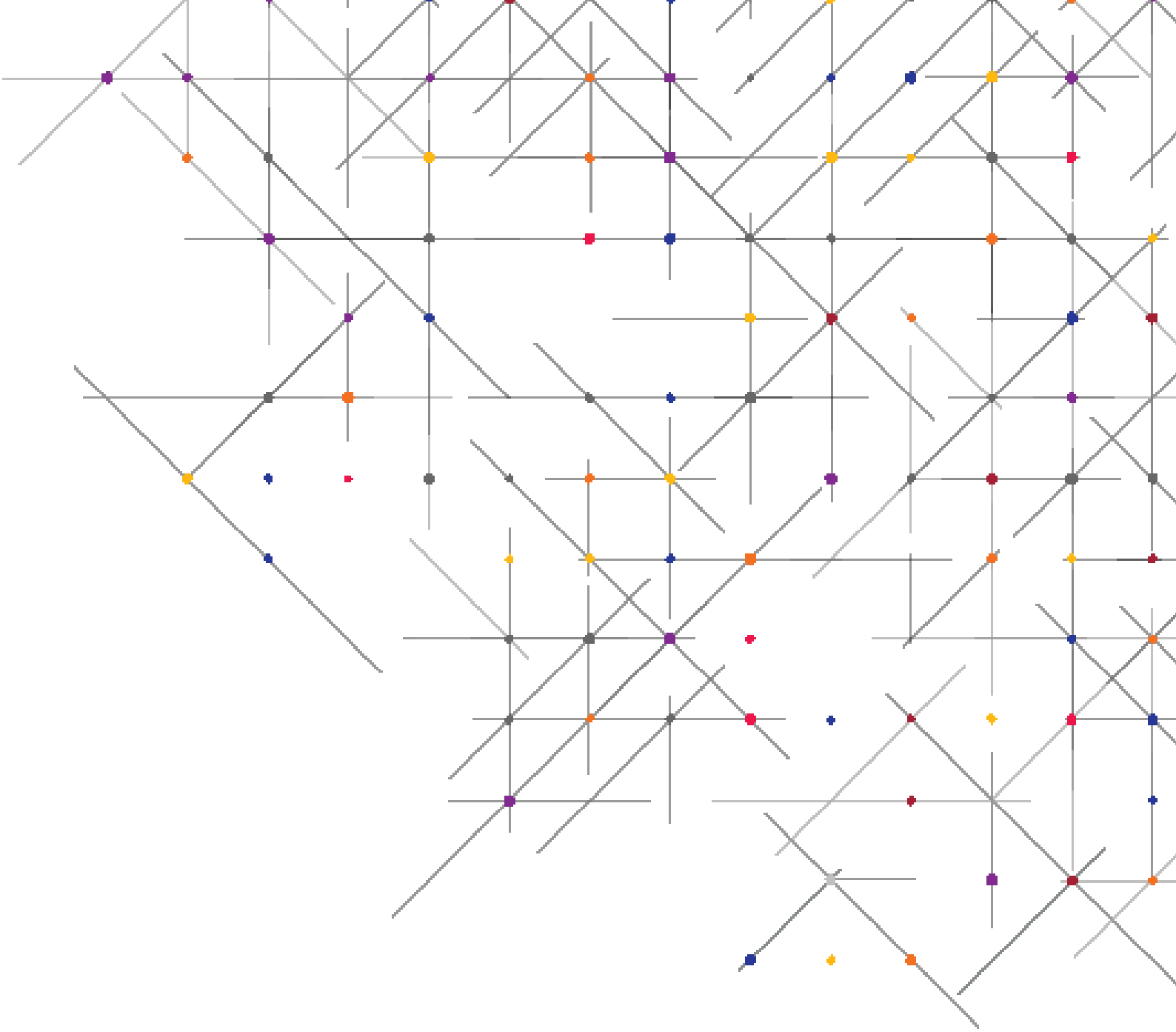

# CHARTING A PATH FORWARD:

## A MULTI-STAKEHOLDER COLLABORATION TO PROMOTE BLENDED LEARNING IN THE ARAB WORLD

Dr. Glenda S. Stump, Education Research Scientist, Open Learning, MIT
Brandon Muramatsu, Associate Director of Special Projects, Open Learning, MIT
Dr. Samar Farah, Director of Research and Innovation, Abdulla Al Ghurair Foundation for Education
Dr. M. S. Vijay Kumar, Associate Dean of Digital Learning and Executive Director, Jameel World Education Lab, MIT

مؤسسة عبدالله الغرير للتعليم
Abdulla Al Ghurair Foundation for Education

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# TABLE OF CONTENTS

# ACKNOWLEDGMENTS

The authors gratefully acknowledge the leadership, faculty, staff, and students of the American University in Cairo and the American University of Beirut for participating in this project. The authors also thank the instructors and staff at MIT and the staff at the Abdulla Al Ghurair Foundation for Education for supporting our collective efforts.

