

HUNDRED RESEARCH REPORT #003

Spotlight on Sustainability

Report

OCTOBER 2018

HUNDRED.ORG

hundrED

IN PARTNERSHIP WITH

MUSE
SCHOOL CA



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Partners



MUSE

MUSE School, a school in California, US, is a high-performance learning lab that demonstrates eco-literacy and serves as a beacon of sustainable living and design, The mission of the school is to inspire and prepare young people to live consciously with themselves, one another, and the planet.

museschool.org



HundrED also gratefully acknowledges the support of our global partner Supercell.

SPOTLIGHT ON SUSTAINABILITY

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Foreword from HundrED

We are thrilled to announce the first 10 innovations selected for HundrED's first thematic spotlight: Sustainability in Education. This project is in partnership with MUSE school, California.

HundrED.org is a not-for-profit organization, which seeks and shares inspiring innovations in K12 education. Our goal is to help improve education and inspire a grassroots movement by encouraging pedagogically sound, ambitious innovations to spread across the world. Annually, we select 100 innovations to our Global Collection, as well as leading research Spotlights, either on a thematic basis or highlighting innovation within a geographic region.

When we search for innovative educational practice we look for three key characteristics. Practice should be **innovative**: applying fresh, new concepts to bridge gaps in the education sector. The innovation should be making evidenced **impact** on young people's lives, improving their educational experience, for their particular context, helping them to flourish. Finally, the innovation should be **scalable**, meaning others can either use it in their own educational setting or adapt the concept to suit their needs. Innovations are scaled on these three fundamental measures, which we believe to be imperative to support our mission: to forward the improvement of education all over the world.

Our hope is
that these
impactful,
scalable
innovations will
find their way
into as many
classrooms as
possible.

One of HundrED's core values is to support collaboration between classrooms, cities, and countries. We have been inspired by how MUSE school have adopted a sustainable, plant-based ethic which forms the foundation of their students' educational experience. Sustainability in education can take on many forms, and this research process has unearthed a variation of innovations that echo the MUSE ethic: facilitating our young people to contribute to, and take action for, sustainable development to live consciously with the planet.

Within this report you'll find insights into the history of sustainability in education, and

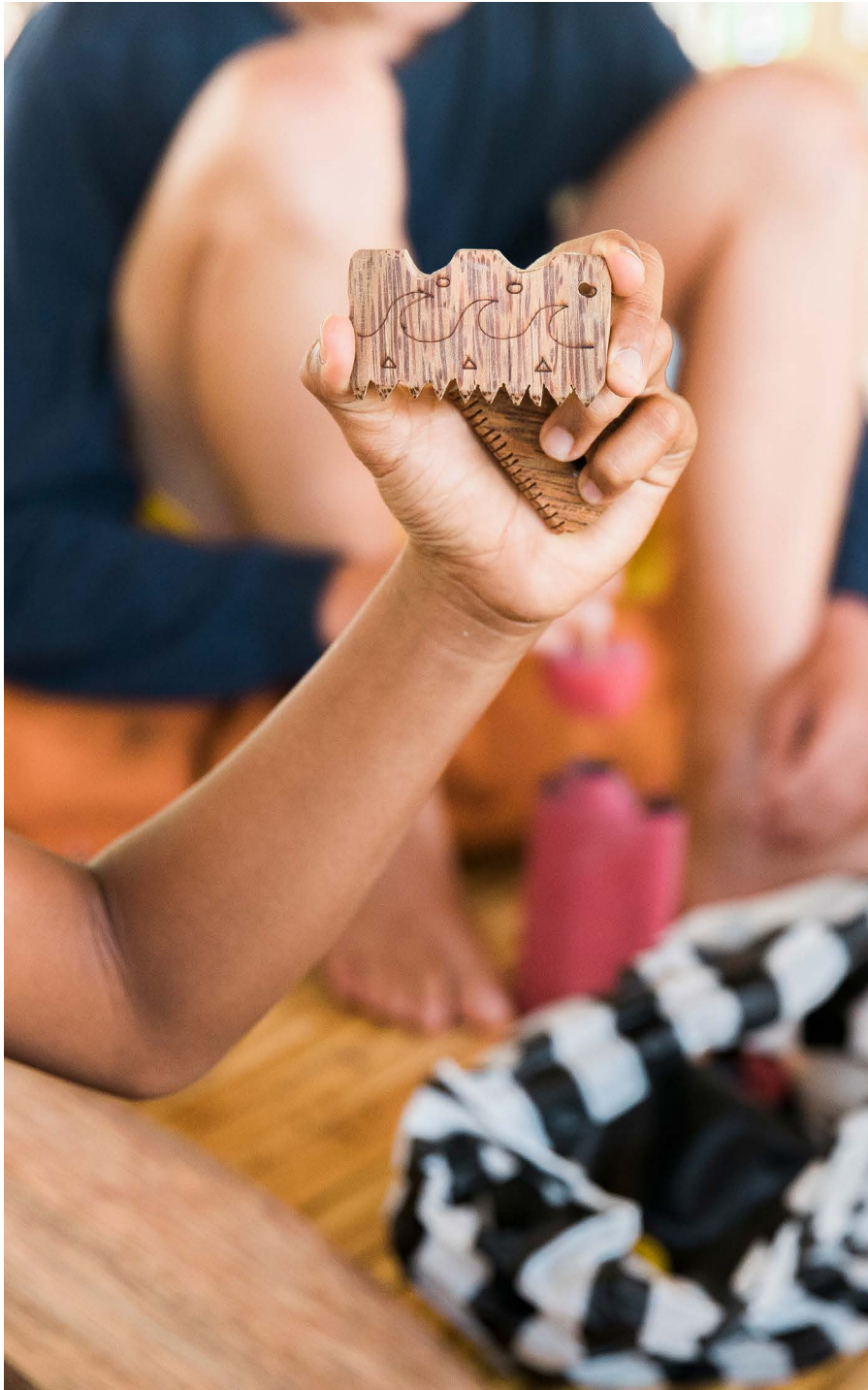
its role today. Our hope is that as teachers and education professionals, you'll be inspired by what you find here, and that these impactful, scalable innovations will find their way into as many classrooms as possible.

We would like to thank the many inspiring innovators who contributed to this research, who's passion and efforts in transforming sustainability in education is something to admire and celebrate.



Natalie Day

Researcher - Sustainability Spotlight
HundrED



Foreword from MUSE

In recognizing innovators in K12 education from around the globe for outstanding achievements in sustainable development, MUSE School is joining forces with HundrED to present Spotlight on Sustainability. As we share impactful, scalable innovations that address educational solutions to overcome the growing environmental challenges facing the planet, it is our intention to inspire educators to bring these ideas and practices back to their local communities.

At MUSE, we co-create the educational experience with students from Early Childhood through 12th Grade through a rich academic program that incorporates what they want to learn. Our students' passions are the compass that guides their journey. When passions lead the way, we find that students light up about all of their learning.

Our students pursue their passions on two of the greenest campuses in the United States – in beautiful Malibu Canyon. MUSE's commitment to sustainability is like no other. We use every opportunity to inspire our students to be stewards of the earth.

MUSE values and exercises sustainable practices on our campuses and in our curriculum. This comes to life with our Food Energy Water (F.E.W.) initiative, where students educate themselves and the community on the process of re-purposing

and conserving these precious resources. As a community, we value and exercise sustainable practices on our campus as well as within our curriculum through MUSE's:

- Green Campuses, created and managed with sustainable materials
- Seed to Table Program, that gives a hands-on way for students to learn about the connection between their everyday good choices, their health and the health of our environment
- Plant-Based Food Program - the most sustainable way to eat
- Water conservation
- Waste management
- Alternative energy (solar) and energy conservation
- Transportation Program (bus, carpool)

MUSE is also committed to developing the emotional intelligence of our students. By teaching self-efficacy – the belief in one's ability to succeed – and by practicing effective communication skills through the Process Communication Model, MUSE students are well-positioned for living and working in the future.

MUSE School is delighted to partner with HundrED, the Finnish Non-Profit that seeks and shares some of the world's most inspiring K12 innovations for the Spotlight on Sustainability Summit.

Rebecca Amis

Co-Founder/President

Jeff King

Head of School

HundrED Manifesto

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

The foundation of basic education and traditional academic skills will always play an important role in education. However, to thrive as global citizens in a fast-changing world we need to develop a breadth of skills, establishing core values and attitudes along the way.

We are keen advocates **of a child-centered** approach, championing personalized, passion-based and authentic learning opportunities. We also believe the relationship between an inspired educator and their student will remain essential.

