

ONLINE LEARNING IN TERTIARY EDUCATION IN THE MIDDLE EAST AND NORTH AFRICA

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EXECUTIVE SUMMARY

While online learning holds increasing potential for high quality learning opportunities in the Middle East and North Africa (MENA) region, there are reputed to be challenges, in particular legal frameworks that do not allow for the recognition of online degrees. However, increasingly institutions need to provide flexible access to tertiary education for people who may be working, have family commitments or be mobile such as refugees. There is also an opportunity to draw on what young people in MENA enjoy most about media, social media and the internet, enabling them to use it to obtain a good education.

This research was commissioned to better understand the potential of, and hindrances to, online learning in the MENA region. The research was carried out in two phases:

- The first phase was based on desk research and was concerned with the regulatory and operational environment, online learning models and cultural appropriateness with respect to online learning adoption.
- The second phase consisted of in-country research in three countries (United Arab Emirates, Jordan and Egypt) based on interviews with multiple stakeholders, with a view to assessing the potential to bridge gaps between international good practice in online learning and current practices in the MENA region, in terms of regulatory and operational change; considering the role of blended learning; and looking at the potential of mobile learning, based on an understanding of the local context.

Key findings:

While the educational culture across the MENA region values face-to-face learning, the rise in blended learning suggests that online learning is becoming more acceptable. This move, combined with the growth in technological availability, is likely to see a continued shift of balance towards online learning. In the short term, online learning may be more readily accepted when it is implemented in the context of blended approaches that balance face-to-face and online learning.

Online learning can be attractive to women who are more restricted in their use of public space and institutions, but there remain major social barriers to women gaining equal access to quality education of whatever type. Across the MENA region we find large refugee populations who are increasingly youthful as well as frustrated by lack of opportunities. Online learning has the potential to reach mobile populations as well as to deliver at the scale needed to meet the demands of such large student bodies. Equally, the impetus to meet this hard to reach group has been a spur to innovation in online learning.

It is expected that the lifelong learning trend will become dominant in the MENA region in the next 10 years, with individuals needing to keep updating their skills and knowledge to remain relevant in the job market. There will be a demand for open and blended degree programmes as well as certificates and diplomas.

Online learning models and innovation

- Innovations in the UK and elsewhere are based on adoption of emerging technologies and evolution in pedagogy, with many innovations focusing on increasing interactions between learners and educational materials, learners and teachers, or among the learners themselves. Researchers agree that online teaching and learning deliver many benefits but require addressing barriers to adoption, development of new skills and pedagogical approaches, and strong commitments from those involved. Mobile learning offers additional benefits and is likely to appeal to the new generation of learners in MENA.

- The research has identified a number of innovative practices in online learning in the MENA region, particularly in Jordan, with international collaboration being the hallmark of some of these initiatives. Innovative online and mobile practices include use of a YouTube channel for educational videos and knowledge sharing, video lectures, provision of immediate feedback to students, online submission of assignments and automatic grading of assignments. There has been pilot testing of a model that makes use of the skills of refugee communities leading the creation and delivery of new higher education solutions, with a number of international partners involved.
- There are MOOCs in Arabic and there is interest among local universities in the development of more MOOCs. Participation in different kinds of MOOCs can give teachers and students some experience of online learning, which can help alter preconceptions about what online learning involves and help learners become more able to discriminate between courses that are offered to them by various organisations or companies.
- The Arab Open University (AOU) in the MENA region has vast experience in designing and delivering higher education courses and programmes using the blended mode of delivery, involving both face-to-face tutorials and independent learning. The AOU has also developed massive open online courses (MOOCs). The AOU provides standardized guidance to all its faculties to ensure that the highest quality online material is provided to students. The blended and open mode of delivery of the courses has been positively received.

Regulatory frameworks:

- Recent expert opinion underscores the idea that the assessment of quality of both online and offline teaching is essentially concerned with learning effectiveness. Digital learning is increasingly embedded into general quality assurance procedures.
- In the UK, the Quality Code for Higher Education sets out the general requirements and includes online or virtual learning as a mode of delivery or experience, rather than regulating it as a separate entity. The United States takes a similar approach to the UK, although there are some specific requirements for online learning. In New Zealand there appears to be a recognition that new technologies require legislation tailored to their specific requirements.
- The review of legal frameworks for online learning in the three countries in the MENA region revealed that relevant information in English is relatively difficult to obtain and online sources may not always be up to date. General reviews of online learning in the region generally explore formal provision in formal settings rather than informal learning that exploits social media or mobile technology.
- The appetite for change across the region, and capacity to change, may not be uniform. The younger “Arab Digital Generation” of people aged 15 to 35 appears to be ready and willing to make greater use of digital technology (online and mobile) but teacher readiness is a common issue.

Academic integrity and security in online courses:

- Maintaining academic integrity is important for any educational process, whether face-to-face or online. However, compared with traditional face-to-face education, online learning presents some special challenges, for example around learner identification and online safety. Students, staff and the educational institutions need to be able to trust the systems to be fair, rigorous and reliable.
- There are two types of approach to maintaining academic integrity: social and technical. An organisation needs to implement aspects of both approaches although the balance would depend upon the type of online learning, whether it leads to a qualification, and the regulatory environment at both institutional and national levels.

- Despite concerns that academic dishonesty is more likely in online courses, the research discussed in this report suggests that this is not the case in practice, although dishonesty at some level will still occur. In a culture where the internet is not widely used for education, attitudes towards cheating might need to be discussed and managed as part of a coherent strategy. In the MENA region the model of teaching is primarily transmissive, with an emphasis upon memorisation rather than interpretation. If this approach is translated into online provision, it increases the opportunities for academic dishonesty for example through the use of crib sheets or copying.

In-country reports (UAE, Jordan and Egypt)

- The UAE is a trailblazer for online learning regionally, especially in the government funded education sector where school education is moving rapidly to a 'no books just tablets' regime thanks to the availability of massive financial resources. The Emirates have few barriers to the recognition of online qualifications and the Hamdan Bin Mohammed Smart University has been at the forefront of establishing national eLearning standards. It is now leading on establishing links with online and blended learning universities globally as well as initiating research and development programmes in online learning. The focus is on a post-petroleum future where technology – and its demand for information skills – is leading to innovative approaches to change. However, there remains a preference for face-to-face interaction in learning and there are capacity constraints around expertise in online teaching and learning given the current dependence on non-Emirati staff. Related to the latter point is the need for adequate hardware and technical support and Internet resources beyond the cities.
- In Jordan, all university qualifications are accredited by the Accreditation and Quality Assurance Committee for Higher Education Institutions (AQACHEI), which was set up to ensure the implementation of a national quality framework for higher education as well as providing guidelines for, and accreditation of, online education. Universities that introduce elements of online education into their qualifications are awarded more credit in the quality assessment process but fully online programs are not (yet) accredited. Professional qualifications e.g. social work, awarded solely on the basis of online study, do not presently enable holders to obtain government or public service employment. The higher education needs of refugees are, however, driving a change in attitudes in this regard. Private universities are at the forefront of the development of online programmes and the assessment requirements within those programmes. MOOCs are widely used in professional and non-government programmes, in particular, using the locally developed Edraak delivery platform. Poor Internet connectivity outside of the capital impacts on the development and take-up of online programmes outside the capital.
- Egypt is undergoing major educational change. The program, which will complete in 2030, includes overhaul of the examinations system as well as the introduction of a wide range of technology including locally designed and manufactured tablets and laptops. The Egyptian Knowledge Bank (EKB) is central to reforms and will see all information needs for Egypt being provided via this online repository. It is anticipated that the EKB, plus provision of laptops to school children, will reduce the need for textbooks in the future as well as removing pressure on parents to use private tuition. Rollout of e-learning - in a blended form - to universities is being coordinated by the National e-Learning Centre and involves conversion of traditional modules presently used in face-to-face classrooms into modules for use on a Moodle system that is compatible with the EKB. Online qualifications are generally recognised for professional training and private tuition and, increasingly, for degree studies. However, institutions like the Academy for Science, Technology and Maritime Engineering practice a system of dual-award degrees by partnering with non-Egyptian universities to offer, effectively, two degrees in one. This assures professional recognition of their degrees both in Egypt and outside the country.

Recommendations from this report – in brief

- Despite very broad-based generalisations around cultural predispositions to teaching and learning, the research reinforces the basic point that context matters. The three countries which were the focus of this research are at very different places as regards adopting online learning across educational levels. Interventions designed to meet these needs must be attentive to the complexities of local circumstances and needs.
- The growing awareness and use of online learning is set alongside youthful populations who are increasingly tech-savvy and for whom digital interaction is commonplace. It is teacher readiness that remains a major barrier to wider and further adoption.
- Models of pedagogy are often transmissive and organisational cultures do not encourage innovation, which militates against new forms of teaching and learning. There is a need to invest in pedagogy. Some countries, albeit in different ways, seem to see the technology as the enabler of online learning, but technology alone does not enhance the learning experience. Indigenous expertise and capacity in designing and developing online teaching remains a challenge.
- There are examples of innovative practices across the MENA region. Edraak, the MOOC platform, possibly stands out in this regard, alongside more bottom up innovation. Learning from these, and possibly working with them, is more likely to ensure modules and programmes are designed appropriately for local needs.
- Contrary to our initial suppositions user integrity and security do not appear to be such a big issue. However, this issue may move up the agenda. The relatively early evolution of online learning means that acceptability of this mode of education is the most pressing challenge before one worries about user integrity.
- Another supposition was that legal frameworks were a barrier to the adoption of online learning. The review of existing approaches across the globe suggests two alternative models. One is to treat online learning as a unique approach and legislate and regulate for it specifically. The other is to treat online learning in much the same way as other forms of delivery. Neither model is necessarily better but countries need to be clear which model they favour and why.
- The final set of issues are around accessibility and marginalisation. In most MENA countries beyond the cities there tend to be poorer, remoter, or more educationally under-served rural populations. In such cases online learning is a big opportunity, but equally questions of access to technology (e.g. bandwidth) can prevent further development. Other potential student populations are also marginal and/or mobile, such as women and refugees.

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ACRONYMS, ABBREVIATIONS AND DEFINITIONS

Egypt

ASTME – Academy of Science, Technology and Maritime Engineering – specialist university in Alexandria serving Egypt and the Gulf

AUC – American University in Cairo

Duroosi – regional online video bank resource

EKB – Egyptian Knowledge Bank – national online information resource

MOOC – Massive Open Online Courses, e.g. Edraak, Coursera, edX, Futurelearn

Nafham – IT start-up offering online tutoring in support of national curriculum subjects

NEC – National E-Learning Centre, part of the SCU – co-ordinates move of university courses online with local roll-out done by E-Learning Centres (LCs) in individual universities

SCU – Supreme Council of Universities – Central universities authority

TAG-Org – Talal Abu-Ghazaleh Organization – MENA wide company offering professional and higher education opportunities in most fields but especially accounting and management

Thanaweya Amma – national secondary leaving qualification – affords entry to higher education

Tutorama – company mediating connection of private tutors and students

UAE

ANQAHE – Arab Network for Quality Assurance in Higher Education – deals with non-academic qualifications

Branch Campus – sub-campus of an international university that is physically located in the UAE and recognised by the UAE authorities via the KHDA

CAA – Commission for Academic Accreditation – for academic programmes – those qualifications recognised by CAA then give students the option to access overseas recognition, funded PhD programmes abroad etc.

Duroosi – project for open interactive learning – collaboration between Etisalat, Google and UAE – bite-sized learning options mainly hosted on YouTube

‘Fly in, fly out’ – an early model for delivery of foreign programmes to UAE students involving block teaching by short term visiting faculty from the home university

Free Zone – an area where private/foreign-funded education institutions are allowed to build and operate (regulated by KHDA)

GCC – Gulf Cooperation Council

KHDA – Knowledge and Human Development Authority – regulates all private education establishments

MOE – Ministry of Education – now includes higher education and research (formerly Ministry of Higher Education and Scientific Research), smart learning (formerly Mohammed Bin Rasheed Smart Learning Project – MBRSLP) and quality evaluation (CAA)

Jordan

HEAC – Higher Education Accreditation Commission - now known as AQACHEI – Accreditation and Quality Assurance Commission for Higher Education Institutions – has developed the National Qualifications Framework and accredits all qualifications that meet Jordanian Government requirements and standards

ECTS – European Credit Transfer and Accumulation System. One academic year corresponds to 60 ECTS credits that are normally equivalent to 1500-1800 hours of total workload, irrespective of standard or qualification type

Edraak - a massive open online course (MOOC) platform, an initiative of the Queen Rania Foundation (QRF). It uses technology developed by the Harvard-MIT consortium, edX, and is the first non-profit Arabic MOOC platform

JRS – Jesuit Refugee Service

KIRON – German government funded Non-Governmental Organisation that supports refugees in facing the challenges of fleeing from their home countries and starting over elsewhere

LASER - Language and Academic Skills and E-Learning Resources project for Syrian refugees funded by the European Union and administered by the British Council in Jordan

LUMINUS – private provider of external online programmes that also provides management and administration for smaller NGOs and other organisations offering, especially, support to refugees and other non-traditional learners

MOHE- Ministry of Higher Education

PSUT – Princess Sumaiya University of Technology – private, not-for-profit, university that has spearheaded use of technological solutions for the expansion of HE

SPARK - an independent, non-profit international development organization working in post-conflict regions. Jordan scholarships programme is funded by the Government of the Netherlands

PART 1: INTRODUCTION

1.1 Background

The British Council in the MENA region (Middle East and North Africa) has begun to work more extensively with online systems of learning in the last few years. Examples of this include the [‘LearnEnglish Connect’ programme](#) and the [LASER programme](#) (Language and Academic Skills and E-Learning Resources) in Jordan, Lebanon and Syria which provide accredited and non-accredited online opportunities for Syrian refugees. While online learning holds increasing potential for high quality learning opportunities in a region that faces challenges in serving an increasingly large youth population, there are a number of limitations; most compellingly, legal frameworks which do not allow for the recognition of online degrees, even those offered by experienced and well-regarded overseas providers such as The Open University. Although this is beginning to change – for example in Jordan, where universities can offer a small percentage of course-learning time online – full-time online learning courses are not accepted and are often regarded as being of low quality and unable to develop either the ‘hard’ or subject-related knowledge required by students, or the ‘soft skills’ required by business and employers.

While online, flexible and blended models of learning are increasingly shaping new and innovative approaches to education in the UK and internationally, they are far less well-regarded in the MENA region. Even with rapid increases in the use of technology and especially smartphones across the Middle East and North Africa, e-learning remains largely unrecognised and unaccredited by governments in particular. Ministries and quality agencies across the MENA region require students to learn face-to-face if their degrees are to be of value to students, their parents, employers and the government. The reasons given for this are many, though the most common concerns given are around quality and, to some extent, security. Furthermore, students who have not experienced online education and have no good examples to work from, may assume that online education is essentially traditional education that makes use of computers as a delivery mechanism. This is very important for advocacy work in this region, particularly because a variety of organisations are starting to promote online education in MENA and learners need to be better informed about their choices.

Increasingly, institutions need to provide flexible access to tertiary education for people who may be working, have family commitments or be mobile such as refugees. Online learning is an obvious solution to some of the challenges of education and training, and as programmes and courses become more sophisticated and internet access improves, the need for flexibility and scalability may ultimately outweigh other concerns. There is also an opportunity for online education to draw on what young people enjoy most about media, social media and the internet, enabling them to use it to obtain a good education.

1.2 Aims of the research

To prepare for any changes that may happen regionally, as well as to better understand the barriers to the recognition and acceptance of online learning by ministries and governments alike, the overall aim of the research was **to better understand the potential of, and hindrances to, online learning in the MENA region**. The research considered:

- international good practice and innovation in online learning, with special reference to developments in the UK
- different forms of online learning, both formal and informal, covering a wide range of tertiary education offers, particularly in the formal university sector
- legal frameworks for online learning in three countries in the MENA region, to identify regulatory barriers
- key providers as well as innovative practices in MENA, and how these have or have not been able to overcome regulatory requirements, including insights into potential future changes

The first phase of this project was confined to desk research and the collection of references and documents for the next phase. The team also reached out to some academic contacts in the MENA region to obtain additional information, including at the Arab Open University which has a model of blended (face-to-face and online) provision. The overall 'framework' for this work comprised three broad and overlapping areas for investigation:

1. Regulatory and operational environment (including legal frameworks and learner identity/ security)
2. Online learning models (extent of innovation, fully or partially online)
3. Cultural appropriateness (pedagogical designs, conceptions of academic integrity, technology adoption readiness)

The aims of the second phase of this project was based on in-country research in 3 key countries - UAE, Jordan and Egypt. The aims of this phase were:

1. to look at what needs to be done to bridge the gaps between international good practice in online learning and online learning in the MENA region both in terms of regulatory and operational change;
2. to consider the role of blended learning in online offers and what this might mean for university providers;
3. to consider the potential role of mobile learning as a way to access online learning or as complementary activity, based on an understanding of the local digital environment and local digital habits.

PART 2: DESK RESEARCH

2. International practice and innovation in online learning, with particular reference to the UK

A recent report published by the International Council for Open and Distance Education (Orr, Weller and Farrow, 2018), which identified emerging models of provision in online, open, flexible and technology-enhanced education, found that “most higher education providers are just at the beginning of developing comprehensive strategies for harnessing digitalization” (p.3). In this section, we provide a brief orientation around current practices and innovation, with particular reference to the UK.

2.1 Current UK practice in online learning

Jisc, the UK higher, further education and skills sectors' not-for-profit organisation for digital services and solutions, is a valuable source for advice to these sectors and has published a series of guides about online learning (Jisc, 2016a). In the guide on Curriculum design and support for online learning, three broad categories are discussed:

- fully online and distance learning courses
- massive open online courses (MOOCs)
- blended approaches that balance face-to-face and online learning

Considering each of these in turn, a number of differences are highlighted:

Fully online and distance learning courses are often aimed at postgraduate level and target part-time students, many of whom also work. They can be expensive for institutions to establish and maintain; and are often treated very differently, regarding operational management, technical aspects and learning support for students. They usually need to go through a lengthy validation and quality assurance process and are often marketed globally. They can be costly for students, although workplaces sometimes pay for or contribute towards courses linked to professional development.