## ABOUT MIT OPEN LEARNING

MIT's Office of Open Learning aims to transform teaching and learning at MIT and around the world through the innovative use of digital technologies. MIT Open Learning provides lifelong learning opportunities designed to advance skills, capabilities, careers, and organizations. With a strong commitment to learning science, MIT Open Learning supports research ranging from basic science on how people learn to bold experiments with new technologies in classrooms at MIT and beyond. Learn more at openlearning.mit.edu.

## ABOUT THE ABDULLA AL GHURAIR FOUNDATION FOR EDUCATION

AGFE aims to empower Emirati and Arab youth to thrive and contribute to the sustainable development of the region, through innovative education solutions and authentic partnerships. As one of the largest privately-funded philanthropic foundations in the Arab region, AGFE supports the provision of high-quality technology-based education opportunities, as well as the development of relevant skills for a successful transition into higher education and the labor market. Founded in 2015, the Foundation is dedicated to the realization of the United Nations Sustainable Development Goals 4 and 8, calling for inclusive and equitable quality education that leads to improved standards of living for all.

# INTRODUCTION

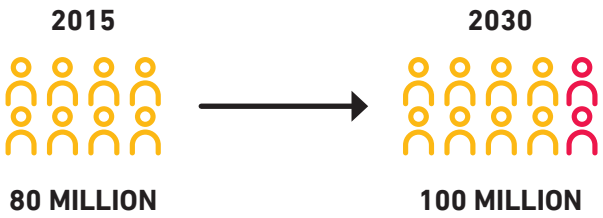
Since May 2016, the Abdulla Al Ghurair Foundation for Education (AGFE) and the Massachusetts Institute of Technology (MIT) have charted a novel path for educational collaborations among higher education institutions and philanthropies. We joined efforts to increase educational access to underserved Arab youth and to accelerate the adoption of online and blended learning at Arab universities. The aim of our collaboration was to improve the availability, quality, and breadth of online and blended (a combination of face-to-face and online) education programs in the region.

In this white paper, we present some of the key findings from a three-year project designed to promote blended learning in the Arab world at two leading regional universities, the American University of Beirut (AUB) and the American University in Cairo (AUC). The project introduced contemporary digital learning activities within redesigned courses in a process that is intended to be a model for others. Our experiences could provide valuable insights for other universities and governments interested in pursuing online and blended learning as a pathway for increasing access to quality education.

# BACKGROUND

The Middle East and North Africa (MENA) region has long trailed behind the rest of the world in its tertiary enrollment rates, with rates of 31% as compared to a global average of 37% (World Bank, 2018). There has been an upward trend in enrollment in recent years, but given that the youth population is set to surge by about 20 million between 2015 and 2030, as shown in Figure 1 below, it is expected that universities will not be able to satisfy the growing demand for higher education in the region (World Economic Forum, 2017). This projected shortage of higher education opportunities will likely contribute to the widening socio-economic gap in the region, caused in part by public education systems' inefficient use of resources, the inability of those systems to prepare youth for the current and future labor market, and the inaccessibility of higher quality alternatives for the majority of students (World Bank, 2019; Dalling et al., 2019). It is within this context that online and blended learning, with its ability to provide access to potentially more affordable high-quality flexible education at scale, has the unique potential to address some of the educational challenges that the current education systems in the region have not yet been able to solve.

**Figure 1. Arab youth population between 2015 and 2030.**




Online learning emerged as a global trend in the early 2000s with the rise of open and freely accessible content from the highest quality universities globally. MIT was an early leader in sharing its course materials openly with the world with the launch of MIT OpenCourseWare[1] in 2001. Over the last 18 years, MIT has shared virtually all of its course materials (e.g., lecture notes and homework assignments) online enabling free and open access to high quality, cutting edge education around the world.

Over time, the demand for digital education globally has continued to grow with the development of courses, and more recently full degrees and new forms of online certifications. The rise of massive open online courses[2] (MOOCs) starting in 2012 has accelerated this growth and the courses have provided access to heretofore unavailable online learning opportunities. Now MIT and many other institutions offer full courses online for learners. MOOCs have reached an estimated 101 million learners worldwide through 2018 with around 20 million learners signing up in 2018 alone (Shah, 2018).