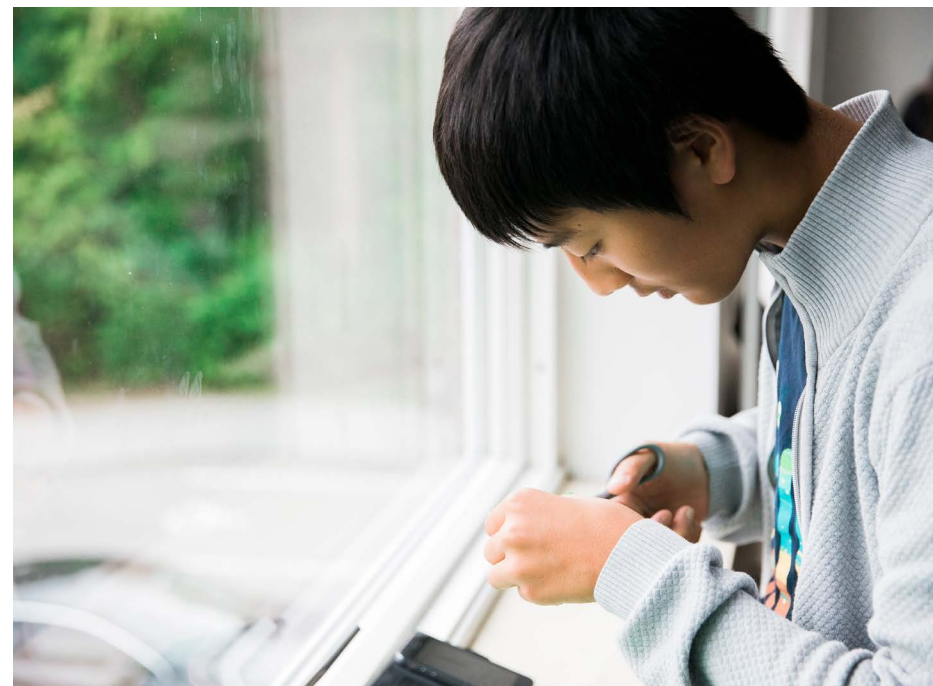
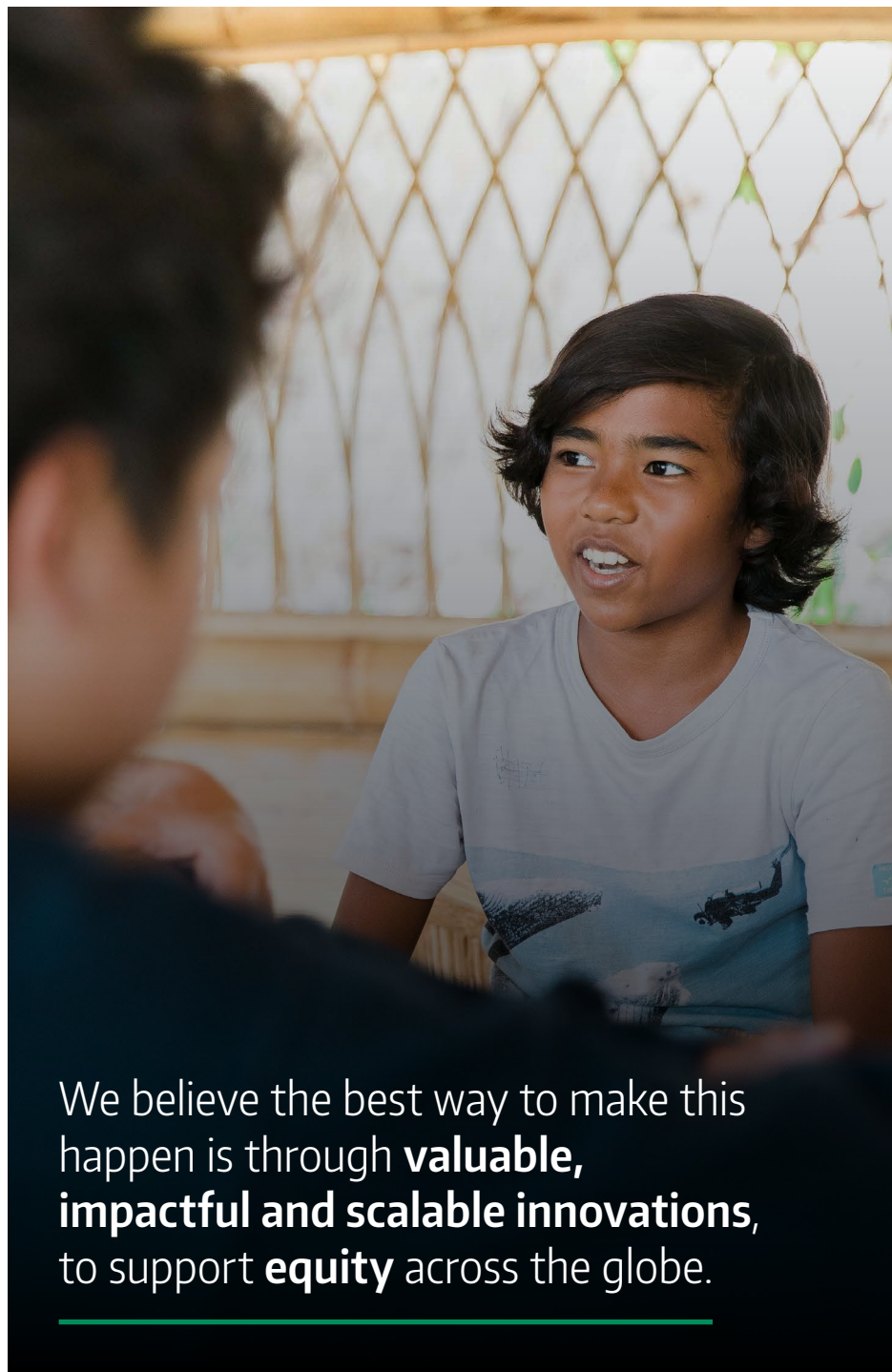
All of this should be reflected in the learning environments of the future, growing inclusivity and diversity, prioritizing holistic wellbeing and opening up to the wider community. To encourage motivation, assessment must be aligned with the core purpose of helping children flourish. To move forward with the above, we require visionary leadership at every level, from **all stakeholders** in our education ecosystem, including youth.

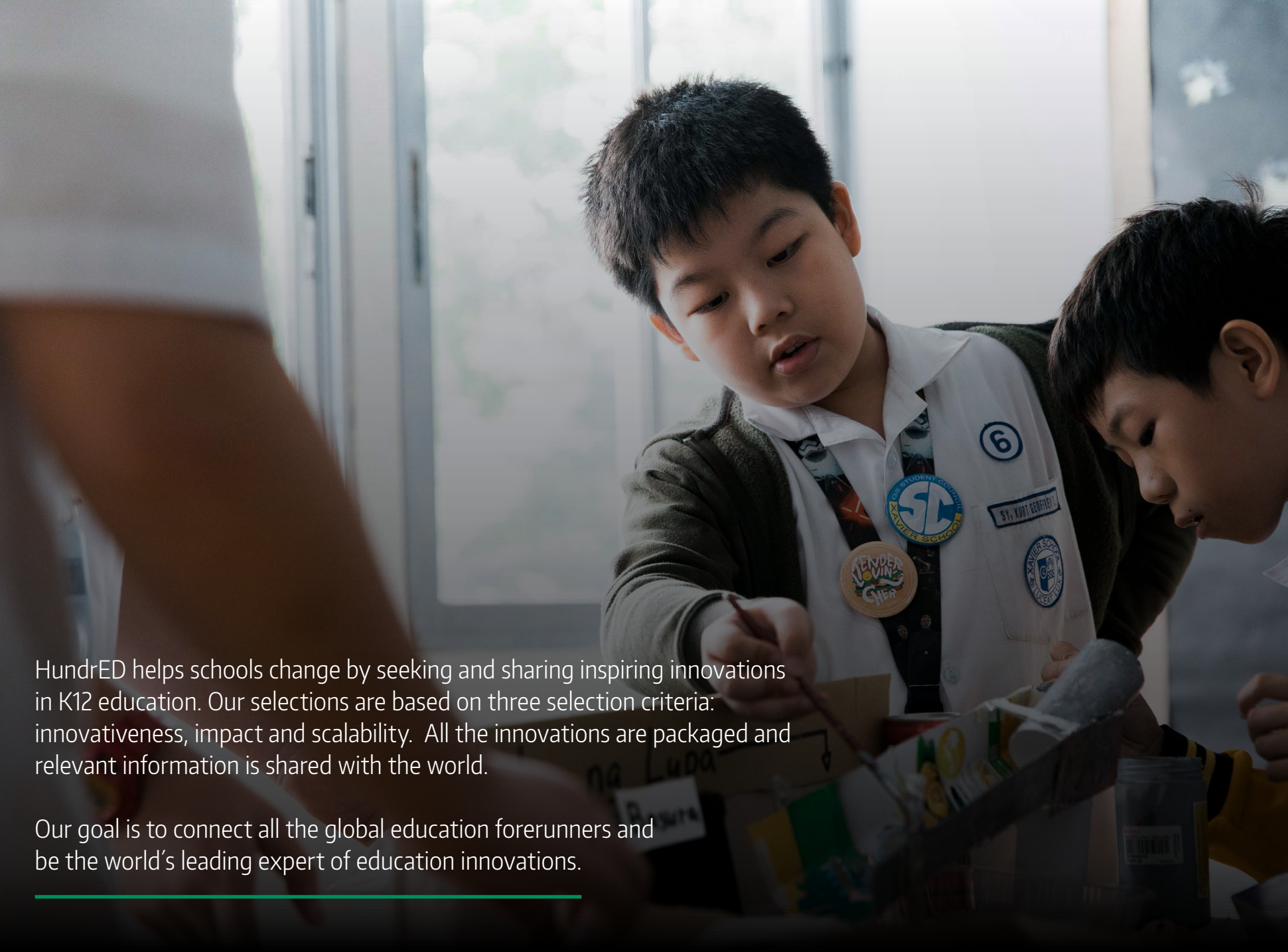
FOR INNOVATORS

Do you have an innovation the world needs to know about? It's free to share your work on HundrED.org and we are happy to promote your valuable work.

