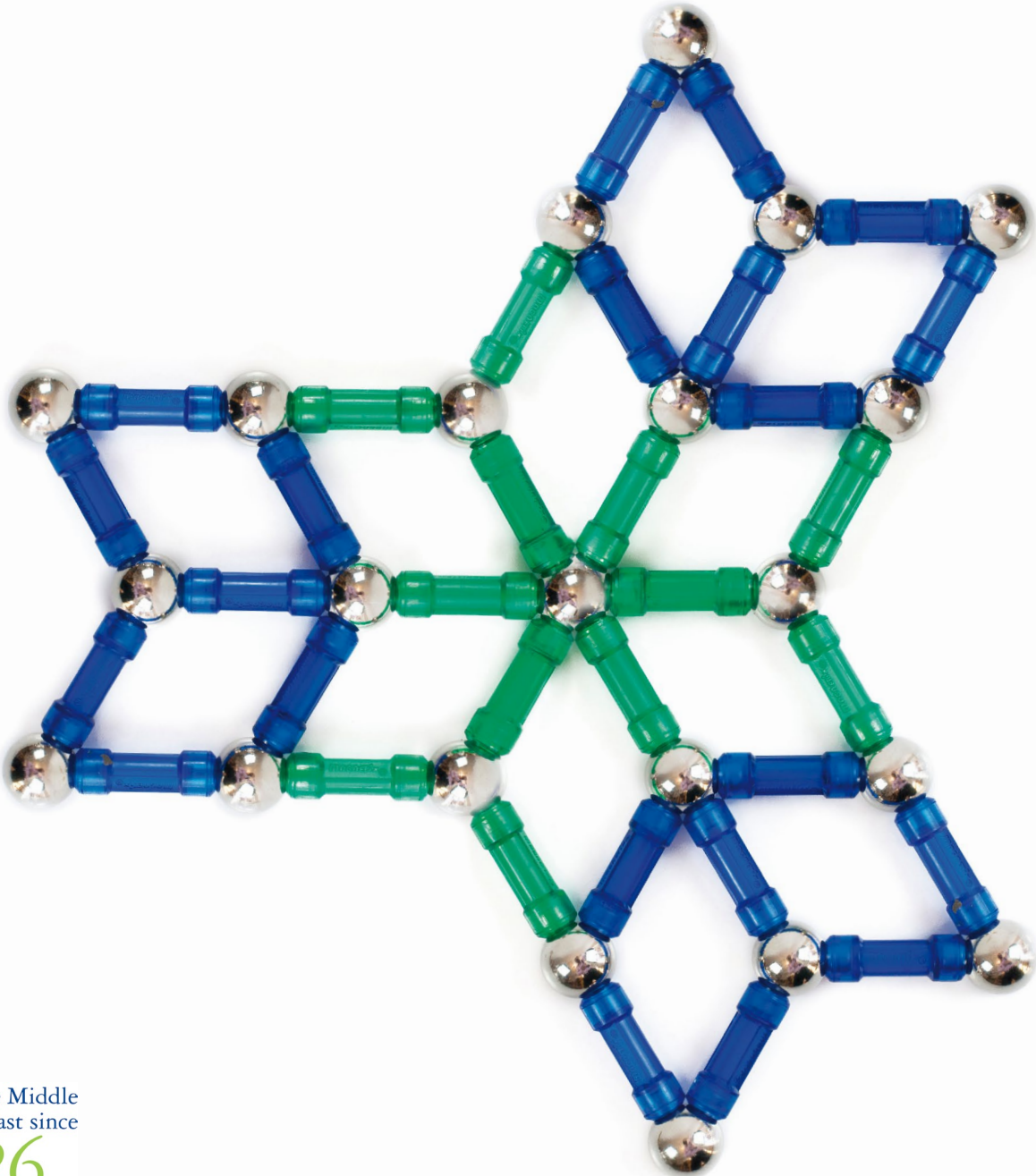


Technology, Media &
Telecommunications
Predictions 2014
Middle East



Massive Open Online Courses (MOOCs): not disruptive yet, but the future looks bright

Deloitte predicts that by 2014, student registrations in Massive Open Online Courses (MOOCs) will be up 100 percent compared to 2012 to over 10 million courses, but the low completion rates mean that less than 0.2 percent of all tertiary education-equivalent courses completed in 2014 will be MOOCs. The growing awareness of online education will force educational institutions to increase investment in this area, drive more acceptance of online education as it becomes accredited, and increase adoption by corporate training groups.

