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All Aboard, All Attuned and All Involved: Fostering Learner Engagement and Teamwork with Clickers in an Introductory Computer Science Course at Winthrop University

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Modern education technology tools and learning systems provide the means for faculty to develop courses that offer connected and engaging learning opportunities. However, many courses, particularly those in the sciences and engineering disciplines, are not often designed to encourage collaboration, cooperation and teamwork.

Given the presence of a global and interconnected economy, it is critical for students to interact with classmates who hold diverse perspectives, experiences and opinions. Moreover, research shows that students who have had the opportunity to participate in learning activities with heterogeneous teams --early in their college life-- are more likely to develop lasting relationships with classmates with backgrounds that are different than their own.

In the past few years, there has been a wide variety of exploratory uses of student response systems, such as clickers, to facilitate classroom interaction and collaboration in large and introductory college courses. From a pedagogical standpoint, research shows that the purposeful integration of clickers in classroom activities can help improve learner's engagement and peer-to-peer interactions in high enrolment courses, i.e., those with 20 or more students.

CSCI 101 is an introductory computer course at Winthrop University. With enrollment levels that range from 25 to 45 students, CSCI 101 is a general education course taken by students at the University who are majoring in a wide variety of disciplines. We decided to use three sections of CSCI 101 to study team learning with clickers. More specifically, we are examining through the study, whether focused use of clickers in the classroom by the students improve contents understanding, engaged teamwork and collaborative learning.

In this session, we report preliminary results of the CSCI 101 with clickers study. We also discuss instructional design strategies and pedagogic approaches that can be used to foster learner engagement and collaboration in large classes.