3 - Science Teaching Processes | Empirical

SP - (15006) - UNDERSTANDING STUDENTS' SENSE-MAKING PROCESSES WHEN FACED WITH UNEXPECTED DATA: A CASE STUDY

Natalya St Clair (United States of America)[1]; Brandi Ediss (United States of America)[2]; Lynn Stephens (United States of America)[1]

1 - The Concord Consortium; 2 - Northampton, MA, USA

Short Abstract

Examining a lesson in a high school biology unit that utilized noisy sensor data, we sought to understand the ways students engaged in active reasoning about the data and the factors that influenced this process. Video analysis centers on one small group of students as they learn to use sensors to collect data on osmosis, focusing particularly on their reactions to variation within and across experimental runs. Our observations indicate that discussion with peers and classroom observers was most productive in facilitating understanding of noisy data when accompanied by hands-on trial and error with the sensor, supported by teacher scaffolding and onscreen instructions provided by the curriculum. Our results lead to several suggestions for educators who are interested in exploring inquiry-based science investigations using sensor data.