Methodological Challenges in Research on Student Learning

Donche, Vincent; De Maeyer, Sven; Gijbels, David; and van den Bergh, Huub, eds.
International Specialized Book Services, 2015

Book Review

Tags: learning theories | structural equation modeling | student learning

Reviewed by: Harold Morales, *Morgan State University*
Date Reviewed: November 30, -0001

The central aim of this edited monograph is to present new techniques for dealing with methodological challenges to sociological research on student learning. The book is organized into a brief preface, seven chapters that each deal with distinct methodological approaches to student learning research, and an eighth chapter that provides an outline for how the preceding chapters can be applied to or help shape future research.

Each chapter presents various solutions to distinct methodological challenges through concrete case studies. Chapter one provides an overview and case study of how structural equation modeling (SEM) can be used to conduct empirical research that tests hypothesized influences on student learning. The authors contend that previous research has not been able to fully address the complex multi-variable character of students' approaches to learning. The strength of SEM is not only its ability to test for multiple variables such as these, but also to examine the pattern and strength of the relationships between these variables. Chapter two explores challenges to research on students in dual programs composed of both university classes and internships. The goal of such research is to take into account the different perspectives, discourses, and research instruments (for example, focused in-depth research and large scale qualitative research) used to study dual program student learning, including workplace learning and the transitions between contexts of learning, learning in higher education and its specific learning activities and patterns, and longitudinal professional development. To study such complexity, the authors propose the use of multilevel analysis for dealing with nested data and methodological triangulation for testing the use of the multiple research instruments. Chapter three outlines a method for using neural network analysis

techniques for assessing the predictability of how much influence cognition, motivation, and learning approaches have on academic performance. Chapter four provides a model for addressing the failure of previous research to address implicit preferences for specific types of learning environments by using conjoint analysis, a method developed and employed in marketing research. Chapter five proposes exploratory-grounded research as a way of developing theories rather than solely testing them. The first case study provided in this chapter analyzes data from semi-structured interviews on students' motivational orientation through various processes for identifying, verifying, and revising themes in the data. The second study then analyzes another set of interviews using the categories developed from the first study. A strength of this approach is its ability to develop innovative theories that are not limited to any pre-established or hypothesized number of categories. Chapter six addresses emotional dimensions and their measurement in research on teacher education. In addition to providing a thorough rationale, outline of theoretical perspectives, overview of the phenomenological method in social science research, identifying themes in the data, and discussing methodological challenges, the chapter provides a helpful survey in the form of a table of previous research articles that address emotional dimensions. Chapter seven explores challenges to longitudinal studies and provides a model and short list of best practices.

Though interesting conclusions and/or corroboration and challenges to previous theories regarding student learning are discussed throughout the book's varied chapters, the overarching focus is indeed on methodological challenges and proposed solutions to these.

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