Adapted from (Jisc, 2016a)

Massive open online courses (MOOCs) are free to the student and they can attract thousands of applicants (though there is usually a significant student drop-out as the course progresses). They offer certification of attendance rather than formal accreditation and are likely to undergo a shorter validation process. They are often participated in by highly qualified professionals, who can self-regulate and learn in an online context without much support; not aimed at undergraduate students, who may need a lot of scaffolding and support. Not all open online learning courses are 'massive', and your institution may choose to adopt open approaches in other courses.

Adapted from (Jisc, 2016a)

“For undergraduate courses, your institution may advocate a blended approach that balances face-to-face and online learning. This means that students will benefit from having some content and activities available at any time, while still having access to appropriate personal support and services.”

(Jisc, 2016a)

Jisc also sound a note of caution regarding some recent developments in open courses:

“They may have contributed to unrealistic expectations around online learning and generated some negativity amongst teaching staff, due to criticism of the educational approaches MOOCs have taken. Delivering a course to thousands of students encourages didactic approaches, such as offering videos of lectures supported by multiple choice questions.

Online discussion forums often support content but aren’t always facilitated or used by students if they don’t contribute to certification. MOOCs are continually being developed, and some institutions are trying to address these criticisms.

There are alternative models of open courses that adopt approaches based on collaboration and networking.”

(Jisc, 2016b)

The above mentioned ‘alternative models’ of open courses are ones that promote learning through social interaction and collaboration. Students on these courses can work with other students, with alumni (past students) and with open participants (anyone who is invited to join in) to learn together and to produce collaborative content such as joint writing, presentations or productions. The course can also reach out to professionals who can engage the students in authentic problem-solving and real-life interactions. Students may find it challenging to learn in this way, and their institution will have to ensure that they understand the benefits of these approaches and are supported to develop the technical and communication skills needed to get the most out of collaborative, social learning.

The Higher Education Academy is another important reference point for HE-relevant research and practice, including ‘flexible’ teaching and learning in the UK. Keenan (2014) offers an overview of student-led peer learning, with some reference to online learning, and whilst there are various challenges for new adopters of peer learning, Keenan notes that “peer-learning schemes now exist on all continents and hold relevance for students of all cultures” (p.5). Bayne and Ross (2013) have investigated the pedagogy of UK MOOCs and one of their key conclusions is that “MOOC teaching is high visibility, high risk and dependent on significant intellectual, emotional and time commitment from academics and the professionals who work alongside them” (p.8). Researchers agree that online teaching and learning deliver many benefits but require addressing barriers to adoption, development of new skills and pedagogical approaches, and strong commitments from those involved.

2.2 Innovation in online learning

Online and distance learning courses are usually presented via virtual learning environments (VLEs) that require the learner to be online to access the server-based learning resources and communication via a web browser. Similarly, MOOCs require access to an online learning platform. Generally, this access is via a desktop or laptop computer, although the use of browsers on mobile devices such as tablet computers and smartphones are increasing. To ensure equality of access, assistive technologies can enable learners with disabilities or special needs to access online learning. Note that technology alone is unlikely to resolve all of the relevant issues, so provision needs to be considered in the context of wider institutional processes and support services.

A variety of innovations can be incorporated into browser-based systems, such as presentation and multimedia techniques, simulations, gaming, and social networking tools – although these may also be accessed via apps. Increasingly, learning analytics (collection, analysis and reporting of data about learners and their contexts) gathered from VLEs are used to inform institutional strategies, improve the learning experience and alert tutors to issues arising within their cohort (see also Ferrell, Smith and Knight, 2018a). Personalised learning environments use data to give feedback to individual learners and suggest next steps based upon their progress, strengths and weaknesses. Interactive textbooks use web-based interactivity to provide a richer experience, with audio, video, activities and quizzes. These tend to be offered on a subscription basis as a replacement for print textbooks and are created by publishing companies moving beyond their traditional print offer.

Looking beyond browser-based technologies there is increasing use of mobile apps, virtual reality, sensors and ebooks, although these innovations tend to occur within specific subject areas, organisations or curriculum offers. The online learning ecosystem is diverse, complex and constantly evolving, although for many learners, browser-based systems will be their main experience.

From a pedagogical perspective, innovation in online learning can be supported by an in-depth understanding of pedagogical practices, some of which may have been around a long time but require re-thinking for a digital learning environment. To assist with this process, the annual *Innovating Pedagogy* series offers explanations of new forms of teaching, learning and assessment for an interactive world (Open University, 2017), with each report covering a different set of pedagogies, e.g. learning from the crowd, open textbooks, intergroup empathy, student led-analytics, etc.

3. Regulatory frameworks for online learning, quality assurance and security

3.1 Quality assurance frameworks and processes

Parker (2008) examined quality standards for online education in Australia, England, Canada, and the United States. Although the review is not recent, her conclusions are still relevant. She makes two key points, in the context that the majority of online education was developed as an add-on to traditional face-to-face provision:

“In the process of taking back some of the momentum in the debate [about quality assurance], the academy must provide clear statements of educational goals. Such goals need not be restricted to technical mastery in specific subjects (...) The measure of the effectiveness of the articulation of the educational goals should be the ways that a course, program, and institution’s goals align with one another. Demonstrating a consistency of purpose should be persuasive to internal and external stakeholders alike, but should not presuppose that students are responsible for seeking their own learning outcomes. This suggestion returns to the essential need for quality to be constructed through consensus building among a range of institutional stakeholders, who must, at the same time, not promise, or be promised, more than can be delivered.” (Parker, 2008, p.324)

“A second theme running through all of the frameworks presented here is the need for sustained institutional commitment to support distance learners (...) All too often, online delivery of courses and programs has been presented in an experimental mode, without long-term, planned infrastructure development. Whether it involves investing in technical systems, or in-training for support and instructional staff, the process of developing robust online teaching and learning environments should not be attempted as ‘one-offs.’” (Parker, 2008 p.325)

Recent expert opinion underscores the idea that the assessment of quality of both online and offline teaching is essentially concerned with learning effectiveness: “Quality matters - it is not about the percentage of online content but how effective the learning is” (James Kieft, cited in Ferrell, Smith and Knight, 2018b). Furthermore, digital learning is increasingly embedded into quality assurance procedures for a number of reasons:

“Large institutions... need to provide parity of experience for all students and staff - for example, by ensuring consistent, comprehensive access to high-quality digital learning...” and “The need to improve assessment has led some higher education institutions to standardise the credit value of modules (...) However, achievement of this goal depends on efficient and effective processing of data about the curriculum - another way in which digital technologies impact on quality assurance.” (Ferrell, Smith and Knight, 2018b)

3.2 Recent developments in the regulation of online learning

Recent developments in three parts of the world are noted in the sections below.

United Kingdom

In the UK, the Quality Code for Higher Education sets out the general requirements and includes online or virtual learning as a mode of delivery or experience, rather than regulating it as a separate entity. This has the advantage of treating the educational experience as an integrated whole and making the quality indicators less susceptible to technological changes. It implies that the specific requirements for online learning are dealt with at an institutional level. So, it is the responsibility of the provider to demonstrate compliance, which will require various processes and technologies, depending upon the physical, virtual and social learning the environments provide. For example:

“Learning and Teaching: Indicator 6¹ - Higher education providers maintain physical, virtual and social learning environments that are safe, accessible and reliable for every student, promoting dignity, courtesy and respect in their use.”

(UK Quality Assurance Agency for Higher Education, 2015: Chapter B3, p.18)

“Conducting assessment: Indicator 11 - Assessment is carried out securely².

Staff carry out all aspects of assessment in a way which ensures the integrity of the assessment process and in turn the integrity of the academic standards of each award. Key areas of potential risk are: [...]

- confirming the identity of students undertaking assessments whether in an examination room or online, and when student work is submitted whether in person, online, or through other means.

Students' marks and related information (such as extenuating/mitigating circumstances applications) are held securely and disclosed only to those who need access to the information and have a right to see it.”

(UK Quality Assurance Agency for Higher Education, 2015: Chapter B6, p.18)

United States

The United States takes a similar approach to the UK, although there are some specific requirements for online learning. As Saba (2011) notes, although there has been a history of broadcasting and other technologies for education at a distance in the United States, the majority of distance education is now conducted online. Hence the terms ‘distance education’ and ‘online learning’ tend to be used interchangeably in the USA, although the two terms have different connotations and interpretations in other countries.

¹ The Quality Code has numbered quality indicators. This is indicator number 6.

² The Quality Code has numbered indicators arranged in groups. ‘Assessment is carried out securely’ is indicator 11, which falls within ‘Conducting Assessment’.

“Specifically, the Higher Education Opportunity Act (HEOA), which was signed August 14, 2008, states, ‘Accreditors must, however, require institutions that offer distance education to establish that a student registered for a distance education course is the same student who completes and receives credit for it’”

(Axiom Corporation, 2011)

The relationship between Federal regulations and State authorization creates some issues for online education that crosses state boundaries. For the Department of Education, this is of particular concern where for-profit private providers receive federal student financial aid for online courses. As Cummings (2011) reports, the regulations were changed: “In essence, the new regulation clearly tied, for the first time, the financial aid eligibility of students in distance learning programs to whether their institutions are authorized by the state in which the student, not the institution, is located”. This means that online providers now have to fulfil the requirements of every state in which they have learners, no matter how few learners or how short the online course. In a country with fifty States, each with its own authorization processes, this is a far from a trivial requirement.

New Zealand

Taking a different approach, in New Zealand there appears to be a recognition that new technologies require legislation tailored to their specific requirements. During 2016-17, the NZ Parliament worked on a Bill to create a new legal status ‘Community of Online Learning (COOL)’ with legislation to regulate this:

“Establishing a regulatory framework for online learning

The Education (Update) Amendment Bill (the Bill) proposes to recognise the impact that technology is having on education, by introducing a new mode of education delivery – online learning. Technological change makes it possible for students to learn anywhere, anytime, and at any pace.

The Bill proposes to enable new partnerships between schools and online learning providers, and enable children and young people to access their education through online delivery. Online learning providers will come from the schooling, tertiary education, and private sectors, and will be able to seek accreditation as a Community of Online Learning (COOL).

The Bill proposes that COOL will have to meet criteria relating to their capability and capacity to deliver education to students in an online environment. Some COOL will be subject to additional terms and conditions, like which students they can enrol. All COOL will be subject to a robust quality assurance regime, including requirements to meet specified student outcomes.”

(New Zealand Government Ministry of Education, 2017)

The Bill (New Zealand Government, 2017) now contains a section (Part 3a) dedicated to online learning, which covers accreditation and the operation of ‘communities of online learning’ (schools, corporate bodies and tertiary education providers).

4. Identity, assessment and security

Maintaining academic integrity is important for any educational process, whether face-to-face or online. To provide a context for the discussion of online assessment, we first consider the situation in traditional education. A survey of students and staff at MIT revealed a complex range of factors affecting cheating in face-to-face courses at the university (Lipson and McGavern, 1993). The conclusions suggest seven main areas for action to reduce cheating, many of which also apply to online learning:

1. Teamwork and collaboration are common within MIT courses, so students need to be taught the difference between reasonable collaboration and cheating (e.g. simply copying another's work). Individual homework is also set, but many students collaborate on that anyway. More guidance is needed about when collaboration is appropriate.
2. More communication is needed between staff in different roles, to agree the degree of collaboration permitted, to reinforce guidelines and to share information about students who infringe the guidelines.
3. Student workload is a factor. When students are overloaded, they are more likely to take short cuts, so student workload and assessment deadlines need to be coordinated across courses.
4. Individual students who are struggling or under pressure are more likely to cheat, so staff need to be sensitive to this and initiate offers of help. Often, those who most need help are least likely to request it.
5. The re-use of questions from old assessments increases the likelihood of cheating by consulting directories of previous questions and answers. Staff find it difficult to devise entirely new questions for some specialised subjects. Unequal access to 'bibles' is seen as the main problem, because it creates unfair advantage, so official question and answer sets may be the best response.
6. Sanctions for cheating need to be made public (with individual's anonymity protected) so students are aware that the system detects cheats and acts upon them. Also, internal records need to be kept for each case, so any repeat offenders can be tracked.
7. Teaching students about academic integrity as part of their studies is important. In many cases, students did not know what was acceptable, or considered some breaches to be trivial.

Compared with traditional face-to-face education, online learning presents some special challenges. Since staff cannot directly observe the students, there is a perception that it is easier to cheat in an online course, by consulting extra information online, sharing documents or discussing assessments with other students. Another concern is that the person who enrolled for the course may not be the same as the one doing the assessment, so there is a need to authenticate learner identity at a distance. Although not about cheating, there are two additional priorities for online courses: protecting the safety of online learners (e.g. from harassment in online discussions) and protecting the security of their digital and personal data. These issues are particularly complicated for cross-border provision, in which the online learning provider may be located in one jurisdiction whilst the learner is in another. This report focuses upon the issues of academic integrity and learner authentication.

When implementing online learning and assessment, the perception and management of risk are important. It is helpful to address these explicitly in the implementation strategy, so that appropriate mitigation methods can be put in place. Students, staff and the educational institution need to be able to trust the systems to be fair, rigorous and reliable. The balance between security and privacy also needs to be considered. Effective implementation integrates the needs of online provision with wider policies and procedures for encouraging and ensuring academic integrity. For the sake of transparency and fairness, these include clear processes for students to query data or appeal against institutional decisions if necessary. The choice of technical solutions will depend upon these factors, plus the perceived risk and status of the assessment and the resources available for implementation.

4.1 The extent of student collusion in online learning

One question is whether students are more likely to cheat in online systems than face-to-face. There is a perception that it may be easier to cheat in online courses, due to the lack of direct supervision. This section discusses two research studies that use statistical methods to investigate the extent and perception of academic dishonesty in online classes.

Grijalva *et al.* (2006) investigated the extent of academic dishonesty in online classes, by asking students directly about cheating behaviour in a randomised response survey, and merging that data with class-specific information. They conclude:

“This paper presents preliminary statistical evidence on academic dishonesty in online classes, and compares the estimated incidence of cheating in online classes to that found in traditional classes. Our estimate that only 3-4% of students cheated suggests that academic dishonesty in a single online class is not greater than estimates of cheating in a traditional class. Until now, the supposition was that, because of decreased monitoring and interaction present in online classes, cheating in this setting would be greater than in traditional classrooms. Our paper suggests that as online education expands, there is no reason to suspect that academic dishonesty will become more common. The results show that social and academic indicators that correlate with cheating in a traditional class setting also correlate with cheating in an online setting.”

They suggest four reasons why the extent of online cheating they measured is no higher than the rate for traditional courses. First, they note that their work only applies to one public university in the USA, which may have specific conditions that reduce cheating. So, further work elsewhere is required. Second, although a higher chance of getting caught may reduce some forms of cheating, it is not the only factor. Hence the lack of supervision in online study may not lead to higher rates of cheating. Third, one common form of cheating occurs when students panic in an exam (the cheating is not pre-planned). Because online study does not involve that type of timed test from memory, panic cheating may be reduced. Finally, the type of assessment used online may be designed to reduce cheating. For example, assignments may allow the use of outside material or collaboration. Thus, behaviours which might elsewhere be regarded as cheating are allowed online, because the terms of the assessment have been changed (Grijalva *et al.*, 2006, pp.13-14).

Taking a different approach, Spaulding (2009) investigated students' perceptions of academic integrity in an accredited university in the USA. This study asked two groups of students, i.e. from face-to-face and online courses, about their perceptions of their own behaviours and of other students' behaviours. A statistical analysis showed no significant difference based upon course type, i.e. the response to both of the research questions below is 'no':

“Research Question 1: Do differences exist between online vs. face-to-face students' perception of the academic integrity of their own behavior based on course type?”

Research Question 2: Do differences exist between online and face-to-face students' perceptions of other students' behavior based on course type?”

(Spaulding, 2009, p.187)

The author noted that the participants reported much higher instances of academic dishonesty in others than in themselves, suggesting that even in an anonymous survey, the influence of social approval may lead to self-reporting a lower level of undesirable behaviours. Even so, the lack of significant differences between the online and face-to-face groups suggest that the nature of the course was not the determining factor.

“The present study provides additional evidence that there may be unnecessary alarm concerning the prevalence of academic dishonesty in online courses as opposed to face-to-face courses. The faculty concerns about academic dishonesty should not necessarily be more strongly focused on the online environment. The results did, however, highlight some of the more prevalent areas of academic dishonesty that are taking place. By identifying these areas, faculty can become better equipped to help reduce and even eliminate academic dishonesty.”

(Spaulding, 2009, p.196)

The areas identified as more prevalent are:

- planned and carried out copying or unauthorised aid from another person during an exam (1.9% self, 20% observed in others)
- planned and used unauthorised material or devices during an assessment (2.9% self, 25.2% others)
- prepared work for another student (2.9% self, 27.2% others)
- copied material directly without proper acknowledgement of source (2.9% self, 36.9% others)
- copied information from websites and submitted it as their own work (1.9% self, 40.7% others)

Despite concerns that academic dishonesty is more likely in online courses, the research discussed here suggests that this is not the case in practice, although cheating at some level will still occur. Thus, there is a need for processes to maintain academic integrity and to authenticate learner identity in online education. These are discussed in the next section.

4.2 Maintaining academic integrity and authenticating learner identity

There are two types of approach to maintaining academic integrity: social and technical. To be effective, an organisation needs to implement aspects of both approaches although the balance would depend upon the type of online learning, whether it leads to a qualification, and the regulatory environment (at both institutional and national level).

Social approaches

Grijalva *et al.* (2006) discuss the social aspects of cheating in their paper, pointing out that “perceived support from peers or pro-attitudes about cheating would act to facilitate cheating” (p.181). Efforts to reduce cheating need to address these social factors. Furthermore, actual cheating behaviour tends to take two forms: planned cheating and panic cheating (Bunn *et al.*, 1992). These may have different social norms, depending upon the context. Planned cheating is deliberate and premeditated (e.g. copying homework), so may be regarded as more serious than panic cheating, which tends to be impulsive (e.g. copying another’s answers in a test).

Typically, social approaches would include the teaching of good practice in academic integrity as part of the course. This may involve discussion about what is reasonable collaboration between students (and what is cheating) and how to avoid plagiarism through the correct use of referencing. A clear academic integrity statement using institutional policies, procedures and penalties can also be effective. This is intended to make cheating less socially acceptable and to reduce perceived peer support for cheating.

