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Extending the use of references to the literature: Lessons from a content analysis of mixed method case exemplars

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ABSTRACT

The role of references to the literature in a scholarly publication is conceived principally in terms of its foundational role in establishing the need for a study and framing its contribution. This methodological inquiry used content analysis to examine how authors of mixed methods exemplars deployed references to the literature in the discussion section of their manuscripts. These authors also deployed references to literature in the discussion section to support statements about the implications and significance of the research or to explain unexpected findings. Immersion in a broad range of relevant literature may be particularly important in mixed methods research where a strong emergent strand often introduces heightened awareness that a phenomenon is more complex than initially conceived.

1. Introduction

The quality of inferences or conclusions holds a central place in a framework to evaluate the overall merits of research using any type of approach (Greene, 2007; Tashakkori & Teddlie, 2008). Inferences are generalizations or interpretations constructed by a researcher that go beyond the results, participants, context, and sometimes theory and that vary by level of abstraction (Ercikan & Roth, 2006, 2011). They make meaning or sense of the outcomes of the research process or provide answers to research question (Teddlie & Tashakkori, 2008) that go beyond the evidence (Miller, 2003). In mixed methods research, meta-inferences that link inferences from the qualitative and quantitative strands of a study are a critical measure of quality. Teddlie & Tashakkori (2009) underscore this point when they observe: “Obviously, the quality of the entire research project depends on the integration, blending, or linking of QUAL and QUANT inferences is achieved” (p. 292).

A principal argument for the value added of mixed methods research also lies with inferences. This argument is that “warranted inferences represent more comprehensive and insightful understanding than could be attained with one framework or method alone” (Greene & Hall, 2010, p. 139). From a realist perspective, warranted conclusions are valid in that they entail accurate description, explanation, and interpretation that is supported by the evidence and that acknowledge plausible alternative explanations (Maxwell & Mittapalli, 2010). Quality can be demonstrated by attributes of inferences (e.g. inferential validity and inferential consequence) and/or by steps in the process used to reach them (Teddlie & Tashakkori, 2010). Explicit language that links a result to its data source or analytical procedure is one way to warrant a conclusion. Linking a speculative inference to references to the literature is a way to build the credibility of the research findings and another way to warrant a conclusion.

The role of mastery of the literature in developing a case for the contribution of the research is the first step in making an

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inference (Teddle & Tashakkori, 2009). Carefully establishing the contours of the literature in the introduction to a publication makes it possible in the concluding sections to be explicit about what the findings add to the literature and/or to develop an argument for its contribution to practice or theory (Beach, Becker, & Kennedy, 2007).

Although engagement in the literature is generally conceptualized exclusively in terms of its foundational role in framing the purpose and contribution of a study, it also plays a pivotal role in providing evidence to enhance the credibility of findings (Beach et al., 2007) and to often a theoretical explanation for contradictory findings (Creamer & Edwards, in press). Expansion of the breadth of the way references to the literature are deployed may be a feature of high-quality mixed methods publications as authors seek to make meaning of unexpected or contradictory findings and to build a coherent and logically consistent explanation that links qualitative findings and quantitative results.

2. Mixed method perspective

The purpose of this methodological inquiry is to examine how authors of mixed method publications singled out by leading figures in the field as case exemplars ($N = 35$) deploy references to the literature in the discussion and conclusion sections of their manuscripts. The topic is of international significance because it addresses conventions of academic writing. It is linked to previous work by the lead author about conventions for academic reporting (Creamer, 2004, 2011). The research is a type of discourse analysis that relates to “the set of rules or assumptions for organizing and interpreting the subject matter of an academic discipline” (Freshwater, 2007, p. 135). It considers the way that language is used to communicate expertise and authority (Starks & Trinidad, 2007). We used content analysis to accomplish the very practical goal of helping newcomers to the conventions of academic writing to construct meaningful and credible conclusions. Excerpts from critical cases illustrate different ways that authors of the case exemplars built the credibility of their conclusions by linking references to the literature to a variety of different types of statements that reflect interpretation. Two negative cases extend the qualitative analysis and introduce the role purpose plays in shaping the ways inferences are used to construct conclusions.

3. Review of relevant literature

AERA Standards for Reporting Empirical Research in AERA Journals (2006) explicitly address four of the types of inferences that contribute to inferential validity. These are: (a) re-integration of the literature with findings, (b) statement of the contribution, (c) acknowledgement of limitations, and (d) consideration of alternative hypothesis. The Standards use the expression “warranted” to refer to inferences that are solidly grounded in the results of a study and linked to appropriate sampling and design features. The role of alternative explanations in warranting is evident in the statement: “An important aspect of reporting is to provide evidence that the outcomes and conclusions are warranted and that disconfirming evidence, counter examples, or viable interpretations have been appropriately considered” (AERA Standards, 2006, p. 36).

Ercikan and Roth (2006) distinguished between what they refer to as “low” and “high” inferences. They advised: “education research should produce research results that are characterized simultaneously by high and low inference levels” (p. 22). Low inferences are less abstract or interpretive in that they often refer to results and are descriptive in nature. This type of inference is warranted when the link to the data or to an analytical procedure is apparent. High inferences are more abstract and reflect a more nuanced level of explanation. They are more overtly speculative in nature and can be supported by references to the literature. A combination of low and high inferences can serve to build a coherent chain of reasoning.

Table 1 is our extension of Ercikan and Roth’s (2006) distinction between low and high inference research. It identifies the types of inferences typically found in the concluding sections of a research article and distinguishes them by level of abstraction as either descriptive or more speculative.

We categorized the different types of inferences that appear in the section of an academic document where results are interpreted and adopted the language used by Ercikan and Roth by referring to low and high types of inferences. We refer to three kinds of inferences as low inferences (repeat a result, references to the literature, and limitations) and five others in the high inference category because they necessarily require a departure from what can be strictly be called a result (alternative hypotheses, contribution, explanatory statements, recommendations for future research, and implications for practice).

Table 1

Descriptive and More Speculative Types of Inferences Found in the Discussion Sections of a Manuscript.

Descriptive (Low) Inferences	More Speculative (High) Inferences
1. Summary of results	1. Statement about contribution
2. Observation of consistencies and inconsistencies with the literature	2. Explanation about results that are not tied to existing theory
3. Limitations of the research, particularly related to transferability and generalizability	3. Alternative explanations or hypotheses
	4. Implications for practice and policy
	5. Recommendations for future research

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