Universities are also increasingly blending online and face-to-face instruction for their students, with almost one third of all students in the United States taking at least one online course as part of their face-to-face degrees, allowing universities to increase the accessibility of their courses beyond their physical classrooms (Allen & Seaman, 2017). This growth has been supported by research that has consistently found students perform significantly better in blended learning environments than in conventional face-to-face classes or online learning environments (Means et al., 2013; Bowyer & Chambers, 2017). Results from the same studies have also shown that these environments improve numerous other outcomes such as attendance, retention, and satisfaction. Finally, studies have shown that the overwhelming majority of students prefer to study in a blended learning modality, with faculty sharing similar views (EDUCAUSE, 2017).

1 https://ocw.mit.edu/
2 The Oxford Dictionaries Online defines MOOC as "a course of study made available over the Internet without charge to a very large number of people." (https://www.lexico.com/en/definition/mooc) MOOCs are offered by a wide range of traditional and non-traditional education institutions, typically with open enrollment for non-matriculated learners. MOOCs provide online courses to learners regardless of background, and can provide alternate credentials showing completion of individual courses.

Not only are more learners opting for learning online, but the leadership from higher education institutions that have already invested in online learning are recognizing its centrality to their educational offerings, with almost 80% seeing it as vital to their future strategy (Bichsel, 2013). This includes the top universities in the United States and internationally. Less than ten years ago, few institutions listed in the top 40 of the US national rankings had any significant online presence. Now, many top-ranked schools, such as Harvard, Yale, and the University of Pennsylvania, offer a number of online and blended degrees as well as alternate credentials and certifications in academic and professional subjects (Gallagher, 2019).

Some universities are also experimenting with novel forms of credentials. MIT launched the first online credential equivalent to half of a master's degree called the MicroMasters® in 2016. This microcredential, targeted at the needs of working professionals, allows learners to earn a credential that recognizes their expertise in a given field. Individuals can apply this knowledge (the microcredential) immediately in the workplace, and they may then decide to pursue a full degree to further develop their expertise and to recognize their mastery in a particular subject (a professional master's degree). Since then, there has been a surge in short, affordable, and employer recognized credentials online, with over 650 MOOC-based credentials now available through a variety of educational providers (Shah, 2018).

Despite the growing array of online learning opportunities, online learning has not yet fulfilled its promise of serving as an equalizer of opportunity. Studies show that the accessibility and effectiveness of these opportunities to date have varied depending on a number of factors, including the type of educational institution providing them, cost, and quality (Hansen & Reich, 2015; Garret, 2018; Reich & Ruipérez-Valiente, 2019; Legon, 2019). Therefore, without the introduction of proactive policies and support services to increase accessibility and completion, education institutions and providers are likely to maintain the institutional status quo (Protopsaltis & Baum, 2019).

In the Arab world, additional factors contribute to the challenges facing the higher education system. The current model of higher education institutions is not equipped with regard to quality, accessibility, or reach to serve the growing needs of the regional population. Although online learning has gained some traction, particularly among learners, the trend remains relatively new and largely restricted to uncertified short courses. In recent years through regional education platforms such as Edraak and Rwaq, MOOCs and other short courses in Arabic have been offered to around 1.5 to 2 million students each (Farhat, 2017; Pickard, 2019). Despite these numbers, national governments remain skeptical of the potential impact and quality of online learning and do not accredit it. However, some governments in the Gulf States and Egypt have begun leveraging online learning to fund workforce training initiatives aimed at addressing skills gaps in their populations.[3]

Although these initiatives indicate a growing acceptance of online learning in the Arab world, traditional education institutions such as universities have been largely resistant to utilizing this new model of learning. Only a handful of universities offer online degrees or diplomas, potentially due to the difficulty of gaining government accreditation, and a few others have started offering select online or blended courses. Initiation of these offerings can largely be attributed to individual faculty efforts rather than institutional strategies or policies geared towards promoting online learning. Some universities, including the American University of Beirut and the American University in Cairo, are beginning to lead the development of new regional initiatives. However, there is ample room for growing the number and quality of online learning offerings at Arab universities to support larger numbers of students in pursuing a high-quality education. Online learning also presents new opportunities for universities to begin responding to the global demand for lifelong learning from employers.

3 The UAE government, for example, has recently partnered with two private education providers, Udacity and Coursera, to train one million Emirati and Arab youth in coding (UAE to Train One Million Young Arab Coders, 2017), and to upskill 60,000 government employees respectively (Alrawi, 2019). Other governments have either launched or are beginning to explore similar initiatives.

