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Technology Education Is Important for Achieving Sustainable Development

Purpose and research question

The interplay between technology and sustainability has become a central issue of our time, and in an era of technological advances it is crucial to reflect on the role of technology in achieving the Sustainable Development Goals (SDGs). This study examines what technology content can be discerned in the sustainable development goals, SDGs, in order to detect possible content for technology education. This can be significant for curriculum development, teacher training and lesson planning.

Results and conclusions

Technology and sustainable development are intertwined. Technology content can be found in all 17 SDGs. Responsible use and development of technology is therefore essential for the achievement of the SDGs.

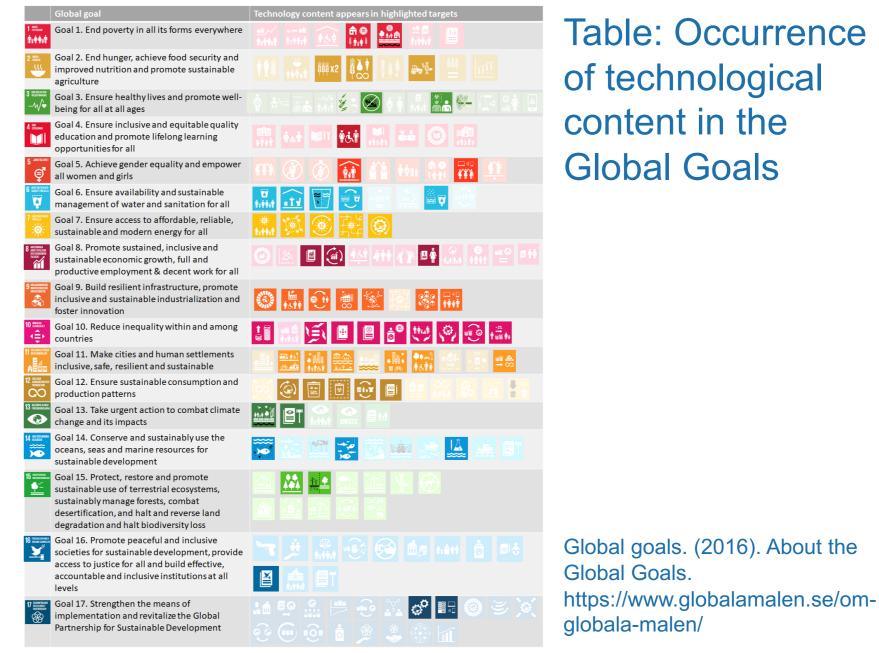


 Table: Occurrence

Method

A category system based on DiGironimo (2011) and Roussouw et al. (2010) was developed in order to discern technology content relevant for schools from the Sustainable Development Goals (SDGs). Content analysis in two steps was used for analyzing the SDGs, step 1 to discern which of the SDG targets contain technology content and step 2 to see what the common themes of this technology content are.

DiGironimo, N. (2011). What is Technology? Investigating Student Conceptions about the Nature of Technology, International Journal of Science Education, 33(10), 1337-1352. doi: 10.1080/09500693.2010.495400 Rossouw, A., Hacker, M. & de Vries, M (2011) Concepts and contexts in engineering and technology education: an international and interdisciplinary Delphi study. Int J Technol Des Educ. 21(4), 409–424. doi: 10.1007/s10798-010-9129-1

By combining technology and sustainability in technology education, we can give students the opportunity to develop skills and knowledge that are essential to address the complex challenges of our time.

Themes of technology content in the SDGs

Resource usage:

• Energy efficiency

Capacity building:

Knowledge acquisition and knowledge sharing

Digital solutions:

• Digital inclusion (screen readers, voice

- Efficient land use
- Increased agricultural productivity
- Water management
- Improved recycling methods
- Renewable energy solutions
- Effective irrigation systems
- Improved fishing methods
- Material properties and applications

Health and safety:

- Safety equipment (helmets, safety belts, etc.)
- Emission reduction treatment
- Disaster warning systems
- Ergonomic and safe work tools
- Inclusive environments (all societal groups the elderly, children, people with disabilities, etc.)
- Monitoring technologies for health and safety

through technical assistance and international collaborations

> doubling productivity sustainable energy services safe and secure working environment Reduce road injuries and the state of the st increase recycling

Technological development:

- Development of existing & new materials
- Infrastructure expansion and improvements (roads, water purification, internet, public transportation, etc.)
- Development of new technologies
- Strengthening of technical capacity

recognition services, etc.)

- Online marketplaces (enabling smallscale producers to reach more customers)
- Digital payment platforms
- Remote work
- E-learning and online training
- Microfinancing
- Mobile banking services

Data and analysis:

• Calculations and simulations for enhanced resource management (land use, irrigation, fertilizer quantity, etc.) Data analysis and modeling (predicting extreme weather, minimizing accidents, etc.)

 Monitoring technology and warning systems (traffic flows, water quality, pollution, weather and climate, etc.)











