Exploring the Potential of Technology to Deliver Education & Skills to Syrian Refugee Youth

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Theirworld

A brighter future for every child

Acknowledgments

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Foreword

GLOBAL BUSINESS COALITION FOR EDUCATION

Across the globe, more than 6.8 billion people have access to mobile phones, the number of those able to access internet is expanding at a rate of 7% per year, and the educational content available through online courses nearly doubled in 2015.

There is no reason why in the 21st century that any child should be denied access to opportunity to learn about the surrounding world and build a better future. We owe it to every child, no matter the harshness of his or her circumstances, the opportunity realize their right to education, and unlock their full potential.

Today, as we face the largest humanitarian crisis since World War II, our collective imagination of what is possible must take full advantage of the new reality in which we live. While the classroom has remained relatively unchanged for the past century, we can be more inventive about how we deliver teaching and resource sharing to Syrian refugee children. And we need to move quickly as these children are increasingly vulnerable to exploitation and face bleak futures.

Technology has the potential to play a transformational role in generating innovative, immediate, and long-term solutions to the lack of learning options. But to do that, far greater investment and commitment to targeting, piloting and investing in these solutions is necessary.

This working paper comes at a crucial moment. The need is urgent and the opportunity is clear. Greater efforts to harness technology on behalf of these youth have the potential to change the future of a generation. This calls for the public and private sector to think, innovate and collaborate in an unprecedented way to provide hope to the 1.3 million Syrian refugee children in the region.

We hope that the principles, opportunities, lessons and ideas included in this working paper will fuel greater investment and innovation in technology-enabled education solutions to open additional education pathways for all Syrian and other refugee youth in the Middle East.

We welcome additional insights and input as the thinking on this important topic continues to evolve.

Sarah Brown

Chair, Global Business Coalition for Education
President, Theirworld

Acronyms

3RP	Regional Refugee and Resilience Plan
AOU	Arab Open University
GEP	Global Education Platform
ICT	Information and Communications Technology
IIE	Institute of International Education
INS	Instant Network Schools
LASER	Language Academic Skills and E-learning Resources
LEARN	Learning and Education for Adolescent Refugees in their Neighborhoods
MEHE	Ministry of Education and Higher Education, Lebanon
MoNE	Ministry of National Education, Turkey
MOOC	Massive Open Online Course
MoPIC	Ministry of Planning and Cooperation
NGO	Non-Governmental Organization
NORAD	Norwegian Agency for Development Cooperation
OER	Online Educational Resources
TEC	Temporary Education Centre
UGBU	User-Generated Bottom-Up
UoPeople	University of the People
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNRWA	United Nations Relief and Works Agency for Palestine Refugees
YTB	Presidency for Turks Abroad and Other Related Communities

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Executive Summary

This working paper comes at a time when the international community is struggling to respond to the great needs of those displaced from the Syrian conflict — the single greatest refugee crisis since WWII. The struggles of those inside Syria and displaced throughout the region are tremendous, but not insurmountable. There is an urgent need to support the rebuilding of lives, families and communities, particularly for children and youth. Rebuilding Syria and preventing further conflict will not be possible, however, without a focus on youth¥ getting greater access to opportunities to learn and to develop skills that will enable them to support themselves and their families in the future.

Prior to the conflict, Syrian youth were among the most educated in the Middle East, with a secondary school completion rate of 74%[1] and universal primary education nearly achieved.[2] Today, displaced children have little access to safe places to play or learn and Syrian refugee youth in Jordan, Lebanon, and Turkey have little or no access to secondary and post-secondary education. This worsening situation is exacerbating education and employment prospects that are among the lowest in the world.[3]

Refugee youth without access to education and training are faced with serious, long-term, compounding consequences and exponentially increased vulnerability to social, economic, and sexual exploitation, including being trafficked, married young or recruited by militant groups. Ensuring these youth have the opportunity to reach their full potential must be a more urgent focus of investment and innovation.

This working paper highlights emerging thinking and initiatives that test the potential of technology to play a role in enabling access to affordable, relevant, and quality education, and to support overcoming barriers to the development of relevant skills required by a 21st century workforce.µ The purpose of this paper is two-fold, 1) to contribute to the discussion on how to better use technology to close the significant gaps for a generation of displaced youth, in particular Syrian refugees living in Jordan, Turkey, and Lebanon, and 2) to amplify the call for all stakeholders, especially the technology sector and international donors, to help refugee youth in the Middle East secure a better future.

The case for investment

Increasing access to education and skills development through technology, particularly for '21st century skills,' can offer opportunities and level the playing field for displaced youth. Alternately, not investing in, and encouraging, new and innovative ways of delivering training, skills and education will result in many youth falling further behind. The gap between those who can contribute to the economy and those who may be left behind will continue to grow.[4] Investing in education as an equalizing force is smart not only for society, but for business. Research shows that for every $1 invested in a child's education, there is a $53 return to the company at the start of employment.[5] Education builds sustainable societies, improves long-term economic growth, contributes to the development of a healthy workforce, expands business opportunities, and boosts wages.[6]

¥ For the purpose of this paper, 'youth' is understood as those between ages 15 and 24, as defined by the United Nations.

µ For the purpose of this paper, 21st century skill refer to a broad range of skills that inclue literacy, numeracy, problem solving as well as other softer skills such as communication, time management, ability to learn, flexibility and more, as defined by the "OECD Skills Outlook 2013: First Results from the Survey on Adult Skills."

Beyond the business case for investment, there is also compelling evidence that education has an important role to play, not only in rebuilding after war, but also in maintaining peace in host countries. Countries with educational inequality — large differences in access to opportunities — are at least twice as likely to experience violent conflict.[7]

Jordan, Lebanon, and Turkey have taken the lead on supporting Syrian refugees and must be better supported with strategies and finance to continue this. Providing relevant education and technical training to refugees is part of ensuring that the efforts that these neighbors have made to provide a safe haven and services to refugees are not rewarded with apathy and increasing instability. The international community must urgently prioritize and fund a plan to prevent an entire generation from missing out on education, opportunities, and skills they need to rebuild their lives and their country.