FOR IMPLEMENTERS

Looking for innovations to suit your needs? Discover inspiring, pedagogically-sound innovations from around the world. If you need help, don't hesitate to contact us.



A photograph of two young boys, likely of Asian descent, working together on a project. They are wearing white school uniforms with green sweaters. The boy on the left is pointing at a cardboard box with a pencil. The box has some text and a drawing on it. The boy on the right is looking down at the box. They are in a classroom setting with a window in the background.

HundrED helps schools change by seeking and sharing inspiring innovations in K12 education. Our selections are based on three selection criteria: innovativeness, impact and scalability. All the innovations are packaged and relevant information is shared with the world.

Our goal is to connect all the global education forerunners and be the world's leading expert of education innovations.

HundrED in Practice

HundrED Global is a collection of 100 inspiring innovations in K12 education that are researched, interviewed and recognized by our research team as innovative, impactful and scalable. The first selection (HundrED Global 2018) took place in October 2017. The collection is refined annually to share a snapshot of some of the most valuable, impactful and scalable innovations in the world of education.

HundrED Spotlights create partnerships between HundrED and local partner organizations to focus on a location or theme to research, understand and share 10 innovations. At the end of each Spotlight, the process is packaged to support spreading and insights on innovations, including a research report and inspirational videos, photographs and interviews.

HundrED Open is our open resource platform where anyone can share their innovative work in education for free and enter to be considered for the annual HundrED Global collection.

HundrED's Community comprises of our innovators, users and supporters. They support our work in discovering inspiring K12 education innovations to be researched by us and helping to spread our annual innovation collections. We have a booming community of Ambassadors, as well as Academy members who provide invaluable support in selecting innovations and growing our outreach.

HundrED's Media team create news items and articles, and maintain HundrED's social media and website to help our global audience discover innovations from around the world. HundrED Media aims to inspire every stakeholder in education, from teachers to parents to policy makers, to make a positive change where they are in the world to help young people to flourish.

HundrED's Research team discover and analyze inspirational innovations in K12 education globally to select 100 that are innovative, impactful and scalable; helping young people to flourish. HundrED research also develops new tools and approaches to understanding innovation, as well as publishing original research, such as the 'Every Child to Flourish Report', to understand stakeholders needs and how to support change worldwide.

To celebrate the release of HundrED's Global Innovation Collection we annually organize a **HundrED Innovation Summit** for the world's most inspiring education innovators, educators, youth and other engaged stakeholders.

More information about HundrED Spotlights

HundrED Spotlights are in-depth collections of 10 innovations that focus on a location or theme. Spotlights explore each location or theme thoroughly and gain deep insight into educational innovation to share with the world.



AN EXAMPLE OF REGION SPOTLIGHT

We've also partnered with Melbourne based [Education Changemakers](#), Australia's leading education innovation social enterprise, along with the [Atlassian Foundation](#) to launch our [debut Spotlight](#) which will identify ten of the brightest Victorian education innovations. The ten selected innovations will be announced at the [EduChange Festival](#) in Melbourne on October 3, 2018, along with a national workshop series that participants can attend to learn more about how to implement the innovations in their schools.



AN EXAMPLE OF THEME SPOTLIGHT

The HundrED spotlight on Sustainability is being executed in partnership with [MUSE School](#), CA. The chosen projects will be announced in November 2018 at the [Sustainability Summit](#) in Calabasas. All of the selected innovations will be featured in the Sustainability in Education Report and will be promoted all over the world.

The Spotlights follow a six stage implementation process:

1.

Launch

The Spotlight is announced at a launch event and will take place over the course of six to ten months.

2.

Submission & Research

Anyone can submit their innovation to be researched. The Spotlight Advisory Board will help to make the final selection of ten innovations together with HundrED and the local partner helping to organize the Spotlight.

3.

Innovation Packages

At the end of the Spotlight, the ten innovations will be packaged and shared on the HundrED website, so that anyone, anywhere in the world can learn about them, implement them and contact the innovator.

4.

Videos

All the innovations will be accompanied by mini documentaries (1-3 minutes) to show the innovations in practice and the positive impact for students and educators.

5.

Report

Each Spotlight will be accompanied by a research report, detailing the area the Spotlight is focussed on and the innovations which were trialled. All research reports will be available on our website.

6.

Summit

The results of the Spotlight and the innovations involved will be celebrated at a Summit event. All innovations will be promoted locally and globally after the event.



The Environment: Why do we care?

As we all know, a healthy planet is the foundation for human life to flourish, but increasingly we, as a global community, are putting extreme pressure on our planet. The depletion of natural resources, water and air pollution, climate destabilization and the extinction of certain species are the United Nations' main foci for 2018. Those concerned for the future of the planet can see that the change lies in education and action, while still being able to build sustainable global communities: "we must fundamentally change the way we think about education and its role in human well-being and global development. Now, more than ever, education has a responsibility to foster the right type of skills, attitudes and behavior that will lead to sustainable and inclusive growth."¹

In 2015, the UN published 17 Sustainable Development Goals (SDGs). Emerging from the United Nations Sustainable Development Summit these goals implement global action to tackle our current trajectory and reach sustainable development by 2030.



Key findings from our research

Developments in sustainability in education are action-based. Mirrored with the shift from 'knowing' to 'doing' at an organisational level (i.e the terminology shift from Environmental Education to Sustainability in Education), innovators are impacting social change through action-competence. It is no longer adequate that our children know about sustainability issues; in order to implement change they need to be actively behaving in a way that tackles them.

Influencing change requires a multi-stakeholder approach. In all 20 of the innovations shortlisted for interview, community engagement was a huge contributing factor towards success. Innovators realise the importance of not only educating children, but engaging with teachers, community members, parents, and local businesses to support changes in perception, understanding and ultimately behaviour. This echoes a key finding from the Every Child to Flourish report published by HundrED in April 2018.

Local innovators are responding to the needs of their context (Global North versus Global South): in this respect emerging innovations are highly reactive to current sustainability issues.



The Environment in Education

A BRIEF HISTORY

Environmental Education (EE) has been a feature in educational research for over 40 years as a result of international bodies forwarding the need for education to address global environmental issues. 'It is a process that provides awareness and knowledge about the environment... to create environmentally literate citizens'.² EE gained importance at a global level after the Stockholm Conference on Human Environment, organized by UNESCO in 1972. Soon after this conference, UNESCO launched the International Environmental Education Programme (IEEP) with aims to 'provide every person with opportunities to acquire the knowledge, values, attitudes, commitments and skills needed to protect and improve the environment'³. With the emergence of Agenda 21 (a result of United Nations conference on environment and development in 1992) there has been no activity linked with the IEEP since 1995. The United Nations Millennium Development Goals (MDGs) are eight goals set by the 189 UN member states in 2000 and agreed to be achieved by the year 2015. The focus of MDG 7 was to ensure environmental sustainability, which has not been reached. The SDGs are still focused on the criteria set by Agenda 21, taking the goals and aligning them as a basis for sustainable development. This is the first time the term **sustainable** is used in this global agenda.

Sustainable Development can be defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs⁴.

TERMINOLOGY

Moving away from EE, **sustainability in education** can take on a number of forms: Education for Sustainable Development (ESD) and Education for Sustainability (EfS) are the most popular. This move from 'environmental education' to sustainability characterizes the **action-need** that UNESCO highlighted in their Decade of Education for Sustainable Development report: not simply producing environmentally literate members of society, but empowering them with the knowledge and values in order to realise changes in actionable behaviour.

ESD is now internationally recognized as a fundamental education strategy to prepare citizens with the values and principles of sustainable development, the knowledge of sustainability issues, and the skills and motivation to apply this knowledge to their own actions at local, national, regional and global levels.⁵

Sustainability in education therefore encompasses this goal: faced with current environmental challenges such as exhausting resources, climate change, and global warming, how can we educate our children to be competent in making actionable change towards sustainable living?

Despite the abundance of academic research over the last four decades, there has in fact, been very little change in the way these concepts are taught in school, leaving individuals to pave their own path and take matters into their own hands. Some of these heroes of environmental-related education are celebrated in our top 10 sustainability innovations.

Education for sustainable development is the process of equipping students with the knowledge and understanding, skills and attributes needed to work and live in a way that safeguards environmental, social and economic wellbeing, both in the present and for future generations.⁶

The implementation of Education for Sustainability (EfS) practice results in quality student learning and engagement. EfS helps learners develop values, habits of mind, and character strengths associated with perseverance and a passion for long-term goals, a quality that educational psychologists are calling resilience or "grit" (see research by Angela Duckworth). These qualities are often nurtured

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through project-based learning, and as well as developing the cognitive skills above, academic engagement is reported. Students have been reported to be more motivated, better behaved, and more engaged in classroom activities.⁷ So why isn't EfS (or the like) a feature of every classroom in the world?