The idea that MOOCs will cause imminent disruption of the existing tertiary education market (also known as higher education or post-secondary education) appears frequently in the media. While this hype creates interest, most large educational institutions will experiment with MOOCs, but they will not disrupt education significantly in the near term. Enterprise training and continuing education looks likely to be the fastest adopter of MOOCs, with significant growth in 2014 and 2015. Although the for-profit and not-for-profit tertiary education market is the largest, at \$400 billion per year, the corporate skills development market is not small, at \$130 billion annually⁷⁴.

Predictions normally look only at the next 12-24 months, but there appears to be a “perfect storm” of conditions that could make MOOCs a major factor by 2020, representing over 10 percent of all courses taken in tertiary and enterprise continuing education. We discuss this perfect storm after exploring the state of MOOCs in 2014.

Alternatives to in-person education are not new: arguably the first occurred in 1895, in the shape of correspondence courses distributed by mail. In 1921, courses were offered over the radio. In the 1950s, televised courses emerged, and in 1962 Stanford offered the first course on a computer network⁷⁵. Now, most universities and colleges offer at least some courses online, many governments offer training courses over the Internet and more than 75 percent of large organizations use online courses as part of their ongoing employee training processes⁷⁶.

How are MOOCs different? They are massive, with potentially millions of users. And they are open: available to anyone, often for free or at minimal cost, much less than a traditional university or college course.

Today, when a tertiary educational institution offers a first year physics course online, it is typically available only to students who have been admitted and enrolled in that school and the tuition is the same as for the traditional version. MOOCs are more efficient because they avoid duplication of effort: first year physics courses tend to have very similar content at every university, which means MOOCs could be used to make a single, well-designed online version available to anyone, for a relatively low fee.

Online training courses on spreadsheet use are common at accounting firms, but tend to be restricted to a firm’s employees. However, spreadsheet skills are fairly universal: what if a single, extremely well done spreadsheet course was available to anyone? Enterprises are already beginning to adopt MOOCs for this kind of training.

At the moment, one of the biggest differences between traditional education and MOOCs is the completion rate: one survey found that 93 percent of students who register for a MOOC fail to complete their prescribed course of study⁷⁷. By contrast, most people taking a university course or corporate online training course want to complete it, need to complete it, and keep trying until they pass⁷⁸. There are exceptions, with some students only “auditing” a course for the sake of learning, but this is rare. Even at universities where dropout rates of 50 percent make headlines, students are still completing their education at a rate seven times higher than the average MOOC.

Why is the MOOC completion rate so low? Not because courses are not enjoyable. One study found that 91 percent of students ranked their MOOC as good, very good or excellent – even though only four percent of those who registered ended up completing the course⁷⁹. Nor is it that MOOCs don’t teach subject matter well enough: one experimental Artificial Intelligence course at Stanford was also offered as a MOOC, and 410 online students got better marks on the final exam than any of the in-person Stanford students. Other studies provide early evidence that MOOCs lead to equivalent educational outcomes⁸⁰. Also, MOOC pedagogy is still in its relative infancy: traditional university courses have had centuries to perfect their teaching and learning methods, compared to less than five years for MOOCs. It appears that, at present, the vast majority of MOOC students that register have goals other than finishing the full course.

Some might be trying out the MOOC format; some might be merely curious. But the number one aspiration is “to learn more about a subject area,” not to complete a prescribed curriculum⁸¹.

Given this crucial fact, MOOC registration numbers in the millions need to be viewed in context. There are approximately 100-125 million students enrolled in traditional tertiary and corporate education globally, many of which are taking and completing the equivalent of eight to 10 courses per year, resulting in around one billion non-MOOC courses completed annually⁸². While the top-line growth in MOOC registrations looks impressive, Deloitte predicts that MOOCs completed will represent less than 0.2 percent of all tertiary⁸³ courses completed in 2014. This suggests that MOOCs’ near-term disruption of the \$1.5 trillion global market for tertiary education⁸⁴ will be minimal.

So, after all the media hype, why haven’t MOOCs created more disruption yet?