The challenge and the opportunity

More innovative and bold approaches, pilots, and investments are urgently needed and at scale, particularly for refugee and at risk youth. Just one-third of Syrian youth are enrolled in formal education and less than 1% are able to access higher education.[8] Information and communications technology (ICT) can offer viable solutions to bridge the skills gap and provide youth with new ways to access learning and rebuild their futures and communities.

Currently, initiatives targeting youth are seriously inadequate, with just 10% of the target to deliver quality secondary education for Syrian refugees being met in the region.[9]

To support this effort, this report draws out broad principles to advise stakeholders on how to successfully invest in and leverage tech-enabled learning and inform further exploration of the use of technology in addressing the Syrian refugee youth education challenge. In brief, these principles include committing to:

- View technology as a tool and not the solution
- Support a diversity of approaches to supplement traditional education access
- Increase access to internet and technological devices
- Increase coordination and monitoring and evaluation of programs
- Ensure credibility of programs through accreditation
- Work with the policy and economic constraints of the host labor market
- Prioritize open source development and user-generated content

Building on existing literature, field visits to Jordan, Lebanon, and Turkey, examples of existing programs in the region, case studies of other innovative initiatives, and interviews with key stakeholders including technology companies, academic institutions, international agencies, and non-government organizations (NGOs), this report also outlines five emerging opportunities through which technology can enable Syrian youth to increase quality access to education:

1. Better online education information and advice
2. Access to quality non-formal secondary education alternatives
3. Access to affordable post-secondary education programs
4. Bridge programs to continue post-secondary education
5. Work experience and income generation

The findings of this report demonstrate the growing interest of stakeholders in investing in the untapped potential of technology to accelerate access to education for refugees. Most of the case studies highlighted in this report can be viewed as pilots. To scale up, additional financial and technical support are critical and agreement on a common curricula and pathways to certification and into the labor market are greatly needed.

I. A Generation of Syrian Youth Without Education

Syrian refugee youth face a grim future without access to education, living in uncertainty with precarious access to future employment, basic services, shelter and social support all added to the trauma of witnessing violence, losing loved ones and being displaced.

The international community has done a great deal to raise awareness of the massive numbers of out-of-school Syrian refugee children since the start of the war. However, despite the ongoing efforts to address the refugee education challenge in Turkey, Jordan, and Lebanon — who collectively host over 90% of all Syrian refugees[10] — systemic and coordinated efforts targeting youth outside of primary age, are highly limited by governments and international organizations, and the Regional Refugee Resilience Plan 2015-16 (3RP) does not include post-secondary education or vocational training as priority areas.

Secondary education: Limited opportunities

In Jordan, formal, informal, and non-formal secondary educational opportunities exist, though according to the Ministry of Planning and Cooperation (MoPIC), only 3,000 youth living in Jordan's refugee camps (housing almost 100,000 people) are enrolled in post-basic and higher education.[11] Over 50% of Syrian boys aged 12-17 are estimated to be out of school, the largest among all other age groups and both genders.[12]

Various non-formal education options are available through UNICEF's alternative learning centers across the country for students who have dropped out of school and for adult education. There are also options for home schooling as well as summer programs.[13] The government of Jordan certifies these programs, but it is not clear how many students are able to transition back into the formal education system, or continue onto post-secondary education or relevant work afterwards.[14]

In Turkey — host to more than two million refugees — even less data is available on the number of Syrian youth enrolled in formal or non-formal education or those currently out of school. For youth excluded from the education system, the Ministry of National Education (MoNE) offers free Turkish lessons as well as vocational and other courses at local public education centers. Other programs are available through NGOs, but are also very limited.[15]

Finally, in Lebanon — where one in four persons is a Syrian refugee — just 2% of adolescents aged 15-18 (approximately 2,000) are enrolled in secondary education in public schools, leaving approximately 87,000 youth in this age group with limited prospects for the future and few options to contribute to their families and communities.[16] The Ministry of Education and Higher Education (MEHE) is exploring opportunities with NGOs to expand non-formal education programs, like those in Jordan, as a temporary option to continue engaging youth and prepare them for the transition to formal education. However, non-formal education programs are not currently certified by the government of Lebanon.[17]

Across the three countries, parents and students struggle to afford the costs of transportation, supplies, activity fees, and — in the cases of some temporary education centers (TECs) — tuition. Other barriers include enrollment obstacles such as language and proof of certification, limited information on the availability of opportunities, lack of access to basic connectivity, a lack of monitoring and evaluation to determine which programs can be taken to scale, lack of coordination and integrated approaches, uncertainty about the relevance or acceptance of accreditation for refugee programs, and labor constraints that mean even well-trained workers are unable to legally seek employment.

Post-secondary education: Beyond the reach of most Syrian refugees

If youth are able to secure relevant and quality secondary education or if they attended secondary education prior to being displaced, the intense competition for few post-secondary places means little opportunity for most. Just 4% of students are able to access scholarships to continue their education in the region and beyond, despite immense demand (Annex, Figure I).

The latest reports on access to higher education among 18 to 24 year old Syrians find that enrollment rates vary significantly across Lebanon, Jordan, and Turkey (Annex, Figure II). In Jordan, only 39% of the post-secondary enrollment target for Syrian youth has been met. These estimates are even lower in Lebanon and Turkey, with just 26% and a mere 3.5% of the enrollment targets reached in those countries, respectively.

Turkey, which hosts the greatest number of Syrian refugees, has the lowest post-secondary enrollment rate. This could be explained by Jordan and Lebanon having a greater number of Syrian students from higher socio-economic classes, thus with the means to enroll in post-secondary education.[18]

In addition, both Jordan and Lebanon offer higher education programs in Arabic, unlike Turkey, where students have to invest additional time to master Turkish prior to enrolling. A large number of language courses are available, some of which are sponsored by international agencies, NGOs, or organizations such as the Presidency for Turks Abroad and Related Communities (YTB). In the long-term however, students may choose not to pursue their higher education in Turkey because doing so may limit the majority of future employment opportunities to those within Turkey.

