

HUNDRED RESEARCH REPORT

# Spotlight: Qatar

Report

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## SPOTLIGHT: QATAR

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Foreword by  
Qatar Foundation

## **A transformative vision for education in a new era**

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The educational motto for the State of Qatar in the 21st century is known as “Education for a New Era”, and it aims to provide inclusive and progressive methods of education for all learners in Qatar’s primary, secondary and tertiary educational institutions.

Under the directive of The Ministry of Education and Higher Education (MOEHE) the State of Qatar’s implementation and delivery of educational policy continues to be a central focus for educational development and sustainability throughout the country. Building upon a culture of learning will contribute towards achieving Qatar’s 2030 vision of developing the Qatari individual, who is able to actively participate in all aspects of life. Qatar plans to shift to a knowledge-based economy as an enabling element of social and economic progress with sustainable development across all sectors. Qatar continuously aims at developing a world-class educational system that meets modern international standards and provides

its citizens with opportunities to develop their abilities, capabilities and capacities. This supports the notion of transforming Qatar into an advanced society capable of achieving sustainable development.

An education system in the public and private sectors is continuously being developed in Qatar, which promotes the notion of critical thinking, creativity and innovation. The outcome of educational development in Qatar, has resulted in sustaining social cohesion and promoting mutual respect for the values and heritage of Qatari society, as well as promoting constructive engagement and positive meaningful action, on a local, national, regional and global scale. Education in the primary and secondary sector of education in the KG-12 system provides inclusive schooling opportunities to meet the individual needs of students and their families. The education system in Qatar includes 208 public schools serving more than 196,000 students: and more than 310 private schools serving approximately 200,000 students. These schools offer diversity in curricula and serve a variety of nationalities.

Education is free for all Qatari nationals in the public sector. All public schools in Qatar are committed to teaching basic and integrated curricula -- mathematics and science, Arabic and English languages, Qatari history and Islamic education. Qatar also offers specialized programs and curricula, such as science, technology and business management. The 12-year public school system consists of a six-

year primary cycle followed by a three-year secondary cycle and then a three-year tertiary cycle, taking students up through the secondary level standards.

Recent reforms have addressed qualification standards for teachers and their leadership qualities by establishing professional standards and professional licenses for teachers. Under the reforms, curriculum standards that address both academic and non-academic dimensions of learning were also introduced. Thus, the teaching strategies were envisioned and designed to become more student-centred by using modern information, communication technology, and conducting scientific research.

In the private sector Qatar has a large, expanding expat population who have residency status in Qatar. This has led to an increase in demand for educational institutions in a range of locations throughout the country. Qatar has also witnessed a growing trend towards private education, which has brought in well reputed international institutions. These institutions provide diverse curriculums and offer global standards that appeal particularly to the expat population. The number of private schools and the enrolments within those schools is higher compared to public schools since all public schools do not admit expat students (except for special provisions), apart from this, parents prefer providing their children with exposure to international curriculums and fluency in both the Arabic and English language.

The education sector in Qatar is still learning what the best way forward as a nation is to fulfil their mission and vision of becoming a sustainable, independent and knowledge producing country. The process of educational reform continues with perseverance, resulting in improvement and substantial growth in Arabic as a national language resulting in higher literacy rates. Qatar is establishing and demonstrating itself as a leading education centre on a regional and global scale.



Foreword by  
Lasse Leponiemi, HundrED

## **Resilient and forward looking education system**

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HundrED is a Finnish education innovation research organisation whose mission is to support every child to flourish in life - no matter what happens. We believe that by identifying pedagogically sound, impactful and scalable education innovations we can help education systems to better support learning.

HundrED Spotlights are our way to highlight educational solutions and practices within a topical theme, region or a combination of both. Over the course of the Spotlight we identify 10 or more solutions or practices that meet the specific criteria of that Spotlight. We call these solutions and practices innovations.

We have amassed a database of thousands of education innovations from around the world. The selected innovations are often teacher-led, and over 70% of our selected innovations are non-profit.

Across the world curriculums are being renewed to meet future labour market demands. Qatar has been progressive in its approach to deliver education both in the public and private sectors. This Spotlight is an evidence of that approach. One of the aims of the HundrED Spotlight on Qatar was to identify teacher-led solutions and practices, which support the national development goals.

It was a privilege to do this Spotlight in a collaboration with the Qatar Foundation. We are grateful for the contribution of the The Advisory Board members from both the Foundation and the Qatar Ministry of Education. We have also been grateful for the support and collaboration with the Pre-University Schools and Programs from the Qatar Foundation, and other schools and organizations. .

This Spotlight is a prime example of just how resilient education systems can be. It was launched in 2019 just before the COVID pandemic hit the world. Over the last two years we have had to make significant alterations in response to pandemic restrictions and requirements. Simultaneously, many of the over 80 submitted innovations were also tirelessly adapting their solutions to the changing circumstances. For example, one of the selected innovations was forced to move the 'school library online to support students' literacy skills during the school closure.

Our aim at HundrED is to focus on factors that can make the selected innovations travel between country and curriculum borders. My sincere hope is that these selected innovations will encourage teachers and schools both in Qatar and beyond to try out some of these approaches within their context.



**Lasse Leponiemi**

Co-Founder & Executive Director,  
HundrED

# Introduction

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This HundrED Spotlight partners with the Qatar Foundation with the purpose to discover 5 to 10 of the brightest innovations originating in Qatar. We draw on the principle that education needs to be contextualised because every location has its own needs and demands that can be understood through both research and practice.

Four chapters make up this report:

**CHAPTER 1 - BACKGROUND:** An overview of education in Qatar.

**CHAPTER 2 - METHODOLOGY:** An overview of the methodology for selecting and reviewing the spotlighted solutions.

**CHAPTER 3 - SELECTED SOLUTIONS:** Each selected solution with a sample of their review data is presented.

**CHAPTER 4 - CONCLUDING REMARKS:** The importance of the local curriculum and heritage in educational innovation are highlighted. The educational areas promoted by the solutions are highlighted (e.g. technology, nutrition, play, ethics).

## HUNDRED

Finland based mission-driven organisation, HundrED, discovers, researches and shares inspiring innovations in K12 education. Their goal is to help improve education and foster a movement through encouraging impactful and scalable innovations to spread, mindful of context, across the world. HundrED Spotlights create unique opportunities for both educational professionals and independent organisers of the Spotlight to gain a thorough insight into the education innovations taking place in either a specific area of education, like literacy or sustainability, or within a certain geographic location, for example, India or London. For each Spotlight, HundrED selects the brightest education innovations, solutions and practices in context, which then undergo a thorough study by our Research Team and an expert Advisory Board. HundrED Spotlights are organised with partner organisations, who help from their area of expertise.

