

The goals of this poster presentation include the following: Attendees will (1) consider how argumentation can be used across multiple disciplines in elementary schools and (2) consider how coding can be embedded within everyday mathematics and science instruction.

Current standards that highlight the use of argumentation in teaching mathematics and science underscore the importance of providing mathematics teachers with professional development opportunities to support them in implementing collective argumentation in the classroom. Moreover, based on recent calls for including coding in elementary education, it is worthwhile to consider how mathematics teacher educators (MTEs) can improve mathematics teacher education, K-12, by designing professional development opportunities to integrate these two ideas.

All teachers were interviewed before and after the professional development course. Those who participated in the enactment phase were interviewed several times throughout implementation. Our analysis of interview data showed that teachers felt they were already engaging students in argumentation in mathematics and science instruction but were not confident in teaching coding or using argumentation in coding instruction. While teachers were initially hesitant to teach coding because of a lack of time and content knowledge, they were willing to learn coding alongside their students and collaborate with colleagues and MTEs to plan lessons integrating coding. During the enactment phase, teachers integrated coding in mathematics, science, language arts, and social studies lessons. Moreover, teachers reported collective argumentation is relevant to all subject areas, not just mathematics and science. Many teachers voiced that collective argumentation is fun and engaging while promoting higher-level thinking and fostering relevant life skills. Initial concerns that not all students could engage in collective argumentation seemed to change as teachers implemented the CALC approach in their classrooms.