Accessibility of Digital Resources

A Framework for the Evaluation of STEM OER

SIMIODE - Session 1

February 13, 2021
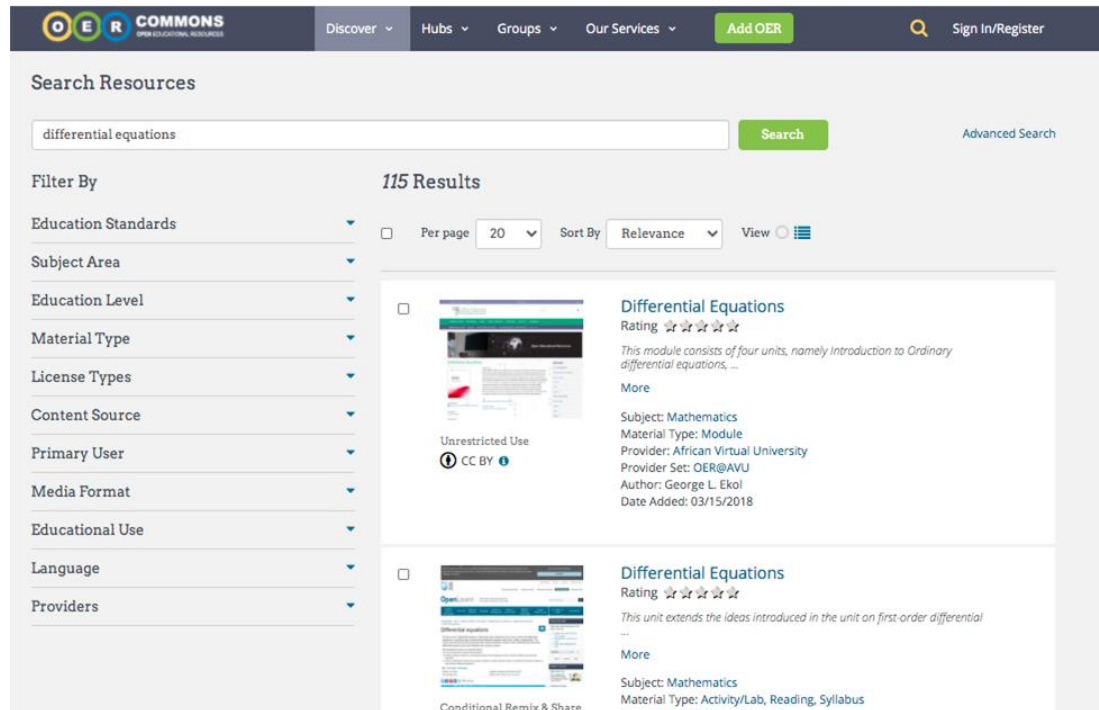
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About ISKME

- **Evidence-based tools** and frameworks to support open pedagogy and the use of OER

- **OER library** with curation and authoring tools to foster collaboration around OER (OERCommons.org)

- **Social science research** that examines the impact of OER use on teaching and learning

About The Project

- Seeks to expand on prior work by ISKME in collaboration with the National Center on Accessible Educational Materials.

- Goal has been to create **evaluation tools and enhanced descriptors to support STEM faculty** in effectively determining whether the OER they find and create meet their campus accessibility requirements and the needs of their learners.

- Part of a larger mini-grant program to support the use of OER for postsecondary STEM education, facilitated by Bates College and the SCORE network, and supported by the William and Flora Hewlett Foundation.

Defining OER: Quick Review

OER are any teaching and learning materials that reside in the public domain or have been released under a license that permits no-cost access, use, adaptation and redistribution.

Because OER can be legally distributed and adapted, they enable the the course design shifts needed to **create accessible, engaging learning experiences for all students**.

OER Can Be:

Primary Sources & Datasets

Videos

Games & Simulations

Open Software

Assignments & Activities

Open Textbooks

Accessible

The term "accessible" is defined by the Office for Civil Rights (OCR), U.S. Department of Education as:

"When a person with a disability is afforded the opportunity to acquire the same information, engage in the same interactions, and enjoy the same services as a person without a disability in an equally effective and equally integrated manner, with substantially equivalent ease of use." —Office for Civil Rights Compliance Review No.11-11-6002

OER Accessibility

The term "OER Accessibility" broadens the OCR definition to include the principles of equity of access and use called for in open education, as well as those described in the [guidelines for Universal Design for Learning](#).

OER Accessibility emphasizes multiple options for learners. Accessible materials are perceivable, usable, and understandable by, and made robust for, the widest range of learner variability.

|	Affective Learning	Recognition Learning	Strategic Learning
3 Principles of UDL	Provide Multiple Means of **Engagement**	Provide Multiple Means of **Representation**	Provide Multiple Means of **Action & Expression**
3 Sets of UDL Guidelines	Provide flexible options for generating and sustaining motivation, addressing the WHY of Learning.	Provide flexible ways to present WHAT we teach and learn.	Provide flexible options to express HOW we learn and express what we know.
3 Goals for Learners	Purposeful & Motivated	Resourceful & Knowledgeable	Strategic & Goal Directed

Project Rationale

With OER and the right accessibility evaluation tools in place, faculty are better positioned to:

- Work on their own or to contact their campus accessibility expert to begin addressing accommodations immediately, because openly licensed content can be quickly accessed and legally adapted.