# ABOUT THE PROJECT

MIT's experience of working at the frontiers of digital learning, AGFE's close ties with Arab universities, and their shared commitment to expanding access to accredited online learning led them to partner on this joint project to promote blended learning. The two institutions sought partners in the region that were similarly driven by a culture of learning, deploying innovation, and driving long-term change in their communities. The project focused specifically on developing blended learning courses in regional universities as a step towards embracing online learning to improve access to quality education in the region.

Two universities self-selected into the project—the American University of Beirut (AUB) and the American University in Cairo (AUC). Through a combination of meetings, design workshops, and online sessions, the project team aimed to achieve four objectives:

1. To promote greater awareness of the opportunities surrounding accredited online learning
2. To facilitate high quality (re)design of selected foundation courses
3. To further develop faculty and instructional designers[4] in the Arab world
4. To encourage greater collaboration among universities, foundations, and governments in the field of online learning.

The faculty and designers[5] from each university were to gain a number of specific skills from this project that would not only enable them to design and deliver blended courses that incorporated online components, but would also fundamentally enhance teaching practice in general.

4 Instructional designers are individuals involved in "the process of determining the needs of the learners, defining the end goals and objectives of instruction, designing and planning assessment tasks, and designing teaching and learning activities to ensure the quality of instruction" (Kurt, 2017).
5 The support staff are referred to as 'designers,' as they were from different departments within each institution but had similar functions within this project. At AUB, the designers were from Instructional Technology Academic Services, and at AUC, they were from the Center for Learning and Teaching.

Beginning with a launch meeting in Dubai in 2017, a team of 18 faculty, administrators, and designers from AUB and AUC convened with experts in course content, pedagogy, online course design, and evaluation from MIT. The team identified three subjects offered at AUB and AUC that could draw on MIT online course materials and could be taught in a blended learning mode locally with residential students. The online materials, from MITx MOOC courses, served as exemplars of contemporary pedagogy and digital tools. Materials from MITx courses were used for biology at both universities, as well as for differential equations (AUC) and computer science (AUB).

The AGFE and MIT teams then held a design camp at AUC for faculty and designers at both universities. The MIT team introduced the online course materials and worked with faculty to begin the process of blending the course materials with active-learning[6] activities in the local AUB and AUC courses. After the design camp, the AUB and AUC teams continued to (re)design courses with support from MIT experts through Fall 2017. The (re)designed courses were offered to students beginning in Spring 2018. As shown in Table 1, AUB and AUC have offered blended courses utilizing online MITx course materials throughout four semesters for 1,196 students.

**Table 1. Number of students enrolled in (re)designed courses.**

| | Spring 2018 | Fall 2018 | Spring 2019 | Fall 2019 |
|---|---|---|---|---|
| **BIOLOGY** | | | | |
| AUC Introduction to Life Sciences (BIOL 1010) | 44 | 35 | 22 | 36 |
| AUB Diversity of Life (BIOL 200) | 24 | | | |
| **MATHEMATICS** | | | | |
| AUC Differential Equations (MACT 2141) | 175 | 125 | 165 | 125 |
| **COMPUTER SCIENCE** | | | | |
| AUB Introduction to Computer Programming (CMPS 200) | | 191 | 57 | 197 |

6 Active learning is a process that "engages students in the process of learning through activities and/or discussion in class, as opposed to passively listening to an expert. It emphasizes higher-order thinking and often involves group work." (Freeman et al., 2014, p. 8413-8414)

# EVALUATION OF THE PROJECT

The project team conducted an evaluation utilizing data from interviews with faculty, administrators, and designers, surveys from students enrolled in the (re)designed courses, and online platform data from the MITx courses. One of the positive aspects commonly articulated during the interviews was that all who engaged in the project were able to learn from peer institutions as well as from institutions like MIT that are well known for their work in online learning. Overall, the data from AUC and AUB showed that the faculty, as well as the administrators and designers, were truly engaged in the project and hoped to continue their involvement. The data also revealed that faculty as well as designers had reflected on and learned from their experience. In addition, they continued to be optimistic about the growth of online and blended learning within their institutions.