Learning and assessment can be designed to reduce the opportunities for copy-cheating, for example by setting individualised project-based tasks or requiring participation in online discussions as part of an assessment process. These types of task redefine the requirements of the assessment to include behaviours that might otherwise be regarded as cheating. They do, however, imply an approach to learning that is collaborative and transactional, rather than transmissive. A transmissive approach assumes that the teacher is the expert who transmits knowledge to the students. This approach tends to involve memorisation and reproduction of knowledge in controlled assessments. For those types of assessment, it may be easier for a student to directly copy another's work, or use other aids. In contrast, collaborative or transactional approaches assume that knowledge can be negotiated and interpreted by the learner; it is constructed through interactions between learners, teachers and the course content. Assessment of this type of learning involves individual interpretation, critique and reflection, so each student would produce a unique response to assessment, making it more difficult to copy another's work. There is often a greater emphasis on the process of learning, so online discussion may be part of the assessment, for instance, and active participation in the online discussion may be rewarded through the marking or grading scheme.

Technical approaches

There are several factors to consider when looking for technical solutions to cheating. Is there a need for continuous checking of student identity during online e-learning, or is it only needed at the point of registration or assessment? Does the student require special hardware? Does the educational provider require access to additional data for verification? Is the solution entirely automated, or does it require live human intervention?

Some technical approaches are illustrated by private providers, such as Acxiom (Acxiom Corporation, 2011), which offers the following services in the United States and elsewhere:

- Plagiarism detection databases
- Secure web browsers
- Encrypted test question banks
- Challenge questions based on third-party data
- Audio and video conference proctoring [invigilation] via webcam. Screen monitoring service with live, certified proctors [invigilators]
- Biometrics/special hardware. Unique typing style or fingerprint plus targeted recording of student in exam via webcam
- In person proctored [invigilated] exam. Face to face with government or institution issued identification.

A typical remotely-invigilated exam requires proprietary software installed on the student's computer, plus a webcam and microphone, to relay live real-time information to a human invigilator during the test. There is an initial security check, during which the student uses the webcam to scan the room (to demonstrate the absence of banned material) and to photograph themselves and authorised photo-ID (to establish their identity). The software may lock down the computer, preventing other communications applications from running. During the test, there is a live video and audio feed to the invigilator, who can intervene to prevent inappropriate behaviour, such as reading the questions aloud or using a mobile phone.

For written assignments, anti-plagiarism tools typically compare student assignments with others from their cohort, from a bank of previous assignments from the same course, with websites and with any other texts input by the institution. Each assignment is given a score, so tutors can examine any that are highlighted above a pre-set threshold. Effective implementation requires clear processes for dealing with queried assignments, because the discovery of quoted text does not necessarily imply cheating. In some cases, the student may have quoted legitimately, or may have provided an incomplete reference. So, the intervention may comprise feedback to the student about good practice in using others' work, rather than sanctions. The impact of this upon staff time and other resources needs to be considered.

Another approach is to design the authentication system to work alongside the virtual learning environment (VLE), so there is a 'one stop shop' to meet the needs of continuous assessment and identity authentication. In the European Union, the TeSLA Project (adaptive trust-based e-assessment) is creating a system to provide effective proof of student identity and authorship (Fernández, 2016). It is designed to be scalable and compatible with virtual learning environments (VLEs). 12 countries are involved in the project, which is currently at the pilot stage with an end date of early 2019.

TeSLA uses the following technologies:

- Biometric instruments (facial, voice and keystroke) for monitoring and recognition
- Digital certificates
- Timestamp receipt
- Anti-plagiarism tool (including text matching)
- Forensic analysis

When considering the overall picture, a wide range of options is available, with rapidly-developing new technologies. Biometric recognition technologies stand out because they are based upon a different premise than most other solutions. As Morales and Fierrez (2015) note, they are based upon "something users are" rather than "something users know" such as a PIN or password. In their case study, they analysed the performance of keystroke dynamics (the speed and pattern of an individual's keyboard typing) and found correct student authentication over 90% accurate based on 100 keystrokes. This approach offers continuous authentication during any online activity that involves typing, so it could be used in online discussion forums and MOOCs, as well as for some types of online assessment.

4.3 Online identity, assessment and security in MENA

Attitudes towards cheating may vary between countries. Hence, studies conducted in the USA, quoted above, should be interpreted with caution when considering their relevance to MENA. Magnus *et al.* (2002) conducted a survey across four countries (Russia, the Netherlands, Israel and the United States) to investigate tolerance of cheating amongst high school students, undergraduates and postgraduates. The Russian sample was further split between Moscow and rural Russia, to investigate cultural differences within the country. All participants were given the following scenario:

"Student C reports to the departmental office that student A, while taking an exam, copied answers from student B's paper with the consent of student B. The questionnaire then asked the respondent to characterize his or her attitude towards each of A, B or C on a 5-point scale: strongly negative, negative, neutral, positive, strongly positive."

(adapted from Magnus *et al.*, 2002, p.126)

The authors found some statistically significant differences between countries. In particular, Russian students were strongly negative about C (the informer), and more positive about A and B, than were students in the United States. The authors suggest that competition between students is seen as an intrinsic value of the American education system, so cheating is less tolerated. In Russia, the culture is strongly against informers in general, and this may also apply to education. The authors note that differences in the design of the education systems could impact upon their results, but they do not see this as refuting the cultural explanation. They called upon game theory to explain that in a culture where cheating is generally less tolerated, the chances of being informed upon, and the social penalties for being caught, are higher. Hence the attitude towards cheating has an impact upon the extent of cheating.

Another factor to consider is the extent of familiarity with the use of the internet for education. In a culture where the web is not widely used for education, the introduction of new online learning opportunities may require extra effort in managing identity, assessment and security issues. Perceptions of these issues, and attitudes towards cheating, might also be discussed and managed as part of a coherent strategy.

As previously discussed, the underlying assumptions about education will impact upon the design of assessment and the practical ways in which academic integrity can be maintained. As the subsequent section describes, in MENA the model of teaching is primarily transmissive, with an emphasis upon memorisation rather than interpretation. If this approach is translated into online provision, it increases the opportunities for academic dishonesty through the use of crib sheets, copying, etc. It might still be possible to minimise this through the use of online invigilation and plagiarism detection. If, on the other hand, the priority is to incorporate best practice in online learning in the MENA region, then a more collaborative teaching and learning approach might be used. The assessment could then be designed to maximise the benefits of the large amount of information available online and the opportunities for group discussion in online forums. Whether this is an acceptable or feasible approach depends upon the needs and priorities of MENA audiences.

With regards to the particular needs of women with family responsibilities, limited time and limited financial resources, this audience could be keen to participate in online learning that could be accessed entirely from home. For this group, blended learning may not be appropriate, because travelling to a tutorial or assessment centre may not be practical. Although MOOCs may meet some of the needs of this audience, the introduction of accredited learning with formal assessment may be an option, especially shorter courses in professional development. These would require some form of technical authentication. One point to note is the potential cultural issue around the use of facial photographs or face recognition software for women in MENA. There may need to be additional safeguards or processes to meet social and cultural norms.

5. Legal frameworks for online learning in the MENA region (United Arab Emirates, Jordan and Egypt)

5.1 Data sources

This section draws on publicly available online sources (official, academic and other), reports and documents available and collected by a regional specialist, and the team's personal experience.

Previous work by Traxler (e.g. undertaken for the United Nations Relief and Works Agency for Palestine Refugees in the Near East in the course of developing their ICT strategy) has revealed that official documentation is sparse. In some cases, this is due to technical issues such as information not being available online, information being in English only (whereas lower level bureaucrats are Arabic speakers), or information being out of date. Other reasons pertain to political or administrative factors, in that legislation around online learning (and the management and implementation of education more generally) is not necessarily enforced or enacted. Such matters are structural and possibly systemic whereby decisions, judgments and adjudications may be arrived at, not by resort to the regulations or to precedents, but to the appropriate post-holder. Furthermore, any of the publicly available online resources, either informal ones, such as blogs, or formal ones, such as the websites of ministries, agencies and newspapers, are more difficult to verify and corroborate than in, for example, North America or Western Europe.

Academic journal papers by local academics are relatively sparse. The result is that most academic analysis is written, reviewed and read by outsiders to the region and so may reflect external agendas and epistemologies as opposed to more locally relevant ones (Buckner & Kim, 2012; Shraim & Crompton, 2015). General reviews of online learning in the region, often taking a quantitative or descriptive approach, are useful and less problematic (Mirza & Al-Abdulkareem, 2011), though they understandably explore formal provision in formal settings. Research into informal learning that exploits social media or mobile technology is immature in terms of activity, findings or methods and often imitates western modes at the moment.

This section of the report reflects the nature and balance of the data, observations and insights across the three countries and the region as a whole.

5.2 The cultural and political determinants of online education

From a broad cultural perspective, as articulated by Hofstede (1984) and applied to various nations of the region (Hamdoun Al-Soufi, 2005; Alkailani *et al.*, 2012; Al-Amleh, 2014; 'Mustafa' 2011; Weishut, 2012), Arab culture appears relatively hierarchic, more risk-averse and collectivist than many Western European societies, though will be more complex when national and sub-national context, age, gender, access to technology, religion or social class are taken into account. These cultural characteristics do, to some extent, explain the differentiated appetite for different kinds of change across the region. Broadly speaking UAE is a modern, affluent state, comparable to others in the Gulf, characterised by high levels of investment in infrastructure, institutions and technology and keen to adopt what is perceived locally as the best of western practices. Jordan³ is on a similar but slower trajectory, one characterised by less investment, less capacity and greater disparities.

A different continuum across the three countries is that of political stability and political orientation. All three countries are politically and culturally conservative. UAE, and the Gulf in general, is characterised by a stability based upon relatively centralised political systems and structures. Jordan is on a similar but slower trajectory whilst struggling to reconcile a potentially inflammable mix of nationalities, sects and factions largely hidden from view. Egypt is downstream of its disruptive Arab Spring and the subsequent political counter-movement, leaving institutional capacity inadequate.

³ And aside from any general remarks, Jordan has no natural resources, one of the per capita highest and most mixed refugee populations (currently consuming most government resources and policy-making), a booming health tourism industry and a nervous general tourism industry.

Drilling down, there have nevertheless been some studies which document the expectations and experiences with which learners might approach online learning and its various pedagogies. A report, *Understanding the Arab Digital Generation* (Sabbagh *et al.* 2012), surveyed more than 3,000 digital users in nine countries including UAE, Egypt and Jordan, defined people aged 15 to 35 who are consistent users of technology as the Arab Digital Generation (ADG). The survey suggested that these young Arab Internet users number 10 million, rising to 13 million by 2014—a rise of 11 percent annually, compared to only 7 percent for the world. While the survey defines and represents the views and preferences of the region’s digital elite, these views are nonetheless significant because they represent a growing segment of potential students and a demographic in the ascendant. In discussing the various social and cultural attributes and practices around ICT, the ADG report asserts that:

“What is particularly striking is that although the ADG is the best educated and most ambitious generation the region has yet produced, it rarely uses the Internet for education purposes. This is not for lack of desire or interest from the ADG’s side. We know that youth in the region are seeking more technologically enhanced forms of education that will help them obtain employment and fulfil their goals. Rather, the fault lies with the education sector, which thus far has not provided the access or the Arabic digital content that this demographic craves”

(Sabbagh *et al.* 2012, p.12)

The rest of the ADG statistics, findings and observations are broadly in line with global expectations filtered slightly through local and regional cultural sensibilities and practices. The survey reports widespread dissatisfaction from respondents on education across the region and its current use of ICT, saying for example,

“... survey respondents make this point clearly:

- 29 percent believe the curriculum and teaching methods are poor
- 23 percent believe the quality of teaching staff is below par
- 29 percent believe the quality of education infrastructure (such as buildings, environment, classrooms, and equipment) is poor
- 40 percent believe that schools insufficiently prepare students for the job market”

(Sabbagh *et al.* 2012, p.31)

The ADG’s remarks about the nature of teaching are corroborated and complemented by UNESCO (United Nations Educational, Scientific and Cultural Organization) statistics on teacher supply, observing that across Arab countries there are ongoing teacher shortages, both in terms of numbers of teachers and teacher quality (UNESCO UIS, 2013). UNESCO has also drawn attention in their global and regional reports to the mismatch between educational attainment, which is similar to much of Africa, and economic activity, which is well above Africa.

A blog post from within the American University in Cairo's Graduate School of Education made the following points about MOOCs in Egypt that may be more widely relevant:

“In a region where some women are not able to study abroad, whether for conservative, religious, financial, or practical reasons, online education has provided unprecedented opportunities. MOOCs have the potential to multiply these opportunities, as the courses are offered for free. This becomes particularly beneficial to professional women who are on maternity leave and who would like to learn something new, but are unable to make huge investments of money and time. MOOCs with flexible deadlines are particularly helpful to these women, as they can fit the courses in between family commitments.

Unemployment is obviously difficult, but during times of political and economic instability, it is even more trying. MOOCs offer an opportunity for professional development in the meantime. They can give someone a glimpse of a different field altogether, in a region where switching careers is still not widely accepted. Although MOOCs don't normally give college credit for free, most provide statements of accomplishment. I wouldn't put too much weight on those statements, though, because most MOOCs don't test deep learning.

In a region that has a “foreigner complex,” or [in Arabic] **عقدة الخواجة**, where everything foreign or Western is uncritically assumed to be superior, a trait that is possibly a remnant of its colonial history, MOOCs risk reinforcing the global dominance of Anglo-based education, particularly brand-name universities. MOOCs tend to give the impression of the benevolent, elite university sharing its superior knowledge with the rest of the world for free, when doing so may actually be at the expense of local, contextual knowledge.” (Bali, 2013)

Section 7.1 outlines some recent local initiatives in MENA around distance and online learning.

The experience of the research team gained from meetings with JEI (Jordan Education Initiative) staff and UNRWA (United Nations Relief and Works Agency for Palestine Refugees in the Near East) HQ staff suggests a strong market, certainly in Jordan, for computer training certification - such as Microsoft, Cisco and ICDL - that outstrips interest in more academic subjects or approaches. It also suggests that digital technology is more likely to be seen as a way to enliven traditional transmissive teaching rather than replace or transform it. An internal review of the government policies relating to e-learning, conducted for UNRWA in the five fields in which it operates (Gaza, West Bank, Jordan, Syria and Lebanon) found these policies were devoted almost exclusively to the primary and secondary sectors and not the tertiary, community, informal or adult sectors. They were devoted to technology and infrastructure, not to capacity or pedagogy; and focused on the ability of technology to deliver the established curriculum, rather than reflect the digital nature of the wider world.

The Gulf states, including UAE, owing to their high GDP per-capita, are different in the levels of investment and technical capacity, but not so different in terms of underlying culture. The consequence is a reliance on foreign knowledge workers that significantly undermines any economic incentive to study, though conversely many of the less affluent, especially long-term refugees in the region with relatives already established overseas, are keen to gain internationally recognised qualifications and then work overseas, hopefully in America, Canada or Germany. This generalised analysis suggests there are discrepancies between the investment in education and the local engagement in it.

The Western and global media image of the UAE is of a user-group that is very digitally savvy and media savvy, and one would therefore predict a number of e-learning initiatives typical of global trends such as high-bandwidth, media-rich MOOCs. One would however also expect these to be limited to the formal and institutional rather than the social and informal, as the literature (see for example, Heyneman, 1997; Assaad, Salehi-Isfahani and Hendy, 2014; World Bank, 2017) points to significant disparities between material affluence and metrics of social and informal learning in the region. Regional conferences suggest an emphasis on pilot studies and studies that are small-scale, failing to address issues of scale or sustainability.

6. Experience of the Arab Open University (AOU)

As part of the research for this report, Professor Marwan Al-Akaidi, Vice President for Academic Affairs, provided some information about the adoption of online learning at the Arab Open University in MENA:

“The AOU has vast experience in designing and delivering higher education courses and programmes using the blended mode of delivery. The blended mode involves both face-to-face tutorials in classrooms and Independent Learning on the part of the students. As an example, the Faculty of Education Studies (FES) at AOU has designed and developed its own educational programmes and has been delivering them in blended mode since the year 2002. As another example, the ITC Programme at the Faculty of Computer Studies (FCS) has been designed by AOU in partnership with The Open University, OU, UK by considering their B.Sc. (Hons.) Computing and IT Programme as a reference model. Our partnership with OU enables us to have access to World class programmes in the fields of IT, Business and English Language Studies to use as reference models while our own Market Research and Local Branch Requirement Studies enable us to fulfil and meet the local branches’ requirements to design updated programmes of study. The blended mode of delivery helps in satisfying the requirements of local MOHE at the branches for our programmes. Hence, the AOU is involved in the Independent Development and design of higher education programmes as well as through its Partnership with the OU, UK. An LMS [Learning Management System] is used to support the delivery of all modules at AOU.

The process of developing higher education courses for the blended model of delivery that is practiced by AOU differs from the traditional courses developed at any regular university in that the courses of AOU include special activities to support Independent Learning. These activities include Self-Assessment Questions (SAQs) and general assessment activities along with the associated solutions provided to students to check and monitor their progress. These activities act as pre- and post- assessments for students to achieve independent learning through the course.

The following programmes have been delivered by the four faculties at AOU using the blended mode of delivery:

- i. B.Sc. (Hons.) ITC Programme
- ii. B.A (Hons.) Business Studies Programme
- iii. B.A (Hons.) English Language and Literature Programme
- iv. Bachelor degree in Elementary Education
- v. Bachelor degree in Special Education
- vi. MBA Programme
- vii. MBA Finance Programme
- viii. MBA HRM Programme
- ix. M.Sc. in Computing Programme

The AOU developed and successfully launched two MOOC courses during the Summer 2017 semester. These included the TM103 (Computer Organisation and Architecture) and EL117 (Writing). The MOOC concept enables the AOU to use the innovative idea of the flipped classroom in which the students have full access to the module material in an online manner and the tutors act as mentors or facilitators during the face-to-face part of the blended mode of delivery. The module material is presented to the students in the form of online text, videos, animations and multimedia resources. In order to increase the student’s engagement with MOOCs, the AOU plans to allocate part of the assessment weightage to the online assessment activities available on the MOOCs.