POLICY

Environmental education policy has been established for over 30 years on a global scale: in the United States the National Environmental Education Act was established in the 1970s; in Costa Rica environmental education topics were introduced in 1977⁸, in Australia, the first Environmental Education Curriculum Statement K-12 was introduced in 1989; and in the United Kingdom the Education Reform Act of 1988 saw the introduction of cross-curricular environmental education. In a systematic review of environmental and sustainability in education policy research over a 40 year period (1974 - 2013) Aikens et al⁹ found certain spikes in research on the implementation of policy and subsequent teaching and learning practices. This demonstrates the reactivity of education ministries to these global policies and the natural research cycle that follows. In the 1970s research peaked in response to US Environmental Education Act (as already mentioned above), in the late 1990s the response was due to Agenda 21; and in the mid 2000s in response to United Nations Decade of Education for Sustainable Development between (2005-2014). Interestingly however, it was found that Africa, South and Central America, Eastern Europe, and most of North and West Asia were hugely under-represented in the literature. It is unknown whether this is a consequence of a lack of environmental educational practice taking place, or as a result of a lack of researcher interest.



Stakeholder interest

“The 2030 Agenda for Sustainable Development calls on us to develop holistic and integrated responses to the many social, economic and environmental challenges we face. This means reaching out beyond traditional boundaries and creating effective, cross-sectoral partnerships.”¹⁰

These ‘cross-sectional partnerships’ is something close to the heart of HundrED. Our recent report *Every Child to Flourish*¹¹ identified the need for multi-stakeholder collaboration as a means of educational improvement.

PARENTS

In a piece for *The Guardian*, Alice Grønhøj¹² explores the role of parent and child in the intergenerational transfer of behaviour. Here, specifically, she discusses ‘acting sustainably’. There is very little evidence to show that the learning direction occurs from child to parent, and while children may certainly put pressure on parents to act more sustainably, the actions still very much fall on parents.

If we question how much parents care about acting sustainably and transferring those behaviours on to their children¹³ it seems that a prior interest in environmental care is essential. Research shows that simply becoming a parent, is not enough to change an individual’s pro-environmental behaviour: only parents with previous

high environmental concern show a need to act more in favour of the environment after the birth of their first child¹⁴.

There is, seemingly, a lack of both academic and journalistic articles exploring parental views on sustainability in education. There is, however, an abundance of materials on the subject from the home-school population. Created due to a perceived gap in curricula, these parents have developed their own, based on their dedication to pro-environmental behaviour. This supports the proposal that parents with a prior interest in such action have forwarded their own educational practice.

THE YOUTH VOICE

Sustainable development is defined as “development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs”¹⁵ a definition that clearly puts young people at the heart of the debate. The UN defines anyone under the age of 27 years as ‘youth’, making up approximately 48%¹⁶ of the world’s population, a significant demographic who have the potential to be agents of change. The youth generation will also need to fulfill employment positions to cater for economic expansion. As we move into the future it will become even more imperative that our children are ‘sustainability-savvy’, in order to fulfill the roles that our global workforce will, no doubt, require.

Only parents with previous high environmental concern show a need to act more in favour of the environment after the birth of their first child.

Results from HundrED’s global youth survey¹⁷ generated the following findings:

- **52.80%** (170 out of 322) **youth from around the world think learning how to live and contribute to a sustainable lifestyle could improve their education.**
- “At present, education in Taiwan has made many students become robots who will only answer tests. If education can have more connection with life, I would like to be more able to arouse our willingness to learn and to help or contribute to our lives.” **14, Female, Educated in Taiwan, Mandarin (translated online)**
- “Focusing more on skills needed for everyday life rather than topics not related to what are aspirations are can help you learn how to live a sustainable life in the “real world”. ”**14, Female, Educated in United Kingdom, English**
- “**In my education I value...** learning things from classes like Environmental and English I become more well rounded and culturally informed as we discuss issues around the world in science and read book around the world in english.” **17, Female, Educated in United States, Polish**

The youth voice is not afraid to shout for what it believes in. With the Youth Climate Movement represented across the globe, a string of organised activities have taken place in order to educate, engage and empower communities to take action against climate change.

The power of the global youth voice was also seen via participation in the iChange competition run by Connect4Climate, a global partnership program of the Communication for Climate Change Multi-Donor Trust Fund (MDTF) at the World Bank Group. The competition received 248 entries from University students across 66 countries, demonstrating the power of global youth participation.

“From the results of this competition, it is clear that climate change matters, not just to students in the global north but to those from all four corners of the world. They are worried about their future and want to help preserve the planet. More than ever, we must not undervalue the global student community but instead engage, collaborate, and listen.”¹⁸

WHERE ARE THE GAPS AND HOW DO WE FILL THEM?

Identified in this research are three notable gaps that prevent a holistic approach to sustainability education.

1. Educational policy does not stipulate specific outcomes for K12 education

Although there are aspects of sustainability that exists in curricula, there is no single taught subject, nor specific learning outcomes aimed towards sustainability in education. So why does traditional education not cater for sustainability in education?

- Current curricula are not adapted for the inclusion of the Sustainable Development Goals.
- Sustainability is predominantly viewed as an add-on, rather than as core to education purpose, which in turn leads to funding and time constraints.
- Sustainability does not traditionally have a subject 'home'. Most often, subject elements are taught in Science, but also feature in Geography. This means there is a lack of subject 'ownership'.

There is a clear juxtaposition between the vision at an organizational level and its implementation at policy and institutional levels. An absence of a holistic approach leads to very little (even zero) action competence in traditional school programmes, and education in this arena is still taught through an 'environmental education' lens (circa 1990), as opposed to sustainability in education.

Beyond K12, higher education institutions are seemingly more engaged with empowering students as catalysts of change. A specific report detailing the pedagogy of how ESD (Education for Sustainable Development) could be implemented, alongside curricula content, is just one illustration of this. Here, an integrated approach is forwarded, aligning with HundrED's own recent findings in the Every Child to Flourish report.

Educators will benefit from an awareness of institutional policies, activities and initiatives that have a bearing on sustainability. [...] it will be beneficial if the curriculum and teaching and learning strategies align with other institutional strategies, for example, those on employability, internationalisation, research, and operational sustainability. This enables coherence and consistency: higher education providers that have sought an integrative approach have embedded education for sustainable development more successfully than those that have not.¹⁹

Only a select few will be exposed to such nourishing curricula in higher education as a result of more focused and purposeful faculties. Outside of subject specialisms, the action competence that is necessary to bring about change could emerge if such a curriculum was filtered down to all educational levels through policy.

2. No formal, designated roles in schools for individuals to lead on sustainability

A strong theme of HundrED's research is the passion exuding from the innovators. Confronted with barriers already highlighted, these agents of change believe passionately about the need for sustainability in education. From the 60+ shortlisted innovations, one thing is clear: the driver of social change has not been in answer to the SDGs, but rather the SDGs offer a rationale, a framework, on which these innovations can be grounded without direct policy implementation.

Perhaps due to the lack of measurable outcomes, or lack of place in the curriculum, sustainability is not a focus for the majority of schools and instead individuals are creating opportunities outside timetabled lessons in which children can engage in learning for sustainability.

A shortlisted innovation in its infancy echoes this point. Developed in the Netherlands by Rieta Aliredjo 7DaysCircular is a school-based innovation in which children understand the circular economy through action. As part of The Stars are Circular Foundation, 7DaysCircular provides children aged 6-14 years with the information and tools needed to develop into conscious, innovative and collaborative participants in a circular economy. Through the enhancement of social, creative and entrepreneurial skills students learn about overconsumption and how they can move away from a linear economy, to a circular one. An important aspect

Beyond K12, higher education institutions are seemingly more engaged with empowering students as catalysts of change.

of this innovation is that the work is done for the teacher. Another consequence of the lack of emphasis on sustainability in education is the lack of professional development opportunities for teachers. Teachers simply do not have the time or resources to create a project of this scale within the curriculum.

"The Dutch government published a report in September 2016 with the ambition of a circular economy in 2050. Almost 2 years later, at the end of June 2018, a letter followed with the plan to incorporate circular economy in the current revision of primary and secondary education. Policy making and implementation takes time. Let's not wait for this and start exploring and experimenting with how to offer circular learning to kids. This is what we do with 7DaysCircular! The bottom up experience we gain is only going to benefit the implementation of policy down the line."²⁰

Demonstrating the topic's rising popularity, The International Journal of Development Education and Global Learning has just released a call for papers for a special feature on Sustainable Development Goals and Education, for publication June 2019. Seeking to understand the ways in which education practitioners and policymakers are responding to the SDGs the call for papers highlights the importance of education as a mechanism for critical engagement with the goals.

It is hoped that traditional academic research truly reflects the breadth of work that is being undertaken by these heroes of change, on a global scale. Lack of researcher interest in the Global South has already been touched upon, as well as educators' exposure to such academic channels without the use of English language. Only through global researcher - practitioner collaboration will we see widespread, multi stakeholder change at all levels.

3. Global North versus Global South

Collectively, the SDG's were established to reach sustainable development by 2030. If we consider the generational aspect of this task, we need our young people and future generations to be educated in these issues today. While there are specific opt-in organisations predominantly in the Global North that children can sign up to, there is a distinct lack of sustainability in traditional, mainstream education for the masses across the world. This is especially troubling given that it is a child's right to be educated on the natural environment²¹ and all countries bar the United States have signed and agreed on this. So how will our children exercise this right and learn to live more sustainably?

