

The Quest for the Constructivist Statistics Classroom:
Viewing Practice Through Constructivist Theory
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The major assumption underlying this research is that all knowledge and understanding about statistics is constructed. Given that students construct their own knowledge, teaching must be designed to support knowledge construction. In this context, the global purpose addressed in this research is: "How do accomplished statistics educators support knowledge construction in their introductory statistics courses?" This global purpose is studied by attending to two more manageable questions: 1) What instructional strategies are being used in and around the statistics classroom?, and 2) What are the results of an analysis of these instructional strategies when the analysis is grounded in a constructivist perspective?

"The Quest for the Constructivist Statistics Classroom" is a qualitative research study that investigated the teaching of four accomplished statistics educators (Paul Velleman at Cornell University, David Moore at Purdue University, Gudmund Iversen at Swarthmore College, and Beth Chance at California Polytechnic State University). Data collection methods included e-mail questionnaires, on-site interviews, and classroom observations of the participants.

Instructional strategies employed by the participants were grouped into categories: strategies for how students come to know statistics; strategies involving technology; and, strategies for assessing student learning.

For the purpose of data analysis, the following definition of constructivism was used: Constructivism is a theory of learning that allows students to develop and construct their own understanding of the material based upon their own knowledge and beliefs and experiences in concert with new knowledge presented in the classroom. During the analysis, it was decided that

the instructional strategies being used in the participants' classrooms did not dichotomously support or not support constructivism, but rather supported constructivism to varying degrees.

Some findings of the study included: 1) all four participants supported student construction of knowledge to some degree; 2) each of the participants employed multiple instructional strategies to involve the students in the learning process; and, 3) class size impacted the ability of the instructors to employ instructional strategies that were more supportive of knowledge construction. In addition, a series of questions intended to inspire further thought and research emerged from the study.