- Expand their knowledge about accessibility and ways to integrate it into their STEM curriculum and instruction.

- Design openly licensed STEM course materials that support both access and use by learners.

- Curate existing STEM content that expands upon traditional textbooks and courseware to address variability in learning.

Project Rationale, Cont.

- How do I know if an open resource meets the accessibility needs of my learners?

- What must be changed in the resource to make it more accessible?

- How do I remediate the resource once I determine its gaps?
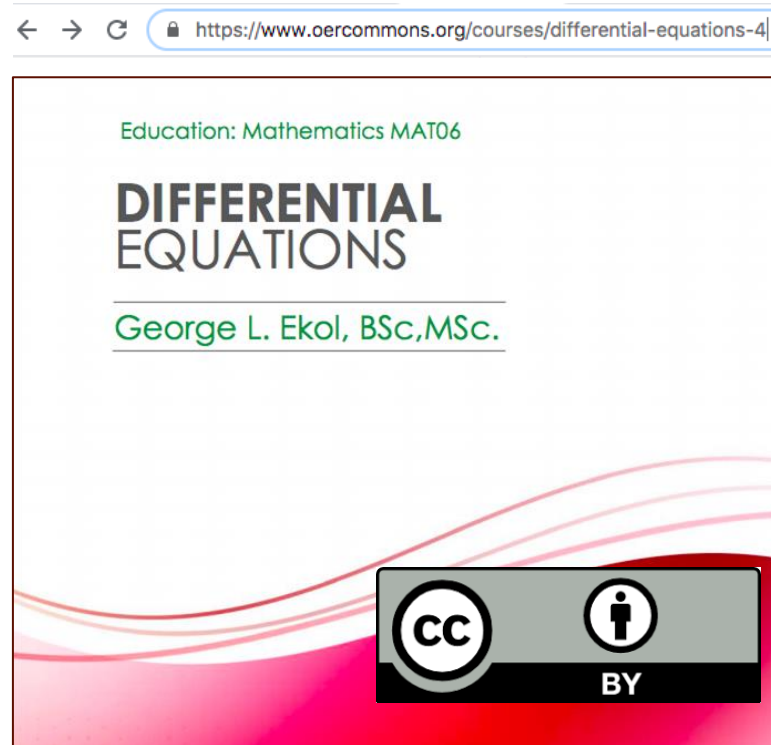
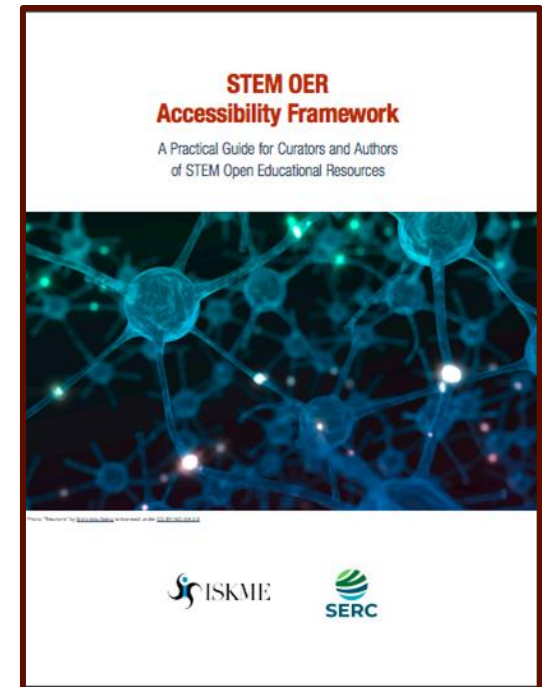
Tags (3)

Coefficients   Differential Equations

Fourier Analysis

Project Approach

- Convened an advisory council of accessibility and STEM curriculum experts

- With advisor input, developed an evaluation tool targeted to STEM faculty seeking to evaluate, author, and curate OER

- Piloted the tool with 21 STEM faculty

- Based on analysis of the pilot data, created the STEM OER Accessibility Framework and Implementation Guide in collaboration with advisors

Resulting Framework & Guide

- 23 accessibility criteria, organized under a POUR + STEM (POURS) Framework:

  - **Perceivable**: Can all students at least perceive the content?

  - **Operable:** Are all students able to navigate and interact with the content?

  - **Understandable:** Are all students able to understand the content?

  - **Robust:** Are all students able to interact with the formats used to present the content?

  - **STEM:** Are all students able to access and use content components that are relevant to STEM?

- For each criterion: Checklist, definition, best practices, examples, and tools

Access the Framework at https://tinyurl.com/STEMOERAccessibility

STEM OER Accessibility Framework

A Practical Guide for Curators and Authors of STEM Open Educational Resources

ISKME   SERC

Connect With Us

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