Sustainability in education is very dependent on context: in the Global North innovations tend to be focused on more global issues such as climate change, energy consumption (community projects/school building etc.) or providing aid/support for the Global South. One particular school in the UK who is challenging the traditional curriculum is The Harmony Project. Head Richard Dunne explains the philosophy: "sustainability is often about dealing with the problems that we have created. Harmony principles such as the life cycle, interdependence and diversity teach us if we align our practices to this way of working, we too, can create a future that is sustainable and well". Through enquiry and projects known as 'Great Works', Richard and his team teach the standard UK national curriculum through the lens of sustainability in education.

In contrast, innovations found in the Global South are far more localised, largely because sustainability is more relevant to everyday life. An example of this is a very young innovation in India. Upcycler's Lab is focused on using a game-based activity to educate local individuals from higher economic backgrounds about their consumption. By changing the behaviour of this demographic the lower-economic citizens directly benefit through waste management and a reduction in surplus consumption.

It should be noted here that access to innovations in the Global South was limited due to results from research databases (such as Scopus and PsychInfo) seeking research from the Global North. This could be due to HundRED being based in the Global North, a bias in researcher interest, and potential inaccessibility of non-English language material. Outside of formal academic channels, limited use of English language continues to be a barrier when seeking out innovative educational practice in sustainability.²²



Innovations

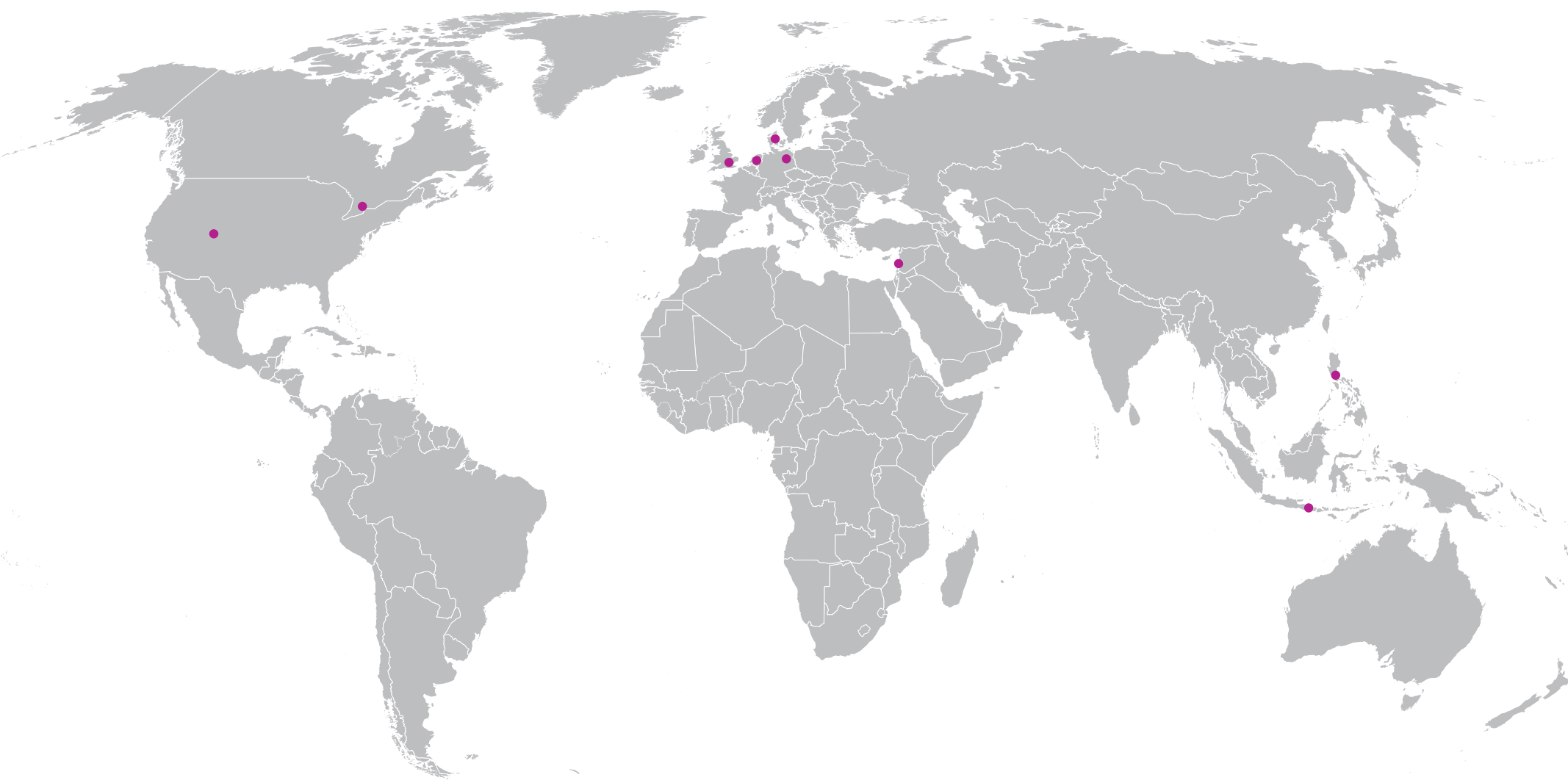
Formal (academic) and non-formal (social media, mainstream media, professional connections) channels were used to seek out innovative educational practice focusing on sustainability in education.

- 62 innovations were shortlisted
- 20 innovations were shortlisted further for interview after considering intended outcomes
- These 20 innovations were considered by an advisory board made up of 6 experts in the field. They were scaled on innovativeness, scalability and impact (see table 1 on the next page).

Toolkit and contact information for each innovation can be found on our website.²³

TABLE 1: HUNDRED'S SCALING MEASURE

	1	2	3	4	5
INNOVATIVENESS	Slight chance + improvement from norm	Moderate change + improvement from the norm	Significant change + improvement from the norm	Vast change + improvement from the norm	Brand new concept that vastly changes & improves the norm
IMPACT	Demonstrate through no. of users only	Anecdotal evidence demonstrating at least moderate benefits	Internal monitoring report of notable benefits	External evaluation demonstrating significant benefits	Published research paper/s demonstrating significant benefits
SCALABILITY	Exists in country of origin + small no. of users	Spreads across region / country + moderate no. of users	Spread to more than 1 country + moderate no. of users	Spread to several countries / across continents + high no. of users	Spread to nearly every country / widespread + high no. of users



Selected Innovations

GLOBAL CHILDREN'S DESIGN-A-THON & SCHOOL PROGRAM

AMSTERDAM, NETHERLANDS

Where children design better futures using new technologies.

ECO SCHOOLS

GLOBAL (67 COUNTRIES)

Eco-Schools is the largest global sustainable schools programme.

ENGINEERING BRIGHTNESS

COLORADO, UNITED STATES

Make the world brighter through solar powered, 3D designed lanterns.

GO! GLOBAL | ESD NETWORK

BERLIN, GERMANY

A virtual exchange program of sustainable action.

GREEN HOPE FOUNDATION

TORONTO, CANADA

Join the 1000+ eco-warriors of Green Hope who are making a difference in Canada, USA, UAE, Oman, India, Nepal & other regions.

GREEN SCHOOL BALI

BALI, INDONESIA

Want to inspire and support a generation of future environmentalists?

KIDS CAN! INNOVATION CAMP

MANILA, PHILIPPINES

Empowering global kids to help solve global problems, one idea at a time.

LEBANON ORGANISATION FOR GREEN SCHOOLS (LOGS)

BEIRUT, LEBANON

Conducting change through education is the best way to make a difference.

PROJECT EVERYONE: WORLD'S LARGEST LESSON

UNITED KINGDOM

How do we engage children with the SDGs?

YES TO TASTE, NO TO WASTE

LONDON, UNITED KINGDOM

Experiential Learning on the topic of Food Waste and Healthy Sustainable food.



INNOVATIVENESS
IMPACT
SCALABILITY



Where children design better futures using new technologies.

Global Children's Design-a-thon & School Program

Amsterdam, Netherlands

Join us on a worldwide mission to unleash the creativity of one million children and teach them to become changemakers for the better future. During our annual Global Children's Designathon event and in schools, children learn to design, prototype and present their solutions for a big societal or environmental challenge the world is facing, such as the topics of a Sustainable Development Goals.

Designathon is a non-profit organisation that combines aspects of Design Thinking and Maker Education to enable Maker Education to ground itself in a broader purpose: to lead the way to become part of a worldwide curricula that empowers children to positively impact the world around them. Children are taught to design a better world around the Sustainable Development Goals using technology.

A designathon is a structured workshop in which children (ages 4 - 12 years) invent, build and present their self-devised solutions to a social or environmental issue around the Sustainable Development Goals. A workshop lasts four to six hours and is facilitated by education professionals. The experience helps children become future ready through learning to design and use technology. Some examples of creations on the topics of 'water' have been a form of pavement that can filter rain, children in India came up with a cotton net to prevent dumping waste in rivers, and in Florida children designed a home elevation system in response to rising water levels in flood-prone areas.

Initially based on constructivist education theories that promote children as producers of learning experiences, not consumers, the students engage in inclusive student-led group activities. Celebrating 10 years of children's rights, Design-a-thon were commissioned by a local museum to showcase the work created by children with autism and other specific learning difficulties.