The AOU provides standardized guidance to all its faculties to ensure that the highest quality online material is provided to students. An example in this regard is the recent introduction of MOOC courses for which staff tutors from all 4 faculties of AOU were provided with training on the design of MOOC courses. Subsequently all 4 faculties used the same unified approach to design and implement their MOOCs.

Individual as well as institutional research contributes towards the design and delivery of blended and online courses at AOU. At the individual researcher level, the faculty members at AOU are actively involved in research activities related to open and blended education. As an incentive, staff members are required to have research publications in open, distance and blended education in order to satisfy partial requirements of promotion. At the institutional level, the AOU is deeply involved in analyzing the effectiveness of its open, online and blended education provisions. As an example, the AOU recently analyzed the student engagement with its MOOC courses by utilizing its LMS [Learning Management System]. Subsequently, recommendations were made concerning better utilization of the online activities features present in the MOOCs to increase student engagement. The team that performed this study and analysis is engaged in broader Data Analytics at AOU at the institutional level.

The AOU considers that a strong and efficient IT Infrastructure is essential for blended and online education provision. Bandwidth limitations in certain parts of the MENA region tend to hamper educational activities conducted at a distance. Virtual Classroom implementation of tutorials may suffer due to inefficient IT Infrastructure in some parts of the MENA region. The same is true for Virtual Labs and Instrumentation setups.

The AOU solicits students' feedback on the Teaching and Learning resources and on the Quality of Teaching in the form of questionnaires and surveys. This feedback is called "Student Views" and includes the following:

- Student Views on courses
- Student Views on resources
- Student Views on tutors

The student's satisfaction is indicated on these questionnaires in the form of the score that the students award to the various factors that are listed on the questionnaires. Overall, the students are satisfied with the teaching and learning resources and with the quality of teaching.

The blended and open mode of delivery of our courses has been positively received. A large part of the AOU student body consists of full-time workers and they greatly appreciate the flexible nature of the open education at AOU. The availability of online material on the LMS greatly increases students' access to the educational resources. Availability of video recordings of tutorials is highly appreciated by the students. The introduction of MOOCs is expected to further increase the positive sentiments of students towards AOU's open and blended educational provision.

The attitude of both the higher educational authorities and students in the MENA region has become more positive towards open and blended education. This is evident from the interest shown by traditional universities to start open education facilities along with their regular course offerings. The MOHEs in the MENA region are aware of this growing trend. The students in the MENA region are aware of advancements in open and online educational facilities on the international level. The majority of them are aware of open education initiatives of world-famous universities such as MIT (open courseware), Harvard (edX) and Stanford (Coursera). This is resulting in a positive attitude towards open and blended education in the MENA region.

The trend of “Lifelong Learning” will become dominant in the MENA region in the next 10 years. The society will become aware and will be convinced that in order to keep up with the rapid advancements in all fields of life, one has to keep updating one’s skills and knowledge to remain relevant in the job market. Lifelong learning will also satisfy the desire of individuals for self-improvement and learning. Hence, open and blended degree programmes as well as certificates and diplomas will be in demand in the MENA region in future.

Mobile devices and smart phones are the main players in enabling individuals to access various resources at any time, from anywhere in a flexible manner. Hence, courses and programmes, which can be accessed through mobile technologies, will have the edge over traditional courses since their reach will be much larger to a bigger audience and clientele. Also, the majority of the younger generation has been brought up with mobile technologies and they will embrace educational resources available on mobile platforms.

The most important thing to enhance the uptake of online learning is to continue to improve the quality of open and online educational provisioning. Continued engagement with the community and its valuable feedback will enable the educational providers to offer relevant programmes to satisfy local needs.”

7. Innovative Practices in Online Learning in the MENA Region

This section gives some examples of innovative practices and an indication of some developments in online learning that are relevant to the MENA region.

7.1 Future changes in the status and practices of online learning

We assume that the global offering of MOOCs is accessible to the region but these courses are almost all in English. There are now some pilot MOOCs in Arabic developed locally onto external platforms, such as edX, and there is considerable interest among local universities in the development of in-house MOOCs. Participation in different kinds of MOOCs can give teachers and students some experience of online learning, which can help alter preconceptions about what online learning involves and dispel the notion that it is traditional education on a computer. It can also help learners become more able to discriminate between courses that are offered to them by various organisations or companies. However, it is important to remember that MOOCs, which are generally aimed at a massive audience, are not entirely representative of the broad spectrum of learning that can take place online. Furthermore, there is an opportunity here for new online education offerings to draw on what people enjoy most about the internet and its resources and the use of social media.

7.2 Some Examples of Innovative Practices

1. At the School of Engineering in the University of Jordan, Professor Lutfi Al-Sharif is using YouTube Channel Educational Videos to enhance Engineering Education in the Arab World. This activity started about four years ago in-house at the university, but was opened up and the videos are widely accessed. With the passage of time, other students followed the videos from other Jordanian Universities, from around the Arab world and from many other countries. This serendipitous outcome has effectively transformed the channel from simply being a repository of videos for Professor Al-Sharif's own students to a tool for sharing engineering knowledge in the Arab world. It is effectively lecture-capture now being exploited by both students and lecturers outside the University of Jordan. The channel subscribers are spread geographically from a total of 122 countries and are sub-divided as follows: Egypt 41.5%; Jordan 10.8%; Saudi Arabia 5.5%; Iraq 4.5%; India 3.3%; Algeria 3.2%; USA 2.8%; Other countries 28.4%.⁴
2. Elsewhere in the University of Jordan, there have been experiments with wholly online delivery, including a couple of courses for PhD students at the Aqaba branch. This was totally distance learning, an interactive board enhanced with a multimedia video and other online tools such as Moodle. The completed assignments were sent and received online and there was no paper-based material at all.⁵
3. In May 2014, Queen Rania Foundation (QRF) for Education and Development of Jordan launched a non-profit massive open online course portal, in the Arabic language, called Edraak to promote knowledge in the Arab world.⁶ The course portal is hosted by the edX platform. There is a constantly changing roster of courses now on the platform, mostly in Arabic, credited to the British Council, Al-Quds, the American University of Beirut, the American University in Cairo, Amman Arab University, some private sector organisations and Edraak itself.

⁴ Personal Communication, Lutfi Al-Sharif, 15th March 2017

⁵ Personal Communication, Dr-Muhannad Al-Shboul, 15th March 2017

⁶ Available at <https://www.Edraak.org/en/>

4. In 2016 Al-Quds Open University (QOU) introduced its first MOOCs called *Remedial Math (RM)* and *Remedial Statistics (RS)* through the Edraak platform. These courses were designed in a simplified manner to provide learners with fundamental maths and statistical information. The course teams spent almost 14 months involving over 8000 working hours in designing and planning the MOOCs in such a way as to integrate technology and pedagogy. The courses were sent out on a weekly basis where learners watched short video lectures online and completed the assignments that were automatically graded. Learners were also able to get immediate feedback if questions arose. Over 18,000 nationwide learners, with a variety of qualifications such as PhDs, MAs, BS, middle school education, etc., enrolled in the courses from 10 different Arab countries.
5. The Jamiya Project provides relevant and accessible higher education for Syrian refugees by reconnecting them with Syrian academics, European universities and the latest education technology. In Jordan, alongside the University of Gothenburg, the Jamiya Project is running two pilot 'Small Private Online Courses' (SPOCs), developed by Syrian and Swedish academics, and delivered using a blended learning method. The courses are in Applied IT and Global Studies, delivered in Arabic, certified by the University of Gothenburg, and delivered in collaboration with the University of Gothenburg, a small team of Syrian academics and NGOs in the field - Norwegian Refugee Council and Jesuit Refugee Service, both in Jordan. By making use of existing courses, learning infrastructure and technology, the pilot tests a model that makes use of the skills of refugee communities leading creation and delivery of new higher education solutions.

8. Mobile learning potential

Mobile learning is a complex and rapidly-evolving field, partly driven by changes in the capabilities of each generation of devices and the apps available to be used on these devices. Educational practices have moved beyond the use of mobiles merely to access information through a different channel. Mobile devices are proving to be highly versatile tools inside and outside the (physical or virtual) classroom, while also helping learners to develop digital competence, which is the ability to use a range of digital tools effectively (Kukulska-Hulme, 2016). Mobile learning advantages include: increased opportunities for flexible study, rapid communication, personalization of learning, informal peer support on the go, easy media creation and sharing (notes, photos, videos, sketches), notifications and prompts for reflection or action, connecting formal learning with learning in work and life, opportunities for situational or contextual learning, and taking advantage of augmented reality to enrich learning.

The location and context of the learner using the device are important to the mobile learning experience. As mobiles have incorporated more sophisticated sensors and geolocation, learners are able to collect data to be shared with others; this creates new learning opportunities, for example in citizen science. In their book, Traxler and Kukulska-Hulme (2015) collected the most innovative examples of context-aware mobile learning. They identified several “overlapping generations, or paradigms” for mobile learning and listed these as being:

1. Techno-centric learning: defining feature was simply that a mobile digital device was used
2. Industrialised learning: where technology is used for its capacity to ensure quality, whilst producing efficiency gains and increased throughput in largescale formal education
3. Enriched learning: using the extra features of mobiles, such as image-capture
4. Extended learning: taking learning to people and communities where traditional educational interventions were too expensive or difficult
5. Encouraging learning: exploiting the apparent capacity of mobiles to encourage learning in order to reach previously disengaged learners
6. User-generated learning: a shift towards contributions by many people using a diverse range of apps and podcasts
7. Learning for mobile and connected societies: once a society has been transformed through the pervasive use of mobile technologies, the “balance of what can or must be known” is also transformed

The MOTILL (2010) project (Mobile Technologies in Lifelong Learning) collected examples of best practices in mobile lifelong learning and undertook a meta-analysis. The project established that there were some key technological questions to be considered when implementing mobile learning. Three of these are considered below:

- The first is whether to require all learners to use the same type of device or whether to adopt a ‘bring your own device’ approach (BYOD). The latter requires the educational provider to cater for a range of devices and platforms. This is more complicated for the provider, although it may be more convenient and cost-effective for the learners and thus increase involvement. A cost-benefit analysis from the perspective of all stakeholders is helpful in deciding which approach to adopt.
- The second question is pedagogical. What paradigm will be adopted in the learning design? This question is closely intertwined with the technology used, including the hardware, apps and connectivity of the device. If the intention is for learners to record their own video to share with the rest of the class, for example, then the quality of the camera, app and data upload have to be considered. The costs of uploading and downloading data may be a barrier, so the provision of free Wi-Fi may be important. An holistic approach is helpful in considering the implications of mobile

learning from the perspective of learners, educators and technical support staff. Small-scale pilot projects can be invaluable, perhaps introduced as innovative project work within a traditional course.

- The third is the relationship between the mobile learning components and the rest of the learning experience. Will the mobile learning occur in pockets of specific activity, or will it be integrated throughout the course? Is it implemented as an additional mode of delivery for existing digital course content, or does it stand as a mobile-specific experience?

MOTILL (2010) found that projects illustrating best practice utilized the unique affordances of mobile technologies to construct learning approaches in support of educational and social goals, which may be summarized as follows:

In relation to learners:

- Facilitating access and social inclusion
- Responding to learners' needs (such as collaboration) and their technology use habits
- Enabling students to manage and direct their own learning

In relation to contexts of learning:

- Taking learning out of the classroom and into the real world
- Enabling construction of learning in context
- Providing learning content based on contextual information about the user

In relation to curricula and learning content:

- Using ontologies to create multidimensional curricula that work at scale and cater to individual needs
- Enabling mass-customized learning content delivery
- Helping teachers and instructors to provide personalized content for students

Finally, MOTILL (2010) found a range of ethical issues relating to access, copyright, privacy and security. Barriers to access included the cost of the mobile devices, costs associated with using devices and the special needs of learners with disabilities. Privacy was a prevalent concern. A range of initiatives protected learners, including: limiting device functions, user anonymity, monitoring the use of technologies and mentoring users. Where mobile devices were used to record photographs, video or audio, ethical processes were needed. Copyright issues were addressed by obtaining permission, developing new material and using material under creative commons licensing (Creative Commons, 2017).

9. Conclusions from desk research

Online and distance learning may be more readily accepted when it is implemented in the context of blended approaches that balance face-to-face and online learning. Access to non-accredited massive open online courses (MOOCs) is making online learning more widely known, however learning designs and assessments that are appropriate for massive courses will often differ from what is appropriate for more targeted audiences. One way in which online courses differ in general is in the extent of their incorporation of social interaction and collaboration as methods of learning. Innovations in the UK and elsewhere are based on adoption of emerging technologies and evolution in pedagogy, with many innovations focusing on increasing interactions between learners and educational materials, learners and teachers, or among the learners themselves. As noted in this report, the online learning ecosystem is diverse, complex and constantly evolving.

This part of the report has reviewed relevant regulatory environments to identify any regulations pertaining to online learning, particularly in relation to quality standards. Despite concerns that academic dishonesty is more likely to occur in online courses, the research suggests that this is not the case in practice. However, cheating at some level is still likely to take place, so there is a need for processes to maintain academic integrity and to authenticate learner identity in online education; in this respect, a number of solutions are discussed, both social and technical. Attitudes towards, or conceptions of “cheating” may naturally vary between countries and regions. If in MENA the model of teaching is primarily transmissive, online provision increases the opportunities for academic dishonesty, but this can be minimised through the use of online invigilation and plagiarism detection. A more collaborative approach to teaching and learning offers other solutions that need to be aligned with appropriately designed assessment.

The review of legal frameworks for online learning in the three countries of interest in MENA revealed that relevant information in English is relatively difficult to obtain and online sources may not always be up to date. General reviews of online learning in the region are available though they generally explore formal provision in formal settings rather than informal learning that exploits social media or mobile technology. It was noted that the appetite for change across the region, and capacity to change, may not be uniform. The younger “Arab Digital Generation” of people aged 15 to 35 appears to be ready and willing to make greater use of digital technology (online and mobile) but teacher readiness is a common issue. The research has identified a number of innovative practices in online learning in the MENA region, particularly in Jordan, with international collaboration being the hallmark of some of these initiatives.

PART 3: IN-COUNTRY REPORTS

10. Overview of the reports

Throughout the MENA region educational demand outstrips supply, with both youthful indigenous populations and through the inflow of refugees, especially for Jordan. The educational culture across the region is largely transmissive whereby experts convey knowledge in a relatively uni-directional way, preferably face to face. However, each of the three countries have made moves towards online and distance learning with UAE leading in this area with Jordan following and then Egypt some way behind.

The **UAE** is a trailblazer for online learning regionally, especially in the government funded education sector where school education is moving rapidly to a 'no books just tablets' regime thanks to the availability of massive financial resources. The Emirates have few barriers to the recognition of online qualifications and the Hamdan Bin Mohammed Smart University has been at the forefront of establishing national eLearning standards. It is now leading on establishing links with online and blended learning universities globally as well as initiating research and development programmes in online learning. The focus is on a post-petroleum future where technology - and its demand for information skills - is leading to innovative approaches to change. However, there remains a preference for face-to-face interaction in learning and there are capacity constraints around expertise in online teaching and learning given the current dependence on non-Emirati staff. Related to the latter point is the need for adequate hardware and technical support and Internet resources beyond the cities.

In **Jordan**, all university qualifications are accredited by the Accreditation and Quality Assurance Committee for Higher Education Institutions (AQACHEI), which was set up to ensure the implementation of a national quality framework for higher education as well as providing guidelines for, and accreditation of, online education. Universities that introduce elements of online education into their qualifications are awarded more credit in the quality assessment process but fully online programs are not (yet) accredited. Professional qualifications e.g. social work, awarded solely on the basis of online study, do not presently enable holders to obtain government or public service employment. The higher education needs of refugees are, however, driving a change in attitudes in this regard. Private universities are at the forefront of the development of online programmes and the assessment requirements within those programmes. MOOCs are widely used in professional and non-government programmes, in particular, using the locally developed Edraak delivery platform. Poor Internet connectivity outside of the capital impacts on the development and take-up of online programmes outside the capital.

Egypt is undergoing major educational change. The program, which will complete in 2030, includes overhaul of the examinations system as well as the introduction of a wide range of technology including locally designed and manufactured tablets and laptops. The Egyptian Knowledge Bank (EKB) is central to reforms and will see all information needs for Egypt being provided via this online repository. It is anticipated that the EKB, plus provision of laptops to school children, will reduce the need for textbooks in the future as well as removing pressure on parents to use private tuition. Rollout of e-learning - in a blended form - to universities is being coordinated by the National e-Learning Centre and involves conversion of traditional modules presently used in face-to-face classrooms into modules for use on a Moodle system that is compatible with the EKB. Online qualifications are generally recognised for professional training and private tuition and, increasingly, for degree studies. However, institutions like the Academy for Science, Technology and Maritime Engineering practice a system of dual-award degrees by partnering with non-Egyptian universities to offer, effectively, two degrees in one. This assures professional recognition of their degrees both in Egypt and outside the country.

11. Methodology of field studies

Phase 2 builds on the desk research of phase 1. A questionnaire was developed, based on the outcomes of phase 1, for use with those involved in online education in the field. The questionnaire was developed premised on a position, focused on in phase 1 desk research i.e. that regulatory frameworks seemed to be the main obstacle to the further development of online learning in MENA. Variations on the questionnaire were included in order to cater for the different perspectives of central government, regulatory bodies, universities, NGOs, etc.

With the cooperation of British Council offices in the three target countries - Jordan, UAE and Egypt - lists of those involved, or potentially involved, in online learning in each of the countries were developed. These lists were used as the basis for selecting interviewees for phase 2. Each interviewee was approached by email or phone about taking part in an interview. A draft questionnaire was sent with each interview request as a way of giving an indication of the topics to be covered and as an incentive to participate, since potential interviewees would be able to see the relevance of participation.

While the questionnaire had been devised and questions selected as a result of phase 1, once in the field it became apparent that the key issue was not regulatory frameworks, which were more fully developed than anticipated, but there were many variables slowing the uptake of online learning, many very specific to the individual country. The questionnaire was therefore used as a starting point for discussions. All interviews had two principal parts: a general discussion about the use, or non-use, of online learning in the particular context and a more specific discussion of how online learning and blended learning were likely to develop in the organisation(s) the interviewee was a part of in the near and medium future. Interviewees were invited to comment on what might speed the process of online learning adoption in their organisation and more generally in their country. They were also invited to comment on how outputs related to employment and the national workplace in general. The analysis we present below is both anonymised and does not contain verbatim quotes.