## QATAR FOUNDATION

Qatar Foundation (QF) is a non-profit organization made up of more than 50 entities working in education, research, and community development.

Their unique ecosystem – supported by partnerships with leading international institutions – is built on initiatives that address their most pressing challenges, create global opportunities, and empower people to shape our present and future in Qatar.

For over two decades, the Qatar Foundation has been driving regional innovation and entrepreneurship, fostering social development and a culture of lifelong learning, and preparing their brightest minds to tackle tomorrow's biggest challenges.

At the heart of everything they do is the knowledge that our future lies in unlocking the most precious resource of all – human potential.

More information: <https://www.qf.org.qa/>



# HundrED's Mission

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## HUNDRED'S MANIFESTO

The purpose of education is to help every child flourish, no matter what happens in life.

In a fast changing world, focusing on traditional academic skills will remain important, but that is not enough. To thrive as global citizens, children must be equipped with a breadth of skills. While we are advocates of a child-centric approach and personalised, passion-based learning, the relationship between an inspired teacher and a motivated student will remain essential.

Assessment has to be aligned with the core purpose of helping children flourish and all of this should be reflected in the learning environments of the future and this should be reflected in the learning environments of the future. To make this happen, we need visionary leadership at every level of our education system and ambitious education innovations: innovative, impactful and scalable approaches that are already effective also in low resource environments.

The world of education is full of hardworking specialists who are making this happen every day. Our mission at HundrED is to give them the recognition and visibility they deserve.

# Theory of change

## 1 Innovations

To have the world's leading expertise on scalable education innovations

## 2 Promotion

To change the global education mindset to be solution oriented

## 5 Community

To build an active global community of education changemakers

## 6 Child

To help every child flourish in life, no matter what happens

## 4 Implementation

To match practical innovations with local needs around the world

## 3 Connections

To accelerate the pace of change through impactful connections

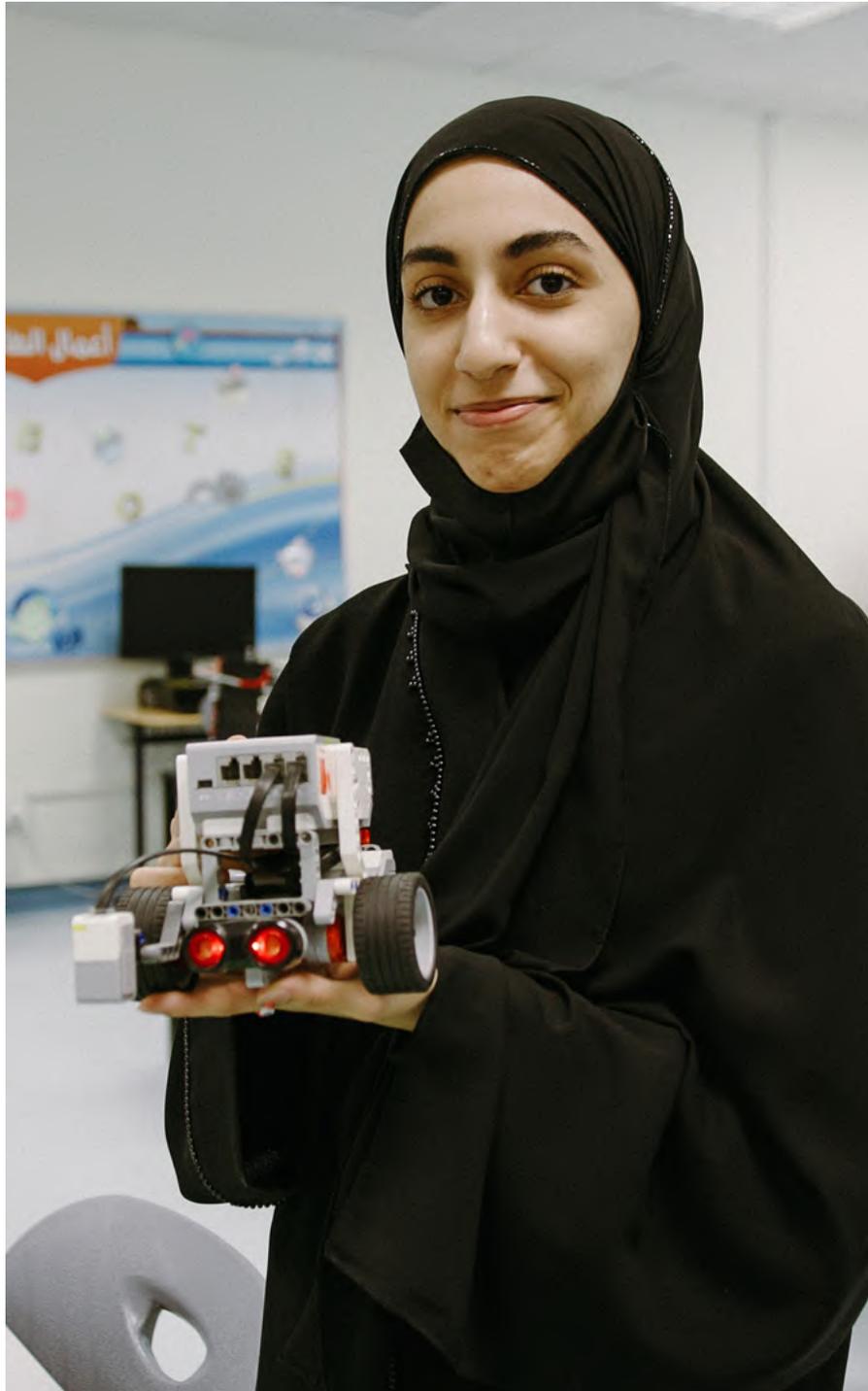


# Chapter 1: Background

Qatar is a small state with an ambitious goal to be a global leader in education. A Gulf state with a vision toward the future of sustainable development, the Qatari people have made substantial investments in the education sector to transform society. Investment in the education sector accounts for 10.5% of the total national budget.<sup>1</sup>

In prioritizing education, Qatar aims to distinguish itself as a world-class hub of academics, technology and innovation. The transformation of Qatar as an actor in the region and globally since the 1950s as a result of the vast wealth of oil and natural gas reserves has made the country an active labor force destination.<sup>2</sup> The population is about 2.9 million people, about 10% of whom are Qatari citizens and nearly 90% are expatriates from around the world.<sup>3</sup> This means that the primary and secondary education system in Qatar serves diverse student cohorts.