## Faculty Experiences

Six of the seven faculty who attended the design camp continued on to either revise an existing course or design a new one. Two AUC math faculty worked together to redesign their entire course for Spring 2018. They implemented a flipped classroom format, requiring students to engage with the online materials before coming to class. Both faculty suffered some undesirable consequences from their intensive course redesign—they reported receiving overt resistance to the changes from students and also received lower end-of-semester course evaluations during the first semester of using the course materials. However, both faculty stated that they saw some positive effects from the redesigned course on their students—by the end of the semester, students became more autonomous learners, and they were able to apply their knowledge to solve problems that were challenging. One of the faculty members elaborated on this, stating,

> Students, collectively, did better than in the last [semester] . . . this does not mean that they scored better marks, higher marks . . . when I say they did better, I mean they achieved better objectives in the exam. We actually asked them harder questions, and they did better on these questions than, for example, if we asked the harder questions in the semesters before.

Two AUC biology faculty engaged in redesigning their introductory biology course for Spring 2018. Both faculty chose to utilize the MITx materials in a flipped classroom format, requiring students to engage with online MITx materials before their class experience. Initially, students did not prepare adequately for class using the online materials, but each faculty member reported being able to mitigate this behavior successfully. One faculty member developed graded in-class activities and quizzes that were worth 20% of the students' final course grade; the other faculty member initiated small group discussions in which the students who had prepared scaffolded the understanding of those who had not prepared. Both faculty presented a very optimistic attitude toward using online materials and active-learning strategies in their classes. Although neither of the practices were new to the faculty members, participation in the project allowed them to engage with both to a greater degree and this was perceived as a positive aspect of the project. One faculty member stated,

> I think it [the online material] really helped the students, making the class more interactive, more interesting for them, more engaging. At the same time, it really helped them with recapping what we had already done so that it was very easy for them to go back and re-watch the videos. It really helped with [their] studying in that sense.

One AUB biology faculty member chose to redesign content for one topic (two lessons) in an introductory biology course. They addressed the effect of the experience on their plans for future course development, stating,

> I thought their [MIT] approach was fantastic. I would love to have my course recorded and put online and have interactive questions there. I would like to see myself trained and giving such lectures to students, maybe perhaps have the facility at AUB to record our lectures, put things online . . . and then use MIT material where we see that fit or as additional or supplementary to what we develop.

This faculty member felt that the experience was beneficial for the students in that they seemed to have a solid understanding of a difficult topic after participating in the redesigned classes. However, they acknowledged that the experience consumed additional class time because students did not prepare for the class as instructed, and the faculty conducted a make-up session for the unprepared students.

Finally, one AUB computer science faculty member designed a new introductory computer science course first offered in Fall 2018. This was the first time the faculty had taught a programming course, and they were appreciative of the availability of the MITx course materials as a resource for course structure and organization. They did not utilize a flipped class format, but incorporated multiple interactive activities within their lectures and reported that the students were much more engaged in this class than in others they had taught previously. Two other faculty members, who did not participate in the project, taught additional sections of the course using the same lesson format.The faculty member who designed the course stated that they really enjoyed teaching it. When asked if participation in the project influenced their teaching methodology, this faculty member replied,

> Personally, yes. I used almost everything that we've learned. It was happening even without really intending to. It felt natural . . . regardless of this course, I think it just gave me a set of tools that I feel have improved my teaching.

Overall, three faculty (two at AUC and one at AUB) continued to participate in the project through Fall 2018. They remained positive about their course revisions that utilized MITx materials, and about the use of digitally-enhanced instructional strategies in general. Each one articulated the use of pedagogies that were either new to them or previously learned but not attempted in their teaching. With repeated use of the courses in Fall 2018 and Spring 2019, they were able to adjust the selection of materials, assignments, and in-class learning activities to meet the students' needs as well as their own preferences for course design. One faculty member articulated that moving to a blended model in their class not only introduced students to engaging content via technology, but that it allowed more time for them (faculty) to use different teaching methods and make the class more interactive, thus improving their overall quality of teaching.

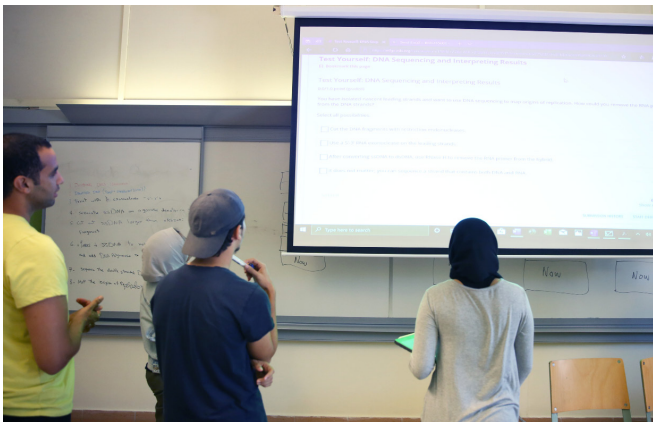
Even the faculty who attended the design camp but did not continue to offer their revised courses were influenced by their involvement in the project. One mathematics faculty left the university to further pursue a career in mathematics education; one biology faculty became the department head so would not be teaching the course they revised, but enthusiastically promised to encourage digitally-enhanced pedagogies to their colleagues; and another biology faculty did not continue to teach in the introductory course they revised, but stated that they would use blended learning for future upper-level courses they will teach. These are all first steps toward changing pedagogy and increasing use of digital materials, also goals of the project.

