

Results of the Wenhui Award for Educational Innovation 2019

Shortlisted applications

- **Nauru Teacher Education Project**
School of Education, University of New England, Australia
- **FABO**
College of Design and Innovation, Tongji University, China
- **Building School-University Partnership for Students Benefit**
Nazarbayev Intellectual Schools, Kazakhstan
- **Mentor-Mentee Outreach Program: Promoting University and School Partnerships in Revitalizing STEM Education in Rural Secondary Schools**
Nyet Moi Siew, Faculty of Psychology and Education, Universiti Malaysia Sabah, Malaysia
- **University and School Partnership for ESD: Empowering Students and Teachers through Multi- faceted Informal Experiential Learning**
Regional Centre of Expertise on ESD Penang, Universiti Sains Malaysia, Malaysia
- **Outreach Services Division of the Library, University of Moratuwa, Sri Lanka and Its Activities**
Ruvini Kodikara, University of Moratuwa, Sri Lanka
- **Service Learning as an Innovative Educational Initiative to Help Underprivileged Schools**
Carrier Guidance Unit, Faculty of Science, University of Colombo, Sri Lanka

Winners

- **Building School-University Partnership for Students Benefit**
Nazarbayev Intellectual Schools, Kazakhstan
- **Service Learning as an Innovative Educational Initiative to Help Underprivileged Schools**
Carrier Guidance Unit, Faculty of Science, University of Colombo, Sri Lanka

Honourable Commendations

- **FABO**
College of Design and Innovation, Tongji University, China
- **Mentor-Mentee Outreach Program: Promoting University and School Partnerships in Revitalizing STEM Education in Rural Secondary Schools**
Nyet Moi Siew, Faculty of Psychology and Education, Universiti Malaysia Sabah, Malaysia

Overviews of shortlisted applications

- **Nauru Teacher Education Project**

School of Education, University of New England, Australia

In response to Nauru's heavy reliance on expatriate teachers and a need to increase the number of qualified local Nauruan teachers, the University of New England and Nauru's Department of Education designed the Nauru Teacher Education Project (NTEP) to improve subject, content and pedagogical knowledge of pre- and in-service teachers; build local teaching and mentoring capacity from within the Nauruan community; provide an internationally recognised teacher qualification that meets the requirements of the Nauru Education Act (2011); allow students to access quality education while remaining in the context of their community for their studies; and provide culturally responsive and appropriate teacher education tailored specifically to the context of a remote Pacific Island country. To meet these objectives, new teacher qualifications with a Pacific focus and a model to deliver these qualifications were developed.

- **FABO**

College of Design and Innovation, Tongji University, China

The global Fablab network, founded by MIT and the Fab Foundation, was introduced to China in 2013 with the construction of the first Fablab at Tongji University. Over the years, FABO has evolved into an integrated network of 20 Fablabs serving about 6,000 students from grades K-12 and universities. Incorporating digital and emerging technologies, such as 3D printing, programming and artificial intelligence, FABO has connected universities, schools, families, communities and companies to establish a STEAM-learning ecosystem for learners to gain hands-on experience in real world situations. Offering quality technical, vocational and tertiary education, FABO's programmes and courses prepare learners to take on the challenges of volatility, uncertainty, complexity and ambiguity in diverse social settings.

- **Building School-University Partnership for Students Benefit**

Nazarbayev Intellectual Schools, Kazakhstan

Intellectual Schools were established in Kazakhstan in 2008 as an experimental platform to develop, implement and commend innovative educational models that include the best traditions of Kazakhstani education and advanced international pedagogical practices. The Nazarbayev Intellectual Schools (NIS) network comprises 20 schools that serve about 15,000 students from 7th to 12th grades, including children from rural areas and disadvantaged families. Providing educational services that meet the best educational standards set by the Commonwealth of Independent States (CIS) International Accreditation, one school offers the International Baccalaureate programme and the remaining nineteen offer the NIS-Programme that is equivalent to the A-Level in the United Kingdom and the O-Level in Singapore. NIS cooperates with leading universities in Kazakhstan to design accelerated undergraduate programmes for NIS graduates and Memoranda on Mutual Understanding were signed with universities in Australia, China, Germany, Korea, Netherlands and United Kingdom.

- **Mentor-Mentee Outreach Program: Promoting University and School Partnerships in Revitalizing STEM Education in Rural Secondary Schools**

Nyet Moi Siew, Faculty of Psychology and Education, Universiti Malaysia Sabah, Malaysia

STEM education integrates the study of science, technology, engineering and mathematics into a cohesive learning paradigm. In Malaysia, efforts to encourage students to take up STEM subjects have risen, but student enrolments in almost every STEM subject area have continued to fall over the last decade. Many rural primary and secondary schools in Sabah, Malaysia, are located in distant, isolated areas with basic utilities and limited infrastructures. To address these challenges and to ensure inclusive, equitable STEM education, a STEM Mentor-Mentee outreach programme through university-school partnership was developed to support disadvantaged and marginalized students in rural schools.