Given the difficulties of locating potential online students every opportunity was taken to question interviewees about their own study practices, any experiences of online learning and/or reservations about studying this way.

In the case of **Egypt**, although the Supreme Council of Universities was extremely helpful with the research several formal meetings arranged with universities did not actually take place either because interviewees did not turn up as arranged, or because on arrival at the agreed location the interviewer was informed that the university staff had not, in fact, obtained the necessary security clearance for the meeting to take place. Some contacts provided information by email.

In the case of **UAE**, key stakeholders, individuals and organisations were identified. They were willing and able to participate in interviews, others suggested colleagues who were better placed to respond. Private education organisations were particularly anxious to participate, but Government representatives were constrained by complex and lengthy local procedure and practice for obtaining permission to discuss education policy with external parties. However, they did refer the researcher to pertinent documents and other material already in the public domain.

In the case of **Jordan**, an initial 10 key people/organisations were approached. Not all were willing or able to participate in interviews. While some simply replied to the questionnaire, others suggested colleagues who were better placed to respond. On a couple of occasions those interviewed felt the study so important that they used their personal networks to secure meetings with yet other stakeholders.

12. Egypt

12.1 Education profile for Egypt

Egypt's population is estimated to be around 100 million (CIA World Factbook 2017), with 35% estimated to be under 15 and a further 20% between 15 and 25 years old. While 70% of the population are economically dependent on the remaining 30%, population growth and numbers of school age children mean that there is a huge strain on educational resources and an acute need for addressing future education requirements for most of the population. In such a context, it is inevitable that radical solutions will be considered and it might be assumed that online education would be attractive and likely to be readily adopted in such a context. Certainly, provision of information online was seen as an imperative by those interviewed. Many classes in Egyptian public schools have 70 to 100 students and it is widely understood that more is spent annually, by individuals, on tutors, than is spent by government on providing education in public schools. One source (Farouk, 2017) suggests that U\$2 billion a year is spent by Egyptian families on private tuition. The Minister has determined that this situation must end (see section below regarding the Tutorama portal). Currently, secondary education has three streams: general, technical and vocational and it is the successful completion of the *Thanaweya Amma* in the general stream that permits entry to university.

Basic education in government schools follows a traditional 6:3:3 pattern (primary: secondary: tertiary years) although major reforms have been announced and are being rolled out presently. The Minister of Education, Tarek Shawki, was appointed in February 2017. He is a former Presidential Council for Education member, has worked for UNESCO, and was an American University of Cairo professor. He has obtained the support and collaboration of many senior figures and companies in education globally, enlisting them as advisors to the reform programme. His announcement of a total reform of pre-university education by 2030 was an extension of reforms he was advocating in his previous post on the Presidential Council on Education (AUCNews, 2015). The foci for secondary school reform are quality, changing assessment strategies, and changing the exit exam that affords entry to university. Skills that are required in the workplace will be central to developments in all these areas and reforms will additionally seek to address perceived problems with the quality of teaching, of the teaching environment, the curriculum and assessment.

Government actions to build political consensus on issues critical to reform have created a climate that is ripe for change. Reform will take place at all levels. In August 2017, it was announced that year six of primary education will become an ordinary study year and no longer be simply an examination year for the primary school leaving certificate, which had previously been the highest qualification that many have held. Furthermore, plans for marking the end of year exams will involve papers being graded by teachers from different schools.

Secondary education and examinations are also to change from the school year 2018-19. The traditional *Thanaweya Amma* system will be replaced with a system based on grade point average. Currently, the *Thanaweya Amma* does not measure higher-order thinking skills, but concentrates rather on rote memorization. Scores can thus be raised significantly by exam specific tutoring, and students with more resources can afford private tutoring which helps them to score higher on these national exams and get accepted into Egypt's top universities. This competitive process of selection restricts students' degree options and results, making students opt for programs and careers which are of little interest to them. It is hoped that the proposed reforms will not only address issues of corruption and eccentric results⁷ but should also discourage the current focus on the memorisation of facts which has dominated assessment to date and is widely seen as inadequate for university admission. New examinations will include coursework and multiple-choice questions (to be marked electronically).

⁷ For example, in 2015 Mariam Malek who having previously had an average over all subjects of 97% was graded 0% in all seven final papers in her *Thanaweya Amma* exams (Egyptianstreets, 2016 and 2017).

In the tertiary sector, the Ministry of Higher Education (MOHE) acts as a champion for reform. The Minister, appointed in 1997, quickly established a committee for the reform of higher education (known as the HEEP Committee) which drew in a wide range of stakeholders including industrialists and parliamentarians. A National Conference on higher education reform was held in February 2000, and a Declaration for action emanating from the Conference was endorsed by the President and the Prime Minister. The Declaration identified 25 specific reform initiatives. The World Bank agreed with, and supported, the Declaration. A range of multilateral and bilateral agencies, including the World Bank, also concurred with the Declaration's proposals, and are committed to supporting various aspects of the reform process. The Government's Higher Education Reform Strategy included 25 projects addressing all the reform domains, should have been implemented over three phases until 2017.

In the current education system, there are 17 public universities, 51 public non-university institutions, 16 private universities and 89 private higher institutions. Out of the 51 non-university institutions, 47 are two-year middle technical institutes (MTIs) and four are 4-5 years higher technical institutes. About 30% of all Egyptians in the relevant age group go to university. However, only half of them graduate. Egyptian tertiary education is steered by a centralised system, headed by the Ministry of Higher Education, with institutions having limited control over the decisions of the curriculum, program development and deployment of staff and faculty. The Ministry of Higher Education has the major function to develop, implement and monitor all the higher education-related policies. The ministry is responsible for the educational activities of the universities, both public and private, in the country. The ministry realizes this function through three executive bodies, namely the Supreme Council of Universities, the Supreme Council of Private Universities and the Supreme Council of Technical Institutions.

Improving system governance and efficiency is an imperative that takes on added urgency given that a significant population bulge has reached the higher education system. The actual number of students entering higher education grew by 17 percent per year between 1992/93 and 1997/98 and the higher education cohort was expected to increase by close to 6 percent (60,000) students per annum through 2009. The consequence was a sharp decline in per student spending of around 40 percent in real terms over that period. Significant efficiencies will need to be introduced into the system just to maintain quality at its current inadequate level.

There are also a number of specialist universities such as the Academy for Science, Technology and Maritime Engineering (ASTME) in Alexandria. ASTME degrees are offered as dual qualifications in collaboration with, and with professional recognition from, international bodies like the Royal Institute of British Architects. This enables students to have a future career both in Egypt and, potentially, elsewhere in the world (see also the section below concerning recognition of degrees and professional qualifications). Other tertiary level institutions include high level colleges with degree programmes linked to offshore international universities, like Notting Hill College in Alexandria which is partnered with universities in the UK and the US and also offers dual degrees as well as specialising in teacher training. Finally, and – reportedly coming in to play 2018-19 – there are to be branch campuses of international universities located in the new Egyptian capital of New Giza. These will also offer dual recognition and, it is believed, options similar to those available already in other such branch university campuses in the MENA region (e.g. Dubai).

Only two universities in Egypt offer distance education programs: Cairo and Ain Shams. These programs are referred to as 'light' because they do not cover traditional academic subjects. The Supreme Council of Universities (SCU) has now intervened to stop new registrations on such programmes and to support the introduction of new programmes, hosted online via learning management systems (LMS). Most programmes of this kind will remain professional or vocationally based e.g. Police education programmes, and will include 25 to 35% of face-to-face contact in an overall blended programme.

Beyond these two cases it is extremely difficult to establish exactly how much online or blended learning is currently present in government or private universities. The general belief is that, in common with the situation in schools, it is more widespread in private universities than in the government sector. The National e-learning Centre is part of the SCU and is coordinating and overseeing the rollout of online learning to government universities. Rollout of e-learning initiatives within any specific university should then be coordinated by Learning Centre Managers (LCMs).

12.2 Online higher education in Egypt

The SCU suggests that each university should have an e-learning centre and that rollout of e-learning, or blended learning which is the most common form of e-learning, should increasingly be taken over by staff in the Learning Centres (LCs) with guidance from national staff in the National E-learning Centre (NEC) at the SCU. It seems that this is a complex and challenging process. Up until now the National E-learning Centre has been the organisation responsible for transfer of face-to-face programmes to blended, or more online based, versions. NEC staff report that 700 courses have already been evolved in to e-courses from paper-based content. Furthermore, these e-courses have been used 4000 times by 66,000 students. Core courses such as 'English for Life', which are studied by all students, have been the first to be adapted to e-courses while another core course on human rights is set to be studied by 500,000 students.

The process of adaptation presently involves taking written content and producing more interactive online elements in the form of learning objects. Generally, each module will use 12 to 14 learning objects. Use is made too of virtual labs. All materials are stored in a digital media library, which includes publications and resources from all teachers who wish to submit material in the form of objects. Materials are not vetted centrally but must have been used by the originator and be reusable. There is a fully integrated and automated evaluation system, which serves to inform potential re-users and is facilitated by constant monitoring of use and usefulness of learning objects and modules as users complete feedback forms.

The National E-learning Centre has recently begun training academics to convert their own modules. Experience is showing that centralising conversion is very time-consuming and frequently requires more time than is available to the staff charged with this task. As has happened in other places assumptions have been made about 'simply' using the same material but delivering it online. NEC staff are very aware of how and why actual practice is not this simple, but academics with systems based around print and textbook technology are reluctant to move to new delivery options. Additionally, a central principle of conversion is the aim of producing modules that will be used across all universities for core concepts and core skills first. This is intended to avoid duplication of effort but needs more consultation and work initially. In order to improve the rate at which modules are converted to online platforms, increasing effort is being put into training instructional designers who work in teams alongside web developers and graphic designers. Instructional design trainees originate from amongst the graduates of the faculties of education, as opposed to computer science or IT graduates, in order to ensure pedagogic and skills development input. Staff from the National E-learning Centre are providing quality control and monitoring standards as required following annual feedback reviews. Conservative estimates suggest that across universities nationally there are around 40,000 modules in need of conversion, all of which also need to be monitored and evaluated before and after first use.

a. Format and structure of programmes

Modules converted by the NEC contain items such as animations, quizzes, video lectures, forums and all the other activities that one might expect to find in an online module. It is suggested that the online material should represent only part of the content of any module and that there will still be a considerable amount of face-to-face interaction for the students to participate in, in order to complete the module successfully. Presently there is no data available on the exact balance of on- and off-line activity. Anecdotal evidence suggests that there is considerable resistance on the part of academics and, by extension, by students. This seems curious given student interest in use of new media and online tools, except that the assessment system in higher education, in common with that in secondary education, continues to favour memorisation. It remains to be seen how the balance of all these elements plays out as more and more modules are converted and the role of e-learning centres in individual universities develops.

At this point it is important to also note the development of the Egyptian Knowledge Bank (EKB). The EKB is a new national initiative, sponsored through the government by high profile international parties such as Discovery and Britannica, to create an online repository of information for the Egyptian population. Access to the EKB, many elements of which are already publicly available, is via a national identity number and access is free and limited to Egyptian citizens only. The EKB is designed to be accessed by all ages from the very youngest pre-schooler to academics and professionals. Different sections of the EKB are designed to cater for different needs. Academics will be required to put all their journal articles and research papers, peer reviewed or not, into the EKB so that all citizens can benefit from Egyptian research and information. No details are presently available of how use is, or will be, evaluated, nor of any system for appraising value or usefulness of any particular items. It is generally believed that the EKB will be a fantastic resource for teachers in particular and will thus support attempts to improve and reform teacher training.

Related to the EKB is the plan to provide tablets for all students. These are to be locally manufactured and will thus contribute to the national economy whilst also helping to raise educational standards. A number of different ministries are contributing to the cost of this development. It is believed that the availability of information via these tablets will enrich the learning experience in government schools and remove the need for so much expenditure on tutorial and mentoring services to supplement mainstream schooling.

The EKB is also intended to support the recruitment and training of 500,000 teachers at all levels in order to complete the wholesale reform of the education system by 2030. As well as providing materials for teachers the EKB will also be able to support curriculum development and change as well as house staff development materials.

b. Platforms

Modules produced by the National E-learning Centre use a Moodle platform, as do many of the e-learning initiatives in Egypt. Moodle is also reported to be very popular in the private education sector. However, in professional education initiatives and continuing professional development programmes other purpose-built platforms are in use. There does not seem to be much reuse or repurposing of Moodle-based material from elsewhere in any sector. The emphasis in the digital media library at the NEC is on Egyptian created content for use in multiple universities/locations with an eye to standardisation across those locations for maximum efficiency and effectiveness.

Few, if any, MOOCs seem to be being used although one or two individuals mentioned having looked at them for professional development programmes. It was not possible to discover if any MOOCs from elsewhere are being accessed; anecdotal evidence suggests this is unlikely to be a major source of educational material although there was evidence of limited awareness of Arabic language MOOC platforms elsewhere in the MENA region - not least by developers and IT start ups developing local Egyptian options. It seems likely that this is largely due to an absence of access to broadband at home. Home or non-work Internet access is generally via mobile phone in cities and wider urban areas but much of the population has very limited Internet connectivity.

c. Regulations impacting online education

In common with many other countries there is a perception amongst many Egyptians that online education does not have the same value as face-to-face education. A considerable amount of this resistance is due to the cultural understanding that information transfer and instruction is best done, indeed should only be done, face-to-face. There is also an abiding belief that knowledge is transmitted from one who knows to those who know less which in practice means study and repetition of the works of “a Master”. Tradition is slow to change and the spin-off from this understanding is that generally professional qualifications are recognised for public service employment and sponsorship only if they come from established face-to-face universities. However, there are exceptions. Notably, the police service makes extensive use of distance learning, but this is accepted on the basis that this is professional training rather than academic study (see below).

The prevalence of dual qualifications, i.e. degrees awarded by local institutions and international universities simultaneously suggests, however, a wider understanding that there are different ways of achieving the academic recognition of knowledge. The arrival of the EKB, and the move to make schools text book-free and concentrated on online delivery, suggests that attitudes (if not recognition) are changing quite fast. Bearing in mind the prevalence of youth it would seem that recognition of online qualifications will likely happen quite soon, assuming that the education reform proceeds as planned towards the target of total system reform by 2030. Pressure from younger students if nothing else will ensure change. That said, it is unclear whether recognition of online qualifications would apply equally to those awarded by institutions outside Egypt as well as those awarded by institutions inside Egypt.

12.3 Online professional training in Egypt

In common with many countries, online and blended learning is very popular for professional training and for continuing professional development (CPD) initiatives. As noted, almost all of the police service’s formal training is delivered in this format. Professional updating and CPD in general is also frequently done online because of its flexibility and potential for adaptation to very specific contexts. Several of the companies involved in CPD work across the Middle East and North Africa region have offices in Cairo and provide similar programmes in Egypt to those offered elsewhere. A notable example is TAG-Org, which boasts 45 years of offering CPD in Egypt. Staff confirmed that offerings in Egypt are the same as those available in Jordan and other countries across the region.

Equally, as is common in other countries in the region, there are individual companies and businesses who use CPD and professional training companies but instruct developers there to produce bespoke versions of standard programme offerings. In this way courses in areas like customer service, accounting and most aspects of management are made culturally specific, in order to give added local flavour and relevance.

IT start-up initiatives supporting education in schools and workplaces

There are many IT start-up initiatives in the wider field of education in Egypt. These capitalise on a sentiment that there is a need for content specifically developed to reflect Egypt’s needs rather than generic solutions.

As has been noted, families invest huge amounts of money in order to obtain tutoring and mentoring services for their school age children. IT start-ups have taken up the challenge of providing support of this kind for those less able to pay high tutoring fees. One company, Nafham Education, is providing such support via video mini-lectures and is presently (November 2017) clocking 1 million unique logins per month to its service supporting primary and secondary learning; 500K of these logins are coming via its mobile app. Videos are prepared either by volunteer teachers or through recording peer-to-peer

teaching and new material is evaluated by means of user feedback surveys. Material concentrates on core concepts and themes from the state education curriculum and access is free at present. Start-up funds were provided by a business accelerator – Flat6 Labs – and from some sponsorship from Google, Canon, Unilever, etc. Advertising is strictly controlled so as to be appropriate for all levels of student. Despite the number of logins, advertising revenue is difficult to secure since this service is targeting the very poorest and youngest of learners (about two thirds of high school students and the rest mainly upper primary) who are of limited interest to mainstream (and well financed) advertisers and this means less revenue than expected. Even bearing in mind that most users view with parents, many potential advertisers do not anticipate high enough returns for the service to be of interest to them. With a view to stabilising the service and moving on from start-up finance a new premium service has recently been added. This offers the possibility of one-to-one tutoring via Skype, Google hangouts or Nafham’s own platform, from volunteer teachers who offer these sessions in addition to their full-time jobs. Teachers receive seventy percent of the fee charged (range is from £E50-£E150 per session depending on level of study) and their performance is evaluated by ongoing feedback surveys. Nafham also offers their teachers training sessions on preparing and delivering tutoring online. Some Nafham-delivered content is aggregated from YouTube with a view to maximising effectiveness of existing resources rather than generating new material. Currently (November 2017) 10K of the 23K videos accessible via the Nafham portal are original content. In addition to videos, there are increasing numbers of quizzes, multi-choice assessments, and Q&A documents. Some units of study, especially in IT topics, offer a certificate of completion as an incentive to participate but no material is formally assessed; materials simply supplement national curriculum subjects. Although not officially sanctioned by the Ministry of Education Nafham reports close cooperation from the Ministry and Nafham materials are available in the EKB. The immediate challenge for the Nafham service is to achieve financial independence and sustainability.

The need for sustainability has moved another start-up, Tutorama, on from simply supporting students (preparing for University entry in Egypt and – most often – overseas) towards facilitating the interaction between students and potential tutors in order to secure assistance with university entrance as well as specialist tuition e.g. preparations for SAT, GMAT etc. Tutorama acts as a facilitation service putting users in touch with potential tutors, financial transactions are dealt with online, and sessions, ranging between £E100 and £E170, are decided between tutors and students. Tutors are vetted by Tutorama by means of CV, interview and student feedback and money back guarantees offered if students are not wholly satisfied. Like Nafham, this initiative has been widely welcomed by both the public and by the Ministry of Education as part of moving reform of education forward.