Many types of educational institutions operate in Qatar, including independent, public and international schools at the K-12 level and university level. About 282,000 students are enrolled in K-12 education in Qatar.<sup>4</sup> With more than 332 registered private schools and kindergartens in Qatar, students have access to a wide range of appropriate educational opportunities.<sup>5</sup> Schools in Qatar offer a wide range of curricula aimed at developing the necessary skills and competencies for the various members of society.



Educational opportunities have been continually expanding, and the government has pursued a series of robust reforms to improve access to quality education for all students. The Ministry of Education and Higher Education (MOEHE) has been working to build and expand basic education by providing schools and various educational alternatives that meet the individual needs of students and parents.<sup>6</sup>The primary and secondary schools feed into world-class higher education in collaboration with some of the world's best universities, located in Education City in Doha, Qatar.<sup>7</sup>

Qatar is widely acknowledged as the best-performing country in the Arab Gulf states region in terms of education. Qatar ranked 6th globally in the Critical Thinking Index 2019 and 6th in the future workforce skills index and 8th in the graduate skills index.<sup>8</sup> A strong and diversified educational sector that responds to various international standards is of key importance in Qatar. Education is one of the most important pillars for the achievement of the national vision aimed at building a competitive economy based on knowledge and developing a creative and thinking workforce that meets the country's future needs and responds to the various requirements of the labor market.

# Chapter 2: Methodology

## PHASE 1 - DISCOVERY

The first phase involved discovering leading innovations in Qatar with support of our partners. Through a series of 8 webinars, the research team conducted bilingual outreach in Arabic and English to invite submissions. 89 submissions were received for this Spotlight.

## PHASE 2 - SHORTLIST

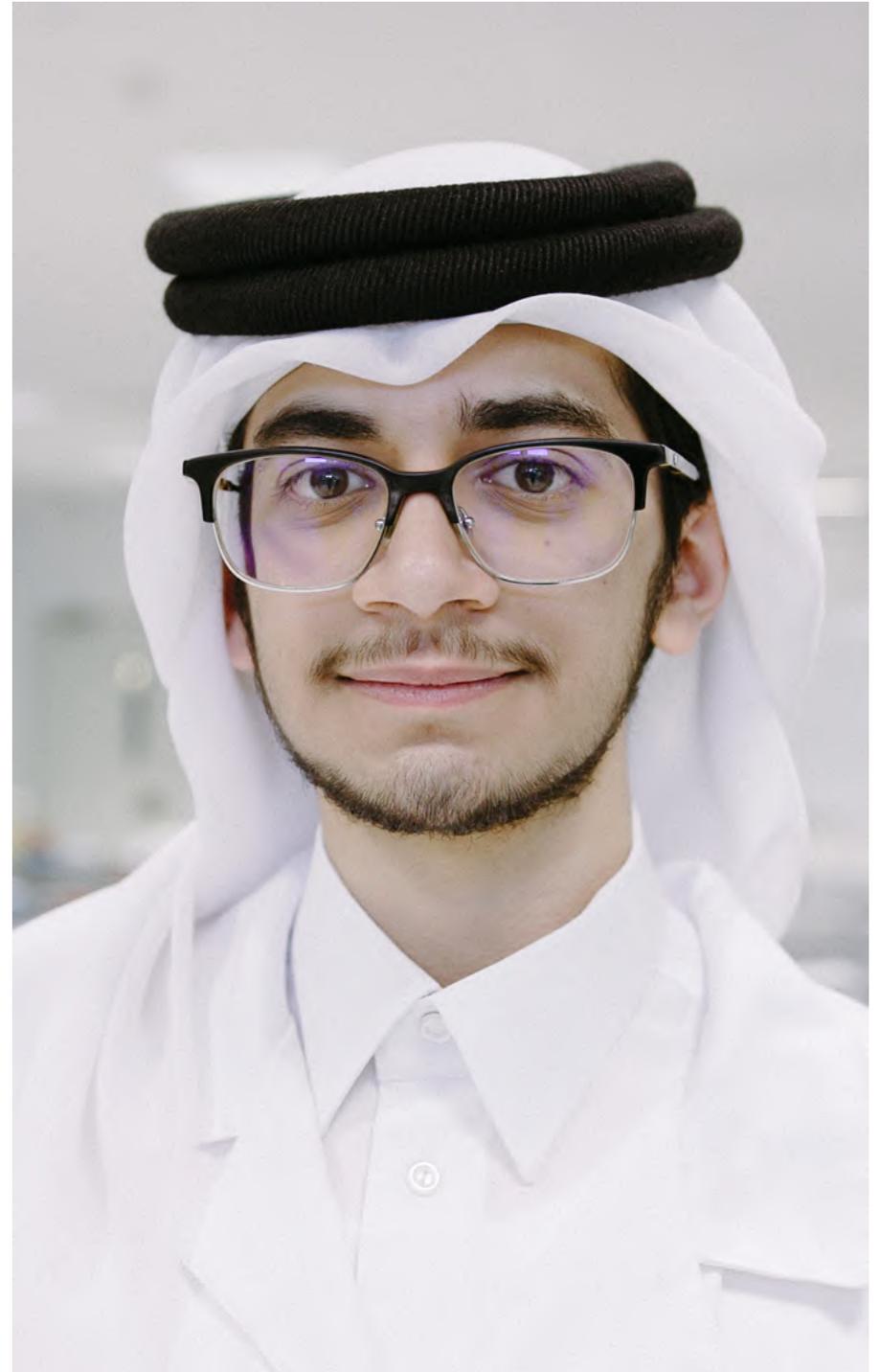
HundrED's Research Team and Spotlight partners thoroughly reviewed each submission. To be selected for the shortlist, each solution must have shown evidence for impact and scalability using the following definitions:

- **Impact:** Evaluated as a valuable improvement within the Qatari context.
- **Scalability:** Either the solution is actively expanding to other contexts or has a high degree of transferability for others to adopt its practice/technology.

For this particular Spotlight, we shortlisted 35 solutions that were later reviewed by the Selection Committee.

### PHASE 3 - SELECTION

The Selection Committee for this Spotlight consisted of experts from the Ministry of Education, Qatar Foundation and HundrED. All shortlisted solutions were reviewed by the Selection Committee and were ranked from most favourable responses to the least. The HundrED Research Team and partners jointly selected the solutions to be highlighted in this Spotlight.