Despite the view that ‘education for education’s sake’ is a good thing, most people expect something tangible in return for their investment of time and money. Although tuition costs vary widely, fees for tertiary education in mature markets such as Canada, the UK, and the US are typically around \$10,000 per year⁸⁵. So a free or low-cost MOOC course offers enormous savings. But in 2014, completing a MOOC course and receiving the course credit carries less weight than passing a traditional or university-sponsored online course: in many cases the credit the student receives is not considered a proper “credential” by the institutions that care most about education.

To enjoy success with tertiary-level students, MOOC course credits need to be fully recognized by some or all of three different groups: government, employers and educational establishments.

Some governments consider enrollment in tertiary study as a factor when providing social assistance benefits and many don’t require repayment of student loans as long as such study continues⁸⁶. Also, some jurisdictions offer tax benefits or military exemptions related to student status⁸⁷.

In 2013, governments were just starting to debate whether enrollment in MOOCs would satisfy these kinds of requirements⁸⁸, and it could be years before the debate is settled.

Employers often require formal levels of tertiary education for new hires, or as part of re-training or on-the-job learning. Requirements can range from full graduate and undergraduate degrees and professional designations to two-year diplomas or even completion of single courses. In 2013, only a few employers recognized MOOCs completed and passed as meeting these requirements⁸⁹. Also, many enterprises are reluctant to accept MOOCs as full degree substitutes: according to one survey half of employers would not consider hiring someone who had earned their degree completely online⁹⁰.

However, not all education is degree level.

Many employers, from web portal companies to steel pipe manufacturers, are enthusiastically adopting MOOCs for internal corporate needs⁹¹. In fact, one survey found that 70 percent of companies are interested in MOOCs for corporate training, and 31 percent have active plans to use them⁹².

Traditional educational institutions are taking a much more conservative approach to recognizing MOOCs: in 2013, it was estimated that very few accredited tertiary educational institutions accepted MOOC credentials, and few students even bothered to take advantage of such credits⁹³.

Education is a source of revenue for traditional education institutions, but is a cost for governments and enterprises, so it’s not surprising that they might be more eager to accept MOOC credits than are universities and colleges, who may see low cost MOOCs as a threat to their business model.

Some early evidence suggests that MOOCs do not lead to inferior educational outcomes⁹⁴, so credentialing is likely the biggest impediment to MOOCs becoming truly massive. Resolving this issue might be all that is needed for MOOCs to achieve their disruptive potential.

MOOCs in the Middle East: bright sparks already

The debate and hype surrounding MOOCs is also one that has extended amongst key figures, authorities, institutions and industries in the Middle East, arguably more so than in many other parts of the world. In a region where over 60 percent of the population is under 30 years old⁹⁵, youth education and employment has become a burning issue over the past five to ten years. The debate surrounding the potential for MOOCs as another solution is therefore not one to be taken lightly in the region.

Over the next few years, the Middle East could see the rise of the Arabian MOOC (AMOOC). New local platforms, in partnership with local professors and universities, may emerge to launch new localized AMOOCs, attended by more Arab users than in 2013⁹⁶. Compared to other regions, the user base will still remain small, as wider systematic disruption and acceptance will take many years to happen, given the challenges MOOCs currently face in general.

Across the region, there are currently several bright sparks of MOOC activity. In Egypt, MOOC aggregator Skills Academy (formerly known as eduudle) was launched in early 2013 and now has over 8.1 million users⁹⁷. In Saudi Arabia, Rwaq, a platform developing and disseminating local academic expertise online has already attracted tens of thousands of local users since its launch in September 2013⁹⁸. In Lebanon, a beta version of Menaversity launched in November 2013, offering AMOOCs on professional and practical skills⁹⁹. In Jordan, the Queen Rania Foundation (QRF) has partnered with MIT and Harvard's edX to form Edraak, a new MOOC platform expected to be launched in 2014 whose objective is to educate over one million Arab youths by 2018¹⁰⁰.

Across the rest of the Middle East, MOOCs have also steadily been gaining more attention in education conferences hosted by local universities and establishments¹⁰¹. International MOOC providers such as Alison, Khan Academy and Coursera have also penetrated the Middle East through partnerships formed with local translation entities Silatech (Qatar) and Taghreedat (UAE)¹⁰².