Costs associated with higher education in the region and beyond are also significant barriers. According to a study undertaken by SPARK — an organization 'determined to increase the number of sustainable jobs and economic prospects for youth in post-conflict regions through the improvement of higher education and the development of the local private sector' — although a degree in Jordan is one fifth of the cost (€5,000) of a degree in Europe (€25,000), it is still more than two times the cost of obtaining a degree in Syria (€2,000), with Lebanon and Turkey not far behind at €4,500.[19]

These tuition costs alone are well beyond the reach of most Syrian refugees. In addition to having to cover tuition fees and living costs associated with post-secondary education, some Syrian youth in Jordan were found to be missing necessary travel documents or school records needed to enroll in universities.[20] Problems with documentation are likely to be the same for refugee youth across the region.

Promising programming: Limited reach

There have been a number of examples of collaborative efforts and partnerships across various actors working to support the education of Syrian refugees, such as the British Council's Language Academic Skills and E-learning Resources (LASER) project. The United Nations High Commissioner for Refugees (UNHCR) has also established a task force for all partners working on higher education in Jordan focused on how ICT can be leveraged to provide greater access to accredited institutions for refugees.[21] However, there is a great need to better engage private partners who can spur innovation and who have the technical expertise needed to roll out large projects.

More notably, there have been limited efforts launched by Arab institutions to help address the problems facing Syrians. Notwithstanding a number of Arab NGOs and companies including Nafham, Jusoor, Edraak, and the Talal Abu Ghazaleh Organization, no higher education institutions have extended financial or other support to Syrian students. Only two regional efforts expect to be launched in the coming years — a scholarship program for Syrian refugees to attend the Arab Open University (AOU) (in collaboration with the Kuwait Foundation for the Advancement of Science), and the launch of a new university in Turkey funded by Qatar.

There have also been limited funds invested in supporting educational innovations that are specifically geared to addressing the Syrian refugee crisis, most of which have focused on primary school. For example, the Norwegian Agency for Development Cooperation (NORAD) has been leading an international competition called "eduapp4Syria," which is seeking an innovative solution to promote Arabic literacy and psychosocial support for Syrian refugee children aged 4 to 10. Other creative competitions such as OpenIDEO have also been launched in an effort to identify effective and scalable solutions in education for refugees more broadly.

II. Principles for Investing in Tech-enabled Learning for Syrian Refugee Youth

Conversations with stakeholders who are currently exploring technological solutions with potential to provide greater access to education for Syrian refugee youth have highlighted a number of issues at the operational and policy levels that urgently need to be addressed in order for these and other initiatives to have the greatest impact.

A radical deployment of innovative technology solutions, if well tested and prepared with the following principles in mind, and with an eye to long term innovation and investment, would more effectively address some of the challenges related to access to education for Syrian youth and for the region.

View technology as a tool, not the solution

As technology becomes more ubiquitous and affordable in daily life, it is increasingly seen as an opportunity to provide greater access to better quality services across all sectors. There has been an exponential growth of programs in schools and of educational programs using computers, tablets, e-readers, as well as online educational resources (OER) to improve the learning experience of students.

Increasing access to technology alone may not improve learning — a recent report found that students who use technology very frequently actually fair worse than their counterparts who use it moderately, even when accounting for student backgrounds[22] — however, as part of an integrated program, technology is believed to serve as a valuable tool in the educational experience of students.

As such, a number of initiatives have successfully used both technological devices and online platforms as tools to improve the quality of educational services. UNHCR in collaboration with the Vodafone Foundation has piloted a program called the Instant Network Schools (INS) program at the Dadaab refugee camp in Kenya, where teachers at the primary, secondary, and vocational levels are provided with pedagogical training, coupled with technological devices to teach their content. While the pilot is ongoing, anecdotal evidence suggests that primary enrollment and retention rates have increased, clearing the way for the expansion of the program to other countries in Africa.[23] Worldreader, a tablet with localized digital content that could be provided to secondary students to promote reading and improve literacy skills, has reached over 5 million users with materials published in 43 languages.[24]

The rise of open access to educational resources online is another area that has received significant attention as a democratizer of education in recent years.[25] Examples include initiatives such as Khan Academy or Massive Open Online Courses (MOOCs). The former offers short free tutorials that serve as supplementary materials to what students may be learning in class, while MOOCs are free university courses offered by a wide range of high quality universities across the world on a variety of subjects.‡ Although the courses cumulatively do not contribute to a university degree, students do receive certificates of completion after each course and are offered access to the development of more specialized skills required by a 21st century workforce. Currently, various institutions

‡ The need for greater monitoring and evaluation of pilots or small intiatives with an eye to taking them to scale is addressed later in these principles.

are exploring ways to accredit such online learning programs, which would be valuable for the growing population of refugees worldwide who do not have the resources, documentation, opportunity, or stability to explore more traditional methods of post-secondary education.

Within the field of online learning, the blended learning model is increasingly recognized as the most effective option.[26] It combines both traditional learning in a classroom with supplementary online or technology-based learning and most studies have found students using this method to perform better than their counterparts in both online and face-to-face learning.[27] This model, although more expensive than just online learning, has been increasingly used in educational programs for refugees helping to overcome the shortcomings or lack of access to both 'brick-and-mortar' and online education programs.

A number of these initiatives have been introduced in the countries hosting Syrian refugees. These include online educational and extracurricular programs for youth, tablet solutions offering digitized content of school curricula or supplementary materials such as UNICEF's Pi4L and Intel's Edison, and workshops for teachers on the effective use of technology. However, most efforts have been small-scale projects focused on single communities within countries and it is difficult to determine what their impact would be if scaled up to serve a larger number of refugee youth.†

Support a diversity of approaches to supplement traditional education access

Traditionally, education has been seen as only being effective if offered in brick-and-mortar institutions. This concept is increasingly being challenged, particularly in a crisis context, where the demand far outweighs the supply of infrastructure, teachers and instructors, materials, and other resources. During crises, more affordable, less resource-heavy models, like those more easily facilitated by ICT, are badly needed.

Though the blended learning model can be more expensive than online learning, in the context of refugees, the model allows youth to receive ICT and academic support from teachers and facilitators as well as moral support and camaraderie from their peers, all of which raise their chances of success in the program.