## Designer Experiences

Nine designers from both institutions participated in the design camp and were partnered with faculty members to support them in the (re)design and implementation of their blended courses. As the faculty were using MITx course materials to (re)design their courses, the role of the designers was more limited than it typically would be if they were working with faculty to develop fully online or new blended courses. In that context, they would provide both technical and pedagogical support in developing new course content. In this project, they provided some initial pedagogical support, but placed more emphasis on research and evaluation.

From the designers' perspective, the project provided an important opportunity for collaboration between the two participating institutions. One AUB designer expressed that it was important for them to work with AUC, stating "AUC is doing some great work, so it's always good to be involved in that." One AUC designer articulated their desire to work with AUB stating,

> We thought we would learn from this experience—we would be working with AUB, we'd get the training from MIT, and we would learn more about the strategic direction of blended learning in the region, not just in our own institution.



## Student Experiences

Student reaction to changes in pedagogy and online course components was a major theme during Spring 2018, the first semester of the project. Data obtained from the AUC student surveys revealed a mixed response to changes within their courses—they appreciated the continuous availability of lecture videos as a means to review course content, but for courses in which a flipped class format was utilized, they disliked the extra time and effort required to prepare for class.

The survey results also contained positive feedback regarding the value of the online materials for student learning. For biology, students' responses to the question, 'what was the best thing about using the online materials in this course?' included comments such as "Facilitates our understanding of the difficult concepts" and "Understanding the material better." Mathematics students replied to the same question with comments such as "It really helped explain all the concepts clearly, easy step-by-step kind of format. It's nice to have this kind of supplement next to the class"; "Visual representation that helps [us] understand a complicated part and the intractable graphics of the functions"; and "Simulated mathematics is one of the most effective ways to enhance mathematical intuition." Faculty reported that by Fall 2018, the negative feedback from students seemed to have lessened somewhat. One faculty member described this as students understanding that "this is the way it is" and becoming more accepting of the pedagogy.

At AUC where major changes within one course produced marked student resistance during its initial offering, one of the administrator interviewees stated that students' reactions prompted new plans for action on the university's part. Beginning with their community education offerings, they decided to begin assessing students' readiness for digital learning and also to support them through their transition from traditional in-person modes to more independent learning that typically accompanies online, blended, or digitally-enhanced modes.

## Institutional Leadership Experiences

Administrators in university leadership positions who were interviewed focused on the project's impact on the institutions as a whole, and on their plans to carry the momentum of digital learning forward, both institutionally and regionally. One individual acknowledged the role of the initial project meeting on their larger vision, stating,

> I think it was that meeting that made me realize how important it is to drive accessible education in the Middle East . . . it was a very visionary meeting, whereby we discussed the big picture . . . and we also realized how resourceful MIT could be to us in that meeting. The presentations that were given by MIT made us realize that there is a lot that we can do together, in order to drive this agenda of online education, not just within AUB but also in the Middle East.

One interviewee from AUB also reported that when talking with the deans within the university, they refer to the AGFE-MIT project as a successful example of how "e-learning" (referring to online learning) can be used. Another interviewee explained that across the institution, this has created a wave of larger, departmental requests. They explained,

> Blended learning, on the course level, it's totally optional for the faculty members. However, we're getting many requests to redesign full programs into blended performance, and this is where it becomes not optional for faculty members anymore. So, if the dean or the program director decides that this program needs to be redesigned in a blended format, and these are the specific requirements, then this becomes a must for the faculty members in this program.

They added that when talking with faculty, the question of 'how do we do it' comes up frequently. The AUB team now replies, "Look, this [referring to the AGFE-MIT project] is a successful example of how we've used it. Yes, we know how to do it; yes, we can help you; and yes, we can partner and lead with you."