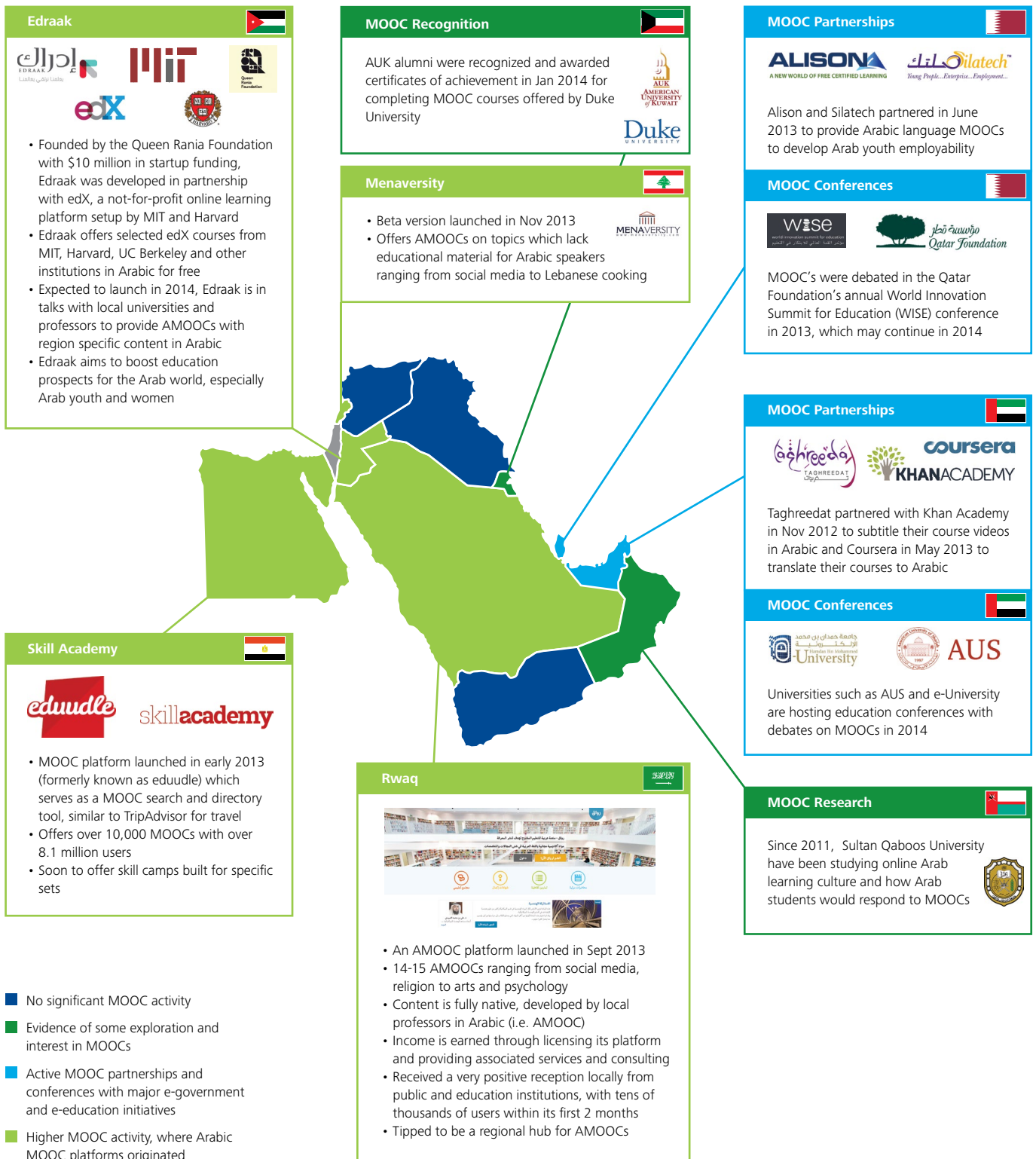
MOOC beneficiaries cover various sections of Arab society: the unemployed looking for work, aspiring youth entrepreneurs, women on maternity leave and with family commitments, as well as eager learners of all ages who seek to develop their interests. Providers such as Edraak and Menaversity are well-positioned in Jordan and Lebanon to use the real power of their MOOC platforms as a solution to educate refugees from neighboring Arab countries.

