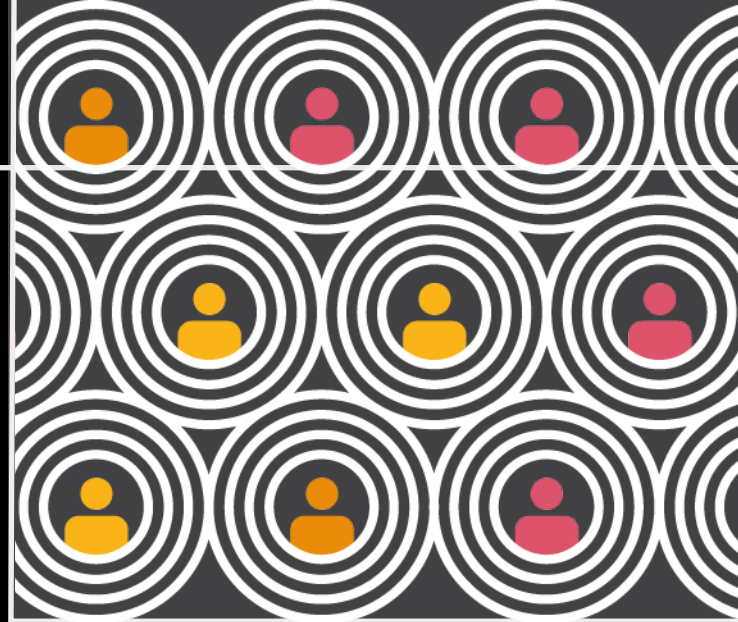# In Focus: Education and the workforce of the future in the Middle East

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Throughout PwC's Future of Work series (pwc.com/me/workforceofthefuture) most of our research has focused on securing the opinions of employers, all of whom emphasise a dependence on the education and training sector to provide the talent they need.

Given the lag in graduating students, meeting this expectation requires educators to be able to predict what employers will need in several years' time and be able to deliver it. To what extent is this reasonable? The increasing number of specialised corporate academies is a symptom of this gap, particularly in the Middle East where the drive to be innovative coupled with a preference for imported research and talent makes it doubly hard for universities to keep up. Is there enough effort being made on both sides?

We therefore interviewed eight vice-chancellors and leaders from well-established higher education institutions in the UAE and KSA on their reaction to our Workforce of the Future report. The UAE is the most active higher education hub in the region, with over 25 international branch campuses and an active private sector that attracts students from around the region. The opinions we heard are a testament to how seriously Middle East educators are taking their responsibility for preparing youth for the future workforce and are humble about their track record to date. But also, not surprisingly, they sound an urgent plea for employers to understand the art of the possible and collaborate with them on this joint challenge. Particularly as students in the ME are, from their perspective, often "blissfully optimistic" about their future and ability to survive and thrive.

"They think that because they are tech savvy they will be able to keep up with whatever is needed" (Head of Strategy at a large UAE university).

Their educators however see stormier seas ahead and are prioritising introducing 21st century skills that prepare students to be more future-proof. Dr Tod Laursen, former President of Khalifa University, one of the leading regional science and technical universities, cites examples of how the digitally savvy youth of today are being infantilised (i.e. becoming less capable) in some critical skills by a dependence on technology. For example, turning to their devices as a reflex but thereby not developing deeper and critical problem-solving abilities: "In some classroom and project settings we ask that assignments and exercises be completed calculator-free, encouraging the development of important quantitative abilities such as estimating orders of magnitude."

Communication skills are frequently cited by employers as one of the most important 21st century skills to develop. Dr Abdulrahman Alangari, a faculty member from King Saud University (KSU), and advisor to the KSA Ministry of Education believes this is particularly an issue in Saudi: "Employers still complain that communication skills are a real gap - but in my view this is also a societal/cultural issue. Young Saudis need to get more comfortable speaking up for themselves, doing more presentations, working in teams."

KSU has introduced 20 mandatory life-skills reinforcing contact hours per week in its curriculum, focusing in particular on building students' problem-solving skills, communication and confidence. This high cultural respect for family structures was also mentioned by others, who believe this inhibits students from speaking up and developing their own opinions.

Two recent publications on the impact of AI in education highlight this same fear of student infantilisation and articulate the growing consensus amongst educators on what these future-proofing skills are, and that these skills can be taught well by universities. In fact, they suggest that universities are the best placed to tackle this, with a healthy blend of independence, internationalisation, liberal perspectives and diverse faculty.

In summary the main findings from our Middle East education sector interviews highlighted the following:

- Students are mostly excited and optimistic about their future and their ability to keep up with technology, and do not seem to share their educators' concerns about having the right skills for the work, particularly at the undergrad level (although according to a GCC faculty member of a research intensive university, graduate students do worry a lot about local research opportunities). This optimism was echoed by UAE students at a recent case competition where I was a judge – one group of students representing five of the UAE universities looked forward to "bouncing about" in a freelance, project-driven job market, for smaller start-ups and where large corporate employers were largely irrelevant to their future. Sobering.

- Educators are prioritising data and analytical fluency, and even banning devices to help strengthen student's mental ability to assess orders of magnitude and memorise key concepts, both of which they have seen deteriorate. All interviewees cited a drop in math literacy in particular among students in recent years, and attribute this to the infantilisation risk of digital dependency, as well as a school curriculum which doesn't include enough analytical topics in the earlier grades.