Nevertheless, both traditional institutions and online programs are needed as they allow for a range of students with different needs and academic interests. For example, blended learning programs can offer girls — who are at times held back from pursuing their formal education security or cultural concerns — a chance to pursue learning, and access information about health, safety, and their rights.[28]

Online and blended learning models are understood to be the most cost-effective and accessible option for students enrolled in general fields but less appropriate for those pursuing specializations like medicine or engineering.

† The Massachusetts Institue of Technology was the first to pioneer this form of education through its OpenCourseWare, where the content (syllabi, lesson plans, assessments, etc...) for all of its courses were available online. At the time, however, they did not have the video lectures or certificates of completion, which have since made MOOCs more attractive to students.

Increase access to the internet and technological devices

The most basic barrier to offering innovative educational opportunities like those mentioned above is the lack of, or very limited, access to the internet and, to a lesser degree, technological devices.

There is currently a range of technology-based programs being offered in various refugee camps and host communities across the region that are utilizing internet and technology. However, these programs are usually run in community centers that have been equipped with the necessary resources, and serve only a limited number of refugees at a time. In order to scale-up initiatives, a collaborative effort is needed across government, private sector, and other non-government organizations.

In September, Facebook CEO, Mark Zuckerberg stated that Facebook will work with UNHCR to provide internet access to all refugees. However, it remains unclear how or when this will be implemented.[29] This is part of a larger, highly publicized, global campaign to provide universal internet access by 2020.[30]

Increase coordination and monitoring and evaluation of programs

Host governments have few resources available to help others deliver education to refugees, particularly through non-formal channels. Though there is an immense demand for non-formal education, these programs can be seen as a threat to national sovereignty since the government does not have capacity to monitor and evaluate programming outside of their own.

Investment in monitoring and evaluation is needed so that government can accredit education programming, taking those successful to scale with additional donor contributions.

The private sector can also contribute to monitoring and evaluation through core business assets and expertise. A prime example of a public-private partnership in this regard is seen between the UK's Department for International Development (DFID) and sQuidcard (a UK-based tech company) that works to provide electronic attendance monitoring for over 150,000 children in Kenya, as well as real-time monitoring of learning outcomes.[31]

Working closely with the MEHE to support Lebanon's National Educational Technology Strategic plan, Theirworld is currently managing several pilot programs designed to open access to digitized and interactive versions of Lebanon's national curriculum in tech hubs based in public schools. The pilots provide technological devices, software and staff and are informed and refined through continual monitoring and evaluation.[32]

Ensure credibility of programs through common curricula and accreditation

The scale of this crisis means that many students will never be able to enter formal education systems. Some have been out of school for too long and lost foundational skills; others may need to work to generate income so their families can survive. Even after overcoming these barriers, there currently are not enough schools or teachers in the formal system. Certified non-formal education is a crucial way of reaching these children but the programs must be relevant and accredited so there is universal and transferable recognition for this education. ICT can help to facilitate access to and enhance the quality of curricula, but without agreement on curricula used and a clear path to accreditation that can be taken into the workforce, many efforts of students and families to pursue education may be futile.

Ensuring credibility of programs through accreditation has been noted as one of the greatest concerns of both youth and organizations working in the field. This is especially relevant in the context of online learning institutions, particularly with post-secondary education.

Determinations on curricula will be led by the host government at the ministry level, but the private sector can play a valuable role by providing sustained engagement, core business assets, resources and expertise, weighing in about the skills and training that they value within the curricula, and the accreditation that they would accept.

As part of Intel's Innovation Initiative for the Middle East, the Intel Foundation is working to provide the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) with technology and funding for an online education portal that will support curriculum developed by UNRWA.

In Turkey, TECs cater to most Syrian refugee children in and outside of refugee camps by offering Syrian curriculum, and are recognized by the Turkish government. Therefore, upon completion of their secondary school education, Syrian students are permitted to sit for the Tawjihi — the general secondary examination — in order to gain a certificate of completion. This should provide an easier transition for refugee students. Unfortunately, the governments of Jordan and Lebanon have not introduced the same policy, leaving Syrians obliged to complete their education based on the national curricula of their host country, even if they have nearly completed their education in Syria.

This barrier further complicates the process of finding regional solutions for increasing access to education for Syrian refugees, as there is currently no regionally recognized or approved curriculum. This concern has been voiced by a number of educational and technology organizations with an interest in supporting Syrian refugee students at the

secondary level. This conundrum has delayed or even halted the process of developing solutions to this problem, causing some organizations to provide non-formal education support without clarity of whether the curriculum will be beneficial to the youth in the long term.

The high demand and limited supply of accredited, post-secondary programs that offer scholarships force Syrian refugees to resort to alternatives that may not result in accreditation. For example, Kiron University is recently launched free, virtual university for refugees in Germany, where students enroll in MOOCs offered in a blended learning setting for their first two years of study. After completion of the initial two years, students are placed in a number of accredited partner universities for their final year of study. Although the university has crowd-funded more than $550,000 for its first 250 scholarships, as a newly-established university, students have no assurance that they will eventually graduate from an accredited university. In addition, as they are expected to master the German language in advance of enrolling in the university, the initial barriers to this program are significant.

Other concerns related to accreditation are linked to the accrediting body of an institution, with some institutions being accredited in the West, but not recognized in the Middle East, where most youth are likely to seek employment. This poses important questions regarding the extent to which Arab governments will be flexible in recognizing the educational certificates of refugees studying in new models of post-secondary education across the world and online.

Work with the policy and economic constraints of the host labor market

The enormous influx of refugees has placed a great deal of stress on host country economies to deliver basic services at a much greater scale and has strained labor markets. As such, host country policies and labor laws may limit employment for refugees, even if they possess valuable skillsets or accredited education.

It is essential that potential solutions consider ways to both provide youth with better training opportunities as well as creating creative opportunities and models for them to seek work opportunities. In addition, there is a need for research to understand the costs and benefits to adapting regional and national labor laws to the post Syrian-war reality.