INTENDED OUTCOMES

Creative thinking and Curiosity

Technological Literacy and using electronics

World Studies Global challenges and the SDGs

Collaboration skills working together

Communication Skills verbal and visual

Entrepreneurial Skills

Social entrepreneurship

Leadership skills

Sustainability literacy

4-12

AGE GROUP

2014

ESTABLISHED

248 / 5600

REACH (teachers / children)

CONNECT WITH THE INNOVATOR

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INNOVATIVENESS
IMPACT
SCALABILITY



Eco-Schools is the largest global sustainable schools programme.

Eco Schools

Global (67 countries)

Eco-Schools encourages young people to engage in their environment by allowing them the opportunity to actively protect it. It starts in the classroom, it expands to the school and eventually fosters change in the community at large.

Eco-Schools encourages young people to engage in their environment by allowing them the opportunity to actively protect it. It starts in the classroom with a student-led group and one enthusiastic teacher, expands to the school and eventually fosters change in the community. The Eco-Schools programme is based on a 7-Step methodology allowing for project-based, experiential learning, focused on positive action change. The 7-Step Methodology is a series of carefully engineered measures to help schools maximise the success of their individual Eco-School ambitions.

- **Step 1: Forming an Eco Committee.** The Eco-Schools Committee is the driving force behind the Eco-Schools process and represents the ideas of the whole school.
- **2: Environmental Review.** This helps the school to identify its current environmental impact and highlights areas for improvement.
- **3: Action Plan.** Results from the environmental review are used to design the Action Plan, forming the core of student action.
- **4: Monitor & Evaluate.** This is carried out find out if the targets set by the action plan are being achieved.
- **5: Curriculum Work.** Eco-Schools activities are linked to the curriculum, ensuring Eco-Schools is truly integrated within the school community.
- **6: Inform & Involve.** This involves getting everyone on board! Actions are not solely confined to the school community but are encouraged to engage community members and parents, for example.
- **7: Eco Code.** Students collaborate to devise a statement that represents the school's commitment to the environment.

AWARDS OF RECOGNITION:

- Ashoka fellowship for Emer Beamer
- Selected for Ashoka Lego reimagine education
- Global Innovator at Dubai Global Expo 2020

INTENDED OUTCOMES

Raise awareness

Whole school involvement

Behavioural changes in sustainable action

Transformative learning

3-20

AGE GROUP

1994

ESTABLISHED

1.3m / 19m

REACH (teachers / children)

CONNECT WITH THE INNOVATOR

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INNOVATIVENESS
IMPACT
SCALABILITY



EB merges engineering and compassion to make the world brighter and inspire global communities through solar powered, 3D designed lanterns.

Engineering Brightness

Colorado, USA

Engineering Brightness impacts a real world problem, light poverty. 1.3 billion people suffer from unreliable electricity. Through creating lanterns students gain confidence in engineering, electronics, and philanthropy. EB also helps children globally realize and cultivate their unique talent and use it to make the world brighter. Local and global communities are strengthened by collaborating.

Engineering Brightness merges STEM and compassion to make the world brighter and inspire global communities through solar powered, 3D designed lanterns. Engineering Brightness is a teacher-created concept that harness the potential of youth to impact authentic global problems. 1.3 billion people worldwide suffer from light poverty with educational, social and health consequences. Children engage in extra-curricular sessions to design and build usable working lamps that are sent to countries such as Nicaragua, Kenya and the Dominican Republic.

Engineering Brightness is the brainchild of three education innovators: Tracey Winey (Colorado), John Howe (Colorado) and Ian Fogarty (Canada). After some extensive work providing biomass stoves to an orphanage in Uganda had come to an end, Tracey's students refused to stop working with them. The Ugandan children then told Tracey and her students of their biggest struggle: that they all dreamt of being professionals, in the same way that children in the US or the UK dream, but the obstacle for the children in Uganda was that once they got home they had too many chores to do, and not enough light to study.

The year of light with UNESCO, 2013, was the year that the idea emerged: to impact the very real issue of life poverty. One of the biggest unintentional outcomes is the empowerment that it this project has given to all of the people who participate: individuals of any age, any language, and in any location have the power the make a difference. Also visible to those who created Engineering Brightness is the effort that the children put in to these products as a consequence of the impact the lamps have. The children learn how to value other people's voices which is demonstrated through the quality of their work.

AWARDS OF RECOGNITION (TRACEY WINEY)

- 2018 Colorado Educator Voice Fellowship
- 2017 E+ Entrepreneur Recipient (awarded from local high school students!)
- 2016 Allen Distinguished Educator
- 2014 Flat Connections Global Educator
- 2012 Google Certified Teacher

PUBLICATIONS:

- 2017 Winey, T., Howe, J., . Engineering Brightness: Project-Based Teaching and Learning, to the Midwest Educational Technology Conference. St. Louis, MO.
- 2016 Winey, T., Hancox, G., Fogarty, I., Howe, J. Teachers Making the World Brighter Using Digital Tools of Collaboration, WE Day, Calgary, Canada.

INTENDED OUTCOMES

Learners explore the basic processes of STEAM engineering and design

Creating a global community of learners

Promote Global Citizenship

Real-world application

Connects classroom content to the real world

Sustainability literacy

Learning sustainable energy

6-16

TARGET AGE

2013

ESTABLISHED

350

REACH

CONNECT WITH THE INNOVATORS

John Howe

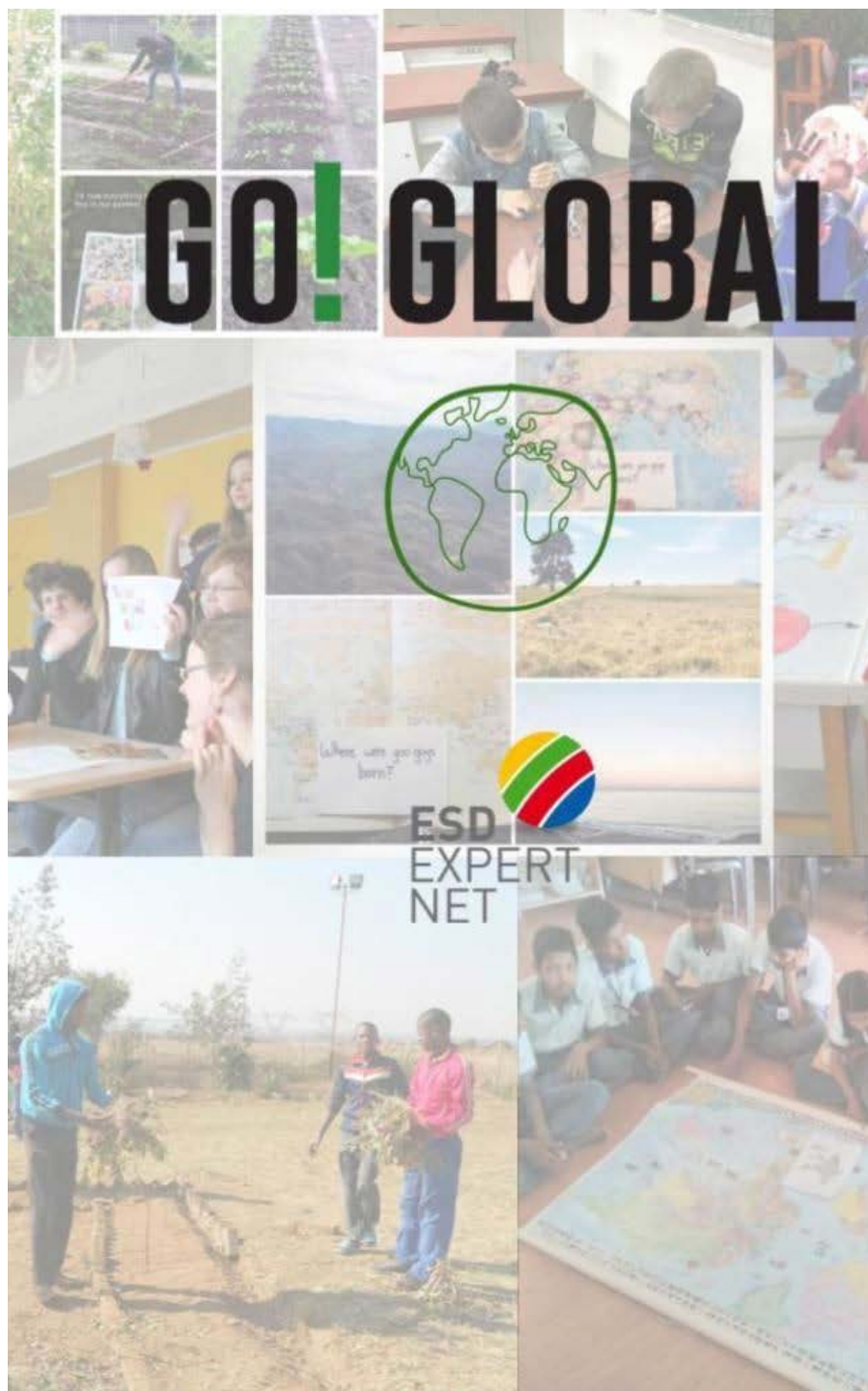
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INNOVATIVENESS
IMPACT
SCALABILITY



A virtual exchange program of sustainable action in schools in Germany, India, Mexico and South Africa... and maybe more!

