

A modular approach to implement the EOP framework in an Engineering Education Masters' Program



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Introduction

This poster presents the results of developing and implementing 3 modules, incorporating learning outcomes related to Environmental Impact and Design, Social Responsibility, and Communication and Teamwork. The project incorporated a cross-disciplinary approach to engineering solutions, implementation, and implications. Project-based, hands-on learning activities were included in the modules to achieve EOP learning outcomes. In this poster we report on the modules incorporated, activities used, learning outcomes achieved and other key metrics.

This approach has been initially implemented at a research-intensive university in the Southeast have begun to incorporate the aforementioned modules into the following courses: Sustainability and Open Access Application in Engineering Education (Environmental Impact and Design), Teaching Pedagogy for Service-Based Engineering Design Challenges (Social Responsibility), and Field Experiences in Engineering Education (Communication and Teamwork).

ASEE EOP Framework



UN 17 Sustainable Development Goals



EOP COURSE INTEGRATIONS

- TED 595 Teaching Pedagogy for Service-Based Learning Engineering Design Challenges (Social Responsibility) Fall 2025
- EED 595 Sustainability and Open Access Application in Engineering Education (Environmental Impact and Design) Spring 2026
- EED 509 Field Experiences in Engineering Education (Communication and Teamwork) Summer 2026

MODULES COMPLETED THUS FAR

Social Responsibility-

- Recognize that some communities have historically been negatively impacted and/or intentionally marginalized and continue to be disproportionately negatively impacted by engineering activities (2, 4)-
- Activity (Social Network Analysis)

Environmental Literacy-

- Describe how engineering activities directly and indirectly cause positive and negative social/ cultural impacts throughout the design life-cycle, both to workers producing the products (i.e., labor practices, livelihood, health, etc.) and to communities, society, and non-human life (i.e., resources acquisition, waste production and management, traditional/cultural methodologies, etc.) (2,4)
- Activity (WikiEdu)

WORK WITH MENTOR

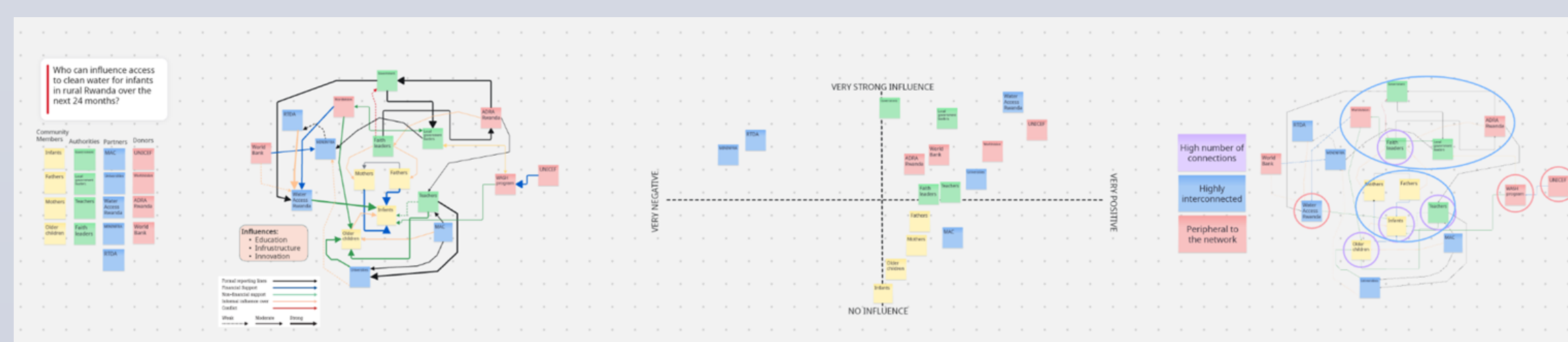
- Dr. Ro Worthy
- We have met with our mentors on two occasions
- Dr. Worthy has provided our project team with valuable resources to support our efforts and has been instrumental in helping team members address logistical challenges of implementing the modules.
- We requested guidance on our evaluation process for this project.
- Key metrics-3 required
- Section 1: Number and Types of Courses Developed or Modified
- Section 2: Number and Types of Students Reached
- Section 3: Number of Faculty Reached

August 15th, 2025 (Preliminary data)
 November TBD, 2025
 November TBD, 2026
 Progress reports-2 required (August 15) Through survey monkey