In Turkey, Syrian refugees were previously not able to legally work. However, given the high demand for refugee teachers, Turkey developed an innovative "volunteer incentive payment," allowing UNICEF and the EU to legally offer a stipend to Syrian refugee teachers through Turkish post offices.[33]

Prioritize open-source development and user generated content

To have maximum impact, technology should be designed and developed under fully open licenses and if possible, built with technologies already accepted and used in local ecosystems. Solutions on locally built, open-source technologies can be taken to scale more quickly, bypassing bureaucratic delay, with direction from those in country who are more well versed with the context and needs.

A great example of this is Ushahidi, an open-source crowdsourcing platform for information collection, visualization, and interactive mapping. Originally developed to map reports of election violence in 2008 in Kenya, in response to a media blackout, Ushahidi (which means witness or testimony in Swahili) was created within days to gather reports from SMS, email and online and plot them on a map to create a clearer picture of the crisis.

This open-source platform which combines citizen journalism, social activism and geospatial data has been since adapted to a number of contexts, including mapping the locations and needs of earthquake victims in Haiti, outlining the extent of the British Petroleum offshore oil spill in Lousiana, and collecting and distributing reports of corruption in India. The platform is easily accessible to the common user, who is able to contribute through locally accepted technological devices and communication channels like mobile phone text. This ease of use and open-source adaptability has allowed the platform to reach over 20 million persons through over 90 thousand deployments. [34]

The user-generated bottom-up (UGBU) Global Education Platform model proposed by GBC-Education also enables a range of learning channels that are responsive and scalable to the needs of a diversity of learners. YourStoryIndia, a pilot of the UGBU model, launched in 2015, increased the generation of local content for youth in India in several languages as well as time users spent reading. YourStoryIndia allows for user-generated, locally relevant content creation, is device agnostic, decentralized and simply distributable for ease of access, and generates data to allow for constant improvement.[35]

III. Five Tech-enabled Learning Opportunities for Syrian Refugee Youth

The following five emerging opportunities outline best practices through which technology can enable Syrian refugee youth to access relevant, quality education, and secure employable skills.

First opportunity: Online education information and advice


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The lack of available trustworthy information and advice on the range of opportunities is a critical barrier for refugees. Parents and students often lack crucial information on their rights and school registration procedures. Some NGOs operate information service centers that offer pamphlets and counseling, but access to these centres is limited. Schools themselves lack overall guidelines for registering Syrian students that have missed several years of school and few organizations provide education and career counseling services on appropriate academic, training, and work opportunities, which take into account the constraints they are facing as refugees, such as legal status, work restrictions, language barriers, and availability of scholarships. Without a support system, students experience difficulties in preparing university and scholarship applications, particularly in cases where they do not have access to their own personal school completion certificates or travel documents.

To address the lack of access to information on a regional level, UNESCO has launched an online portal called 'Jami3ti' ('my university') for Syrian and disadvantaged Jordanian youth based in Jordan.[36] The portal serves as a clearinghouse for information about higher education opportunities in the country. The portal will publish data and reports on the needs of the post-secondary students to better inform policymaking; however, its mandate does not include providing academic support services to students.

Jusoor, an NGO created by Syrian expatriates, launched an accelerated learning program worth $10.5 million that enrolls children who faced academic setbacks into public schools within host countries. Jusoor will also work with private sector partners to support Syrian youth to transition to higher education by providing university applicants with scholarships and mentoring programs. Over the course of the next year, Jusoor aims to expand enrollment in their Lebanon-based public school program to approximately 5,000 students, and expand enrollment in their university scholarship program to 200 students within the Middle East and 100 students internationally.[37]

In Turkey, the International Rescue Committee is also working through its service app to inform parents of different education services for children that are available.[38]

On the employment side of the issue, Creative U is an example of a model that works to aggregate learning, skills, and employment opportunities available for youth and provide youth access to high-quality online and mobile content.[39]

Case study: Shatha Alkhalil's 'Scholarships for Syrian students' group

Shatha Alkhalil is a final year Doctoral Candidate at the Technische Universität Ilmenau in Germany, where she is studying electrical engineering. Over the past six years, since she left Syria to complete her post-graduate studies, Alkhalil has been offering advice and information through workshops or social media to other Syrian youth seeking educational opportunities and scholarships (typically abroad).

Due to the high demand and interest in the advice she was providing, Alkhalil created a Facebook group to organize information and advice based on her own experience of the English language examinations (TOEFL and IELTS), how to prepare one's curriculum vitae or statement of purpose, and other relevant information.[40] To date she has reached over 39,000 Syrian students. Alkhalil notes that most students do not have access to free resources, guidance counselors, or community members who could share information about continuing one's education abroad. Receiving over 80 requests from individual students a day, Alkhalil states that there is high demand for such support for Syrian youth.

Second opportunity: Access to non-formal secondary education alternatives

Given that secondary education is not as high a priority as primary education on the educational agenda of governments and support agencies, formal education opportunities at the secondary level are limited for Syrians across all three host countries discussed in this paper. In addition, the challenge of re-enrolling at higher grades is more complicated, due to differences in curricula, languages, and extended time spent away from school, whereby most students are not permitted to re-enter formal education if they have been out of school for over a year. Finally, youth at the secondary age are increasingly expected to work to help support their families financially, further disengaging them from the formal school system.

In these cases, non-formal educational opportunities such as mobile learning platforms and alternative learning centers can offer Syrian refugee youth a second chance to continue their education. Even in learning centers with limited internet access, offline versions of mobile platforms are available and affordable, such as KA Lite, the offline version of Khan Academy.

Alternative learning centers like UNICEF's Makani in Jordan also offer non-formal education programs, though many cater only to a limited portion of the youth population and are not integrated with the formal school system to allow direct entry back into formal education.

