

IEEE Region 8



IEEE REACH (reach.ieee.org)

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IEEE REACH – Free OER program for Secondary Educators

- ▶ Interdisciplinary program, developed for Social Studies Teachers and STEM teachers and is delivered through the lens of history!

- History Center Program, guided by History Committee
- IEEE Foundation Priority Program & recent NIC grant,



- ▶ Target: secondary school educators
- ▶ Addresses how technology, throughout time, impacts society, culture, economics and politics, & vice versa

Focuses on the “social relevance” of technology, where traditional STEM programs focus on the “How” i.e., how to design, REACH focuses on the “Why” – why was this technology designed, what social problem did it address/impact



[Perceptions of the Social Relevance of Science: Exploring the Implications for Gendered Patterns in Expectations of Majoring in STEM Fields](#)

Authors: Sarah Blanchard Kyte and Catherine Riegler-Crumb

- ▶ ***“... students who perceive science as more socially relevant are in turn more likely to expect to major in STEM...”***
- ▶ ***“ ... as perceptions of the social relevance of science increase, girls’ probabilities of expecting to major in STEM increase substantially...”***

What's Included

Standards-Aligned to International Standards for Technology and Engineering Literacy as defined by ITEEA
Can be easily aligned to individual country standards



- ▶ Inquiry Units (Lesson Plans)

- ▶ Primary Sources (Original sources or evidence such as an artifact, document, recording, that was created at the time of study)

- ▶ Engaging Video and Audio

- ▶ Hands-on-Activities

<https://vimeo.com/ieereach/electriclighthandson>

- ▶ Background Information for the Teacher

- ▶ Additional Resources

Interdisciplinary resources found here link to TryEngineering lesson plans and other sources

VIA:

- FREE online website
- A one-stop shop with all the information needed to bring the history of engineering and technology to life in the classroom

reach.ieee.org

REACH Website: reach.ieee.org

Inquiry Units on IEEE REACH website



Drones



Triremes



Radio



Electronic Music



Skyscrapers



Tools of
Early Maritime Navigation



Electric Lighting



Printing Press



Refrigerator Railcars



Information Theory
(Posting Soon!)

REACH - IMPACT

2022 Year End Stats

- **12,221** Users with 34,177 page views (46,200+ users over 5 years)

At minimum, if only 70% (Users) were teachers, and they used the resources *only one time*, **205,313 students impacted** in 2022!

Overall Stats

- 2,700+ downloads of Inquiry Units and supporting materials via REACH website
- 1,700+ subscribers to the REACH monthly newsletter (emailed)

Newsletter subscribers surveyed, 85% stated they used REACH in their classroom during the most recent school year. Of those, **41% used it 3 or more times.**



- Users have accessed the site from **186 countries**
- **7,000+** Users have accessed from **Region 8** (*Est. 118,000 students impacted!*)

Blue covered areas on world map shows from which countries REACH was accessed, dark, 63% is US, **15% Region 8**

UNESCO Partnership

Under IEEE's Memorandum of Understanding with UNESCO, with assistance from the IEEE Africa Council and the Uganda Section

UNESCO/REACH co-branded Pilot education program in Uganda, Africa

- Delivered to students (predominately girls) in the classroom and by way of a traveling classroom trailer, reaching under-served rural communities.
- Upon completion, more than 70 teachers and approximately 1,000 students were impacted.

Expansion of Program

- Uganda National Commission for UNESCO invited REACH to present a STEM teachers workshop
- Uganda Ministry of Education in attendance, and currently scaling via a top-down approach
- UNESCO wants to expand program by taking REACH to rural areas in South Africa, sees REACH as opportunity to improve female interest in STEM and as an aid to engineering capacity building in Africa
- UNESCO interested in expansion in other African Countries and possibly within their global network of schools



IEEE REACH in Africa and Region 8

▶ **COMSTEDA 19** (CONFERENCE ON MATHEMATICS, SCIENCE AND TECHNOLOGY EDUCATION IN AFRICA)

“Continental platform for educators to share innovative ideas, best practice, and interrogate issues relating to STEM education. The international forum brings together educators, policy makers, researchers, teachers, NGOs, and public / private sector stakeholders to present papers, posters, exhibitions and workshops.”

- **Hosted by the Uganda Ministry of Education**
- Presentation, Workshop, and IEEE support (Silver Bolt - REACH implementation partner, Uganda Section and IEEE volunteers)
- **Included annual meeting for Strengthening Mathematics and Science Education in Africa (SMASE-Africa)**

27 African Member Countries – Ministries of Education

Seeks to promote synergy in promoting dialogue on effective classroom practices in STEM through research, policies, networking, advocacy, and capacity building

▶ **OE Global Conference, Nantes, France with UNESCO and awarded the UNESCO OER Implementation Award for Excellence, 2021**

▶ **World Science Forum, Cape Town, South Africa**

- CEMASTEAM, Kenya (Secondary-education, STEM-arm, Kenya Ministry of Education)
- National Science & Technology Forum - South Africa
 - STEMulator – Collaboration and other IEEE collaborations including HC’s ETHW
- 7- Discussions with South African Parliament relating to using REACH in rural school project



❖ **1,029 teachers and students** (in-person and virtual)

❖ **16 countries participated/** including 38 STEM education centers & virtual hubs that included student participation.



REACH opportunities through Networking

Share REACH with your local community!

- PowerPoint presentation is available to introduce local educators and administrators to the program
- IEEE volunteers may connect us directly with local school districts and we will provide them with a free teacher training webinar
- Help REACH with philanthropic opportunities through corporate introductions

IEEE REACH Webinar – IEEE Education Week

Discover IEEE REACH: A Valuable STEM Education Resource for Educators

Vincent Kaabunga – Past Chair, IEEE Africa Council will share his experiences with REACH and working with local educators

Date: April 3, 2023

Time: 9-10 AM EST

Education Week site (<https://educationweek.ieee.org/>) to learn more, or register here: <https://bit.ly/REACH-Webinar>



Questions?