At AUC, one of the interviewees articulated that the project changed the conversation, particularly with regard to the idea of integrating online learning into classroom instruction. They stated that "the idea of blending online [material] is no longer alien as much as it was." They acknowledged that a big push for the use of online resources came with the new president and provost, and that this is included in the university's strategic plan. They also stated that the "silver lining" resulting from increased interest by top university officials was the provision of funding for a new Digital Education Unit within AUC's Center for Learning and Teaching. The unit includes additional digital education staff who are charged with producing more online materials and fulfilling the strategic requirements of the university in that regard. One interviewee described the new Digital Education Unit as evidence that AUC is "setting up and getting serious about online and blended learning."

By all accounts from the institutional leadership, the project aligned with their vision and goals to bring digital learning to the forefront of activity at both of the universities. During the past several years, each institution has developed a coordinated plan to increase the quality and utilization of digital materials. They readily acknowledged that the project has played a role in the development of their individual strategic plans, either by providing examples of success, or by helping to expand the view of what is possible. Both AGFE and MIT played important roles in this process—MIT provided new ways of thinking about pedagogies for online learning and reinforced active-learning pedagogies for in-person instruction that were already encouraged at both institutions; AGFE provided financial support and encouragement for the changes that were instituted. The regional support provided by AGFE was acknowledged as being especially important by those in leadership positions.

# LESSONS LEARNED

From the shared experience of working on this capacity building project with AUB and AUC, and drawing on feedback from both institutions, we identified seven components that are critical to ensuring the successful implementation of such projects. Although many of the lessons are applicable to any change management in higher education, some components are specifically related to the introduction of online or blended learning. Ensuring that it is done effectively and with the best interest of students in mind are key to the implementation process.

## 1 Participatory Design

One of the key lessons learned in the project was the importance of co-designing the project with all stakeholders involved, to the extent possible. Although we had clear goals and objectives outlined for the project, the details were decided in collaboration with administrators from both universities, not only to ensure their buy-in, but also to ensure that it addressed a real need at both institutions.

The leadership from both universities helped to identify and select the courses they wanted to adapt and the faculty who would teach them. The chosen faculty were open to using education technology and were willing to champion the effort, which was anticipated to meet some resistance. The faculty members then decided what components of their courses they would blend, and how they would do so. Although there were some restrictions as they were only using MITx materials (rather than developing their own online materials), it was important for them to determine which materials were relevant for their courses and their student populations.

The importance of participatory design extended through the actual course delivery as well. Faculty members who were involved in the design camp and the (re)design process used the revised course materials as planned when they taught their course, whereas faculty who were recruited to teach other sections of the same course with the (re)designed materials did not always do so. This points to the idea that if the goal is to significantly change pedagogy for an entire course, participatory design must include a course team comprised of all the faculty who teach the course.

## 2 Team Roles and Responsibilities

In each of the universities, a small team consisting of faculty and staff was created to participate in the project. The staff consisted of administrators as well as members of the Center for Learning and Teaching (AUC) or Instructional Technology Academic Services (AUB), both of which included a number of instructional designers or educational technologists (collectively referred to as 'designers'). Although the project focused primarily on training the faculty and supporting them in redesigning their courses, designers were engaged to support faculty from a pedagogical and technical perspective. Their role is important in helping to sustain online and blended learning. Finally, the role of the administrator was to oversee the project and ensure smooth implementation from an institutional perspective.

Experiences from universities such as MIT indicate that building expertise in the learning sciences, analysis of large datasets, and knowledge of online teaching in specific disciplines also improves the quality of courses. Specialists in these areas, known as learning engineers at MIT, would be important team members as universities build their online and blended learning capacities.

## 3 Communication about the Project

Effective communication is a key aspect of any project. As part of the design camp, we held a series of internal meetings with AUC's academic leadership, faculty, and staff, as well as with the broader public to communicate the details of the project. More important, these interchanges allowed administrators and the project team to answer questions and address concerns regarding the introduction of technology into the classroom. Although this was not possible to do at both institutions, participants from AUC stated that MIT's brand as one of the leading universities in the world, both in terms of quality education and online learning, helped to change the mindsets of some within the institution.

## 4 Students as Stakeholders

Although project activities did not directly engage students at both institutions, the evaluation results indicate that they are important stakeholders to consider in similar efforts moving forward. Gaining student acceptance of changes in pedagogy is not easy, nor is it a short process. Those who study this process describe students' reactions to major pedagogical changes as akin to grieving, in that students progress from a stage of shock and denial to one of integration into their concept of acceptable (Woods, 1994, as cited in Felder & Brent, 2006). Recognition of students' needs in this regard is a key take-away from this project.