Additional innovative models to provide Syrian students with a chance to flexibly continue their education while bypassing the current institutional barriers, would allow a greater number of students to complete their secondary education. Two recent initiatives that attempt to do so — albeit not catered to Syrian refugees in particular — are Nafham (see case study below) and Tabshoura, an online platform that offers the K-12 Lebanese curriculum for free in English, Arabic, and French. Thus far, content for grades 6-9 has been developed. A third project, soon to be piloted by Mercy Corps in Turkey, is the Learning and Education for Adolescent Refugees in their Neighborhoods (LEARN) program. Supported by Syrian teachers, LEARN is a mobile-learning self-paced program for out-of-school youth aged 12-18 in a blended learning environment. Certification and accreditation, however, are still being explored.

Case study: Nafham — A platform for non-formal online K-12 education

Nafham ('we understand') is a free online K-12 educational video platform launched in Egypt in 2012, on which users can post 5-15 minute educational videos on any topic covered in the public school curriculum. The videos can be compiled and curated by Nafham or posted by teachers, parents, or students themselves as part of their 'Crowd-Teach' initiative. Videos are accessible through the website or its mobile application.

Nafham's business model is based on building partnerships with the private sector and other organizations as well as online advertising. The platform currently has 600,000 active users watching over 23,000 videos, 9,000 of which are based on original content. So far, over 65% of users are based in Egypt, 15% are based in Saudi Arabia, with the remainder in other Arab countries. The Egyptian curriculum content is almost all available, while the remaining curricula (Saudi Arabia, Syria, Algeria, Kuwait) are just less than half complete.

Nafham aims to serve as an alternative to private tutoring in the region, where enrollment rates are over 50% and as high as 85% in Egypt.[41] Private tutoring has been found to place a significant financial burden on families, increasing inequality among students of different backgrounds, and reducing the quality of education in schools.[42]

Third opportunity: Access to affordable post-secondary education programs

Another significant hurdle for youth is the relatively high cost of traditional post-secondary education and its opportunity cost in the form of forfeited potential income. Although education is a priority for most Syrian families, five years into the conflict, most living in Turkey, Jordan, and Lebanon receive limited, if any, social assistance and are not permitted to seek formal employment. This leaves them with little to no income to invest in the education of their children, which is significantly more expensive than in Syria, particularly at the post-secondary level. Instead, most youth — in particular males — are expected to contribute to the family income by working in the informal sector.

At present, full scholarships for Syrian refugees to attend higher education are in high demand, but remain extremely limited. Moreover, students looking to pursue post-secondary education incur additional costs, including the costs of foreign language programs, exams, applications, accommodation, materials, and more. Finally, there are many concerns about quality, accreditation, and the gap between the quality of institutions in Syria and its neighboring countries.

In light of these limitations, there is an urgency to explore customized, affordable, accessible, and quality tech solutions such as MOOCs. More importantly, there is a need for potential solutions to provide students with non-academic skills that will prepare them for employment and becoming productive citizens in their communities. One program that has recently begun providing catered solutions to Syrian refugee youth is the University of the People, described in the case study below.

Case study: University of the People offering higher education for Syrian refugee youth

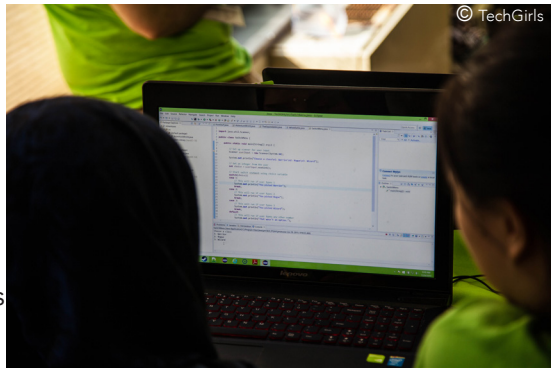
University of the People (UoPeople) is the first non-profit, tuition-free, US-accredited online university established in 2009. It offers two-year Associate and four-year Bachelor degrees in Business Administration and Computer Science. To enrol, students are not required to have a broadband connection and all content is taught through written texts (not videos). The University's partners offer a range of scholarships for students, but for those who do not have scholarships, a $100 processing fee is incurred for every completed course, cumulatively costing $4,000 for a complete undergraduate degree. As of November 2015, the University has over 2,500 students hailing from over 170 countries. This is a rise from just 600 in 2013 and they expect that these numbers will double in the coming year.

In September, 2015, UoPeople announced that it will provide at least 500 scholarships to Syrian refugees. The University is also hoping to Arabize its program to better serve Syrian and other Arab refugees who do not have sufficient English language skills to enrol in its current programs. Students would be expected to learn English over the course of the first three years with the goal of enrolling in courses conducted in English in their final year. This will allow them to engage in discussions with students from multicultural backgrounds in their final year of study. The program hopes to offer 10,000 students placements over a 10-year period, provided that funding for the initiative can be secured. In addition, students would be supported by Syrian staff, who would ease their transition and guide them throughout the online educational experience. This model would simultaneously provide opportunities for Syrian students and adults seeking employment.

Fourth opportunity: Language 'bridge programs' to continue post-secondary education

The language of instruction at most post-secondary education institutions is another important barrier to the enrollment of Syrian refugee students. Language barriers prevent Arabic-speaking students of all ages from entering Turkish-language schools in Turkey or trilingual schools in Lebanon. In some cases, older students received English instruction in Syria but never got the chance to practice. Lebanese public schools offer their curriculum translated into Arabic for Syrians, but Lebanese teachers cannot always teach these courses in Arabic.

In Turkey, there are no formalized or systematic ways for non-native speakers to learn Turkish in the public school system, although the Turkish government is currently working on developing language cards and activity sets for certain ages. Language classes for children and adults are available at some NGO-run refugee service centers, but refugees do not always know they are available.



Although this is not the case for some post-secondary institutions in Jordan, many others in Lebanon and Turkey are taught in French, English, or Turkish. This requires students to enroll in language bridge programs — such as British Council's program described in the case study below — prior to enrolling in university programs to ensure that students can succeed in their studies. The programs typically provide students with language as well as academic support to help transition into university, other non-formal or vocational education programs, or work, and can be offered intensively from 3-6 months or up to one year.

Some languages are seen as offering greater opportunities for students than others. English for example, is a more widely spoken language than Turkish or German and is likely to be seen as more desirable by youth hoping to seek employment and settle elsewhere. Increased access through technology for options to learn languages can help remove a significant barrier to continuing education.

