Governments in MENA



What are they learning in the region

Top Enrolments by Domain

	Course Primary Domain	Total Enrollments Count	
1	Business	2,191,979	
2	Computer Science	1,617,987	
3	Data Science	1,304,424	
4	Health	1,266,795	
5	Language Learning	1,034,304	

Top Courses by Enrolments

Course Name	Total Enrollments Count	
Learning How to Learn: Powerful mental tools to ...	249,287	
Machine Learning	194,333	
English for Career Development	173,719	
The Science of Well-Being	109,185	
Programming for Everybody (Getting Started wit...	108,083	
Speak English Professionally: In Person, Online &...	92,185	
Write Professional Emails in English	77,578	
Successful Negotiation: Essential Strategies and ...	77,212	

MIDDLE EAST & NORTH AFRICA

- Investments across digital skills will help globalize government services and ensure job creation for the millions of young people looking to enter the workforce in the next decades.
- Digital skills development will be a critical ingredient in tackling a number of pressing challenges. GDP in the region could remain below pre-crisis trends for a decade due to insufficient diversification and poor integration in global value chains.
- Improving labor force participation of women and youth is another opportunity. Only 37% of learners in the region are women.
- The region lacks in technological and data science skills. However, it demonstrates particular strength in Security Engineering, with nearly all countries ranking in the top half globally.

4.5M Coursera learners

4.5% GDP spent on education

30 Median age

37% Female learners

Skills Trends and Takeaways

- The pandemic economy has created a complex landscape that threatens to leave millions of students and workers **ill-prepared for the digital future.**
- Skill investments have the potential to drive **competitiveness, innovation, and equity.**
- We believe that this moment presents a unique opportunity to build more **inclusive, modern, and scalable education systems** that focus on skills development for the future of work.

Learn more:

www.coursera.org/campus

campus@coursera.org