

International Science Education and the National Science Teachers Association

Introduction

NSTA encourages and promotes international science education on all levels from preK to post-secondary. The impact of science education has profound consequences for the betterment of a society and the global community as stated by UNESCO's Science for a Sustainable Future initiative: "Creating knowledge and understanding through science equips us to find solutions to today's acute economic, social and environmental challenges and to achieving sustainable development and greener societies. As no one country can achieve sustainable development alone, international scientific cooperation contributes not only to scientific knowledge but also to building peace" (UNESCO 2016).

Scientific and technological advances have a significant impact on the living conditions of citizens around the world. The result is the emergence of many socio-scientific issues on which decisions must be made by individuals and communities for the mutual benefit of society. This new global perspective provides little room for citizens or nations to operate in isolation. A globally informed citizenship requires implementation of 21st-century skills incorporating global awareness and, among other disciplines, the science, technology, engineering, and mathematics (STEM) disciplines (P21 2016; NSTA 2011).

It is common for scientists to openly share ideas and knowledge at the global level; it is equally important for science educators to engage in this international exchange. After all, it is science teachers who must educate our future scientists and citizens and help them develop a world view that embraces cultural differences and belief systems. Recent studies have sought to compare student achievement in science at the international level. These comparisons have drawn attention to the need for global scientific literacy.

NSTA defines international science education as any activity or learning experience involving science teachers from different cultures or countries communicating with and learning from teachers and other educators to improve the quality of science teaching and learning and to support a worldwide view of the global implications of science and scientific phenomena.

A collaborative approach to science education within the international community also serves the purpose to gain insights into benchmarking of outcomes in STEM education (Achieve 2010).

Both informal and formal collaborations are ways to realize the goals of international science education. These collaborations should provide opportunities for preK–16 science educators to work together to improve science education worldwide and should

- be based on the human spirit of trust and openness, as well as a desire to reach a mutually beneficial outcome;
- seek positive results in the teaching and learning of science that exceed what any one organization could expect to achieve on its own;
- incorporate best practices to transcend scientific teaching and learning through active involvement of many stakeholders; and
- mirror scientific collaboration worldwide and not let language, in and of itself, be a barrier (NSTA 2005).

NSTA supports international science education as a priority for science educators on all levels and provides a community platform through national and international in-person and virtual venues. To embrace international science education, NSTA offers the following declarations.

Declarations

NSTA supports teachers of science and science teacher educators at all levels and in all venues and encourages them to

- view themselves, students, and teaching and learning in a global context;
- acknowledge the different value systems and cultures of diverse student populations;

- raise student awareness of social and international issues and global impact of scientific concepts and concerns;
- provide and use curriculum materials that include an international perspective;
- learn about effective teaching practices in other countries and cultures;
- teach about the global impact and importance of scientific issues and concepts;
- value diversity and gender equity in science education; and
- engage in international collaborations to improve the quality of formal and informal science teaching and learning.

NSTA encourages school leadership (administrators, principals, department chairs, science coordinators, superintendents) to

- recognize it is crucial for science educators to understand students' cultural value systems;
- provide opportunities for science teachers to increase their knowledge and understanding of various world cultures;
- establish an environment in the school or district that encourages international and cultural awareness, understanding, and openness;
- encourage science educators to disseminate information about successful international collaborations; and
- support science educators who wish to participate in international collaborations and strive to provide access to systems and means for these collaborations.

NSTA encourages policy makers at all levels to

- fund and support programs that further the goals of international science education;
- support teacher professional development opportunities and programs that focus on international perspectives; and
- support international science education as a mechanism to raise the professional status of science educators.

NSTA encourages science-related organizations, associations, agencies, and businesses at all levels to

- create and fund international collaborations among educators and leaders;
- partner with other professional organizations to encourage and support international collaborations;

- provide opportunities for the dissemination of successful international collaborations and activities; and
- provide a forum for critical discussion of the various models of international projects and collaborations.

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References

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