Go! Global | ESD Network

Berlin, Germany

Do not just talk to learners about sustainable actions, guide them to discover how to turn their actions into more sustainable ones and let them talk to learners on the other side of the globe about their sustainable actions!

Go! Global | ESD Network is a virtual exchange program of sustainable action in schools in Germany, India, Mexico and South Africa. Learners have the opportunity to share their experiences and thoughts on a range of topics beyond national borders. Children share their experiences of anything they are doing to contribute towards pro-environmental behaviour with a firm grounding in the Sustainable Development Goals. This could be school gardening and food production, or waste disposal and recycling. These topics concern everyone, irrespective of their country of origin, and help children to find similarities between cultures and contexts. Through virtual exchange learners not only explore commonalities and differences on a global level, but they also learn to recognize and analyze global connections, share their experiences with each other and gain new thought-provoking ideas for their own behaviour and actions on a local level.

Go! Global is well supported: the founders and current collaborators of this program are active members of the ESD Expert Net (UNESCO key partner for the GAP). Engagement Global gGmbH is a German government institution which funds the annual working meeting of the members of the network as well as a working group session in the middle of the year.

Members of the working group Go! Global volunteer their time to make the program possible. The program is very child-led and is successful because the exchange is based on the interests, questions and actions of the learners who participate. It is of the utmost importance that the role of the facilitators is to support the learners in an organic way to satisfy their curiosity. To support this ethic Go! Global provides a DIY manual, courses and videos to model this facilitation during personal intercultural virtual exchanges.

Predominantly a constructivist approach is adopted, but every single activity suggested can be adapted to different pedagogical theories that best suit the learners.

AWARDS OF RECOGNITION

- Second place at the German Federal President's school competition
- The "Go! Global Do it yourself Manual" has been awarded as a best-practice project WeltWeitWissen congress in 2018
- Go! Global Garden as one of the best-practice projects in Germany WeltWeitWissen congress 2016

INTENDED OUTCOMES

Learners develop understanding of sustainable futures

Learners interaction skills develop

Encourages intercultural dialogue and understanding

11–17

AGE GROUP

2015

ESTABLISHED

170

REACH (students)

CONNECT WITH THE INNOVATOR

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esd-expert.net/go-global-virtual-school-exchange.html



INNOVATIVENESS
IMPACT
SCALABILITY



Join the 1000+ eco-warriors of Green Hope who are making a difference in Canada, USA, UAE , Oman, India, Nepal & other regions. The Future belongs to us!

Green Hope Foundation

Toronto, Canada

Green Hope Foundation is a youth organisation working on Education for Sustainable Development, children's rights and environmental protection by empowering young people and helping to build effective partnerships with all stakeholders of civil society.

Green Hope Foundation is a not-for-profit youth organisation working on Education for Sustainable Development, children's rights and environmental protection by empowering young people and helping to build effective partnerships with all stakeholders of civil society. Green Hope believes in providing a platform of engagement to children so that they are empowered in driving change in civil society. Echoing the findings of the power of the youth voice, Green Hope believes that as generations of the future, children need to play a determining role in the sustainable development dialogue. This forms the basis of all the "on the ground" campaigns in which a bottom up approach is adopted. Young members work on different campaigns gaining the hands-on experience of becoming changemakers.

Workshops called "Environment Academies" are held for school and university students to spread awareness about the environment and sustainability. Kehkashan personally trains members of Green Hope to make presentations at these academies, demonstrating the foundation's uniqueness: it is run entirely "by children, for children".

Green Hope's work featured in former US Vice-President Al Gore's 24 Hours of Reality global broadcast of 2017 which engaged half a billion viewers worldwide. Kehkashan was also invited to speak at the 34th session of the UN Human Rights Council in Geneva, 2017²⁴.

INTENDED OUTCOMES

Promote Global Citizenship

Children's rights awareness

Learners adopt a sustainable lifestyle

6-20

AGE GROUP

2012

ESTABLISHED

20 000

REACH

CONNECT WITH THE INNOVATOR

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INNOVATIVENESS
IMPACT
SCALABILITY



Want to inspire and support a generation of future environmentalists?

Green School Bali

Bali, Indonesia

Green school is committed to teaching sustainability in a holistic and student centered way. The Educator Course creates a global network of educators inspired to work towards these goals.

Green School Bali is a no-walls school educating children with a student-centred, holistic, entrepreneurial and pro-environmental philosophy. Educating children for sustainability, Green School empowers children aged from Kindergarten through to High School to be green leaders, emphasising a community effort and co-learning space alongside parents, members of neighbouring villages and of course the Green School community of staff and students.

As well as in house innovative educational practice, Green School Bali also addresses the issue concerning the lack of professional development for teachers in sustainability in education.

The Green Educator Course invites teachers from around the world as well as local and international experts. Attendees leave with a new toolbox of innovative teaching strategies and resources, to be implemented and shared in their own teaching context. These courses are 3-7 day experiences for educators who are seeking to learn more about Green School's holistic, student-centred, nature-based curriculum. The Green Educator course brings together like-minded educators from around the world with interests in progressing education in a changing environmental, social, and economic global landscape.

Nature is the framework on which interactive workshops, collaborative projects, and other activities are built on in order to immerse participants in a cultural experience in which models of sustainability and pedagogical practices are discussed.

INTENDED OUTCOMES

Learners develop intercultural understanding

Learners develop a connection to nature

A holistic approach to wellbeing is implemented

Learners develop sustainable environmental practices

Educators have access to rich online resources

International professional collaboration

Partnerships between schools and communities are developed

AGE GROUP	Students 3-18 years Educators 25-55 years
ESTABLISHED	School opened 2008 Course started 2013
REACH	School capacity 400 students Course 550

CONNECT WITH THE INNOVATOR

Sanne Van Oort

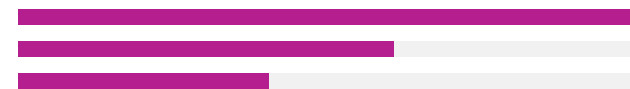
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INNOVATIVENESS
IMPACT
SCALABILITY



Empowering global kids to help solve global problems, one idea at a time.

Kids Can! Innovation Camp

Manila, Philippines

At the heart of “Kids Can! Innovation Camp” is the goal of involving, engaging & providing children the opportunity to become critical thinkers, creative problem-solvers, & active agents of change. The journey towards the goal starts with empathy. The project integrates: Sustainable Development Goals, E+STEAM (Empathy+STEAM), design-thinking & passion-based learning.

As a society we tend to leave the big global problems to adults, disregarding the innate curiosity that drives our young people to understand the world. Our schools are seldom about learning from the world we live in. In response to this gap in education, Kids Can! Innovation Camp was launched in the small makeshift makerspace of a school in the Philippines. From an inter-after-school-club synergy, the Innovation Camp has become a global collaboration project supported by a team of educators from all over the world.

At the heart of Kids Can! Innovation Camp is the goal of engaging children in opportunities to develop their critical thinking skills in order to become active agents of change. The journey towards the goal starts with empathy, and integrates the Sustainable Development Goals, E+STEAM (Empathy+STEAM), design-thinking & passion-based learning.

The project aims to help children devise different solutions to real world, genuine, problems that the children identify themselves. The solutions the children develop are therefore completely student-led, and in response to the problem they have identified themselves. Possible solutions may include but not limited to: Making or inventing, information and advocacy campaigns, call to action through service, and philanthropy.

Kids Can! Is a project developed by teachers who volunteer to support its growth. Creator Jim Tuscano collaborated with teachers in his already established network to translate the resources to five languages: Filipino, English, Bahasa (Malaysia), Vietnamese, Korean, and Polish. With another five in the pipeline (Hindi, Chinese Mandarin, Chinese, Spanish, and Serbian) Jim's goal is simply to give teachers around the world access to great resources, which are free to download.

INTENDED OUTCOMES

Creation of real-life and authentic projects

Student motivation increases due to passion-based learning approach

Learners understand the Sustainable Development Goals

Learners develop craft skills

Learners develop communication and presentation skills

Learners develop creative and critical thinking skills

Learners develop design thinking skills

Learners develop empathy

9-15

AGE GROUP

2017

ESTABLISHED

500

REACH

CONNECT WITH THE INNOVATOR

Francis Jim Tuscano

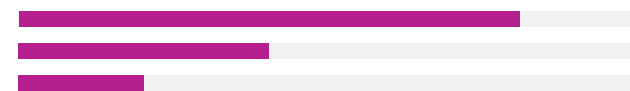
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INNOVATIVENESS
IMPACT
SCALABILITY



Conducting change through education is the best way to make a difference.

Lebanon Organisation for Green Schools (LOGS)

Beirut, Lebanon

School is the natural and ideal place to learn, raise environmental awareness, build habits and citizenship values.

On a social, economical and health level, Lebanon is threatened by one of the country's greatest dangers: environmental deterioration. Non-recycled waste, daily traffic, growth in population, and increased carbon emissions in Lebanon are the main factors contributing to climate change. The current educational system does not adequately educate students to become environmentally aware citizens. The deterioration became visible with the waste crisis, and so the Lebanese Organisation for Green Schools (LOGS) was established to react immediately: they rolled up their sleeves and contributed in administering first aid.

