

FOSTERING INFORMATION LITERACY SKILLS FOR ENGINEERS: A MODULE BASED APPROACH TO ENGENDER LIFELONG LEARNING

University of Waterloo Library

Dr. Kari D. Weaver, kdweaver@uwaterloo.ca and Dr. Kate Mercer, kate.mercer@uwaterloo.ca



This work was led by individuals who live and work in Waterloo, Ontario, Canada, which is the traditional territory of the Neutral, Anishinaabeg and Haudenosaunee peoples. The University of Waterloo's main campus is situated on the Haldimand Tract, the land granted to the Six Nations that includes six miles on each side of the Grand River. Our active work toward reconciliation takes place across our campuses through research, learning, teaching, and community building. We strongly encourage you to locate yourself within the territory in which you live and work.

INTRODUCTION

In distance learning It is necessary to create learning opportunities tailored for specific needs. Engineering students present a unique challenge for librarians as they come to information with a purely 'transmission-of-knowledge' mindset, not a critical perspective (Taraban, 2006). Despite this challenge engineers spend large amounts of time finding, evaluating, synthesizing, and using information (Fosmire, 2014). To bridge the gap between the higher education and professional practice, the authors led a grant-funded project to create a suite of open educational resources (OER) written and designed to teach engineering students key information literacy concepts for application in the classroom and beyond.

REFERENCES

- Fosmire, M. (2014). Engineering research. In P. Keeran & M. Levine-Clark (Eds.) Research within the Disciplines: Foundations for Reference and Library Instruction (pp. 46-49). Rowman & Littlefield.
- Taraban, R. (2006). The growth of text literacy in engineering undergraduates [contributed paper]. ASEE Annual Conference and Exposition, Conference Proceedings.

STUDENT NEEDS

To identify the scope and focus of the project existing information including engineering student questions and samples of student work were reviewed. Through this process a number of student needs emerged:

- Information literacy that mirrors real-world engineering practices
- Content to address the complexity of information from online sources (e.g. misinformation, bias)
- Discussion of how AND why to evaluate information
- Professional and ethical obligations for information use

THE MODULES



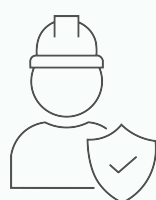
Information Overload

Misinformation, Trust, & Bias



Information Evaluation & Filtering

Diversity of Information



Information Use, Ethics, and Professionalism

Modules were designed to be used together or independently by undergraduate engineering students in any year of study.

LESSONS LEARNED

- Asking questions with the intention of understanding other approaches or ways of knowing is a sign of respect, when done well
- Successful collaboration takes time and sustained effort, particularly when the collaboration is interdisciplinary
- Communicate in lay language - this is not the time for discipline specific jargon
- Set firm deadlines for feedback and discussion, especially of content
- Listen to and involve students in the work. You will be glad you did!

THE AUTHORS THANK

The authors would like to thank eCampus Ontario who provided the generous grant funds to develop this project, Cathy Sebastian who designed custom graphics seen in this poster, and the many individuals who contributed their time to provide feedback at various points of development. Additionally, this project benefitted from the time and expertise of our collaborators at Queen's University, the University of Toronto, and the University of Manitoba.

USER FEEDBACK

Feedback was gathered through student response to content, direct usability testing, and a two-phase survey of students, faculty, STEM librarians, and practicing engineers. Additionally, students working on the project shared their feedback and insight throughout. The word cloud represents content and experiences in the modules that resonated with users.



SEE THE MODULES



POSTER CITATION

Weaver, K.D., & Mercer, K. (2022). Fostering information literacy skills for engineers: A module based approach to engender lifelong learning [Poster presentation]. Distance Library Services Conference. West Lafayette, Indiana.