Yet other IT start ups focus on bespoke in-house online training solutions for corporate clients who do not wish to employ their own IT and training staff but can afford to commission external assistance. One company, having previously offered free online modules for general public consumption, reported having moved to providing bespoke solutions because it was impossible to find a viable business model any other way in a regulatory environment where Egyptian government rules limit joint financing arrangements i.e. charitable/grant/aid funding cannot be combined with revenues gained by sale of services on a commercial basis. Demographics and income distribution thus massively militate against provision of services to those most in need.

12.4 Key issues

Motivation towards the adoption of online delivery

Population growth and age spread imply, as does publicly stated political will for education reform, that online delivery of many parts of the education process will happen very soon. Assuming the full realisation of the EKB and the programme to provide tablet computers to all schoolchildren it seems likely that demand for online delivery of higher education will increase rapidly in the next 5 to 10 years. The ingenuity and flexibility shown by IT start-ups implies too that non-traditional solutions will increase. What is not clear is how this pressure will affect established processes like recognition of 'non-standard' (i.e. online) academic and professional qualifications. It is to be hoped that the extensive use of online by bodies like the police service will spearhead a change in attitudes. Likewise, demographic trends will bring many younger teachers in to academia in order to keep up with demand and so will drive change there too. Wealth distribution and the economy and the difficulties being experienced by education start-ups presently suggest that the biggest issues for new ways of working will be financial security and the control of access to knowledge.

Support for disadvantaged communities

Population distribution, resource distribution and security issues in certain geographic locations have inhibited development of education opportunities in many parts of the country. Many of the problems being encountered could be overcome by use of technology and technology-enhanced programmes. Even in areas where broadband is not available there are solar and satellite options that could widen Internet access in schools, support teachers and bring access to the EKB resources if finance could be found.

Internet access

Internet access, even in major cities and towns, is still mostly via mobile devices; either mobile phones or tablets. Landlines and broadband by landline are not widely available. Where broadband by landline is available, it is expensive and an unreliable and unattractive option. Students report that issues include frequent problems with poor download speeds that do not meet the needs of the material being used (e.g. videos and animations) and server problems. Present estimates suggest Internet penetration has reached close to 50% - principally as a result of mobile Internet in urban areas. Many areas of the country do not currently have Internet access at all but, reinforcing a point made elsewhere, that satellite and solar technology options mean that there is virtually nowhere that could not potentially be afforded Internet access. Whether remote, or in the city, access is still most likely to be via mobile device and this is a design issue that needs to be kept in mind. Start-up companies in professional development have recognised this fact and it is to be hoped that EKB access will be kept fully mobile friendly.

Language

The majority of online educational offerings discovered are in Arabic although English medium content is also reported to be in demand. Those reporting use of free online resources, videos, MOOCs etc. reported use of both Arabic platforms like Edraak and Duroosi as well as those using English like Coursera and FutureLearn. Schools' resources and teaching are of necessity almost exclusively in Arabic, as, reportedly, are the materials in the EKB.

Accreditation and recognition of awards

Dual degrees have emerged as a pragmatic solution to a seemingly intractable problem of a lack of understanding of the possibility that degree level study can be successfully and effectively completed online.

A language graduate explained the practical difficulties of getting access to an approved post-graduate programme: an Internet search produces a list of possible universities on and offline outside Egypt. Applications are made and places offered. The potential student applies to the Ministry of Education to find out which would be approved to enable continued public service and is given an answer. The student completes the degree and returns to Egypt in order to resume employment. Public service authorities rule that the foreign qualification does not actually meet Egyptian government regulations. Other students report having requested a list of approved courses/institutions but these do not exist as 'applications are considered on an individual basis.'

12.5 General discussion

The education reform process along with the existence of the EKB form a backdrop to any assessment of the development of online education in Egypt. None of the issues arising are particular to Egypt but their individual and group significance over time will be determined by local socio-political and economic realities. Questions raised in the course of discussions with online education professionals, students and those with an interest in technology-enabled learning regarding future developments included:

- The potential danger of over generalisation of modules across institutions leading to loss of individual universities' identities and diversity of knowledge.
- The practicalities of removing books from schools and the role of libraries in the future particularly in relation to the resistance to online texts and teaching in higher education.
- Prevalence and expansion of online learning and information resources without further development of broadband connectivity to stabilise it and give access to areas of the country presently without, or with inadequate, coverage.

12.6 Moving on

SCU/NEC staff are keen to gain access to examples of online courses and information about options that might be used in adapting current content for future delivery online and inclusion in their digital media library.

It is understood that e-learning centre (EC) staff in different universities are also interested in sharing experiences and information with professionals in non-Egyptian institutions facing similar challenges to those being faced in ECs around Egypt in a time of resistance to change on the part of staff and students. It was reported that staff would attend briefings about new online developments and express interest in the potential of such initiatives but after a few weeks would conclude that change was 'too problematic'. EC staff need assistance with following through on the practical implications of online learning initiatives. One area of particular concern is the security of examinations held online as staff are not convinced that online assessment will produce appropriate results.

13. Jordan

13.1 Education profile for Jordan

Jordan's population is estimated to be between 9 and 10 million. The number of ethnic Jordanians and others with Jordanian citizenship is said to be 6.5 million of whom slightly more than 20% are under the age of 25 years. Of those under 25 years more than 30% are estimated to be unemployed or underemployed. Refugee numbers are difficult to estimate, as they include nationals from many MENA states, but estimates suggest there are around 600K Syrians alone, if not more.

The Ministry of Education (MoE) is responsible for the pre-primary, primary and secondary levels of education. The post-secondary education is the responsibility of the Ministry of Higher Education and Scientific Research (MoHESR). This Ministry includes the Higher Education Council and the Accreditation Council (HEAC). Technical and Vocational Education and Training (TVET) at the post-basic level (excluding community colleges) as well as applied vocational education, administered by the Vocational Training Corporation (VTC), is under the authority of the Ministry of Labour.

The Ministry of Education has developed an advanced national curriculum and other nations in the region have developed their education systems using Jordan as a model. The Ministry of Education is now making it mandatory for students to be computer literate and able to apply their studies in computers to their regular studies, most especially scientific and mathematical courses. Its educational system is of international standard and its secondary education program is accepted in world-class universities. The [Jordan Education Initiative](#) recently received the UNESCO prize on ICT use in education. This pioneering education project in Jordan schools is based on utilizing ICT with proven methods of learning to transform the learning environment in schools. It is however offered in a small number of selected schools across the country.

Basic schooling involves 10 years initial education followed by two years of secondary or technical and vocational education. Beyond this, entry is to university or college once students gain the 'Tawjihi' certificate of general (academic) education, which includes a paper in English. There are reported to be 10 public universities (including universities of technology) and 21 private universities (including universities of technology) although only 27 institutions appear in the [national rankings list](#).

Just over 2.5% of Jordan's total population is enrolled at university. Access is open to holders of the General Secondary Education Certificate who can then choose between private Community Colleges, public Community Colleges or universities (public and private). The credit-hour system, which entitles students to select courses according to a study plan, is implemented at universities. Most universities in Jordan follow the English-American education systems and are associated with many American and English universities. Bachelor's Degrees normally take four years.

Jordanian universities, and other degree-awarding institutions, are governed by Law No. (20) of 2009 and its Amendments: the Jordanian Universities Law. This prescribes the minimal requirements for institutions offering degree programmes within the kingdom.

All university education must be accredited. **Accreditation** has until very recently been an extended registration process based on meeting certain physical requirements, quality assessment having been dealt with separately and not being mandatory for accreditation. However, in 2016 the former Higher Education Accreditation Commission became the Accreditation and Quality Assurance Commission for Higher Education Institutions (AQACHEI) and now deals with quality as well as accreditation. A national framework document was launched in 2016 and the first announcement of national rankings was made in September 2017.

Quality Assurance at HEIs is governed by a HEAC document entitled *Quality assurance at Jordanian higher education institutions*. This sets out the criteria under which quality is to be addressed including programmes and their effectiveness, financial management, institutional integrity and governance systems.

Foreign involvement in higher education is controlled and normally requires direct partnering of a foreign higher education institution with a Jordanian institution where the latter will validate qualifications. However, the sector is in flux and evolving quickly. Respondents presented different scenarios for acceptance, or not, of foreign qualifications. The most significant factor was that until recently foreign qualifications were not fully recognised but now there is a rapid shift towards accepting such qualifications. Generally, acceptance is possible as long as the overseas institutions are placed on approved international rankings lists including [Shanghai](#) and [Times Higher Education](#) and there is a clear correspondence between the content of the overseas course and the content of an equivalent one offered in Jordan. The accreditation criteria for institutions, courses and faculty are publicly available from the [HEAC/AQACHEI](#) website.

As outlined in Section 6 ('Experience of the Arab Open University'), distance higher education is offered at a branch of the [Arab Open University](#), head-quartered in Kuwait with other branches in Egypt and elsewhere. Under the partnership agreement with The Open University, UK, it offers a range of academic programs taught in English. [Al-Quds Open University](#) (Arabic: [جامعة القدس المفتوحة](#)) is an independent public university. It was established in Amman, Jordan, by the Palestinian Liberation Organization (PLO) and started operating in the Palestinian territories in 1991 and is the only Open Learning institute in the Palestinian territories. It has 60,000 students studying in 19 branches with centres distributed all over the West Bank and Gaza Strip. It is now however head-quartered in Ramallah with a presence in Jerusalem.

The **potential for online education** to develop is limited in scope not from lack of options but because of the need for recognition of professional qualifications in the future for those wishing to work in public service in Jordan. Those wishing to work in Jordanian public institutions will need recognition from their professional body, which in turn will only be able to validate qualifications from institutions that meet AQACHEI requirements. Students not requiring such recognition may choose online options for their training or may go overseas.

Most **examples of online education** are to be found supporting the educational needs of refugees. Considerable numbers of these refugees were in education in Syria when forced to flee to Jordan. However, all external agencies involved in education programs for refugees are required by government to recruit a minimum of 30% Jordanian students. It is likely that this will increase to 50% in the near future and indeed some agencies (e.g. KIRON) are already working to that ratio.

The ongoing refugee crisis is spearheading **change in education practice and policy**, but is also related to the wider employment situation. Present government employment regulations restrict the employment of Syrian refugees. It is impossible to predict exactly how this situation will work out whilst it is unclear how long Syrians, in particular, refugees will need to remain in Jordan. Presently the only employment options, other than agriculture and construction positions, are via self-employment by setting up a business in the various enterprise zones where non-Jordanian nationals are encouraged to do so. These physical, economically different, zones are [widely seen as having great potential](#) for supporting refugee education and employment needs.

13.2 Online education in Jordan

Format and structure of programmes

Online programs take different forms in Jordan. Most are best described as blended learning and of these there seem to be three main variations:

1. Repurposed MOOCs or combinations of MOOCs consolidating study skills and basic knowledge as a prelude to certification and then admission to traditional face-to-face higher education in Jordan that may (in fact probably will) include some (up to 20%) online study.
2. MOOCs/ repurposed MOOCs with added Arabic content leading to the award of 60 ECTS points which will most likely be used, as in '(1)' above, to gain a place at a face-to-face Jordanian University, but may potentially be used for online or face-to-face entry to a university somewhere outside Jordan. For example, KIRON report that many of their students are registered with UNHCR (United Nations High Commission for Refugees) or other agencies for resettlement or reunification programmes and may later attend university in a third country.
3. Online programs from universities like Amity (India) and Walden (US) with induction/wraparound and local mentoring or support, and which lead to the award of foreign qualifications. These are generally courses in non-STEM subjects since they will not normally get Government of Jordan recognition unless they have at least a semester face-to-face in the foreign university and/or the foreign university is on one or more of the approved international ranking lists.

In '(1)' and '(2)', sourcing, selection and repurposing is done differently according to which donor/agency is funding the project. In some cases, selection of materials and content is made by the donor in the country of origin (e.g. KIRON uses German education specialists), in other cases refugee academics, (e.g. from Syria) are actively engaged in the curriculum building process.

Generally speaking refugee education programmes of all kinds operate a 'flipped' classroom pedagogy i.e. tutor/mentor/f2f interaction comes after the student has studied new subject content, online and/ or on paper. This gives students more content to use in discussions before coming to class. The ensuing class discussion is about developing understanding of known content rather than a means of delivering new material.

In addition to these three formats, the British Council has online English language programs using MOOCs (some of them free) that can be used as a way of certifying students' requirements for English for future study. The British Council also administer scholarships, including for English language study, which lead to either local face-to-face placement (similar to the KIRON refugee scheme above) or to further online study (via the OU as part of the LASER project). The latter is not popular with students who seem, from enrolment data, to prefer traditional face-to-face programs (see discussion below about meeting the needs of disadvantaged communities).

Platforms

MOOCs come from a variety of sources e.g. Coursera; edX, FutureLearn, etc. Arabic medium MOOCs come from Edraak (set up by the Queen Rania Foundation). Generally, Edraak is the delivery platform of choice because materials are in Arabic or, in the case of courses in English, delivered in English focused for Arabic speakers. The range of subjects on offer is extensive and includes, for example: marketing; business communications; healthcare for professionals and for families; childcare; citizenship; science; and art and design. A full list can be [found online](#).

Regulations impacting online education

Since refugee education programs, whatever percentage use they make of online delivery, are not awarding their own degrees, they are marginally impacted by regulations dealing with online education more widely. Generally, programs aimed at refugees are pre-certification programmes and award of a certificate is simply a stepping stone back into traditional face-to-face education (the same applies to those Jordanians admitted under the quota requirement – most have poor, or missing, Tawjihi results and their goal is an alternative route into f2f university). It should be noted that increasingly face-to-face education includes an online element delivered via a virtual learning environment. Exact offerings and options vary by course and by institution but will meet the AQACHEI standards mentioned previously. Moreover, in the new quality assurance ranking system for universities in Jordan, extra marks are awarded to those institutions offering some online courses.

13.3 Key issues

Motivation towards the adoption of online delivery

Although some staff in AQACHEI are convinced of the ability of online delivery to adequately meet the needs of STEM professional qualifications, there remains considerable reluctance to accredit degree programmes. In most subjects, there is some degree of flexibility, however, where students can attend part of their programme, usually a minimum of one semester, in an overseas face-to-face university and it is acknowledged that this may include some online learning whilst the student is abroad. There is every reason to believe that in the short to medium-term some regulations will be relaxed with regard to credit for online courses in STEM and professional subjects. This process is likely to be speeded up if AQACHEI and other Ministry of Higher Education and universities' staff can see from personal experience the effectiveness of online delivery in their own disciplines. To this end staff in AQACHEI suggested that one way forward would be not only to have staff attend online courses in their own disciplines but also to set up comparative studies whereby identical content material would be delivered online and face-to-face and the results tested by means of monitoring student performance on completion of the different options. This is one area where AQACHEI will be looking for a partnership and it is possible that they may look to The Open University for assistance with this. Another suggestion from AQACHEI was that an online version of the English language module of the Tawjihi might be developed in order to develop online delivery. Again, this is an area where they would normally seek UK or European funding, assistance and expertise.

However, it is important to recognise that there is a degree of cultural resistance to online learning, because it does not use face-to-face interaction. Jordan has an oral tradition of knowledge transmission where information and wisdom is passed from person to person, face-to-face which accords in-person interaction a higher value in education. This attitude is changing with the adoption of new technologies but remains an important factor when students (and their families) are considering options for study.

Some small steps have been made towards offering profession-specific training online, insofar as at least two of the refugee education programs include social work-related programmes in their options. One project is offering a pathway in social work and another in case management. Both projects identify a need for those with social work and psychology expertise to work with traumatised refugees. One graduate of the JRS programme is now working (as a volunteer since formal employment is not permitted under Jordanian law) with fellow refugee students to assist them with maximising learning. The other social work programme has not yet graduated any students, but staff are hopeful that by the time the first graduates emerge employment rules in Jordan will offer some employment options that are currently unavailable. There is no expectation, meanwhile, that the need for refugee education workers with some socio-psychological expertise will diminish in the short to medium future, even if graduates have to work as volunteers rather than as fully accredited professionals.

KIRON online students are successfully transferring to face-to-face STEM programmes in Jordanian universities although the first graduates in, for example, civil engineering, will not appear for another 3 to 5 years. KIRON are optimistic that by the time those trainees emerge there will be professional posts for them to apply for, either in Jordan or elsewhere. For KIRON the wider motivation for entering students into these programmes is that training takes many years and waiting until peace before beginning training is unrealistic, since there will by then be an immediate need for already trained personnel.

Higher education in Jordan is beyond the reach of both many Jordanians and much of the large refugee population. It is estimated that only around 5% of refugees who should be in education currently participate. Providing online education is thus very attractive, on grounds of cost and convenience, both to the local population and to the refugee population. Refugee programmes are oversubscribed, and TAGI-UNI, a commercial education provider which acts as a portal to access to online programmes for Jordanian students that are validated by foreign universities (in subjects where public service recognition and accreditation is not required), is expanding and adding new partner providers each year. TAGI-UNI programmes are popular because they are less expensive and a wraparound of mentoring and support is provided f2f in Jordan.

TAGI-UNI staff report, however, that there is a distinct generational divide in acceptance of these programmes and some parents are still reluctant to allow their children to complete their education online. However, they see this situation changing rapidly and anticipate that they will, as a trusted and long-standing provider, be able to do something similar to that done in the refugee community by combining external online and other material to form Jordanian-specific, higher education via programmes online. Once accreditation of fully online programmes is available, and TAGI-UNI envisages this happening within the next few years, it will seek to adapt and develop its own programmes online with material drawn from many sources but with face-to-face local examinations at the end as a means of validating students' efforts. Like the universities, TAGI-UNI is conscious of a lack of instructional design expertise but staff there feel that in future the expertise required will be that needed to assemble and repurpose material from elsewhere, and add Arabic content and wraparound, rather than design completely new material.

Of the 27 universities, members of the royal family sponsor several of them. All universities charge fees (although some are for-profit and some, both public and private, are not). Many private universities are at the forefront of introducing online courses and activities but this is mainly being done within generally face-to-face degree programmes. Despite changing attitudes there is clearly a continued preference for at least blended programmes if not completely face-to-face ones. A university such as the Princess Sumiaya University of Technology (PSUT), which has introduced many online innovations, is very supportive of increased use of online learning as they see this as a way of extending their reach to those who cannot easily relocate to attend face-to-face programmes. These are mainly, but not exclusively, women. They also feel there is a large unmet demand for continuing education programmes for homemakers who may eventually wish to return to the employment market and need to keep skills up to date.