Case study: British Council's Language Academic Skills and E-learning Resources (LASER) project

The British Council is in the inception stages of an EU-sponsored three-year project to provide language and academic skills to Syrian refugee youth living in host countries, whose higher education has been interrupted. The program offers a range of formal and non-formal, accredited and non-accredited pathways, catering to students' needs, abilities, and interests. The program is implemented with the support of various partners already working with Syrians, and will focus on a blended learning model where students engage in collaborative learning with the support of trained facilitators.

The program consists of three parts:

- 2,930 Syrians and disadvantaged Jordanians will study English, as well as other languages, as a bridge program to access higher education opportunities.
- Of those studying English, the highest achieving are expected to enroll in accredited online degree programs, hosted by the Open University in the UK (approximately 50 students, while others will enroll in online programs offered by the Talal Abu Ghazaleh Organization administered in English)
- The remaining students who complete the language course will pursue online MOOCs in English, offered by FutureLearn, or in Arabic, offered by Edraak.

The program will be launched in Lebanon in early 2016, followed by a rollout in Syria, where it will be run through a partner organization.

Fifth opportunity: Work experience and income generation

Youth in the Middle East, and women in particular, have one of the highest unemployment rates globally at 28%.[43] Although no recent estimate is available for Syrian youth, this number is expected to be significantly higher.

Syrians refugees currently living in Jordan and Lebanon are legally not permitted to work in the formal sector or face significant institutional barriers that make formal employment very difficult. Turkey is currently evaluating a government measure that would allow Syrian refugees to apply for conditional work permits. As a result, refugees work in low paying, typically physically demanding jobs outside of their trained professions. All Syrian refugee youth — especially those who have not completed their education — have limited opportunities for finding work due to the lack of access to internships, trainings, and courses. Therefore, in addition to providing youth with better training opportunities, it is important to consider ways to capitalize on their assets and skills, developing creative models for them to seek work opportunities that will support them and their families.

One such example is Natakallam ('we speak'), an online platform that connects Syrian refugees in Lebanon with individuals looking to improve their Arabic. Lebanese students can improve their language skills while providing Syrians an income.[44]

Silicon Valley-based NGO, ReBootKAMP, is promoting both the education and employment of Syrian refugees by sponsoring youth to enroll and complete computer programing courses. ReBootKAMP also provides training and employment opportunities to participate in developing innovative solutions to address challenges facing their communities. The model is currently being piloted in Jordan, and if successful, will be deployed in other countries in the region and beyond.[45]

Another such example is Samasource, a firm that seeks to recruit youth in areas where the opportunity to learn how to operate various technological platforms is uncommon. The firm trains youth on computer-based work and operations like data management, then employs them, providing both a technical skillset and income. Samasource currently works in five countries outside of the region.[46]

In cases where employment cannot be offered, enrolling youth in training leading to employable skills is valuable. For younger children, UNICEF's Rasberry Pi is good example of a cost-effective platform to teach children to create computer code and program.[47]

Engaging youth in community development projects can also provide them with a meaningful alternative to unemployment. For example, efforts at UNHCR's Learn Lab and other organizations to promote community-driven design, give youth an opportunity to find innovative solutions to community issues. Interviews with Syrian youth have found that being engaged in relief and community support activities can offer purpose and a sense of agency.[48] It also allows youth to build life skills and feel part of a community outside of their home that will better prepare them for an independent life.[49]

IV. Conclusion and Overarching Recommendations

The impetus for this working paper was the considerable amount of interest on the part of private and non-profit technology providers in playing an active part in creating solutions for the children and youth of the Syrian conflict currently living as refugees in Lebanon, Turkey and Jordan.

However, the obstacles and challenges to supporting these children and youth to survive the trauma of war and displacement and to continue to build their futures through education is more broadly at the heart of all international humanitarian and development efforts.

Breaking down the barriers noted here as well as between the humanitarian and development communities and creating new solutions for these youth will serve both as a measure of the ability of the international community to serve the most vulnerable, and a milestone either reached or missed on the path to a more stable, peaceful and prosperous Middle East region.

To support this effort, this working paper has drawn out broad principles on investing in tech-enabled learning and the use of technology in addressing the Syrian refugee youth education challenge. In brief these principles include committing to:

- View technology as a tool and not the solution
- Support a diversity of approaches to supplement traditional education access
- Increase access to internet and technological devices
- Increase coordination and monitoring and evaluation of programs
- Ensure credibility of programs through accreditation
- Work with the policy and economic constraints of the host labor market
- Prioritize open source development and user-generated content

This working paper also outlines five emerging opportunities through which technology can enable Syrian youth to increase quality access to education, including:

1. Better online education information and advice
2. Access to quality non-formal secondary education alternatives
3. Access to affordable post-secondary education programs
4. Bridge programs to continue post-secondary education
5. Work experience and income generation

While this paper was being drafted however, refugee youth without access to education and training continued daily to face bleak futures and increased vulnerability to social, economic and sexual exploitation, including being trafficked, married young, or recruited by militant groups.

That makes the question of 'how' and 'how fast' despite all the barriers noted herein, questions of considerable urgency. We need to innovate and respond with the swiftness demonstrated by efforts like Ushahidi to immediately protect and support the futures of these youth despite the difficult context. Changing this situation for individual youth

and for the future of the Middle East region will require a far greater level of funding and political will on the part of all donors.

While some private sector and foundation actors including some of those mentioned in this working paper are able to support these efforts with their own funding, open source technology and staff time and expertise — and should be applauded — these efforts must be seriously match-funded and actively encouraged by donor governments. They must also be coordinated with the wider efforts to provide accreditation that is relevant and sought after.

In our discussions with a wide range of stakeholders, we found that there are many organizations that have solutions or products to offer, but without the resources to implement at scale there is the potential for various types of ICT, e-learning, data monitoring and handheld and computing technology to never reach those who could benefit.

Offers of matched donor funding and public private sector partnerships — executed in line with Paris Principles and the right to education — could go a long way to bridging gaps in implementation and access to learning, 21st century skills, accredited qualifications and employment opportunities.