## 5 Data as Evidence

An indispensable component in the implementation of such projects is tracking progress and evaluating its outcomes, particularly when trying to gain or maintain buy-in from stakeholders. Although communication around the project is important, data providing evidence to illustrate success of the project and lessons learned can be more powerful.

Collaborators within the participating institutions are critical to the processes of obtaining approval for and collecting the necessary data. In this project, individuals from the Center for Learning and Teaching at AUC and from Institutional Research at AUB provided that critical liaison. As part of the project evaluation, perception data, or feedback from administrators, faculty, designers, and students, became an important source of information to understand the lived experience of those who were involved at the various levels. This feedback was important to gauge the acceptance of those undergoing change and also helped to determine further interventions.

## 6 Leadership Commitment and Alignment with University Goals

Upon launching the project, one of the conditions set for universities to participate was that they would provide a letter of commitment from the university president. Gaining this commitment was especially important, as online and blended learning are not seen as a priority for most universities in the Arab region and their implementation can breed internal resistance from staff and faculty. Therefore, it was critical to have this support which demonstrated the willingness of the universities' leadership to invest their resources to pursue such a project.

## 7 Accreditation

Although governments across the Arab world, to differing degrees, grant approval for universities to offer blended or a limited set of online courses (as part of a residential degree program), there are currently no national policies or procedures for accrediting full degree programs online. There is also limited clarity about how to initiate such a process and what quality indicators universities need to address in order to do so. Even though the challenge of government accreditation remains a significant hurdle for universities interested in pursuing online and blended learning, both AUB and AUC are pushing forward with their ambitious digital education strategies. They have also made some advancements by offering a successful Online Joint Professional Diploma in Green Technologies (with the Lebanese American University as a third university partner), which has been accredited by relevant bodies in the United States.

# MOVING FORWARD

In 2016, when AGFE and MIT launched the project to promote blended learning in the Arab region, our aim was to explore how digital technology can improve the quality of teaching and learning in higher education institutions in the region. Our broader ambition, however, was to illustrate to AGFE's university partners and to other stakeholders, the critical role they can play in addressing some of the long-standing access challenges in higher education through this mode of learning. Four years on, it is evident that these goals are in the process of being achieved, whether directly or indirectly as a result of this project.

Both AUB and AUC have developed and are implementing new and more ambitious online and blended learning strategies that engage a wider set of stakeholders within their institutions (more schools/faculties, departments, and professors) as well as more diverse student populations (not just those within the walls of their institutions). In Fall 2019, AUC launched its Centennial Strategic Plan in which digital learning is a priority. One of the focus areas was improving blended and online learning for those in extended or continuing education as well as non-degree programs.

AUC also used the AGFE-MIT project as an opportunity to lead in recognizing innovative educational certifications offered online. In late 2018, they began offering a blended Master's degree in Economics in International Development following discussions with MIT. This degree provides an alternative pathway to AUC's residential degree program for learners that successfully complete the MITx MicroMasters Program in Data, Economics and Development Policy (DEDP; Moriatis, 2018)[7]. This model is considered innovative due to its low cost (it is equivalent to approximately half of the master's degree at the institution, due to the affordability of the MITx MicroMasters Program) and its accessibility as the MicroMasters does not have any official academic prerequisites.

AUB too has been influenced by this new educational model and has designed online diploma programs that will contribute towards their residential master's degrees. Among other notable developments is the upcoming launch of an e-MBA program and a new multi-year collaboration with AGFE to establish the Al Ghurair Hub for Digital Learning in Engineering, Architecture, and Design at the Maroun Seman Faculty of Engineering and Architecture. Beyond its short- and medium-term goals of increasing access to quality education at AUB, the initiative "aims to establish a knowledge hub for training and supporting other regional universities interested in transforming their teaching and learning and building their online and blended learning capabilities" (Abdulla Al Ghurair Foundation for Education, 2019).

Online and blended learning offer a range of innovative possibilities to strengthen and extend education—rethinking and reconstructing curriculum, creating flexible delivery options, or introducing data driven formative assessments to meet the needs of different learners, to name a few. Our work with AUB and AUC highlighted several of these possibilities. Our work also made it abundantly clear that comprehensive and sustainable change requires systemic considerations such as faculty preparation and institutional infrastructure. We expect that the lessons learned from this project will be valuable to other institutions and can help initiate wider change across the region.

7 Upon successfully completing the coursework equivalent to half a master's degree offered fully online and receiving a certificate from the MITx DEDP program, learners can apply to AUC's master's degree program. Upon acceptance, AUC will recognize the MITx coursework as credits toward the master's degree.

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