Geographically, Saudi Arabia holds the largest Arab student base enrolled in educational institutions, with 75 percent, the next highest at 8 percent is in the UAE¹⁰³.

With the broad market appeal, significant activity has been observed but as with MOOCs generally it is not yet clear how this enthusiasm can be converted into a sustainable business model. It is clear that the private sector is driving MOOC developments and most likely will continue to do so. However, investment is required. For example, Edraak was reported to have received about \$10 million in QRF startup funds¹⁰⁴.

Over the next few years, the Middle East could see the rise of the Arabian MOOC (AMOOC). New local platforms, in partnership with local professors and universities, may emerge to launch new localized AMOOCs, attended by more Arab users.

Figure 5: Landscape of recent MOOC activity across the Middle East



Source: Deloitte research & analysis

The long term

There appears to be a confluence of major trends and conditions that will likely lead MOOCs to cause disruptions for students, governments, the educational industry, the pace of innovation, continuing education, the digital divide, and society at large.

Cost of education to individuals. The single biggest driver of MOOCs adoption is likely to be their relatively low cost relative to traditional tertiary education: this is a trillion dollar issue over time.

While there are many different models for how students pay for tertiary education, in countries where students pay for a significant portion of tuition and books, the cost of traditional education has been climbing much faster than inflation: in the US, for example, since 1985 the consumer price index has risen 115 percent, while college tuition has risen almost 500 percent¹⁰⁵. The money that students can earn at minimum wage has not kept pace, therefore US student loan debt has gone from just over \$200 billion in 2003 to almost \$1 trillion in 2012 while other lending, such as auto loans and credit card debt have stayed in the \$600-800 billion range each over the same time frame¹⁰⁶.

This sharp rise in student debt would be less of an issue if it positioned students to find jobs that paid well enough to repay the loans. Unfortunately the reverse is true: the cost of public four-year college tuition and fees in the US is rising faster than the average earnings of full time workers aged 25-34 with a Bachelor's degree only: 72 percent growth in tuition since 2000, versus a 15 percent decline for earnings over the same period¹⁰⁷.

Cost of education is a major factor in the Middle East for all income groups. For example, private school fees in the region come into the global top tier bracket¹⁰⁸. With an increasing scarcity of places and rising demand for quality education, fees for private schools and universities in the region are likely to continue to rise. This could compel some expatriate families to return home, draining some of the region's most talented individuals¹⁰⁹.

Whilst MOOCs may not be a suitable substitute for schooling or tertiary education, they can certainly complement and help fulfill regional education needs at low cost. For example, many parents in the Middle East (particularly expatriate parents) who push their students to take on further tuition outside school may consider MOOCs as a viable lower cost alternative. MOOCs can also be used by students as a low-cost source of university or career advice, especially in a region which lacks counselling in these areas.

Local schools and universities may also integrate and bundle MOOCs to complement their curriculum and course offerings at a lower marginal cost. This could even help enhance their competitiveness with foreign universities who have setup campuses in countries such as Qatar and the UAE.

The remote learning capability of MOOCs also enables students to access course content easily without investing in relocating or parents sending children abroad to study, for example for summer schools or completing secondary school.

Large gap in education supply and demand. There is a shortage of good quality schools in the Middle East. Enrollment in primary and secondary education across the GCC is already high and near saturation at 90 percent (as it is compulsory for all GCC nationals to attend)¹¹⁰. By 2020, demand in terms of the number of students in the GCC is expected to grow from 9.5 million to 11.3 million. Private education enrollment at primary and secondary levels will also increase from 1.3 million to 1.9 million students¹¹¹. As the Middle East is challenged with closing this gap, MOOCs could become a potential home-schooling alternative, which could open up a new market for expatriate students who may otherwise not have access to certain international schools.

Skills half-life is shortening across industries. In the past, a skill learned often created value for a lifetime. In contrast, the hundreds of millions of workers worldwide whose jobs either have been outsourced to a low-cost country or supplanted by new technology or robotics need to learn new skills. And it's not just older workers who need retraining: the pace of technological advancement is such that the programming techniques computer students learn in first year might already be obsolete by the time they graduate, only four years later.

