Book Review

Gigi Berardi

Research Methods in the Dance Sciences

by Tom Welsh, Jatin P. Ambegaonkar and Lynda Mainwaring

Tom Welsh, Jatin P. Ambegaonkar, and Lynda Mainwaring are editors of the information-packed *Research Methods in the Dance Sciences*, accounting also, either singly or as co-authors, for about half of the 23 chapters in the book. A must-have for dance students, educators and scientists, the numerous figures and tables, appendices, impressive glossary with well over 200 terms, and extraordinary 20-page index (one of the most detailed I have ever seen), alone, renders this substantial book critically important for those interested in the dance science foundations of conditioning, technique, health, and longevity for dancers.

Twenty-four scholars and practitioners contributed to the 23 chapters which are divided into six parts. The book includes practical applications as exercises and/or summaries, as well as chapter-specific references and additional resources.

Figures clarify topics and key discussion elements, including models of scientific thinking, aspects of ethical researcher conduct, steps in the research data cycle, and a working model for translating research into injury prevention practice. Tables further organize material for example, as electronic resources in the dance sciences or possible management strategies for threats to internal research-design validity.

Simply put, this book offers everything one might want in a how-to on research design, implementation, analysis, and interpretation, as well as dissemination of results. A careful read of the book gives even first year undergraduates a solid understanding of how to design, conduct, interpret, and report dance science research. Topics and articles from each of the six parts are highlighted below to illustrate the scope of the book.

The beginning section of the book is called “Bringing science to dance,” and includes a provocative article written by the editors titled “Ways of knowing” which asks questions about how the reader can recognize practical information that is accurate. The authors discuss a variety of ways of knowing, ranging from intuition and trial by error, to logical reasoning and emotion. This understanding is somewhat different to more scientific ways of knowing which include observation, identifying and refining a question to answer, and following a systematic way to answer it. The chapter, too, provides an excellent discussion of approaches in understanding science, such as suspending judgement and parsimony, or seeking the simplest explanation of the results, that are tantamount to certain research methods. Also discussed are ways of developing knowledge, suggesting that although researchers themselves are personally involved in the process, they should remain disciplined and systematic in their work, without adding personal bias. The authors conclude that many ways of thinking and knowing can be useful in the right context.

In Part 2, “Creating a foundation for research,” each chapter provides material especially useful for students selecting research topics and designs. Chapters “Reviewing research literature and choosing a topic” by Leah Reilly Sherman and Merry Lynn Morris; “Types of research” by Tom Welsh; “Research ethics and research ethic committees” by K. Michael Rowley and Tom Welsh; and, “Writing a literature review” by Sarah J. Kenny and Jeffrey A Russell, offer suggestions for how to be both critical and productive in reviewing research reports, appreciate the important roles of descriptive research, particularly in new research areas, and understand the importance of recognizing and treating participants ethically, as collaborators in the research process—and, in so doing, adding to the quality of the research work produced. The chapters are worthwhile for researchers in any field of science. For example, the “Writing a literature review” chapter details the general need for clear questions and purpose statements, primary and original research, and citation management programs to help stay organized and efficient.

Part 3, “Designing and conducting research,” consists of three chapters, all of which the editors authored or co-authored. These chapters include a treasure trove of information: selecting participants by identifying target populations and then deciding on sampling techniques, such as non-probability, purposeful selection, and more; choosing research settings; selecting independent variables; pilot testing; understanding common quantitative data analysis types, tests, and results; and, ways to present data, understand research designs, and query internal and external validity, much less methodological integrity.

Part 4, “Choosing a research methodology,” is the largest section of the book, featuring chapters on research methods: descriptive and qualitative approaches; surveys, questionnaires, and interviews; correlation and regression analyses; case studies, reports, and series; experiments; and, epidemiological research in dance—all of which are well explained. Ideas discussed include: the richness of descriptive research (in new research, but also focusing on one person or group); the time-effectiveness of using surveys to collect data from samples; that qualitative research can indeed be robust; correlations as a first step in looking for patterns; the value of case reports; and, within-subject designs useful in assessing patterns of individual performance over time and across conditions. Epidemiological research in dance, a chapter co-authored by Rogier M. van Rijn, Sarah J. Kenny, and Janine H. Stubbe, addresses the question: What are the best ways to measure illness and injuries among dancers? Dance epidemiology is described as the science that studies the patterns, causes, tracking, and prevention of health-related events among dance populations. The authors posit sport injury prevention models and discuss the pattern-recognition aspect of the research.

Both Part 5, “Influencing the field,” and 6, “Pursuing a career in the dance sciences,” offer much guidance regarding reporting research (Jeffrey A. Russell and Jatin P. Ambegaonkar) and applying findings to dance practice (Donna H. Krasnow and Virginia Wilmerding), pursuing graduate studies (Matthew Wyon and Yiannis Koutedakis), and building a research repertoire by focusing on research skills, research communities, and mentors and collaborators (K. Michael Rowley). They emphasize ways to apply research in the day-to-day work of practitioners.

Very little, if anything, has been left out of this all-inclusive but concise tome, and I intend to

use it in my own graduate classes. Authors not previously mentioned are Amit Abraham, Manuela Angioi, Liliana S. Araújo, Imogen Aujla, Steven J. Chatfield, Wendy C. Coates, Boyi Dai, Jennifer Deckert, Claire E. Hiller, Nico Kolokythas, Emma Redding, and Selina Shah.

This highly readable text, useful for both undergraduate and graduate classes, as well as professional researchers and clinicians, is based on considerable solid research. Indeed, many of the researchers have been working for decades in the design, implementation, and interpretation of research methods in dance. *Research Methods in the Dance Sciences* is a unique and wide-ranging text, asking questions and providing many answers, an invaluable addition to the bookshelf of any dance student, educator or dance scientist

Full Citation

Welsh T, Ambegaonkar JP, Mainwaring L, eds. *Research Methods in the Dance Sciences*. University Press of Florida; 2023.