# Chapter 3: **Selected Solutions**

- 1 BIOTECHNOLOGY AND BIOMEDICAL ENGINEERING (BBME) COURSE
- 2 ETHICS CURRICULUM
- 3 FARM YOUR COUNTRY PROGRAM
- 4 GLOCALIZATION INITIATIVE
- 5 MUSEUM IN RESIDENCE
- 6 MY FRIEND ROBOT
- 7 QUESTS IN ACADEMYATI
- 8 SCIENCE AND SUSTAINABILITY CLUB
- 9 SCIENCE BOOK FORUM (SBF)
- 10 VIRTUAL LEARNING RESOURCES CENTER WITH VR TECHNOLOGY



VISIT THE WEBSITE



Introducing high school students to Biotechnology and Biomedical Engineering

# Biotechnology and Biomedical Engineering (BBME) Course

Qatar Science & Technology School for Boys

The overall goal of the BBME course is to provide the students the opportunity to explore the role of genetic engineers and biomedical engineers in the diagnosis and treatment of diseases through well-designed procedures and advanced technology. Ultimately, more students are inspired to pursue their studies in the biomedical and biomedical engineering fields.

#### **WHAT IS THE PROBLEM IT IS ADDRESSING?**

Qatar has a very high demand for STEM graduates and especially in the biomedical and bioengineering fields. Moreover, most of the high school students who decide to pursue their studies in STEM disciplines, tend to select a major in traditional engineering fields rather than medicine, biomedicine or biotechnology.

#### **WHAT IS THE SOLUTION?**

The solution is to develop a four-year Biotechnology and Biomedical Engineering (BBME) course for students from grade 9 to 12. In this course, students are exposed to different learning experiences in the fields of biotechnology, microscopy (micro-techniques and digital imaging), biomechanics, biosensors, and bioinformatics. The course is purely hands-on with a focus on project-based learning. It provides the opportunity for students to conduct several projects and investigations, which gives them a good background in engineering and biological sciences.

#### **AN OVERVIEW OF ITS IMPACT**

Several methods such as questionnaires, surveys, focus group meetings and interviews are used to collect data about the impact of the course on the students. The results clearly show that the students start developing strong positive attitudes towards learning biomedical, biomechanics, bioinformatics, biotechnology, and genetic engineering. Many of them expressed their willingness to pursue their studies in universities in one of these specialties.

#### **HOW CAN SOMEONE ELSE IMPLEMENT IT? WHAT DO THEY NEED?**

The implementation of this course depends on the specifications of the curriculum, resource allocation and teacher training of the school. Some of the required devices, reagents and software are: horizontal and vertical electrophoresis units, thermal cyclers (PCR), centrifuge, micropipettes, microwaves, hotplates, shakers, spectrophotometer, distilled water units, microscopes, automated microtomes, biosensors and data logging system, motion capture system, DNA extraction and amplification kits, tissue staining and slide preparation kits, media for bacteria and yeast culturing, bacterial transformation kits, Geneious prime for bioinformatics, Kinovea for biomechanics, and sparkvue for biosensors and molecular applications.

VISIT THE WEBSITE



Learning about honesty, perseverance, being humble and mindfulness while making ethical choices

## Ethics Curriculum

Qatar Academy Al Wakrah

The Ethics Curriculum is crafted to embed a deeply rooted moral code in children to serve as a foundation enabling them to navigate the complexities of making ethical choices and decisions. We help children develop their perseverance, mindfulness and honesty, elevating them to think outside the box and dissect dilemmas.

#### **WHAT IS THE PROBLEM IT IS ADDRESSING?**

The purpose of the Ethics Curriculum at Qatar Academy Al Wakra is to provide students with a tool box to face the challenges of the world from an ethical perspective. The long-term goal is to create a generation that can effectively navigate the ethical dilemmas that scientists, leaders, journalists, teachers, community members and all face on a daily basis, in a world where ethics is a foundation on which all other domains and careers are constructed.

#### **WHAT IS THE SOLUTION?**

From preschool to grade 10, students at Qatar Academy Al Wakra engage in four experiences each year in the areas of Honesty, Perseverance, Mindfulness and Being Humble. These experiences are carefully designed to immerse students in discussions, projects and creative learning journeys to dissect each ethic in depth from different perspectives.

#### **AN OVERVIEW OF OUR IMPACT**

Based on the needs of the students, a team that included teachers, parents and administrators, worked over a course of one school year to develop the written curriculum and the program, which was launched in 2016. It was important for Qatar Academy Al Wakra to ensure that the curriculum was closely tied to the community, traditions and culture of the students.

#### **HOW CAN SOMEONE ELSE IMPLEMENT IT? WHAT DO THEY NEED?**

The program has been successful each year since it was implemented and it is sustainable as students are responsible for supporting their peers and collaborating to solve problems. The future goals with this program is to promote it to other schools in Qatar and/or worldwide. This program has also a big potential to promote students' engagement in sustainable projects within their school and their country to support SDG goals.

VISIT THE WEBSITE



Nutrition education program that promotes healthy food choices

## Farm Your Country

Al Faisal Without Borders Foundation

Farm Your Country is a nutrition education program by Alfaisal Without Borders Foundation to promote healthy food choices. The main goal of this program is to raise students' awareness on good nutrition, develop healthy habits and create sustainable solutions to social problems. It also aims for strengthening the link between health, education, agriculture and the environment.

#### **WHAT IS THE PROBLEM IT IS ADDRESSING?**

Farm Your Country addresses the issue of high obesity and diabetes rates found in Qatar. It aims to inform kids about healthy lifestyles by offering interactive lessons about nutrition and field trips to a local farm.

#### **WHAT IS THE SOLUTION?**

The program includes educational material on healthy food and a field visit to a local farm where students get to see greenhouses and learn about how crops are grown. Among other activities, students plant tomatoes and vegetables, prepare food and eat a healthy meal with their classmates.

#### **AN OVERVIEW OF OUR IMPACT**

Some indicators that determine the impact of Farm Your Country are:

- Around 3000+ students participated in this program.
- 90% of the students visited a farm for the first time thanks to this program.
- 99% of students planted their first plant.
- Students showed progress on how to take care of their plants.
- The program has increased the students' awareness of the importance of a healthy lifestyle.

#### **HOW CAN SOMEONE ELSE IMPLEMENT IT? WHAT DO THEY NEED?**

This program requires a group of teachers in the school that is willing to implement the project in their classrooms. Learning materials and a space for farming on the school premises are also needed. In addition, connections with local farms are essential for the field trips. Al Faisal Without Borders Foundation wishes to increase the number of participating students in the program, therefore any school interested in this program should contact them and discuss options for implementation.

VISIT THE WEBSITE



Linking global curricula with local knowledge, innovation, language, culture, heritage and values

## Glocalization Initiative

Tariq Bin Ziad School

Tariq Bin Ziad School is taking the responsibility to glocalize their curriculum by linking their international study plan to the particularities of their local context. The Glocalization initiative is used as an approach for learning real life experiences on a local scale linked with global issues.