This is especially the case in the Middle East, which is going through a large-scale digital upgrade and development. As a result, the need for skills upgrade in the fields of Information Technology, Digital Services and others has been identified and exposed. Entrepreneurship, creative thinking and innovation technology are also new skills which are increasingly in demand, following the rapid adoption of social media and smartphones¹¹². AMOOC providers such as Rwaq from Saudi Arabia and Menaversity from Lebanon have recognized this and are now offering AMOOCs in topics such as social media to address the skills gap¹¹³.

Cash-strapped governments and re-training.

Obsolete skills translate into lower productivity and higher and persistent unemployment rates – both issues of great concern for governments at all levels.

Broadly speaking, in the wake of the 2009 global economic crisis, many governments can't afford to re-educate the 20-40 percent of their older workforce that requires it (let alone students who graduated in the last year) in traditional bricks-and-mortar universities, colleges and technical/vocational schools. Governments need a more cost-effective solution for re-training: MOOCs seem likely to be one possible more cost effective solution.

Of grave concern to local governments, especially in the GCC is the massive skills gap that persists through low enrollment rates in tertiary education. At just 23 percent, GCC tertiary enrollment is far lower than many developed countries, which average 75 percent in key Western economies¹¹⁴. This is particularly the case amongst male GCC nationals, who naturally after secondary school opt for rewarding opportunities offered by the public sector instead of pursuing tertiary education to enter the private sector. As a result, about 90-95 percent of private sector employees are expatriates in the main GCC economies (KSA, UAE and Qatar), who are educated primarily in the private sector education system and possess tertiary level qualifications. This raises a formidable barrier for GCC nationals who eventually need to up-skill and seek work in the private sector as the local labor pool grows and the public sector work-force becomes more saturated¹¹⁵.

Although nationalization policies are in place to encourage the private sector to recruit more locals, employers are voicing their legitimate concerns over the skills gap. AMOOCs can be a solution as part of government reforms to equip GCC nationals with the necessary skills to enter the private sector and improve labor mobility. This can open up opportunities for GCC nationals to make the move to the private sector. AMOOCs can also be used to target GCC nationals towards targeted non-oil sectors by equipping them with the relevant skills needed to support non-oil economic diversification strategies.

Advances in online education/pedagogy. Education, both online¹¹⁶ and in person, is moving away from the "sage on stage" approach¹¹⁷. "Flipped learning" is a new approach based on the idea that traditional tertiary education has it backwards. Instead of a professor lecturing to passive students, who then go home and struggle with material unsupported, students view lectures at home, and then come to class to get help on assignments from the professor in person. Recent data suggests that over 80 percent of professors who are using flipped learning believe it improves their students' mastery and retention of information¹¹⁸.

Flipped learning is possible in traditional schools, but because the technique is based on recorded lectures distributed over the Internet, it is particularly suited to MOOCs.

This could also alleviate the burden on teachers and professors in the Middle East who have to contend with higher student-teacher ratios than found in the United States and Europe¹¹⁹.

Push vs. Pull. Traditional education is a lot like traditional TV: students show up at scheduled times for lectures and write exams at even more rigorously scheduled times. As younger viewers transition from a world where content is pushed to one where they pull content towards them, we are likely to see students embrace MOOCs that allow them to learn what they want, when they want. Also, younger viewers often don't lock themselves into specific channels, viewing patterns or fixed schedules, but might consume video in small chunks and clips, or perhaps might go on a binge and view everything at once. In the same way, they might acquire education in ways that differ from traditional tertiary education with its clearly defined curriculum and end point. In this new world, completion rates might be less meaningful.

Patterns in Arab digital media consumption illustrate the effectiveness of pull learning in the region. For example, reports suggest that many Arab females in Saudi Arabia avidly consume educational YouTube videos in their thirst for knowledge¹²⁰. For a country with one of the largest YouTube video consumption rates in the world, the pull effect for MOOCs could be a key factor in driving uptake.

Big data/analytics/granularity. As the cost of education rises, it becomes increasingly necessary to measure its effectiveness. At a national level, across millions of students, measurement and analysis of education outcomes tend to be partial, slow and coarse.

Even collating final exam results from hundreds of institutions takes weeks to months. In contrast, analysis of MOOCs can use modern big data tools to run real-time queries – not just of every mark for every assignment and every test for every student – but even looking at text or lectures while students are reading or viewing them, and then examining specific passages that are being replayed, which might indicate they are poorly written or hard to understand. In this way, educators could use real-time data to improve MOOCs on a daily basis¹²¹.