- **University and School Partnership for ESD: Empowering Students and Teachers through Multi- faceted Informal Experiential Learning**

Regional Centre of Expertise on ESD Penang, Universiti Sains Malaysia, Malaysia

Schools in Malaysia, as in many other countries, face challenges in infusing Education for Sustainable Development (ESD) into their formal curriculum. Having large pools of experts in varied academic disciplines, universities have a considerable comparative advantage in promoting ESD as part of the Education 2030 Agenda. The Regional Centre of Expertise on Education for Sustainable Development (RCE) Penang has been working with local and international education communities and engaging teachers in embedding sustainability principles in the school curriculum for over 15 years. RCE Penang's university and school partnership programme includes inter-related projects such as the Malaysian International Young Inventors Olympiad, Integrated Green Garden, Rehabilitation of Mangrove Forests, Empowering Students' Leadership in ESD through Networking at the Asia-Pacific Level and the Regional Sejahtera ESD Network Schools Carnival & Exhibition. Since 2013, RCE Penang has reached more than 1,000 schools and 5,000 students through its activities.

- **Outreach Services Division of the Library, University of Moratuwa, Sri Lanka and Its Activities**

Ruvini Kodikara, University of Moratuwa, Sri Lanka

The University of Moratuwa Library is a prominent technological library in Sri Lanka, with subject specialization in engineering, architecture and information technology. Having recognized the social responsibility in reaching the community around the university premises, the library established the Outreach Services Division (OSD) in 2013 to emphasize the changing nature of library services which are no longer limited to a space in a building with stack of books. To maximize the usage of the library's resources, the OSD initiated numerous programmes targeted at a preschool located inside the university grounds and a primary school in the vicinity to share knowledge required by the school syllabus using multimedia technology and the internet. Through activities such as language learning, storytelling, colouring techniques, drama and reading camps, OSD has helped to improve the students' reading habits and examination results.

- **Service Learning as an Innovative Educational Initiative to Help Underprivileged Schools**

Carrier Guidance Unit, Faculty of Science, University of Colombo, Sri Lanka

The Carrier Guidance Unit (CGU) was established in 2008 in the Faculty of Science of the University of Colombo in Sri Lanka to develop graduates' multi-disciplinary knowledge, creative thinking and analytical skills together with a high degree of civic conscientiousness. The CGU has developed a programme for final year science undergraduates to carry out school-based projects with financial support from the corporate sector. Working in remote and underprivileged schools, the undergraduates teach science, mathematics, IT and English language in these schools. The programme also offers vocational training and other life skills to students to enhance their employability. Since 2012, the Service Learning programme has helped more than 16,000 school children.

Winners

- **Building School-University Partnership for Students Benefit**

Nazarbayev Intellectual Schools, Kazakhstan

High schools prepare students to enter universities, and universities nurture professional, competent individuals to contribute to the development of their country as well as to reinforce peace, mutual understanding and tolerance between countries and peoples. A well planned flow of education from high school to university will help to prepare students become valuable ambassadors of their country to meet these goals.

In 2008, Intellectual Schools were established in Kazakhstan to provide a platform to develop, implement and commend innovative educational models that include the best traditions of Kazakhstani education and advanced international pedagogical practices. Coordinated by an autonomous educational organization, the Nazarbayev Intellectual Schools (NIS) network currently comprises 20 schools that serve about 15,000 students from 7th to 12th grades, including children from rural areas and disadvantaged families who receive tuition-free education. Career consultants and psychologists are on hand in all NIS institutions to help students identify their potential career choice and university to pursue their course of study. Providing educational services that meet the best educational standards set by the Commonwealth of Independent States (CIS) International Accreditation, one school offers the International Baccalaureate programme and nineteen offer the NIS-Programme – developed jointly with the University of Cambridge – that is equivalent to the A-Level in the United Kingdom and the O-Level in Singapore.

Partnership with universities is one of NIS' strategies to support their graduates and recognize their achievements. As a result, NIS has been cooperating with leading universities in Kazakhstan to accept credit transfer and to develop accelerated undergraduate programmes for NIS graduates. Partnerships with universities in other countries were also established resulting in about 15 percent of NIS graduates enrolling in universities in Australia, China, Germany, Netherlands, Republic of Korea and the United Kingdom. NIS also cooperates with embassies of different countries to discuss admission and recognition policies.

