Online Community Scan

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<h1 align="center">Topic</h1>

Virtual labs are digital alternatives to physical labs in science courses. Virtual labs are great alternatives when resources and facilities are not available, or materials are dangerous and difficult to obtain. Virtual labs are not new technology, but now they are more readily available, simulate more complex content, and are compatible with various platforms. Like other new technologies, science teachers must obtain instructional training, resources, and a solid community of practice to successfully implement virtual labs into their curriculums. The following list is a collection of science teacher organizations, virtual lab companies, government initiatives, social media groups, and online communities aimed at the progress of science teaching and scientific learning.

<h1 align="center">Webliography</h1>

PhET

A collection of free online simulations to promote science teaching and learning. The PhET website, based out of the University of Colorado, hosts 97 simulations in different scientific concepts. The site also hosts various teaching resources created by the PhET team and science teachers worldwide. The resources are also available in multiple languages, translated and shared by community members. The PhET organization supports continuous research on the use and impact of virtual labs and provides online webinars, global resources, and fellowships. https://phet.colorado.edu

Virtual Labs Initiative

India's Ministry of Education has an ongoing Virtual Labs initiative. This project aims to deliver virtual labs, experiment simulations, and resources for educational institutions lacking access to facilities or materials. The project also includes an outreach program that has run 2351 workshops with 716,136 participants. Their community also consists of an active Twitter discussion group, @TheVirtual_labs. https://www.vlab.co.in

Labster

A private organization that creates virtual labs and science simulations for high school and higher education science courses. Labster is host to multiple resources available to their members, including webinars, case studies, podcasts, research, and actively presents in major science teaching conferences. Their main goal is to ensure every student has access to quality science education, and universities and colleges around the globe have used their platform. https://www.labster.com/resources

ChemCollective

The National Science Digital Library project aims to support chemistry teachers with engaging online labs and simulations. The online simulation platform led by Dr. Yaron at Carnegie Mellon hosts its simulations and content in collaboration with other universities. The site also hosts lesson material created by community members and continuously seeks cooperation with its members. http://chemcollective.org/teachers/index

National Science Teacher Association

The national community of science educators has over 40 thousand members in the field of science and education. The NSTA provides resources, content, research, and conferences to improve the quality of science education. The NSTA hosts numerous articles and webinars on virtual labs and various conference presentations on best practices and the use of different platforms. https://www.nsta.org

LabXchange

An online community for learning and sharing labs in all fields. The site hosts resources from various platforms, websites, and highly active community members. Content can be used and modified to create personalized learning pathways and shared again for other members to use and modify. The global community aims to build learning networks, provide mentoring, and form communities of practice. The LabXchange community also hosts multiple conference events, webinars, and continuously posts new blog articles highlighting best practices, educators, and relevant news. https://www.labxchange.org/explore

Virtual Labs MERLOT Skills Commons

A Virtual Lab community of practice created to support the use of innovative virtual labs educational technology in higher education with members around the world. The MERLOT community hosts over 190 thousand members and 97 thousand learning resources. The Virtual Lab subgroup hosts resources for professors in the universities, and anybody with access to the site, like virtual labs in various science content areas from diverse platforms, case studies, and ePortfolios of professors with first-hand experience implementing virtual labs in their curriculums. https://virtuallabs.merlot.org/index.html

OER Commons

The Open Educational Resources (OER) Commons is a worldwide community that shares free quality educational resources to breach the gap in equitable access to scholastic material. The community creates and shares online textbooks, activities, assessments, lesson plans, and simulations for all major subject areas. There are 142 virtual-lab-specific posts and discussions by members of the community. www.oercommons.org

American Association of Chemistry Teachers

A professional community support by teachers and for K-12 teachers of chemistry. Their main objective is to support the continued success of chemistry and science teachers by providing resources, professional development, coaching, conferences, and diverse networking opportunities. Membership in the organization includes various benefits, and they also have an active Twitter community with over 3 thousand followers. The AACT has created different webinars, published peer-reviewed and news articles on virtual labs. https://teachchemistry.org

Science Teacher Facebook Group

The public Facebook group created by Muhammad Shafique aims to bring science-based teaching methodology help to its members. The group has an active membership of 17.6 thousand members with hundreds of posts a month. Many members discuss virtual lab resources within the group and help implement virtual labs in their lessons.
https://www.facebook.com/groups/454808828054279/

Teacher Resources Subreddit

A subreddit group created in 2013 where teachers share teaching resources and materials. The community has 27.8 thousand members and high post activity. The subreddit can be further filtered into course-specific posts. The general science subgroup consistently shares new platforms, resources, and best practices for virtual labs from various users.
https://www.reddit.com/r/teachingresources/