Students make up one quarter of the entire Lebanese population and spend 15 years at school: LOGS is built on the premise that conducting change through formal education is the best way to make a difference. Education for sustainable development enables the whole school community, staff and students alike, to develop ethics that value nature. Actionable change is established through these values that become fundamental to children's daily lives. LOGS philosophy is therefore a combination of humanity, education, environment and most importantly laying the foundations for a better tomorrow.

LOGS uses a top down approach starting with training administrators and staff on green practices covering major subject areas such as languages, mathematics, sciences and humanities. Schools are supported in establishing environmental clubs to take action on environmental issues specific to their context, using the school building itself as the context. During the process of learning about the environment and adopting green behavior, students enjoy an interactive experience by applying what they learn to practical tasks around the school. As well as helping children to become environmentally literate, they also establish a responsible relationship with their natural environment and enhance their citizenship. Children are working towards preserving Lebanon's precious resources and ecology.

Hadla Traboulsi (creator) was selected by the Swedish Institute as one of the top 25 influential women of the "SHE Entrepreneur" program for the work she has done through LOGS.

INTENDED OUTCOMES

Professional development is improved

Promote Global Citizenship

Learners adopt a sustainable lifestyle

6–18

AGE GROUP

2016

ESTABLISHED

3000

REACH (students)

CONNECT WITH THE INNOVATOR

Hadla Traboulsi

Beirut, Lebanon

<http://www.logslebanon.net/>



INNOVATIVENESS
IMPACT
SCALABILITY



How do we engage children with the SDGs?

Project Everyone: World's Largest Lesson

United Kingdom

Introducing the UN's Sustainable Development Goals in a meaningful and purposeful way to bring about actionable change

The World's Largest Lesson brings the Sustainable Development Goals to children all over the world, reaching over 130 countries and millions of children since its launch in September 2015.

The aim of World's Largest Lesson is to encourage teachers, schools, and organisations outside formal education to introduce children to the Sustainable Development Goals, using them as a framework to help students to understand their education in the context of sustainable development. As it currently stands, sustainable education exists in isolation, and this innovation believes that the SDGs can bring a higher purpose for their learning.

Free and creative resources are developed for educators to teach lessons, run projects and stimulate action. At the heart of the resources sit animated films written by Sir Ken Robinson, animated by Aardman and introduced by public figures students know and respect, like Emma Watson, Serena Williams, Malala Yousafzai, Kolo Touré, Neymar Jr, Hrithik Roshan and Nancy Ajram. These films establish a context for the Goals and inspire students to use their creative powers to support and take action for them.

Another focus is to ensure children use the real world as the learning context, with a focus on learning and action in order to bridge the gap between traditional learning and active based learning. Children are encouraged to participate in self reflection, reviewing their local community and considering action that can take place.

INTENDED OUTCOMES

Every child takes action to create a more sustainable world action

Every child feels empowered take action to achieve the Global Goals

Every child know what the Global Goals Sustainable Development Goals are

8-14

AGE GROUP

2015

ESTABLISHED

50m+

REACH

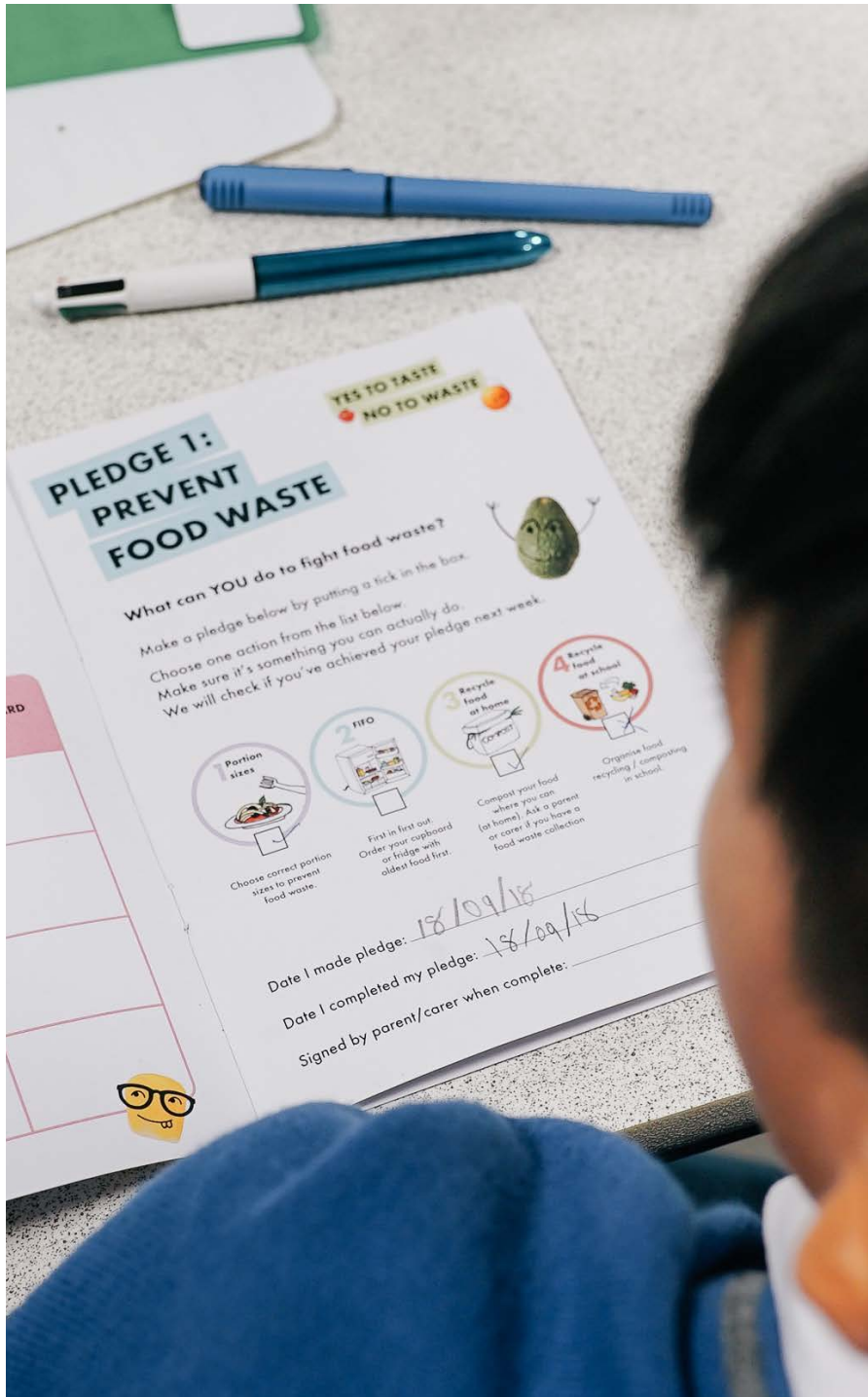
CONNECT WITH THE INNOVATOR

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INNOVATIVENESS
IMPACT
SCALABILITY



Experiential Learning on the topic of Food Waste and Healthy Sustainable food.

Yes to Taste, No to Waste

London, United Kingdom

Small Change Big Difference is a food focused campaign led by Resource London; the partnership between WRAP and LWARB, together with Groundwork London. Funded by the LIFE program of the European Commission the project currently works with 24 schools across 9 London boroughs. The aim of the program is to raise awareness of food waste, and encourage healthy and sustainable eating. Each school receives 6 workshops, which are all based on Experiential Learning, where pupils have the opportunity to 'learn through doing'.

The aim of the programme is to raise awareness of food waste, and encourage healthy and sustainable eating. Each school receives 6 workshops, which are all based on Experiential Learning. The programme is curriculum linked and was designed by teachers, for teachers.

Each school receives 6 hands-on workshops consisting of interactive activities leading to a campaign day hosted by the children at their school. The program is based on a model of co-production where pupils actively make decisions and take ownership over the rationale behind their campaign. A brief outline of the 6 sessions are outlined below:

- **1. Content base:** Children are taught about food waste prevention and food waste recycling. An audit measures prior knowledge, attitudes and beliefs about food waste and the children's own habits.
- **2. Interactive:** surplus fruit is used to make smoothies. Children learn about the environmental impact of meat production, and the relative lower environmental cost of fruit and vegetables.
- **3. & 4. Pupil led sessions via a school campaign:** Children plan and promote a campaign that is relevant to their school and school community.
- **4 & 5 Action:** Time is given for students to action their campaign through letters home to parents, posters, banners, radio and TV advertisement.
- **6. Students share their learning:** This may be in the form of an assembly for parents, video links to other EU cities or dissemination to other schools/ classes.

INTENDED OUTCOMES

At the end of the project ensure lesson plans are freely available for teachers to download

Ensure wider school community engagement whole school approach

Ensure all workshops include Experiential Learning

Reach 24 Schools with the innovation

9–11

AGE GROUP

2017

ESTABLISHED

24 / 4000

REACH (teachers / children)

CONNECT WITH THE INNOVATOR

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smallchangebigdifference.london

List of Abbreviations

EE	Environmental Education
Efs	Education for Sustainability
ESD	Education for Sustainable Development
IEEP	International Environmental Education Programme
MDGs	Millennium Development Goals
MDTF	Communication for Climate Change Multi-Donor Trust Fund
SDGs	Sustainable Development Goals
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization

Endnotes

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Do you want to organize a HundrED Spotlight?

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. Spotlit 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 on sustainability in education, please contact us.



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