Those supporting contemporary reform efforts for mathematics education in the United States have called for increased use of mathematical technologies to support student-centered learning of mathematical concepts. There is a need for more research and professional development to support teachers in transitioning their instruction to better meet the goals of such reform efforts.

Instrumental approaches to conceptualizing technology use in mathematics education, arising out of the theoretical and empirical work in France and other European nations, show promise for use to frame studies on school mathematics in the United States. *Instrumental genesis* is used to describe the bidirectional and influential relationship that develops between
a mathematical user and the mathematical and technological tool – the tool shapes the user and the user shapes the tool. Instrumental orchestration is used to describe the teacher’s role in guiding and shaping students’ use of technology and their opportunities to engage in instrumental genesis. Although recent work has revealed different types of instrumental orchestrations, researchers have not yet unpacked the finer-grained characteristics of the performance phase of teachers’ instrumental orchestrations; doing so would help educators build their repertoires of teaching techniques from which they can draw when supporting technology-enhanced mathematical activities.

Concurrent to developments in the literature related to instrumental orchestrations, the literature related to discourse in mathematics education has been used to describe and categorize different pedagogical moves that provide conditions favorable for mathematical discourse in the classroom and help to position students as doers of mathematics and as co-constructors of mathematical knowledge. These pedagogical moves may be viewed as aspects of educators’ repertoires of teaching techniques. Such literature supports the student-centered tenets of contemporary reform efforts.

The case study presented here is used to discuss data collected from two sections of one college instructor’s class for preservice elementary teachers (PSETs). Instrumental approaches are elaborated by way of teacher discourse moves and other pedagogical moves related to the PSETs’ use of Tinkerplots and the TI-73 Explorer. A new category of reform-oriented pedagogical moves, referred to as student-centered instrument moves, is revealed and grounded in the data. The instructor’s use of different pedagogical moves is cross-referenced with her use of different types of instrumental orchestrations. Implications for theory, future research and teacher training and development are discussed.