Tartu Declaration on Science and Technology Education

The World Conference on Science and Technology Education was held in Tartu, Estonia, 28 June - 2 July 2010. We, the conference participants from 35 countries, believe that 21^{st} century Science and Technology Education should prepare students for rapidly developing knowledge-based societies.

Access to high quality education is a fundamental right for all. In times of global vulnerability, issues such as sustainability, health, peace, poverty alleviation, gender equity and biodiversity conservation need to be at the forefront of thinking, planning and actions related to Science and Technology Education (STE).

People, including children and young people, increasingly indicate that they want to learn 'now science and technology' as well as 'history science and technology'. Planning and implementing effective STE includes an emphasis on the development of life competencies such as problem-solving and decision-making skills, and working collaboratively in teams. The development of confident life-long learners, with skills and attitudes to thrive in complex societies is a high priority. Relevant 'big ideas' in science and technology should be introduced with students as well as necessary fundamental material. Health and safety in STE is integral and important.

The conference participants call upon all involved in research, policy development and practice in STE to carry out their roles actively in implementing this Declaration in their regions of the world, acknowledging the key roles of teachers.

We resolve that:

- innovative STE is of fundamental importance throughout life commencing at the earliest years;
- major aims of STE are active, ethical citizenship; responsible evidence-based decision-making, and high levels of satisfaction in STE;
- STE involves students developing and applying scientific conceptual understanding to make sense of contexts in their evolving world;
- inter-disciplinary learning in relevant contexts is essential to reflect the nature of professional science and everyday science and to allow teachers to build on students' interests and questions;
- an integrated approach to STE needs to be implemented because science and technology are inseparable as we move into the future;
- student involvement in decisions about their own STE learning is essential;
- an inquiry approach is central to STE, where students formulate scientific and technological questions, investigate those questions and build and apply conceptual understandings;
- assessment policies and practices that improve students' learning need to be implemented;
- high-quality teacher preparation and continuous professional learning support are essential in order for teachers to create rich, relevant, interesting, timely STE:
- STE policy and practices should be informed by evidence-based research findings and research in STE encouraged and supported.