Technology. Robust Internet, pervasive broadband (landline and wireless) powerful connected devices, powerful collaborative software tools, as well as big data tools and analytics will all make the MOOCs of 2020 even more potentially effective and disruptive than in 2014, especially outside the developed world.

For MOOCs to truly be widespread and accessible to Arab society at large, rural areas of the Middle East also need to be connected. With the existing 'digital divide' between urban and rural areas, there is a lot to be done. National information, fixed line and telecommunication infrastructures need to be installed with coverage of vast geographical areas, and poorer students in these areas will need library-like community MOOC learning hubs to access computer devices for internet and MOOC services. GCC governments have started implementing national broadband strategies and should achieve improved connectivity and easier MOOC usage.

Region-specific content. As we have seen with social media and related services, there is a large demand and persistent gap in region-specific content.

Globally, Arabic is the seventh most popular language and the fastest rising on the Internet with exponential growth from 2000-2011¹²². With most Middle Eastern countries ranking in the bottom third in their population's English language capabilities¹²³, Arabic translation of MOOC content is essential if they are to educate the Arab masses. The first steps have already been taken, with the recent advent of AMOOCs in the region.

Beyond simple Arabic translation, content must not only be in Arabic, but also needs to be modernized to be more fun, interesting and contemporary. At the same time, it should also be contextually relevant and specifically applied to the region. For example, a key topic in demand in the region is social media and youth entrepreneurship¹²⁴. A true AMOOC in this area would include Middle East market specific content such as players, legality, trademarks, challenges, critical success factors and case studies.

Cultural sensitivities need to be considered¹²⁵. Local AMOOC providers such as Menaversity (from Lebanon), Edraak (from Jordan) and Rwaq (from Saudi Arabia) are already working with local Arab experts in their own ways to evolve AMOOC content towards this¹²⁶.

As AMOOCs are locally designed and refined, expertise for Arabic knowledge creators will also be developed. This presents an opportunity for original content development. Through a revenue-sharing model, AMOOC content developers can work in partnership with platform providers to accelerate the development of AMOOC offerings.

Bottom line

MOOCs are a fast-growing trend in the educational landscape. In the short term, MOOCs aren't a threat to traditional tertiary education providers, and in fact might never be a threat, even in the long term: MOOCs and traditional education might not be a zero-sum game. People whose primary learning motive is certification or in-person networking might still pay the higher cost of traditional programs. However, providers of MOOCs are branching into new business models. In addition to the revenue from providing fee-based platform services to traditional universities, MOOCs are currently collecting modest fees from certification options, as well as from partnerships with employers to provide targeted learning programs, which might become material in the medium term if the enterprise MOOCs market is the first to take off¹²⁷. The US Department of Education's decision to provide funding based on demonstration of competencies rather than hours spent in the classroom suggests that at least one government is willing to start endorsing non-traditional education approaches in the face of mounting pressure to do something about the looming student debt crisis¹²⁸.

MOOCs don't provide the same on-campus experience and social component as bricks and mortar institutions. However, the percentage of students over the age of 25 is increasing faster than the percentage of students under the age 25 as life-long learning becomes a requirement for continued employment¹²⁹. These older learners might be less interested in the campus experience that is so appealing to 18-22 year olds, and might prefer being able to learn on their own time and turf: particularly as the perceived isolation of online learning is mitigated by new social media elements.

MOOCs seem well placed to meet the needs of the next generation of learners, who are increasingly disillusioned with the idea that a degree is necessary for success¹³⁰, more comfortable with multi-media content delivery, and increasingly averse to student debt.

While MOOCs might not be a significant presence in the traditional for-profit tertiary education market today, colleges and universities need to take the MOOCs threat seriously and learn how to harness it, much like traditional media and music companies have benefited from embracing digital content.

As MOOCs become larger and better credentialed, they could become a disruptive force, especially because of how cross subsidization works in for-profit tertiary educational institutions today. The current financial model for most high tuition tertiary education is that courses in the first and second year tend to be very large (with thousands of students in a lecture hall listening to a single professor), while third and fourth year classes are very small (less than 50 students). Yet the tuition is the same because the first two years effectively subsidize the cost of the final two years. However, MOOCs seem particularly well suited to replace first and second year classes. If students take those classes through MOOCs, and then transfer into a traditional tertiary school for the final two years, colleges and universities may become almost entirely uneconomical, unless they raise tuition for the later years to reflect their true cost (more or less double the current levels).

