

Chapter XLIV

Using Meta-Analysis as a Research Tool in Making Educational and Organizational Decisions

Ernest W. Brewer
University of Tennessee, USA

ABSTRACT

This chapter explores the viability of meta-analysis as a research tool for helping career and technical educational and organizational professionals make decisions. Following many of the same steps involved in the basic research process, meta-analysis provides a means for reconciling contradictory quantitative results from multiple studies, thereby generating a conclusive answer. However, meta-analysis is subject to many forms of bias and can pose practical problems. Meta-analysis has been used to study many issues in administration and management. From this chapter, educational and organizational professionals can determine if it is an appropriate tool to help them make decisions about specific challenges that they face.

INTRODUCTION

Faced with numerous challenges on the job, career and technical educators (CTE) and administrators rarely have the luxury of having simple, straightforward decisions about what is the best course of action for addressing those challenges. Sorting through the various options for dealing

with challenges can be more difficult than the challenges themselves. For example, consider job satisfaction of CTE. Although most educational and organizational professionals undoubtedly will agree that increasing job satisfaction is vital for organizational effectiveness, how to go about increasing job satisfaction is debatable. Should one focus on such organizational factors as reward

structure and promotion policies? Or, should one direct one's energy to recruitment and selection of employees? The answers to these questions can vary according to who is asked and what literature is consulted. Consequently, many professionals charged with addressing an issue such as job satisfaction can easily find themselves overwhelmed by a myriad of confusing and contradictory ideas. Therefore, it is essential that professionals know how to integrate and make sense of conflicting information.

The purpose of this chapter is to explore the viability of meta-analysis as a research tool in order to help professionals make decisions about complex challenges facing their organizations. Specifically, the author hopes to provide enough information about the definition, purpose, and process of conducting meta-analysis research, as well as the key issues and emerging trends associated with this type of research. In doing so, this information will allow educational and organizational professionals to determine if it is suitable for application in their situation so that they can become savvy consumers of meta-analytic results.

BACKGROUND

History of Meta-Analysis

Prior to the establishment of meta-analysis, researchers often summarized findings of various studies by grouping together similar aspects of the research. For example, if a researcher was reviewing literature regarding the effect of a reading program intervention, he or she may have stated that 15 of 25 studies showed that reading programs led to increases in student ACT scores. However, this method did not take into account the diverse designs and quality of the various research studies that were being summarized or

the discrepancies in study results (Gay, Mills, & Airasian, 2009; Rubin & Babbie, 2008). Furthermore, the summarization approach resulted in subjective research, often varying from one researcher to the next due to inconsistent ways of selecting and analyzing such research (Gay, Mills, & Airasian). Introduced in the early 20th century (Moncrieff, 1998; Rosenthal & DiMatteo, 2001), meta-analysis initially was used primarily in clinical medical research (Nijkamp & Pepping, 1998). However, in the 1970's, Glass, McGaw, and Smith (1981) adapted this method of research for the social sciences, and over the past 30 years, it has been widely applied to quantitative research in education, psychology (personal and industrial), criminology, and other social sciences (Bangert-Drowns & Lawrence, 1991; Duvall & Tweedie, 2000; Mann, 1994; Robey & Dalebout, 1998).

Meta-Analysis Defined

During the past several decades, the literature associated with research studies has increased substantially. While many studies investigate similar subjects and phenomena, often the results are not the same. Meta-analysts seek to reconcile the differences amongst a multitude of research literature (Gay, Mills, & Airasian, 2009; Rubin & Babbie, 2008). In simple terms, meta-analysis is a quantitative technique for combining results of multiple studies with similar hypotheses to clarify findings (Creswell, 2008; Gay, Mills, & Airasian; Rubin & Babbie). When performed properly, it generates a conclusive answer to a complex issue from an inconsistent and disparate body of research. It can be particularly useful for reconciling contradictory results from studies on similar topics. Meta-analysis research also provides insight into the strengths and weaknesses of prior research studies using quantitative measures (Rubin & Babbie).

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