

Declaration on the human right to science* education

Berlin, October 1st, 2018

Participants of the International Symposium on human rights and equality in STEM education agreed upon the following final declaration on the right to science education and its implementation.

1. The right to science education and STEM

Referring to the Universal Declaration of Human Rights, participants underline the existence of a right to science education as an inherent aspect of the right to education, the rights to information and the right to enjoy the benefits of scientific progress including the right to contribute to scientific progress as enshrined in Art.26 and 27 UDHR. As a human right it deserves a human rights approach to science education. The right to science education pursues the goals of acquiring knowledge as an end in itself, of participating as a useful member in society and of the development of the full personality of learners. The right to science education encompasses the dimensions of availability of and accessibility to science education, the component of acceptability referring to the quality thereof, as well as the dimension of adaptability of science education, in order to meet the requirements of scientific as well as societal dynamics.

2. The access to science education and STEM

Participants are fully aware of structural and societal barriers as well as their intersectional nature and effects in the access to science education, particularly for women and minorities, explicitly referring to the UNESCO Recommendation on Science and Scientific Researchers 2017. Science education needs to follow an integrated approach with the general vision of science as a common good. Accessibility encompasses access and achievement in all forms and levels of science education. Access without discrimination follows from the Convention Against Discrimination in Education and the Convention on Technical and Vocational Education.

3. The quality of science education and STEM

Science education must be acceptable to learners. It needs to be up-to-date and presented in a way that learners can get full benefit of learning, as well as using science for their own benefit. Acceptability includes the knowledge content and research. Knowledge and research which reproduce inequality are therefore regarded as not acceptable. The identities that are co-constructed and reproduced through science and STEM education and the manner in which individuals are identified, addressed, tokenized and positioned within science education, must be acceptable to the individuals and may not harm the individuals' dignity. Acceptability of science education excludes any form of stigmatization by its content, its methodologies, its didactics or its applications.

* science summarizes what is considered as natural sciences (e.g. physics, chemistry, biology) as well as technology, engineering, mathematics, informatics and research in this fields

Recommendations

Education Institutions

With reference to the UNESCO Recommendation on Science and Scientific Researchers, we call upon its member states taking measures to actively encourage women and persons of underrepresented groups to consider careers in sciences and to periodically report on their success to the international community, as stated in Art.13. Further, with reference to the Montreal Declaration of the International Conference on Human Rights Education 2017 (3. Specific Recommendation, 3.2 Higher Education Institutions), states shall take all measures to ensure that science educators at all levels of education should be trained in human rights and should gain awareness of the right to science education.

Research in STEM

Researchers in the field of STEM should develop new knowledge and technologies being guided by critical reflection as well as by the vision of science as a common good. Novel scientific knowledge should be constantly assessed regarding the reproduction of social inequality. We call upon the decision-makers in the field of science to provide the frame for responsible research and to care for respective accountability at all levels.

Quality of STEM education

Within the responsibility of decision makers in the education system, the knowledge content of STEM, as conveyed through teaching material amongst others, should be revised to take inclusiveness as described above and in the respective international standards into account. Furthermore, scientific content should be revised regarding the conditions of social inequality under which the content was developed.