At present, many initiatives exploring new technology-driven educational programs for Syrian youth are in the early planning and piloting stages. Due to the scale of the Syrian refugee crisis, incomplete data about the population, and the noted context-specific challenges, organizations may be cautious about rapidly implementing. There is however a clear opportunity for entrepreneurs, pioneers and leaders in the technology sector to combine their efforts and 'crowd source' not just technology but combined technologies, expertise and shared risk.

New collaborations between platforms, products, technologies and technology experts could accelerate innovation and access and lead to completely new ways to think about learning in the most difficult contexts.

Rebuilding and preventing further suffering will not be possible without far greater and far better targeted investment in educational opportunities for youth to enable them to heal from this war, support themselves and their families and rebuild.

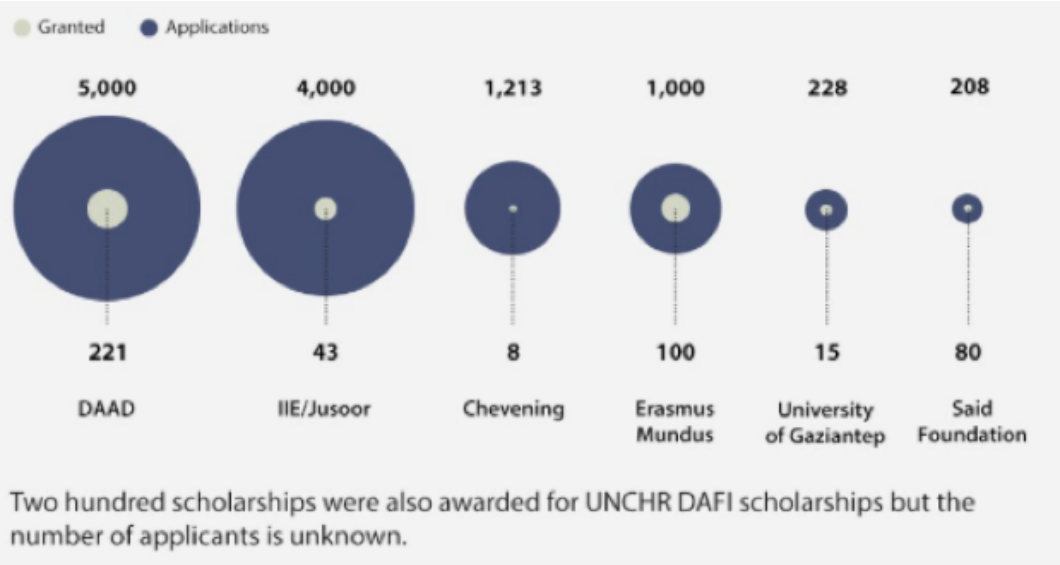
Upcoming Opportunities for Coodination

Global Entrepreneurship Summit 2016, 29 January, Silicon Valley, California
Hosted by the US Department of State, this Summit will be the 7th installment in a series previously hosted by the United States and the governments of Turkey, the United Arab Emirates, Malaysia, Morocco, and Kenya. In bringing the Summit back to the United States, President Obama highlights his commitment to connect global entrepreneurs with the access and exchange needed to develop and innovate, creating sustainable change.

Techfugees NY Creative Conference, 9 February, New York City, New York
Hosted by The Hive USA for UNHCR and Techfugees NY, the Creative Conference will bring together the smartest minds in technology, design, innovation, media and humanitarian work for a series of discussions and work sessions focused on how to apply the expertise that exists within the United States to solving challenges related to the global refugee crisis. Discussions and work sessions will focus on challenges in three major areas: coordination, expansion and engagement.

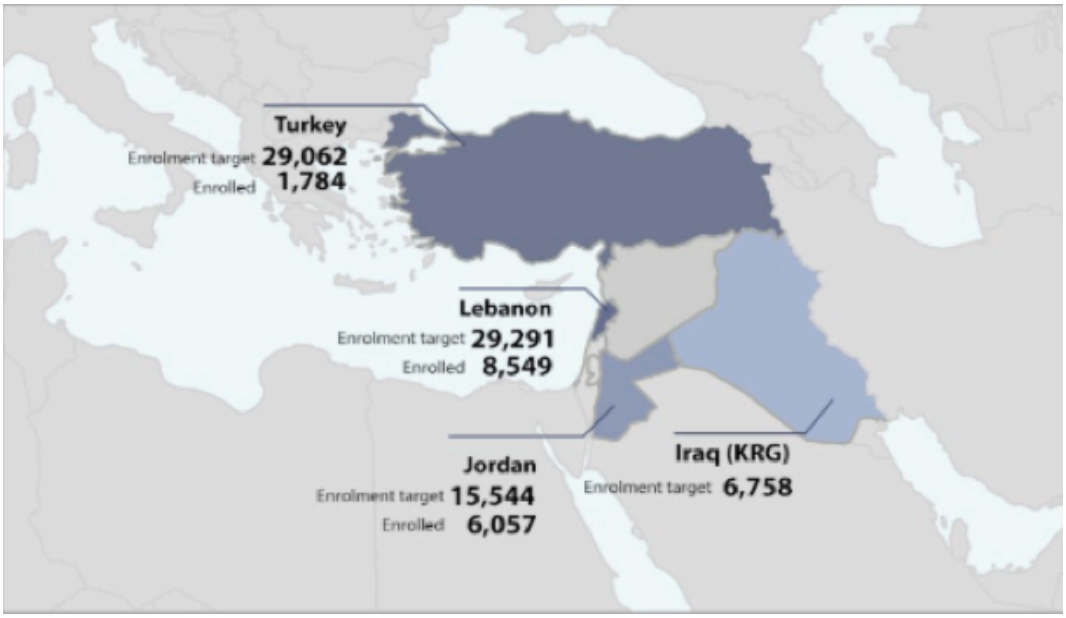
V. Appendix

Figure I. Syrian Students' Demand for Scholarships and Available Grants



Source: SPARK (2015)

Figure II. Syrian Refugee Youth Excluded from Higher Education



Source: SPARK (2015)

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