The uniqueness of NIS' efforts lies in the initiatives it has taken to collaborate with universities in and beyond Kazakhstan, as well as embassies of different countries, to provide their students with opportunities to pursue their education. The Memoranda of Mutual Understanding between NIS and the various institutions and agencies ensure that the partnership is sustainable and beneficial to all parties.

- **Service Learning as an Innovative Educational Initiative to Help Underprivileged Schools**

Carrier Guidance Unit, Faculty of Science, University of Colombo, Sri Lanka

For a nation to advance in science, technology and innovations, a proper base for teaching science in schools is essential. Unfortunately, many schools in remote areas lack the necessary human power and resources to teach science and IT. The University of Colombo is the oldest and one of the largest state universities in Sri Lanka where the Faculty of Science was set up in 1913. Recognising the importance of service learning, the Carrier Guidance Unit (CGU) was established in the Faculty in 2008 to develop graduates' multi-disciplinary knowledge, creative thinking and analytical skills together with a high degree of civic conscientiousness.

Aiming to contribute to Sri Lanka's development, the CGU has developed a programme for final year science undergraduates to carry out school-based projects with financial support from the corporate sector. Working in remote and underprivileged schools, the volunteer undergraduates teach science, mathematics, IT and English language in these schools. The programme also offers vocational training and other life skills to students to enhance their employability.

Specific projects included (i) empowering school children with IT (e-learning) and vocational education involving 20 schools island-wide; (ii) preparing school children for employment by grooming school leavers and job seekers for the workplace; (iii) promoting good food habits and combating malnutrition through awareness raising in four schools in Colombo; (iv) swim for safety to provide water safety skills involving about 70 students from Colombo.

Since 2012, the Service Learning programme has helped more than 16,000 school children in many parts of the country. The 'triple helix' initiative highlights the partnership between university, community/school and private sector.

Honourable Commendations

- **FABO**

College of Design and Innovation, Tongji University, China

STEAM (science, technology, engineering, arts, and mathematics) education emphasizes the integration of multiple disciplines to provide comprehensive, practical skills training and bottom-up learning. It has gained the attention of many countries seeking to move away from an examination-focused system. The global Fablab network, founded by MIT and the Fab Foundation and introduced to China in 2013, offers a dynamic approach for personal learning and experimentation, allowing students to actively explore real-world problems and challenges to acquire deeper knowledge.

The FABO team at Tongji University has established an integrated network of 20 Fablabs serving about 6,000 students from grades K-12 and universities. Incorporating digital and emerging technologies, such as 3D printing, programming and artificial intelligence, FABO has connected universities, schools, families, communities and companies through its programmes. Its STEAM-learning ecosystem includes the FABO playground for elementary schools and middle schools, FABO X for high schools and above, and the Fab Academy for educators and entrepreneurs. FABO has organized STEAM workshops for more than 6,000 students in 300 schools and 100 interdisciplinary open-night lectures for communities. It has trained more than 1,000 STEAM teachers, and connected tech companies such as Autodesk, Solidworks, Roland, Trolect, Intel and Alibaba to schools. FABO has helped to develop contents and mechanisms for second- and third-tier cities and remote locations where STEAM educational resources are insufficient.

- **Mentor-Mentee Outreach Program: Promoting University and School Partnerships in Revitalizing STEM Education in Rural Secondary Schools**

Nyet Moi Siew, Faculty of Psychology and Education, Universiti Malaysia Sabah, Malaysia

STEM education is an interdisciplinary approach to learning which integrates the study of science, technology, engineering and mathematics into a cohesive learning paradigm. The provision of STEM education and giving students opportunities to explore STEM-related concepts will equip them with 21st century skills such as critical thinking, problem solving, creativity, collaboration and communication skills. In Malaysia, efforts to encourage students to take up STEM subjects have risen, but student enrolments in almost every STEM subject area have continued to fall over the last decade. The situation is even more challenging in Sabah, an East Malaysian state where 72 percent of its schools are located in rural areas with basic utilities; limited infrastructures; inadequate teaching and learning materials; shortages of resources, computers and science laboratories.

Therefore, a STEM Mentor-Mentee outreach programme through university-school partnership was developed to address the gap in STEM education attainment between rural and urban schools in Sabah. The programme targeted Form Four students (aged 16 years) from 14 rural secondary schools to help them understand STEM by relating it explicitly to their local environment and to improve their STEM knowledge, attitudes and practices. In-service and pre-service teachers who assisted in the programme also gained mentoring and assessment skills to conduct STEM activities. From 2015 to 2019, a total of 632 students, 311 in-service and 99 pre-service teachers benefited from programme.