#### **WHAT IS THE PROBLEM IT IS ADDRESSING?**

International curriculums often lack the perspective of local environments and therefore part of the identity and heritage of the learner's community may be lost. In the light of a globalized world, future generations need to know about their heritage and schools play an important role in preserving it. Through this initiative Tariq Bin Ziad School seeks to apply an international curriculum emphasizing the local context.

#### **WHAT IS THE SOLUTION?**

Tariq Bin Ziad School offers a dual language program providing an accredited international curriculum from a local perspective in which Qatari heritage is promoted in all its forms. For instance, students learn about the authentic Qatari values and customs by linking learning units with local institutions and entities that support the connection with local context. This helps the learners understand the world around them and the needs of their community in a holistic way. Part of the heritage curriculum also includes tangible cultural aspects such as traditional food, drinks, clothing, art and literature.

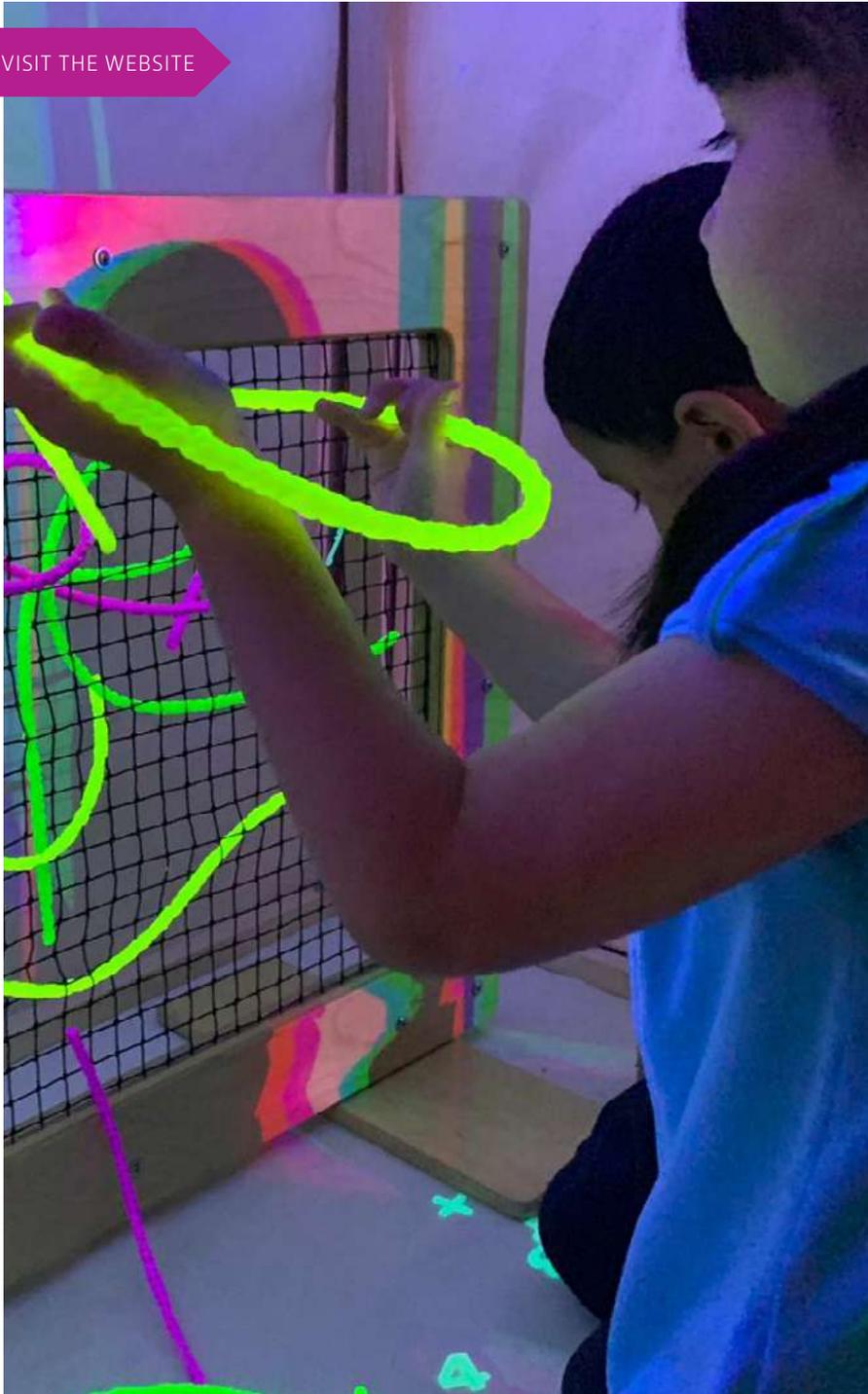
#### **AN OVERVIEW OF OUR IMPACT**

Multiple activities have proved the success of this initiative. For instance, Qatari heritage is incorporated into the academic subjects through the use of traditional games such as Kerem, Jis, Subba, etc. The school also offers extracurricular workshops to learn how to make traditional crafts and tools (fishing and diving tools). They also organize field trips to cultural sites like museums, mosques, castles, etc. A traditional clothing day takes place every month in which students attend school wearing traditional Qatari clothes. More activities can be found on the website.

#### **HOW CAN SOMEONE ELSE IMPLEMENT IT? WHAT DO THEY NEED?**

For those interested in adopting a glocalization initiative in their school, a recommendation to get started is to develop educational resources about the local culture, values, ethics and heritage while supporting dual language education and supporting the existing knowledge of the members of the local community. Tariq Bin Ziad School believes that by following these steps it is possible to embrace the local environment and provide young generations with a spirit of citizenship, tolerance and social responsibility.

VISIT THE WEBSITE



An immersive environment with playful learning opportunities for children to explore new concepts

## Museum in Residence

Dadu Children's Museum of Qatar

Museum in Residence (MIR) advocates for student-led, learning-through-play approaches within schools. MIR focuses on Early Years Education, drawing upon established and contemporary child-development philosophies that form the basis of dialogue between museum practitioners and teachers. MIR utilises a school's existing materials and remixes them with an injection of everyday materials.

#### **WHAT IS THE PROBLEM IT IS ADDRESSING?**

Dadu Children's Museum of Qatar identified a gap for play-based learning opportunities within the formal education sector in Qatar. In 2017, WISE (World Innovation Summit for Education) published a report exploring key international developments in Early Childhood Education. This led to a subsequent policy brief entitled "Early Childhood Education in Qatar: A Snapshot," which outlined challenges in Qatar related to the implementation of a play-based curriculum, the training and capacity of the ECE workforce and the development of community engagement and support.