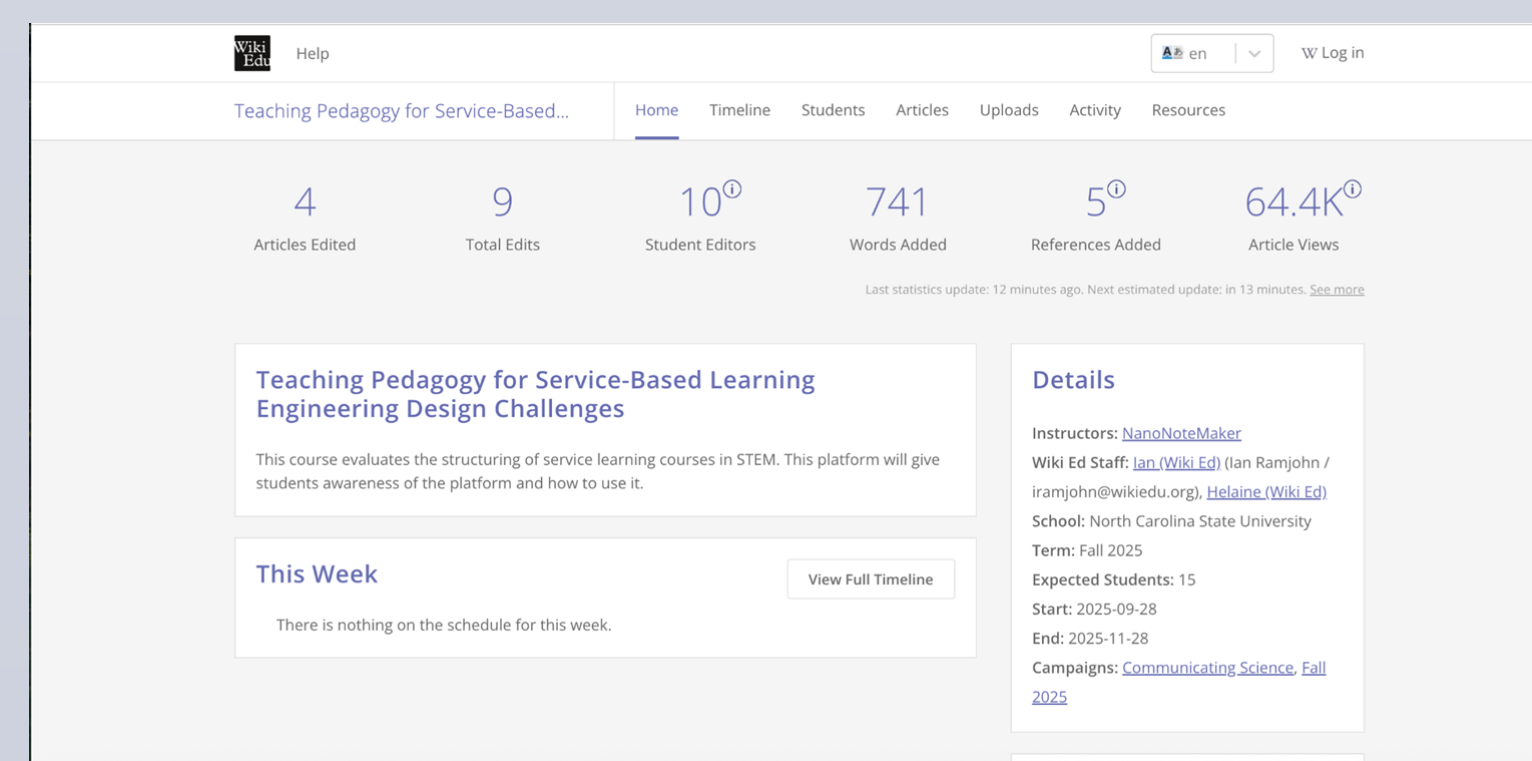
RESULTS

Student Artifacts

- Social Network Analysis



- Wiki Edu Activity



College of Education

College of Education

Engineering Education

NEXT STEPS

- Environmental Impact Assessment(Core-4) connection with LO 3
- Question complex or contradictory information to make decisions among trade-offs (i.e., What is the cost of the decision? Who and what will be most impacted by the decision? Are marginalized communities part of the decision?) by Dr. Veronica Catete (Nov. 18th)
- WIP: A modular approach to implement the EOP framework in a Engineering Education Masters' Program abstract accepted ASEE 2026

References

1. The Lemelson Foundation. (2022). The EOP Framework. 2. Rulifson & Bielefeldt. (2019). doi:10.1007/s11948-018-0042-4.

Acknowledgements

ASEE, The Lemelson Foundation, EOP MGP, and our mentor: Dr. Ro Worthy (Kennesaw State University)

More Information?

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