Several interviewees mentioned that mobile devices, such as smartphones, are seen as social rather than educational tools. The researcher saw almost no use of tablets and larger mobile devices other than laptops in the coffee shops, cafes and other locations where they might be expected to be in use. Interviews suggested that online learning is seen as more appropriate for continuing professional development than for degree work. As one interviewee put it, 'how can you write an essay on a smartphone; I have had students do so but I don't understand how they managed'. The importance of student and parent expectations in determining how education happens cannot be underestimated. In particular in this case it is interesting to note not just the expectation that a large device is necessary for online study but also the assumption that writing an essay is a critical part of good learning.

Support for disadvantaged communities

Developing online learning in Jordan is inextricably linked to supporting disadvantaged communities, be they Jordanian or refugee. Online delivery is particularly attractive to those organisations and institutions charged with catering for the educational needs of refugees and other transient populations. Start-up costs can be kept to a minimum with basic online delivery using open source platforms, MOOCs and repurposed material, because they are expandable, portable and endlessly adaptable to ever-fluid circumstances.

There is considerable potential for the repurposed material globally available to be repackaged at minimal cost for use where formal/professional accreditation and recognition are not an issue; for example, for refugee programs where a Jordanian professional accreditation is not expected or required.

Using German expertise, the KIRON project has comprehensively mapped the content of MOOC offerings from a number of reputed sources to the syllabuses and curricula of programmes in partner Jordanian universities. This has provided the material for the first year/two years of their programmes in civil engineering, social work etc. for refugees, and disadvantaged Jordanian students, who then transfer to traditional face-to-face universities for a period leading to the award of a (recognised) Jordanian degree. SPARK has used refugee Syrian academics to perform the same kind of analysis for a similar programme.

The most effective programmes take into account the students' socio-cultural profile and offer additional support. However, costs begin to increase dramatically when face-to-face orientation, tutorials, mentoring programs, and so on, are added. Several interviewees mentioned that a barrier to uptake of online programmes was that, culturally speaking, face-to-face is the expectation for the delivery of learning; moreover, cost is a barrier to extending f2f elements. One interviewee emphasised that 'mobiles are for socialising not learning'. Another added that 'phones are for Facebook and WhatsApp'. The question 'how can you write an essay on a phone?' sums up two essential points about the evolution of online learning by illustrating both the expectations and the assumptions of 'how' learning is done. This possibly underpins why online elements within face-to-face degree programmes are expected and sought after - and often done on campus rather than remotely - whilst fully online programmes are not so popular.

In the refugee education sector, the Jesuit Refugee Service programmes seem to be particularly successful because they are designed (adapted not purpose built) so that classrooms, including ones with computers (refugees do not normally have their own hardware), are all located off a central social space with seating and access to refreshments so that it is hard to attend an online class without face-to-face socialisation being involved too. Conversations with staff there and elsewhere also highlighted that as refugees are not normally allowed to work, education and the socialising options it allows, are much more important for those in the country who are separated from family and friends and/or traumatised as a result of what has happened to them. Education is also about hope for the future and gives them something positive to do while they are living with uncertainty. Furthermore, this is a way of developing the solidarity of shared endeavour that helps everyone involved face the uncertainty of the future.

Internet access

1. Internet access is good in Amman but not consistently available elsewhere and this needs to be borne in mind in considering how the potential of online learning can be exploited in Jordan.
2. The British Council has an English language development operation in a refugee 'camp' outside Amman where a computer centre allows **controlled access** to online learning (not direct internet access which is forbidden in refugee camps for security reasons) but this only opens during business hours because staff have to travel from Amman to operate the centre. For many in the camp this is not a problem but for those who are able to work this can mean no access because they are away working when the centre is open. British Council staff reported that this was preventing some from continuing their education especially the English language skills that might bring them wider options for future professional development.

3. Ensuring **secure communications** online is not unique to Jordan. The reality of the perceived threat is hard to establish. However, current technical know-how and freely available tools mean that almost anyone almost anywhere could potentially cause disruption or use an Internet connection for illegal purposes. Just as the internet makes plagiarism easier for students but also makes tracking that plagiarism easier, internet access for study is no more or less likely to result in untrackable misuse. On the contrary, it offers a lot of options for those otherwise unable to study and/or find gainful employment. Most of the institutions surveyed were very conscious of online security issues, had policies in place to assist and access to assistance to keep staff and students safe online.
4. **Online security** - in terms of knowing who is sitting online exams - was an issue raised by almost every interviewee. In most cases students had to physically present themselves at the place of study to sit the exam on a computer at that location. The fact that students had previously had to attend f2f sessions of 'wraparound' material meant identity could then easily be verified.

Wholly online assessment is presently almost non-existent because of current accreditation standards but in talking about potential future developments in online education a great deal of interest was expressed in how this might be secured. TAGI-UNI, for example, who come close to providing wholly online courses, could not envisage a situation where students did not attend a f2f location for exams even if they had studied wholly online. Fingerprint logins were not deemed secure. Interest was shown in keystroke pattern logging but concern was expressed that "we would have to see it in practice here" or "it wouldn't work in Jordan". As with the potential for online education to deliver STEM competencies this is an area where in-country demonstrations and workshops could help speed development of these aspects of online education.

Hardware and software

Mobile phones are ubiquitous but not all have Internet capability. Smartphones were reported as being for Facebook, WhatsApp and social media. The researcher did hear of study use of smartphones but did not encounter anyone who had actually done this.

Language

Since little online material is being developed locally and since most freely available material is in English most online offerings are presented in English. However, many have 'wraparound assistance' in Arabic and there is a growing Arabic medium MOOC resource in the form of Edraak. All parties interviewed noted the need for the growth of Arabic medium material. TAGI-UNI, for example, saw this as imperative.

13.4 General discussion

With 27 ranked face-to-face universities in Jordan there is little need or incentive to develop online first-degree programmes other than to meet the expectations of those already interested in, or committed to, online education. Government legislation exists to help with the development of online education but individual educators are often reluctant due to lack of experience of working with technology, or lack of requisite skills. There is also clearly some element of fear of the unknown and which may be exacerbated by negative media propaganda; a lack of evidence "seen with my own eyes" and lack of experience on the part of those making decisions. Furthermore, there is no tradition of formal teacher training until recently, which has resulted in a shortage of experienced instructional designers. This, in turn, is compounded by a context in which doing is believing, but you cannot do online learning until it exists. There are also reasonable concerns about whether fully online education suits the practice and culture of education, especially the tradition of didactic delivery in Jordan (see discussion above). Until a critical mass is developed in terms of those committed to developing online education, efforts will necessarily be institution specific, even if quite innovative (the JRS example is innovative for Jordan although not globally unique).

Higher education already contributes significantly to the Jordanian economy and given the uncertainty in other parts of the region this contribution has the potential to increase. However, for the time being the starter costs for online programs, in terms of equipment and resources, are far greater than those for a face-to-face institution even though in the longer term online has the greater revenue generating potential. Of course, in a cultural context that favours face-to-face interaction in education, this further encourages face-to-face program expansion.

It has been suggested that accreditation issues are a major barrier to the development of online education in MENA. In Jordan, accreditation of institutions (and thus courses) has significant history but tended to concentrate on physical resources. Even the new Higher Education quality standards emphasise physical layout, space available etc. whilst also awarding extra points for the provision of online options. Standards for online programmes and institutions are in the pipeline (some can be found on the AQACHEI website) but it will take time for new ways to become fully operational.

Accreditation of wholly online programs is undoubtedly only a short way away. It will probably occur at postgraduate level first where students are seen as more self-motivated and better able to deal with the demands of self-regulated learning. Then other programs will follow close behind simply because it makes education more attainable, especially financially, and younger students expect it as an option.

Pressure on instructional design practitioners is huge and will only increase - online is much less forgiving in terms of poor design. Teacher training programs will eventually ease this situation but there is a real danger that expertise will develop too little too late to meet current and short-term future demand.

In the short term the refugee sector seems to have fewer barriers than mainstream education but until they can offer their own online awards, or collaborate with others offering accredited online STEM courses, their options will be limited. That students in their sector are barred from most STEM/professional employment is a further constraint. Organisations in the refugee sector are being as innovative and client-led as they can be, but the restrictions are considerable. Meanwhile their use of their own trained students to help them improve their offerings is worthy of note.

There are two further points impacting on the development of online learning related to refugees. Firstly, even though job prospects are very poor most refugees given the option of scholarships to either face-to-face universities in Jordan or online elsewhere (LASER project) are choosing face-to-face Jordanian options because they are accredited in Jordan. It is unclear whether this is because they see a need for Jordanian recognised qualifications, or whether they actively want face-to-face education in preference to an online education, or some other reason. Secondly, subjects for refugee programs are firmly driven by donor priorities. These priorities usually relate to prospects of peace and a return to rebuilding in the home country. They seldom take account of broader learning needs in refugee communities, nor the possibility that conflict may be prolonged. Several years on from the start of the refugee influx many of the programmes that began on the basis that refugee need would be for months, are still in place and supply exceeds demand.

The commercial sector (i.e. the business sector, not private universities who are restrained in regulatory terms by the same requirements as public universities) is also being as flexible as possible. But sector providers still have to work within the constraint that although they can offer online international options, only those students who are confident that they will not be seeking Government of Jordan employment can afford (in all senses) to sign up for online programs because the qualification will not be recognised. This may also impact potential Masters and PhD students who may require Government validation of their qualifications at undergraduate level in order to proceed to postgraduate level either in Jordan or outside. In this sector it is worth noting that TAGI-UNI, for example, by providing (via Luminus) wraparound social support is meeting sociocultural expectations in a similar way to the refugee sector.

13.5 Moving on

In Jordan, the most obvious need is for assistance with instructional design – particularly but not exclusively – for the development of locally relevant online material and courses, especially in Arabic. The absence of instructional design expertise seems to have arisen from a lack of formal teacher/instructor training in the past and it will be some time before those currently in training, or having recently completed training, will have the experience necessary to start offering their expertise to others. Meantime several options for support to the sector could be helpful if donors can be found:

- a. Hands on workshops for those currently involved in online programming/course development in universities – both academic and technical and support staff. These workshops would aim to provide a network of support in the hands-on delivery of more online education. Participants would come together (ideally from different institutions) and by the end of the workshop would have created an actual online unit.
- b. This is not an original idea, as Prof. Abdullah Al Zoubi of Princess Sumaiya University is already seeking funding for an EU project to do something similar but on a much bigger scale; one which would result in a common first year core (i.e. compulsory) undergraduate module that would then be taught in participating universities and evaluated both for design methodology and for efficacy delivering online. As Prof. Al Zoubi points out such activity would be an interim solution, but would begin a process of sharing common baseline modules across universities and thereby of raising standards across the sector.
- c. Cross-sector showcase workshops looking at distinct elements of online design e.g. online exams; online laboratory experiment work; science and mathematics modelling online etc. so that those involved across the Higher Education sector, including quality evaluators, AQACHEI personnel etc. could try the various online techniques themselves.
- d. Development and parallel running of “identical” on and off-line modules to compare experiences and results, with the active participation of AQACHEI and staff from other universities chosen by them. One issue that would need to be addressed if this were pursued would be the idea – as expressed by some not so familiar with online learning design – that materials, lectures, hand-outs etc. should be exactly the same. It is a common misconception that it is simply the delivery mechanism that changes when learning is done online. There is some way to go in helping decision makers appreciate that while the information transmitted may not vary, certain different techniques help delivery of the same material when presented online as opposed to in a face-to-face environment.

14. UAE

14.1 Education profile for UAE

The United Arab Emirates, UAE, is a federation of monarchies of seven emirates; Abu Zaby (Abu Dhabi), 'Ajman, Al Fujayrah, Ash Shariqah (Sharjah), Dubayy (Dubai), Ra's al Khaymah and Umm al Qaywayn. The total population of UAE is estimated to be around 9.5 million. While the number of ethnic Emiratis is around 1 million, the rest of the population comes largely from Asia and neighbouring Gulf countries but also from much further afield. Those from India are the largest non-local group at around 2 million. Provision of education began with the establishment in 1976 of the federation which coincided with the inception of the first university - the United Arab Emirates University, in Al Ain, Abu Dhabi. Since then, the country has progressed, ensuring high literacy rates (currently 90%), modern programs and women's participation in education. The UAE currently devotes approximately 25 percent of total federal government spending to education. Education for Emiratis is free in government-funded schools and not-for-profit higher education institutions; elsewhere fees vary by institution. Basic education differs in length according to the system followed, but generally, since major education reforms in 2013, government schools follow a K-12 system leading to students entering university, college or employment at age 18.

Responsibility for government-funded education has historically been vested in different bodies within the various Emirates that make up the UAE. Over-arching education matters have generally been dealt with by the Ministry of Education, with the Abu Dhabi Education Council taking a lead in Abu Dhabi. However, it was recently announced that schooling will be standardised across all Emirates so as to provide a consistency of practice and rollout of new policies across the union. The government sees innovation and creativity as critical to this process and to the success of the system. Vision 2021 is a cross-ministry, cross-government initiative which aims for the UAE to become a knowledge-based economy through the integration of technology in education at all levels.

Alongside the Ministry of Education (as state education provider) are parallel, not necessarily equivalent, private education providers offering options specifically for different national groups resident in the Emirates. These vary in size and complexity and aim to replicate home country education systems to avoid the need for expatriate workers' children having to return to their home countries for a home-culture focused and accredited education. Institutions based on the Indian education system are the most wide-ranging example of this. Many of these alternative education systems extend from kindergarten through to higher education.

One of the inevitable consequences of allowing parallel education systems for (potentially) every nationality represented in UAE is that there is a huge number of education providers and institutions that need to be recognised. Recognition of any educational institution can be done through the Ministry of Education and there are a few foreign providers who have sought Ministry of Education recognition. The vast majority of private/ foreign providers seek recognition from the Knowledge and Human Development Authority (KHDA), which is specifically tasked with the development and recognition of private education.

A further complication is the number of types of recognition that are required before programmes can be offered by any educational institution. To quote from the Ministry's own guidelines:

Licensure [of an institution - a long process in itself lasting several years] does not imply the accreditation of any programs. Accreditation is a separate process; each academic program must be accredited before the institution may admit students to it or offer its curriculum.

Licensure arrangements (issued in 2007) for e-learning institutions focus as much on the physical buildings housing the institution as on the content or philosophy of courses to be offered.

Licensure is distinct from quality control of content. Different sectors have different procedures directly or indirectly linked to the quality framework (10 levels) of the National Qualifications Authority (NQA), which deals principally with vocational education and the need to meet the requirements of the 'social and economic development of the UAE'. The NQA is further charged with facilitating the movement of students from one education sector to another by means of sorting out the equivalence of programmes and credit across different sectors.

There are also controls on where different types of education institution can be located physically – development is by zones that encourage the grouping of businesses by category. Private education providers are restricted to land in free-zones. Depending on the target audience for services this may restrict (or facilitate) access to any particular audience. In 2003 Dubai established a dedicated education zone, Dubai Knowledge Village. The 1 km long campus brings together international universities, training centres, e-learning, and research and development companies in one location. As of early 2007, it had attracted 16 international university partners, which included Saint-Petersburg State, University of Engineering and Economics, University of Wollongong, Mahatma Gandhi University, and the Manchester Business School. Some of these institutions have since moved to a larger free zone in Dubai, Dubai International Academic City. Much of this trajectory resembles that in Qatar and presumably elsewhere in the Gulf.

The Ministry of Higher Education and Scientific Research (MOHESR) is a ministry of the government in the United Arab Emirates (UAE). Established in 1976, the Ministry has several departments, including the Commission for Academic Accreditation (CAA), which provides institutional licensure and degree accreditation for private universities and their academic programmes in the UAE. Institutions based in free zones do not need to seek CAA approval.

It also houses NAPO (the National Admissions and Placement Office) which provides admissions and placement services for the federal institutions of higher education, including United Arab Emirates University, Higher Colleges of Technology, and Zayed University, as well as the CEPA (Common Educational Proficiency Assessment) which assesses the English and Math skills of MOHESR applicants to higher education. The Ministry handles steps in the certificate attestation process, provides equivalency services for degrees and qualifications received outside of the UAE, and provides government scholarships for UAE nationals who wish to study overseas.

The CAA is the government-run institutional licensure and degree accreditation organization for private universities and their academic programmes in the United Arab Emirates (UAE). The CAA is a member of the Arab Network for Quality Assurance in Higher Education (ANQAHE). Institutions must follow standards set by the CAA. There are specific standards for e-learning and, since 2009, for vocational education and technical training. Licensure and accreditation are achieved through submission of supporting documentation and site visits by a commissioner and a visiting committee of experienced academics with appropriate expertise.

All non-federal higher education institutions operating outside a free-zone in the UAE must have a license to operate and their academic programmes must be accredited before students may be admitted. Many institutions operating within a free-zone nevertheless submit themselves to the CAA for license and accreditation. More recently, degree programmes at federal (government-run) institutions are also being accredited.

14.2 Relationship of education initiatives to general government policy and practice

The Ministry of Education and the KHDA perform many common tasks and there are on-going efforts to integrate aspects of the two organisations. In parallel to these moves has been the integration of the Ministry of Higher Education and Scientific Research (MOHESR) with the Ministry of Education. Major change programs are a central focus of the work of all Government staff at the present time in response to Government initiatives to develop and innovate, but those in education are particularly extensive.

Innovation and the optimal use of technology are at the heart of government policy and practice in the Emirates. Within this context two of the government's change and development programmes - Smart and Happy - are having a major impact on government and associated bodies. Whilst these two programmes affect all government activity they have particular impact on the education sector.

Smart involves integrating the latest technology into all walks of life. It is most apparent in smart government, where all interaction with government, and subsequent service delivery, is accomplished as far as possible via online means. Likewise, all government guidance and documentation should, under the smart initiatives, be available online/for download. Smart is seen as the key to making life in UAE happy. The smart programme is well underway, but it is noticeable that there are still many operations and activities that can only be completed satisfactorily face-to-face. The Ministry of Education, for example, still receives a large number of visitors to its Customer Happiness Centre (see below), with non-standard enquiries relating to overseas qualifications, equivalencies etc. It is difficult to see how many of these individual human operations and interactions can be made smart.