#### **WHAT IS THE SOLUTION?**

As part of the programme, Dadu creates an immersive environment with playful learning opportunities to explore different concepts. The installations are generally open-ended, have multiple learning outcomes and draw on contemporary art practice to create a space that generates intrigue, encouraging whole-body, emotional and poetic engagement. The MIR programme draws on pedagogies such as Montessori and Reggio Emilia that recognise that children are born curious and competent and are in a constant state of active exploration of their environment.

#### **AN OVERVIEW OF OUR IMPACT**

The programme has positively impacted Dadu's partner institution's teaching practices and student's learning. Teacher professional development (PD) sessions were conducted to introduce learning-through-play as a pedagogical approach, which was a new and innovative way to teach the curriculum for teachers. During the evaluation of MIR, all teachers and schools requested another MIR installation highlighting that they saw value in this approach to teaching.

#### **HOW CAN SOMEONE ELSE IMPLEMENT IT? WHAT DO THEY NEED?**

Schools that are interested in implementing a MIR will have access to Dadu's resource list. The MIR kit of parts, to some extent, can be used interchangeably to create different experiences. But in time, the team has developed a core menu of installations that have worked reliably, been successful in engaging the students and received good feedback from teachers. Alternatively, schools can design a unique MIR experience that draws upon concepts of play-based, open-ended and student-led learning.

VISIT THE WEBSITE



Designing and assembling a robot to develop self and creative learning skills

## My Friend Robot

Zaynab Preparatory Girls School

This initiative provides students the tools to design and assemble a robot in order to develop competencies such as self-directed learning, creativity and technology skills. The project is led by students who plan the different stages needed to build a robot. The process includes doing research at the school library, designing, installing, applying, programming and addressing problems.

### **WHAT IS THE PROBLEM IT IS ADDRESSING?**

This initiative was created in line with Qatar's vision to offer high quality learning opportunities and a technological and robotic syllabus. Designing and assembling robots develops students' creativity, which will help them thrive in a technological age and will ultimately lead to more career opportunities.

### **WHAT IS THE SOLUTION?**

The goal of My Friend Robot is to give students access to this technology and learn how to program it. The task of the teacher is to help students understand from a computing perspective the movements of the robot and the process of exploration using receptors and various technologies. Students design and assemble the robot and develop ideas to use their robot in the real world. The robot can also be used as a learning support for students with visual impairments and other students.

### **AN OVERVIEW OF OUR IMPACT**

My Friend Robot was evaluated by the teachers implementing the project. They observed that student motivation increased as well as interest in robotics, as a result, more students solicited taking part in this initiative. Students started thinking about ideas that could help them learn better, to the extent that they now link the robot with most of their work, ideas and research. Another indicator of the great impact of this initiative is that some students developed ideas to use the robot to help other students with special needs.

### **HOW CAN SOMEONE ELSE IMPLEMENT IT? WHAT DO THEY NEED?**

The idea is very easy to implement if the school has access to a robot. It is important that students participate in designing, installing and programming the robot. The robot can also be integrated as a friend for students in various fields of education, and this will increase their motivation for learning. The robot can be implemented in different subjects such as visual arts (experimenting with colors) and in maths class (calculating variables and speeds or drawing and discovering geometric shapes). The robot adds value to the learning process as teachers can use a hand-on and tangibly methodology.

VISIT THE WEBSITE



Quests in Academyti are vehicles for nudging children's self-directed learning

# Quests in Academyti

Academyti School

Quests in Academyti are vehicles for nudging children's self-directed learning. They are not lessons or activities, they are open-ended engagements that are sparked by the child's interest. This initiative is based on the idea that children are trusted to lead their own learning journey and that teachers are there to support them. This idea has the potential to revolutionize the way a traditional school looks like.

### **WHAT IS THE PROBLEM IT IS ADDRESSING?**

Coercive approaches to teaching and learning limit the chances of the child's growth into their full potential. In a world hungry for innovation and creativity to address its problems, we want educational systems that unlock potential rather than limit it.

### **WHAT IS THE SOLUTION?**

Quests in Academyati are vehicles for nudging children's self-directed learning. Respecting and nurturing student agency is key in discovering inner gifts and developing them. In Academyati School, free-play is an essential part of learning. In this initiative, students spend the first part of the session enjoying free-play. After that, different quests are presented to them and they have to choose a quest that might engage them for that day or more.

### **AN OVERVIEW OF OUR IMPACT**

This initiative offers nurturing learning environments which have a direct impact on children's development. Quests can be either planned or improvised. Planned quests emerge from teachers' deep understanding of what children are interested in. Improvised quests start by children's spontaneous interests in a particular topic and teachers explore it with them using the rich variety of resources available in the school. A spontaneous quest might develop into a planned quest in the future and may engage more children. If the student decides to explore a quest for weeks, it becomes an overarching quest that usually ends up with a reasonably visible outcome such as a gallery, a show or a performance. In short, a quest is like a journey in a child's mind.

### **HOW CAN SOMEONE ELSE IMPLEMENT IT? WHAT DO THEY NEED?**

Quests can be easily implemented in a school by empowering children, listening to them and trusting their initiatives. It is important that teachers foster student agency and trust that children will make good choices for their learning journey.

VISIT THE WEBSITE



Fostering a culture of sustainability inside and outside the campus

## Science and Sustainability Club

Qatar Academy Sidra School

The Science and Sustainability Club is dedicated to promoting a sustainable life inside the campus and homes of the students. Six major global challenges are examined in detail during this program: food security, human resources, species and ecosystems, energy, industry and urbanization; with the goal of equipping students with skills that not only allow them to be successful in life, but also contribute to enriching and sustaining the world.

**WHAT IS THE PROBLEM IT IS ADDRESSING?**

The Science and Sustainability Club started as an initiative to educate students about food security and the importance of adopting sustainable habits in their daily lives.

**WHAT IS THE SOLUTION?**

Qatar Academy Sidra School uses garden-based learning (GBL) to educate students about basic agriculture. Students cultivate various crops in the school garden and it leads to reflecting about the importance of food security, eating healthy, being self-sustainable and how to adopt agriculture in our daily lives. During off-season, students grow salad greens using aeroponic towers and water that is recycled from a tank beneath the tower. In this program students learn about various food preservation techniques, water filtration hacks, microgreen agriculture, upcycling crafts and lacto fermentation techniques to equip them with various alternatives for food storage, security and how to reduce the carbon footprint.

**AN OVERVIEW OF OUR IMPACT**

The Science and Sustainability Club has been featured in local newspapers and local news channels multiple times. In the light of this initiative's success, Qatar Academy Sidra School has assisted other schools in installing the garden towers and have collaborated in various other ways to implement the programs.

