CSforME: *Integrating CS in Maine's High Schools*

Code.org reports that 44% of rural high schools in Maine have no foundational CS courses available and in small schools that number rises to 53% (2023-24 school year). While there is an official state position and a state plan for CS education, those have not materialized into planning for developing teaching standards, teacher certification, or graduation requirements for CS.

Educate Maine, the Institute for Advancing Computing Education (IACE) are proposing a Small-size High School strand project that will develop a new pathway for CS/CT in rural underserved schools in the state: integrating the content into core curriculum (e.g., social studies, science, ELA) in high school classes. Through this planning grant, CSforME will establish a Researcher-Practitioner Partnership that convenes STEM professionals and researchers along with classroom teachers and school administrators to together develop curated collections for rural ME schools, while identifying other resources and preparation educators will need for classroom implementation.

The research questions will be:

RQ 1 - what is the current state of rural teachers' self-efficacy, relevance, and interest in integrating CS into their subjects?

RQ2 - what are prioritized recommendations to the state based on this evidence to support rural teachers' growth in teaching CS integrated into other subjects?

These outcomes will become the basis of a larger NSF grant proposal, which would allow teacher supports to be created and disseminated.

Project activities will include:

1. Establishing an RPP with 3-5 schools with HS teachers across multiple disciplines;
2. Leading listening sessions for educators and community members to develop an on-the-ground understanding of these underserved areas, their cultural/value systems, and other assets or barriers that may impact CS/CT education;
3. Lead exploratory research (mixed-methods) to learn what factors may increase CS teaching self-efficacy, CS relevance for students, and interest among Maine's rural educators;
4. Work as an RPP to examine already developed integrated CS/CT materials (e.g., Digital Promise) to evaluate which might be effectively used for use in Maine's underserved high schools and how they may be adapted to tie into local workforce/community issues and needs, compiling them into an initial database;
5. Pilot testing an integrated CS PD with teachers in multiple disciplines;
6. Creating traveling, unplugged CS/CT kits that can be used as dissemination/communication tools as well as in classrooms and conferences; and
7. Creating a Policy Brief and other outreach materials for reporting back to local stakeholders and decisionmakers on outcomes and next steps.

Educate Maine advances education policies and practices that prepare Maine students to be the next generation of productive, engaged citizens. EM leads outreach and advocacy to advance education policies and practices that prepare Maine students for postsecondary learning and the workforce; convenes education, business, and policy leaders to develop innovative solutions to Maine's education and workforce challenges; and manages programs that help realize an ambitious education vision for Maine. Project>Login is the signature program that Angela Oechslie directs to expand CS in Maine.

IACE is an independent, non-partisan, non-profit research institute that produces and promotes evidence-based methods to bring CS education to every child. Their work involves designing, conducting, and promoting research that educators find relevant and actionable, empowering researchers to produce meaningful and rigorous studies that address key questions in computing education.