In schools run by the Ministry of Education the smart initiative aims to remove traditional books and paper resources completely and replace them with online resources and online working, even within a face-to-face classroom. There is no suggestion of reducing teaching staff. In fact, the value of interaction is repeatedly stressed and is a very specific requirement within the recognition process for all schools. Quite how the balance of online/smart resources and teacher interaction will evolve is an area for speculation and there is also a clear cultural preference for f2f interaction in the UAE. More than one informant in this study suggested that the need for f2f could be limiting in the further rollout of smart education programmes in schools.

Equally, all services for parents and guardians and other professionals requiring access to educational records should also be online. The move to smart learning is being introduced over a period of years and evaluated annually by Jigsaw Consultants. Full and extensive evaluation reports of rollout are available. The smart initiative obviously has many implications for any evaluation of online learning in the Emirates and different aspects of the smart education initiative will be referred to in more detail in different sections below.

Happy - the happiness initiative seeks to make the Emirates and life there happier for all, citizens and non-citizen residents alike. In terms of the education sector the happiness initiative chiefly impacts what previously would have been known as Customer Services. Visitors and enquirers to the Ministry of Education no longer present themselves at Reception in the Ministry but are directed to a purpose-built entry point, known as the Customer Happiness Centre. Here they will always be greeted positively before being directed to specialist staff who can assist them. Extensive use is also made of smart technology to ease visitors' passage to the services they require.

Visitors seeking to interact with the private education sector via the offices of the KHDA are welcomed into a huge open plan space, furnished to meet immediate material needs, while they wait to meet with staff who can assist with their queries. The space is equipped to encourage visitors to feel at ease. Coffee and water are offered freely along with fruit and cool cloths to offset the effects of outdoor heat and dust. There are fish tanks to help visitors relax and meeting rooms are themed. Other floors in the building, occupied by KHDA staff workstations, are similarly equipped on the principle that happy staff will make for happy customers. Exit from the reception area is by one of two channels, the red channel or the green channel, according to how visitors feel their visit has gone. Anyone leaving by the red channel

will be (politely) stopped and asked about any difficulty they may have had during their visit so that it can be resolved and they can subsequently leave by the green channel.

In common with many other countries in the region education providers are constrained in the development of their programs by the need for public service accreditation/recognition of their qualifications, either to enable their graduates to qualify for public sector employment or for them to gain entry to post-graduate programmes. In contrast to other countries in the region wholly online delivery of education, although not universally used in UAE, is generally endorsed as an equivalent alternative. The Ministry of Education website lists international higher education institutions that are recognised as meeting UAE standards and it will evaluate qualifications from elsewhere on request with a view to adding other institutions to the list.

Online elements in mainstream education abound in public and private education. Developments in schools' use of online delivery – via the Hamdan Bin Mohammed Smart Learning project (recently subsumed under the Ministry of Education) - and the expansion of institutions like the Hamdan Bin Mohammed Smart University (see below) seem likely to move the use of online delivery even further in the short term.

14.3 Higher and further education in the UAE

As intimated in the above sections there are numerous options for HE and FE in the UAE. There are government run universities and colleges for profit and not for profit; there are private universities and, within this sector, there are 'branch campuses'. Leading on online delivery and ideas of flexibility and lifelong learning is the Hamdan Bin Mohammed Smart University (HBMSU). Its lifelong learning philosophy is appropriately illustrated as a learning pyramid. Having secured a significant place in the HE and lifelong sectors in UAE HBMSU is now collaborating with online and blended universities elsewhere in the world as well as establishing research and development programmes. The national eLearning standards mentioned above were triggered by the HBMSU experience.

Within the region it is worth noting that in 2013 HBMSU signed a Memorandum of Understanding (MoU) with TAGI-UNI (discussed in the Section on Jordan) with the expectation, as voiced by the Chancellor of HBMSU that the MoU would 'open new opportunities to promote the culture of e-learning in the Arab world' and a return sentiment by the TAGI-UNI President that linking to the first e-learning institute in the Arab world would 'provide direct access to some of the best online programmes from HBMSU, a leading accredited online Arab university' (story reported on the websites of both organisations).

The Branch Campuses are regulated by KHDA and are physical out-reach campuses of recognised international universities. They number more than 30 and are currently educating 30,000 students with this number expected to double in the next few years. They attract not just UAE based students but also a number of international students coming to the UAE simply to attend university. There were initial teething problems and it has taken 10 years to perfect the model. Some early efforts failed to meet quality control standards and had to be abandoned and students relocated. KHDA staff report that these universities are increasingly popular because they offer a blend of international experience (some even offer accommodation and sports and social activities as would overseas campus universities); economy (international education without the cost of travel overseas); and security (a degree of close family supervision and security not possible if students travel overseas). Some offer semester and year abroad schemes and may receive students from other branch campuses they have elsewhere. In the case of Heriot Watt – the longest serving of these campuses –, courses at home in Edinburgh, on the Dubai campus and on their Malaysian campus are identical in content and fully interchangeable so that students can attend in any of the locations and be assured of the same (quality) degree at the end. This is awarded by the parent campus and having, thanks to technology, been taught by the same faculty members. Online technology is key to assuring parts of this set up. Although there is still some use of 'fly in, fly out' teaching (the model at the time when the campuses were established), whereby academics from Edinburgh come, deliver lectures and then fly home leaving students to work further on their own,

communications technology means this is no longer the only way students can be exposed to specialist staff. Use can also now be made of online classrooms, one-to-many online lecture delivery and one-to-one video conferencing.

The Higher Colleges of Technology (HCT), initially four but now seventeen across the Emirates, were set up from the late 1980s onwards as a post-secondary school alternative to university. They sought to include a broad student base, which included taking female students, and to teach in ways that better met individual needs than just traditional methods of delivery. Major financial investments were made in the original colleges in order to allow them to provide laptops and other technology for all students to facilitate their progress; campuses were Wi-Fi enabled before this became standard practice elsewhere. More recently the colleges have expanded to offer not just diplomas and certificates but also degrees. As numbers of students have increased, resources have diminished and the focus has changed in favour of bringing students into contact with the very latest technological gadgets rather than just providing technology as a tool for learning. The original model of giving all students laptops to enable them to study 'whenever, where-ever' has moved on – because students already have their own laptops – to offering them access to new tools like the 3D printer, for example. Likewise, bespoke technology-based materials have been replaced with off the shelf packages (e.g. video lectures from Khan Academy) that are more easily delivered to greater numbers of students. There is some evidence that this is presenting quality and sustainability challenges (investment in schools is now a higher priority perhaps than at FE/HE level) and that the range of options for learning elsewhere is making innovation in the HCTs more challenging.

Although not strictly higher or further education, programmes for professional development are a key part of the post-school education environment. As is the case in other countries in the region online and Internet based delivery is common. Standardised packages are popular in the major area of demand: IT skills. Content in this area is ideally suited to packaging and in the context of the smart society demand is reported by providers to be high. Some standardised packages are ubiquitous as they deal with software and systems that are globally implemented. Locally focused materials are also in demand and these tend to be based on core modules but have 'wraparounds'; contextualised content added in order to accommodate needs specific to the UAE context e.g. financial and tax packages. iLearn (New Horizons) is one professional training company offering training in this domain both in-company and in its own training centre. They report that previously clients desiring bespoke training have been given access to their library of modules and smaller learning objects so that they can tailor make materials to meet their needs. However, increasingly iLearn do not do this as companies can find their own items to develop but are more in need of having this material wrapped around by iLearn. This possibly implies that instructional design skills are now more in demand than content; possibly too that appropriate content selection and presenting this contextually is a more critical focal point in the process of creating training materials than actual delivery.

In terms of training delivered in the training centre in Dubai most material is delivered online but only when wrapped around with highly personalised one-to-one (121) support. A typical student will begin their day with an individual 30-60 minute 121 session with a tutor who will review previous study then explain what the student is to do. This is followed by the student working on their own on the prescribed tasks. They will work through this material on two screens. The first screen is their task material whilst the second screen/machine offers on-going pre-programmed guidance and acts as a reference 'text' and support for the new material. Students work in the same room as other students and are free to collaborate as they go along. In this way the system offers, it is suggested, the 1-2-1 tutor support that best helps the individual as well as offering the interactive context of a f2f classroom in the training centre.

14.4 Particularities of online education in UAE

Online delivery and online-mediated programmes take different forms. Some aspects bear considering more specifically:

Format and structure of programmes – Blended programmes are pretty ubiquitous but their format is best described as wrap-around rather than the online or other technology parts being simply additional resources to otherwise standalone content like text material. Mostly, online material is deliberately integrated into delivery of content rather than left to stand alone as related material. This is most apparent in the professional training delivery context, but equally apparent in some HCT induction material. For example, where standalone materials have been brought in from external online educational publishers, or the locally organised Duroosi video bite-sized learning resource (accessed on YouTube), these materials are woven in to HCT generated content and not just delivered as standalone items.

MOOCs and Platforms – Despite the existence of the Jordanian, Arab-medium Edraak platform, it is not in use in UAE. This may be explained by the resource that is Duroosi (open to all but also wrapped in to some online offerings). Likewise, a great deal of teaching in UAE is done through the medium of English, which serves as the lingua franca for the majority of the population who are not native Arabic speakers. In fact, commercial platforms, such as Blackboard or Adobe, seem to be used in most institutions where cost is not, perhaps, as critical as it might be in other less well financially endowed education systems. It may be that free MOOC material is simply superfluous because it is not needed and/or it is, in this context, a largely unknown resource. Government does not charge fees for Emiratis at any point in the education system, up to and including tertiary and further education. In the private sector, customers are used to pursuing very culturally specific outcomes and qualifications, which MOOCs only tangentially support. It may be that MOOC use is happening on an individual and personal level. It is unclear too how much use is made of open source software such as Moodle.

Unlike in many countries there are no obvious **recognition/accreditation** barriers to developing online learning modules and environments.

Hardware and software of all kinds and to meet all educational needs are all widely available in the UAE. However, it is less clear how many of the population are able to afford to equip themselves to face the smart society being rapidly developed around them.

Jigsaw, the consultancy company monitoring the roll-out of smart education in schools, points out in its most recent evaluation report, that ‘there is still sub-optimal **connectivity** in many schools.’ This is a problem that is not confined to schools and will always be a weak spot in implementation. A similar situation is apparent with **technical support** for hardware.

In the future, staff who did not find technology use a positive experience may struggle to cope with **internet-based information resources** devoid of traditional textbooks:

‘...well, they will have no choice, they will have to [use the technology]... will have to interact that way...’

A further query about how the validity and reliability of Internet sources was greeted with a shrug and,

‘...information is information...’

14.5 Key issues

Blended online learning is alive and thriving in many forms in the UAE. It is helping push forward the smart agenda that is seen as necessary for a sustainable future. The pace of change is rapid and this raises a number of questions about future online learning development.

Motivation towards the adoption of online delivery

Jigsaw has repeatedly polled staff about how they feel about the adoption of smart education and where they feel progress is in relation to the roll out of the rest of smart society. Overall, most of those polled feel that development is happening in parallel with development of other systems; that the momentum of introducing smart society across the board is clearly influencing progress. This is illustrated by the way that school developments are seen as part of a bigger picture of development. In the higher education and further and professional training fields this energy for change is equally intense. In higher education, there is also a momentum from the wish to participate in international and global movements towards the use of online learning. This is balanced too with a desire for the 'real' student experience as represented by the growth of branch campuses. Most organisations are globally well connected and, if they wish, have access to experience and case studies from elsewhere.

Jigsaw have identified the pace of change as a potential barrier to the quality of online roll out in schools too. The infrastructure rollout has faced problems coupled with the simultaneous implementation of a staff development programme for principals and teachers. This is far less of a problem in higher education given that development has happened over a much longer period. One issue for higher education is the focus on hardware over pedagogy. In situations where change is felt to be necessary but where there has already been a great deal of change, the only option available is the provision of hardware whether or not it supports pedagogy. Hard questions have to be asked about, for example, introducing the latest 3-D printers in preference to reinforcing work on information literacy. This is not, of course, a new issue. The pressure to spend money to solve development issues is also significant here.

Curriculum development

The Ministry of Education is having to revise curriculum very fast in order to try to keep pace with the rollout of hardware in schools. Creating online resources to replace textbooks in order to meet the Vision 2021 deadline is impacting on the quantity and nature of resources being used and when they are available.

In the longer term this disconnect is going to impact on further and higher education as students move through the system. HE institutions, especially branch campuses, are already struggling with what they see as unprepared students who do not have the study skills required for undergraduate entry. In some cases, year-long introductory or foundation programs have had to be added to branch campus degrees to deal with this situation. On one hand it is possible to imagine that this situation will improve as students move through the system and arrive at University with more experience of online and self-managed learning. On the other hand, given the problems sourcing resource material for schools there is also the possibility that this will expose further areas of concern about the knowledge base of students arriving at University. Given the speed of change there is also the danger that lessons will be lost in the speed of progress.

The popularity of face-to-face higher education, in particular the branch campuses, suggests that at least at present there is still a flourishing belief in the value of face-to-face education. Developments across the education sector suggest that face-to-face elements will become less and less significant in overall programmes. To date there seems to be little if any account taken of the needs of those who, for whatever reason, are not able, or do not wish, to join the move online. The idea that younger students will interact online because online will be the option that they have for interaction is less than helpful

to groups of students with needs that cannot easily be met by a standardised online system. Although technology exists that can assist students with special needs, these do not presently seem to be included in rollout plans.

Innovation v. implementation

There is a distinction to be made between innovation and widespread implementation. Innovation may be easier when implementation is not widespread because innovation requires individual and context specific responses that do not always easily lead to wide implementation. The HCT were a site of early innovation in the use of laptops and use of IT for widening access and participation but expansion (4 to 17 colleges over a period of just a few years) has led to a uniformity of mass delivery rather than more innovation.

14.5 Moving on

The UAE is clearly on a path to wider use of online learning and has the resources and plans for expansion and development. It has many international collaborators and is sharing its experiences widely. There remain a few areas, however, that are as yet unexplored.

- a. Support and resources for minority and special needs groups e.g. those who cannot use technology; those with physical constraints in using technology, and those who are sensory impaired.
- b. How to optimise sustainable technical support services to maintain hardware capabilities - some work is being done on this in schools but hardware failure or system non-availability is an issue in further and higher education too.
- c. How to optimise student hardware and software acquisition for learning.
- d. What role MOOCs and other open access options might play in development of online learning in the UAE.

Also, despite the fact that the UAE produces its own graduates and postgraduates in instructional design and related professions, there is increasing need for people who can adapt such skills to the fast-changing environment engendered by the rollout of smart education.

15. Recommendations

The research suggests that across the MENA region online learning is steadily increasing. While the educational culture across MENA has been towards face-to-face learning, the rise in blended learning suggests that online learning is becoming more acceptable. This move, combined with the growth in technological availability, is likely to see a continued **shift of balance** towards online learning.

Yet, despite very broad-based generalisations around cultural predispositions to teaching and learning the research reinforces the basic point that **context matters**. The three countries may share some characteristics around relatively centralised political systems and preferences for transmissive forms of education, but equally they are at very different places as regards adopting online learning across educational levels. Interventions designed to meet these needs must be attentive to the complexities of local circumstances and needs.

The growing awareness and use of online learning is set alongside youthful populations who are increasingly tech-savvy and for whom digital interaction is commonplace. So, while demand from students, or potential students, for digitally-mediated learning may exist, it is **teacher readiness** that remains a major barrier to wider and further adoption. Models of pedagogy are often transmissive and organisational cultures do not encourage innovation, which militates against new forms of teaching and learning.

This issue around teacher readiness is linked to the need to **invest in pedagogy**. Some countries, albeit in different ways, seem to see the technology as the enabler of online learning. This means that hardware is being introduced at different levels of education, with UEA moving furthest towards a smart, technology-enabled society. But technology alone does not enhance the learning experience and requires innovative and appropriate pedagogy. At present, much of this expertise seems to be borrowed via the adoption of modules developed outside the MENA region or by importing skilled personnel to devise solutions. As such, indigenous expertise and capacity in designing and developing online teaching remains a challenge.

That said, there are examples of **innovative practices** across the MENA region. Edraak, the MOOC platform, possibly stands out in this regard but the colleague at the School of Engineering in the University of Jordan (Section 7.2) who produced his own videos which gained wide popularity is an example of a more bottom up innovation. Learning from these, and possibly working with them, is more likely to ensure modules and programmes are designed appropriately for local needs.

Contrary to our initial suppositions **user integrity** and security do not appear to be such a big issue. However, this issue may move up the agenda. As noted, at present the relatively early evolution of online learning means that acceptability of this mode of education is the most pressing challenge before one worries about user integrity. But assuming it does become more important our research shows that systems and approaches exist where this can be worked around, and the data suggests that questions of deception are not more prevalent in online systems compared to face to face ones.

Another supposition was that **legal frameworks** were a barrier to the adoption of online learning. The review of existing approaches across the globe suggests two alternative models. One is to treat online learning as a unique approach and legislate and regulate for it specifically. The other is to treat online learning in much the same way as other forms of delivery, given that issues of good pedagogy, institutional support, teacher quality, etc are common across delivery methods. Neither model is necessarily better but countries need to be clear which model they favour and why. This may also be linked to scale and level of decentralisation in educational provision with more fragmented systems possibly more difficult to organise and regulate.

The final set of issues are around accessibility and marginalisation. In most MENA countries **beyond the cities** there tend to be poorer, remoter, or more educationally under-served rural populations. In such cases online learning is a big opportunity, but equally questions of access to technology (e.g. bandwidth) can prevent further development. Other potential student populations are also **marginal and/or mobile**, such as women and refugees. Online learning can be attractive to women who are more restricted in their use of public space and institutions, but there remain major social barriers to women gaining equal access to quality education of whatever type. Across the MENA region we find large refugee populations who are increasingly youthful as well as frustrated by lack of opportunities. Many of these people lack access to the funds, citizenship status, and the technology necessary to access Higher Education and so remain under-served. Set against this, online learning has the potential to reach mobile populations as well as to deliver at the scale needed to meet the demands of such large student bodies. Equally, the impetus to meet this hard to reach group has been a spur to innovation in online learning, as the KIRON example illustrates.

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