**HOW CAN SOMEONE ELSE IMPLEMENT IT? WHAT DO THEY NEED?**

Everything starts by creating a space for gardening in the school premises and engaging students in taking care of the space!

VISIT THE WEBSITE



An initiative to promote science reading and understand the link between books and real life

## Science Book Forum (SBF)

Qatar National Library

An initiative to facilitate science reading by holding public forums that discuss influential books and scientific papers on crucial topics of general interest. This will encourage the next generation to enroll in science and engineering studies in Qatar and the MENA region by igniting their scientific curiosity and critical thinking through reading science books.

#### **WHAT IS THE PROBLEM IT IS ADDRESSING?**

Today, a large portion of Arab youth are introduced to the importance of exploring scientific and technical advances through methodological reading and assimilation of the basic scientific facts that govern our world's evolution. However, questions related to climate change, water resources, desertification, food security and others remain poorly understood.

#### **WHAT IS THE SOLUTION?**

Science Book Forum is an initiative to encourage science reading. This is achieved by holding public forums that discuss influential books and scientific papers on crucial topics of general interest, and by addressing scientific misconceptions. Monthly follow-ups are also organized for readers to meet scientists and the authors of the books discussed in the forums.

#### **AN OVERVIEW OF OUR IMPACT**

This is the first library in the region with a science reading initiative that helps communicate scientific questions of relevance to Arab readers nationally, regionally and worldwide. The Science Book Forum has been organized in 16 events reaching 35,550 attendees and 2,155,803 interactions on social media. The Science Book Forum has been expanded internationally participating in the Book Fair Frankfurt in Germany with the global publisher Springer Nature.

#### **HOW CAN SOMEONE ELSE IMPLEMENT IT? WHAT DO THEY NEED?**

They should believe in the importance of scientific reading for students, understanding the link between books and real life. It is essential to shift scientific forums from being places where things are made and information is found, to places where knowledge and ideas are developed and imagination and creativity are fostered.

VISIT THE WEBSITE



Digital books and electronic sources permanently available and easy to access

## Virtual Learning Resources Center with VR Technology

Juwayriyya bint Al-Harith Primary Independent School for Girls

This initiative arose as a result of the school closures during the COVID-19 pandemic and the rising trend of using advanced technologies and artificial intelligence in education. The main idea of this EdTech innovation is to improve access to digital books and electronic resources in a virtual learning resource center.

**WHAT IS THE PROBLEM IT IS ADDRESSING?**

This initiative addresses the need to provide an efficient and effective virtual learning resource center for schools. It also improves permanent access to books and electronic resources for all students, teachers and community members.

**WHAT IS THE SOLUTION?**

A learning resource center with VR technology is designed to provide a complete simulation environment for the school learning resource center, which makes the student feel the pleasure of being present in the library of the school in a virtual space. The data is updated regularly through various applications and programs managed by the school and accessible at any time. In order to access the virtual center, you only need internet connection and a phone, tablet or laptop.

**AN OVERVIEW OF OUR IMPACT**

This EdTech innovation supports teaching and learning processes by providing access to information and educational materials beyond the school premises. It also supports scientific research and prepares a creative and educated generation that keeps pace with developments and positive interaction with challenges.

**HOW CAN SOMEONE ELSE IMPLEMENT IT? WHAT DO THEY NEED?**

The future goal of this initiative is to develop the idea in other schools and institutions to implement it on a wider scope and reach more students and teachers. Anybody interested in this initiative should connect with Juwayriyya bint Al-Harith Primary Independent School.

# Chapter 4: **Concluding Remarks**

This Spotlight aimed to identify and promote impactful and scalable solutions that support the development of innovative educational practices in Qatar. The results show that there are a plethora of educational solutions that are transforming the education system within the local setting. These practices use diverse methods to develop students' critical thinking and problem solving skills, with attention to the national curriculum and Qatari heritage, helping students thrive locally and globally.

## **4 key trends in the Qatari education system**

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In this Spotlight, 10 innovative solutions providing high quality learning experiences for students have been highlighted, focusing on a wide range of educational areas such as technology, nutrition, play and ethics. After a long and thorough process of analysis, five main trends have been identified in the Qatari education system:

#### **A STRONG FOCUS ON DEVELOPING STEM EDUCATION AND EDTECH**

The solutions highlighted in this report show the substantial investments that Qatari institutions have made to increase the availability of technological equipment in schools. 'Virtual Learning Resources Center with VR Technology' is a great example of a technology that supports learning and teaching, making educational materials easy to access and facilitating data collection for assessment. Along with increasing access to technology, most of these solutions indicate that science, technology, engineering, and mathematics are core subjects in student development associated with academic and professional success.

#### **STRENGTHENING LOCAL HERITAGE AND QATARI CULTURE IN THE SCHOOL CURRICULUM**

Identity, culture and heritage, values, and ethics are an integral part of the Qatari education system. The Glocalization Initiative and the Ethics Curriculum are two solutions that show how these concepts have been integrated into the academic curriculum successfully. These initiatives help students make responsible decisions, develop their citizenship skills and function effectively at the local, regional, and global level.

#### **ENHANCING ENVIRONMENTAL EDUCATION FOR SUSTAINABILITY**

Two of the solutions selected for this Spotlight - Farm Your Country and the Science and Sustainability Club - focus on environmental education for sustainable development. Through a garden-based learning methodology, children study how to develop a sustainable agriculture model in Qatar, tackling issues such as food storage, water and resource management and carbon footprint. These initiatives are more than just communicating information about the environment, they also engage students in finding solutions to environmental problems and offer opportunities to develop healthy and sustainable lifestyles.

#### **USE OF SELF-DIRECTED LEARNING AND FREE-PLAY METHODOLOGIES TO DEVELOP STUDENTS' CREATIVITY AND CRITICAL THINKING**

Innovations such as Museum in Residence and Quests in Academyati provide children with spaces and materials for free-play and self-directed learning. These initiatives have a strong focus on nurturing children's interest in learning, which is extremely beneficial for developing critical cognitive and social skills such as creativity, self-confidence, initiative, perseverance, collaboration and life satisfaction.

## Bibliography

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Ibnouf, Arwa, Lois Dou, and Jane Knight. "The evolution of Qatar as an education hub: Moving to a knowledge-based economy." In *International education hubs*, pp. 43-61. Springer, Dordrecht, 2014.