One of the key positive aspects of MOOCs is the educational opportunities they provide to those who would otherwise not have access to tertiary education, due to factors such as cost, distance, language, and the need to work. MOOCs can be a game changer in those instances, and in developing nations won't have the same kind of installed base of incumbent educational institutions to compete with for credentialing status. Also, there is an opportunity in those nations for governments to support MOOCs in the same way public universities are supported in many developed countries.

Middle East perspective

The environment and conditions for MOOCs to develop and gain prominence in the region are certainly in place. We are seeing this unfold already with the warm reception that new AMOOC platforms such as Edraak, Rwaq and Menaversity have received.

However, a series of obstacles in the region need to be overcome if they are to become more significantly disruptive in the long-term. Culturally, the MOOC concept is still relatively new. A wide range of Western universities already provide MOOCs whereas local universities are still in debate or at most in discussion phases. There is also the fear that Western universities could use MOOCs to promote their own content and views at the expense of eroding Arabic content and culture. With top Western brands such as MIT, Harvard and Stanford leading MOOC development and offering their own MOOCs, foreign content could be seen as superior, which could make them further dominant and possibly even overshadow AMOOCs.

In terms of employability, switching careers is also not widely accepted by regional employers, so there is still little career pathway flexibility here. Employers prefer students who are qualified through full time, rather than part-time or online courses. Certification and accreditation is also given more importance rather than actual knowledge and learning¹³¹. Such traditional views limit the practical disruptive impact MOOCs can really have as a preparer and facilitator for labor mobility.

Whilst the low-cost aspect of MOOCs is very appealing, their impact on earnings prospects is arguably even more important. Education is not only an investment of money but also of time. For Arab students, the return on their money and time invested in terms of subsequent earnings could be the key factor that will ultimately decide whether MOOC adoption in the region will be wide scale, or simply more limited at a supplementary and interest level.

For MOOCs to fly, they need to be developed and presented in the right way. They must be supported and recognized by local governments, employers, educational institutions and ultimately by Arab students themselves. Coordination is therefore needed between the ministries of labor, higher education and the private sector (sector boards and chambers of commerce) to actively integrate and utilize MOOCs as an enabler of employment. For example, selected MOOCs could be made mandatory for GCC nationals as part of nationalization programs in agreement with the private sector to address skills gaps. Students in turn could be tested by their prospective employers on the MOOCs they have undertaken, to ensure they have actually acquired the skills needed from their MOOCs, rather than passively going through the motions for compliance purposes. Blended MOOC learning alongside traditional instruction can also enable personalization of the learning experience and free up classroom time. Teachers can shift from mass teaching more towards one-to-one tuition, a style which is more suitable for Arab students, who, unlike their explorative American counterparts, want more interaction and direction to know exactly what to do and how to do it¹³².

The need for an accreditation body for MOOCs is also a vital element for its success. Setting up a dedicated accreditation body would provide recognition of the value offered by such courses in addressing structural gaps in skill sets across the workforce. The evolution towards a national credential system, supporting the notion of a "Learning Passport" would enable students across the region to identify occupational competencies and industry competencies in demand and structure their educational choices accordingly. As students move through the workplace, the Learning Passport would serve as a vital reference to document continuing learning efforts of the individual and improve mobility based on industry relevant skills garnered. MOOCs would complement traditional learning courses by helping to address specific skills needed to perform a job in the industry.

So can MOOCs work in the Middle East? The Arab youth have already demonstrated their ability to rapidly adopt new technology. With the right support and recognition, AMOOCs can be the next step in the region's digital, economic and social development.

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Deloitte is among the region's leading professional services firms, providing audit, tax, consulting, and financial advisory services through 26 offices in 15 countries with more than 3,000 partners, directors and staff. It is a Tier 1 Tax advisor in the GCC region since 2010 (according to the International Tax Review World Tax Rankings). It has received numerous awards in the last few years which include Best Employer in the Middle East, best consulting firm, and the Middle East Training & Development Excellence Award by the Institute of Chartered Accountants in England and Wales (ICAEW).