- They are not surprised at the findings that Middle East employers worry less about planning for the future workforce: in this region employers are still highly dependent on what they see as a limitless source of international expat talent and believe they can source whatever talent they need when the time comes. "It is a solvable problem or no problem at all for most employers" (Head of Strategy at a large UAE university). National talent development will therefore need to remain a government priority. Top national talent does have a lot of choices and can switch easily, some large local employers such as DEWA (Dubai Electricity and Water Authority) are implementing postgraduate programmes to specifically target and retain top local talent. However, regional stability is increasingly a problem in attracting good faculty to the region, together with the growing cost of living.

- They all see potential for AI to support student success through adaptive learning and providing more impactful student support: Middle East students are diverse, tend to be quite dependent on their families, and many struggle to adapt to an independent student life. However, with the exception of Emirates Aviation University (whose VC, Dr Ahmad Al Ali is a mathematician) and the Higher Colleges of Technology (HCT) who are running exploratory AI pilot projects, the others are in the very early stages of considering its potential.

- Regulation both helps and harms the situation: industry advisory panels for universities are a good accreditation requirement but are rarely done well in the opinion of all interviewees. On the flip side, most GCC accreditation standards are behind on recognising blended learning models, allowing credits for internship work, and allowing industry practitioners as adjunct faculty (although both these points are being addressed in the UAE's new standards for 2019). Similarly, labour laws currently do not allow a part-time job for expats, thus making it very difficult for universities to expose students to industry guest lecturers – a common practice in more developed markets.

- All agreed with the statement by PwC's Blair Sheppard, Head of Strategy and former Dean of the Fuqua School of Business, that "For students, it's not just about acquiring knowledge, but about how to learn." As highlighted by one of our interviewees: "Educators shouldn't focus on the fact that there is a right or wrong answer, instead they should focus more on teaching students how to frame the problem."

What is the potential for AI in the education sector?

As we learned from the interviews, only two out of the eight universities are actually using AI tentatively today, and both admit they are at very early stages. This is not an uncommon finding worldwide, but the pace of experimentation and innovation is picking up and many see great potential for AI to radically disrupt education and support meeting the talent development challenge. One of the leading writers on the subject, Sir Anthony Seldon, has also recently been appointed as the UK special envoy to KSA. In our opinion, he will have a virtually blank page to work with, and the opportunity to make a significant contribution to its vision 2030.

The following points summarise some of the AI work in education elsewhere in the world that wel believe have the greatest promise for addressing our region's challenges:

- Freeing up teacher and faculty time to focus more on specific student needs - the region has a shortage of teachers and if demographic trends continue this will provide a good solution.
- Virtual teachers that learn about the student and even age with the student are currently being piloted – this could help address the teacher continuity issue and parental disengagement challenges in the region.
- Social mobility - opening up access to a good education for students in remote areas, and in single sex schools where many good faculty are not allowed. Lecture capture and virtual teachers can help here.
- Broadening curricula choices - all national curricula are rigid, and in this region implementing change is particularly fraught with bureaucracy and multiple opinions. This may be of a concern to some, the region is deeply conservative, and AI can both make it easier to impart consistent ethics and values aligned with the leaders' vision, and similarly only impart such values. In particular the opportunity to build more interest in those jobs that will not be as disrupted in the future (teaching and healthcare for instance) would be of benefit.
- Providing more challenging and rewarding learning experiences - as Anthony Seldon highlights in his book: "life is fulfilling when we are challenged. We need to educate the young to celebrate and seek challenge, not avoid it." AI has the potential to provide more opportunity for gifted and special needs students to reach their maximum potential. It reduces the need to manage the curriculum for efficiency through early specialisation, or remove high cost courses from student options. In turn this should support the drive to produce more entrepreneurs across the region.
- Accreditation and certification: the region's regulators expend significant resources on recognising credits, transferring credits, attesting degrees etc. Given the diversity of backgrounds of the expat workforce – AI and other technologies such as block chain will obviate much of this high risk and complex work.
- Exposure to more engaging and relevant learning. A good personal example of this is when I recently sat next to a young Emirati graduate in international relations whose family had resisted her travelling outside the UAE. Her passion for studying different cultures was so evident when I recounted my own travelog, that I was quite struck by the contrast in our opportunity. AI could bring students like her closer to experiencing the real thing at a younger age.

Some other benefits of AI from our interviews

A GCC faculty member of a research intensive university sees a real opportunity in helping the faculty to stay closer to its students. The university has a top-ranked medical school and generous scholarships that attract talented students, yet struggles to find faculty, so some of the class sizes are large. He sees AI as having real potential for the faculty to be closer to the students: "They have too many to look after to provide the individual attention some students need."

Meanwhile, HCT is considering using AI to identify 'at-risk' students and foresees an education sector where students are able to pick and mix courses from a range of providers.

There are many ethical, privacy and legal issues related to the adoption of AI, and I believe that the minds of those individuals I had the pleasure to interview for this piece of work would be a good resource for the governments of the region, especially if they connect with their peers around the world. As the region's passion for innovation drives employers forward, educators have an important role to play in grounding students.

One of my favourite quotes is from the outgoing VC of a leading university in Australia, who said some students now graduate with "the attention span of a tweet, as competent surfers of the digital wave of bite-sized communication, saturated in a sea of information but unable to navigate the wider ocean".

The education sector has its work cut out. I join their appeal for employers to work with them on addressing this challenge.

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