Ministry of Education and Higher Education (MOEHE) Qatar. Accessed December 12, 2021. <https://www.edu.gov.qa/ar/Pages/HomePage.aspx>

Qatar Development Bank. "Education Sector in Qatar." Accessed December 12, 2021. [https://www.qdb.qa/en/Documents/Education\\_Sector\\_in\\_Qatar\\_EN.pdf](https://www.qdb.qa/en/Documents/Education_Sector_in_Qatar_EN.pdf)

Unesco Institute for Statistics. "Qatar." Accessed December 12, 2021. <http://uis.unesco.org/en/country/qa>

World Economic Forum. "The Global Competitiveness Report 2019." Accessed December 12, 2021. [https://www3.weforum.org/docs/WEF\\_TheGlobalCompetitivenessReport2019.pdf](https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf)



## **Qatar Partners**

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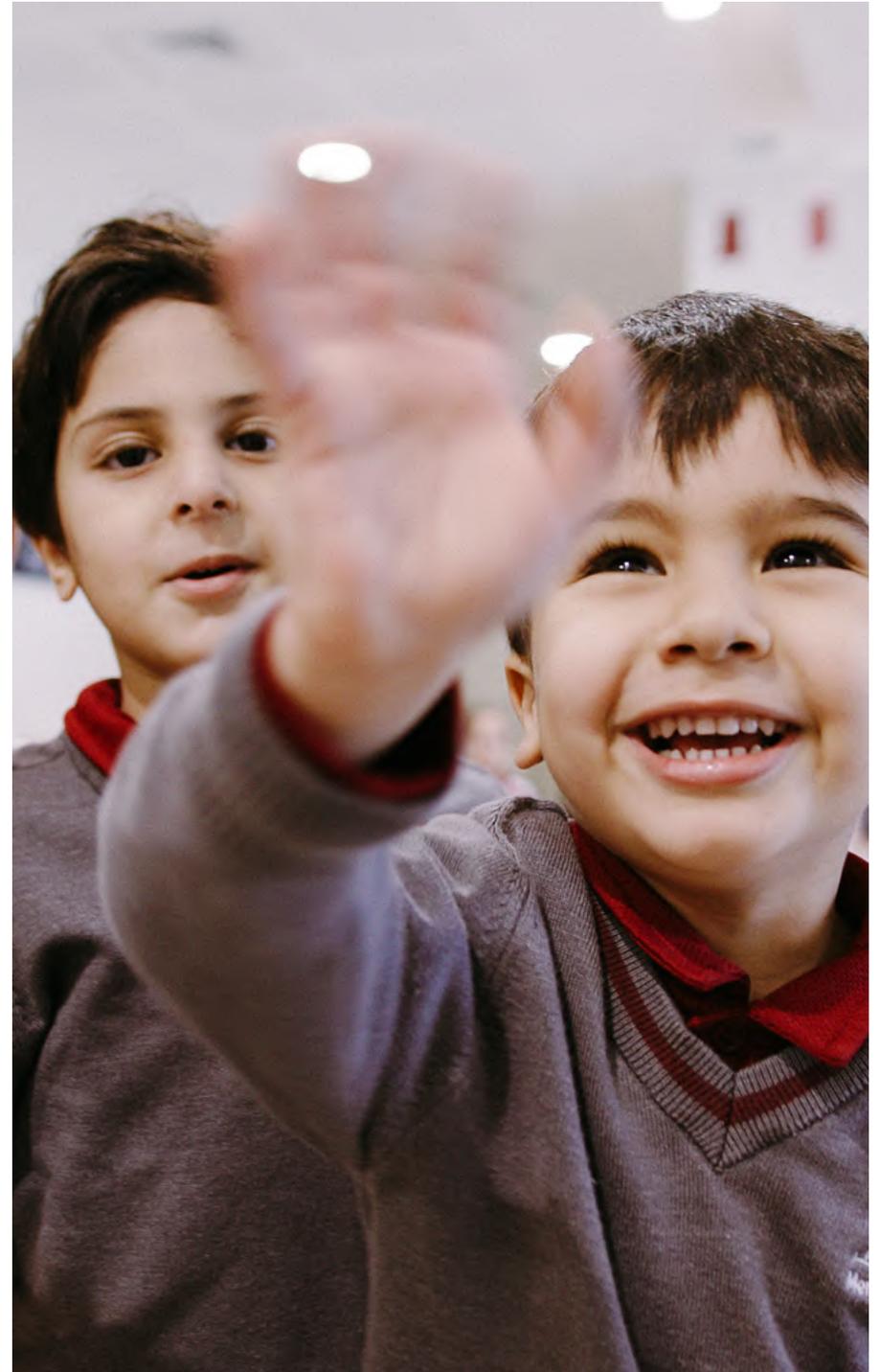
HunderED gives special thanks to all of the innovative teachers and educators who submitted their solutions and practices, and to the advisory board members who used their time to review them as a part of the selection process.



## References

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1. "Education Sector in Qatar." Qatar Development Bank, accessed December 12, 2021 [https://www.qdb.qa/en/Documents/Education\\_Sector\\_in\\_Qatar\\_EN.pdf](https://www.qdb.qa/en/Documents/Education_Sector_in_Qatar_EN.pdf)
2. Arwa Ibnouf, Lois Dou, and Jane Knight. "The evolution of Qatar as an education hub: Moving to a knowledge-based economy." In *International education hubs*, pp. 43-61. Springer, Dordrecht, 2014.
3. "Qatar." Unesco Institute for Statistics, accessed December 12, 2021 <http://uis.unesco.org/en/country/qa>
4. Ministry of Education and Higher Education (MOEHE) Qatar, accessed December 12, 2021 <https://www.edu.gov.qa/ar/Pages/HomePage.aspx>
5. MOEHE.
6. MOEHE.
7. MOEHE.
8. "The Global Competitiveness Report 2019." World Economic Forum, accessed December 12, 2021 [https://www3.weforum.org/docs/WEF\\_TheGlobalCompetitivenessReport2019.pdf](https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf)





## Do you want to organize a HundrED Spotlight?

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HundrED Spotlights are an opportunity to gain a thorough insight into the education innovations taking place in either a specific area of education, like literacy or sustainability, or within a certain geographic location, for example, India or London.

HundrED Spotlights are organized by HundrED and a Spotlight Partner. Together we select the location or theme of focus and the partner will encourage applications from innovators for this Spotlight. In-depth research will be conducted together into these innovations and 10 will be selected by HundrED and an advisory board. Spotlitged innovations will be filmed, packaged and shared on the HundrED platform.

HundrED Spotlights are non-profit but rely on funding from Spotlight Partners. If you are interested in becoming a HundrED Spotlight Partner please contact us.

We believe that these selected innovations deserve to be spread across the world. And there is a lot more good innovations just like them waiting to be discovered.

If you want to support further research in education, please contact us.

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