

ABSTRACT

HARRISON, TAYLOR RAY. Decision-Making of Secondary Statistics Teachers. (Under the direction of Dr. Hollylynne Lee).

An increasing number of high school students are enrolling in statistics courses. Hence, an increasing number of teachers are needed to plan and implement these courses. Yet, many teachers report feeling unprepared to teach statistics. When planning and implementing these courses, teachers draw upon their knowledge and beliefs when making decisions about their instruction. These decisions can have a significant impact on the learning of the students in those courses. However, little is known about how and why teachers of statistics courses make the decisions they do. This study investigates the decisions that secondary statistics teachers make, both when they are planning statistics instruction and when they are implementing statistics instruction. The study attempts to identify the knowledge and beliefs that teachers are drawing upon when making decisions, and contextual factors that may be inhibiting these knowledge and beliefs from being put into practice.

To investigate secondary statistics teachers' decision-making, an instrumental collective case study was performed. Seven high school statistics teachers participated in a series of interviews and observations designed to assess their decision-making processes. Participants' decision-making was examined first during their planning of instruction, and then during their implementation. Regarding participants' planning of instruction, the study identified five areas of beliefs and two areas of knowledge that participants drew upon. Contextual factors ranging from short class periods to limited planning time often inhibited four of these areas of beliefs and both areas of knowledge from being put into practice. Regarding implementation of lessons, the study identified several types of events that resulted in participants making decisions to modify their initial instructional plan by altering a student task, a lecture, or a whole-class discussion. These

modifications ranged from altering the instructions for a task to adding new topics to a discussion. When making these decisions to modify lessons, participants drew upon four areas of beliefs and two areas of knowledge. Contextual factors often mediated whether and how participants used their knowledge and beliefs in their decision-making.

Results suggest that statistics teacher educators should help prepare teachers to make decisions, both planned and in response to unanticipated events. Results also suggest that teachers should be aware of the variety of contextual factors that they will face in the reality of the classroom. Recommendations are presented for preparing statistics teachers to make decisions in the classroom.