Editorial

Virtual Special Issue on "Quality in Mixed Methods Research"

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Sergi Fàbregues[1], José F. Molina-Azorin[2], and Michael D. Fetters[3]

The quality of mixed methods research (MMR) has been a much-debated topic in the field as evidenced by a significant number of published articles (Bryman, 2014; Bryman et al., 2008; O'Cathain et al., 2008; Onwuegbuzie & Johnson, 2006; Onwuegbuzie & Poth, 2016), chapters of mixed methods handbooks (Collins, 2015; O'Cathain, 2010), and reports (NIH Office of Behavioral and Social Sciences, 2018). Two reviews by Heyvaert et al. (2013) and Fàbregues and Molina-Azorin (2017) traced the increase in the number of publications since the mid-2000s, a period coinciding with the beginning of the *expanded procedural developmental period*, according to Creswell and Plano Clark (2018). In this period, MMR methodologists focused on consolidating the acceptance of MMR through the publication of guidelines and criteria for the design, implementation, and reporting of high-quality MMR studies. Owing to *Journal of Mixed Methods Research's* (*JMMR*) leadership during this period, the journal took seriously its responsibility to publish several substantial editorials and articles dedicated to the topic of quality in MMR. In this editorial, we introduce this virtual special issue by providing an overview of these previously published editorials and articles.

Since MMR has several features that are distinct from those of quantitative and qualitative research, this research should be appraised using criteria specifically related to MMR. Specifically, appraisals of MMR need to provide both a rationale for using MMR and specific evidence of integration of the quantitative and qualitative components. These criteria allow researchers to guarantee the warrantability and transparency of MMR studies in which they participate, journal editors and reviewers to be confident that published MMR manuscripts meet high-quality standards, and researchers participating in MMR systematic reviews to ensure that they can distinguish the best evidence available.

An important challenge for the establishment of quality criteria stems from the diversity of viewpoints in the MMR field where various disciplines and philosophical stances converge. Several authors (Creswell, 2015, Plano Clark & Ivankova, 2016) have argued that quality of MMR is highly context-dependent and this characteristic makes agreement on criteria a difficult undertaking. The general points of agreement and plurality of views on this topic are both

[1]Universitat Oberta de Catalunya, Barcelona, Spain
[2]University of Alicante, Alicante, Spain
[3]University of Michigan, Ann Arbor, MI, USA

Corresponding Author:
Sergi Fàbregues, Department of Psychology and Education, Rambla del Poblenou, 156, 08018 Barcelona, Spain.
Email: sfabreguesf@uoc.edu

well represented in the five editorials and eight articles we have chosen for this virtual special issue. The articles chosen broach a range of subjects, including the following: the development of quality criteria and frameworks, overviews of quality criteria, and reflections on the concept of quality.

Development of Quality Criteria and Frameworks

To date, *JMMR* has published five editorials that provided reporting guidelines for authors interested in submitting empirical or methodological manuscripts to the journal. In the first *JMMR* editorial on this topic, the co-editors-in-chief Creswell and Tashakkori (2007) took advantage of their experience during the first year of submissions to the journal to describe the attributes that strong and effective empirical and methodological manuscripts should have in order to be published in *JMMR*. The authors defined a set of core guidelines still in use today. According to these guidelines, publishable manuscripts should make a relevant contribution to the MMR literature, and in the case of empirical studies they should include and properly report rigorously designed quantitative and qualitative components that are well integrated in the study.

Four years later, Mertens (2011) added several insights to these guidelines. Using as a basis her experience as co-editor-in-chief, she stressed that manuscripts publishable by *JMMR* should not only report rigorous and well-integrated quantitative and qualitative components but should also contribute to the MMR literature from a methodological standpoint. Mertens also noted that authors should report key MMR features, such as the rationale for using an MMR design, how the quantitative and qualitative components were integrated, and the added knowledge gained from the integration.

In 2015, Fetters and Freshwater (2015) took another step forward by not only describing the attributes that should be included in rigorous MMR manuscripts submitted to the journal, but also by providing recommendations on how to structure those manuscripts to clarify for the readership the methodological gap in the literature and implications of the article for mixed methods methodology. Two key contributions found in this editorial are the presentation of the hourglass model of writing MMR manuscripts and the idea that the structure of an empirical MMR paper depends on the type of MMR design used.

In response to input from the editorial board, Fetters and Molina-Azorin (2019b) added three new requirements for articles to be published in *JMMR*. These included stating in the abstract the contribution of the manuscript to the MMR field, providing a clear methodological aim in the introduction section, and incorporating in the discussion a subsection titled ''Contribution to the Field of Mixed Methods.'' In the most recent editorial on this topic, Fetters and Molina-Azorin (2019a) noted the challenge for readers to conveniently access the entire series of previously published editorials. They presented a checklist of elements for inclusion in submissions to *JMMR*, intended to be easy to access and use by authors less familiar with MMR who are interested in submitting a manuscript to the journal. They encouraged authors of submissions to include the checklist with submissions to *JMMR*.

In the first of the eight original articles selected for this virtual special issue, Dellinger and Leech (2007) developed a validation framework incorporating notions of validity used in both qualitative and quantitative research, as well as other notions specific to MMR. Given the broad diversity of terms in the literature related to validity, the validation framework aims to unify notions and terminology. Based on both Messick's and Cherryholmes' work, the validation framework incorporates the following five elements of construct validation: (1) the foundational element; (2) validity criteria for quantitative, qualitative, and mixed methods research; (3) inferential consistency; (4) the utilization/historical element; and (5) the consequential element. A key contribution of the paper is the introduction of the notion of the foundational

element, which refers to the researcher's prior understanding of the literature and their personal knowledge and potential biases related to the phenomenon under study.

Three years later, Leech et al. (2010) demonstrated the applicability of Dellinger and Leech's validation framework by evaluating four studies in the disciplines of education, health, and counseling. The authors showed that the validation framework could help researchers carrying out MMR studies evaluate their own work. The results of the study allowed those authors to confirm the flexibility of the validation framework as a tool that can be applied to MMR studies in a wide range of disciplines. Furthermore, the results also allowed those authors to conclude that the validation framework is an inclusive and comprehensive tool that includes all the elements that researchers must take into account when assessing the validity of MMR studies.

Canales (2013) described the Transformative, Mixed Methods Checklist for Psychological Research With Mexican Americans, a tool composed of evaluative criteria based on three perspectives: the transformative MMR approach, Chicana/o (Mestiza/o) psychology, and Baca-Zinn and Dill's Chicana multiracial feminism. Given the lack of literature on culturally relevant criteria for understudied populations, the aim of this checklist is to provide researchers with criteria that are aligned with transformative perspectives in MMR and to promote the development of analogous criteria for MMR studies with similar types of populations.

Using an MMR study of graduate student engagement in an online methods course, Ivankova (2014) addressed the topic of quality in exploratory sequential MMR designs with the ultimate aim of providing both procedures to ensure the quality of the meta-inferences and strategies to alleviate potential validity threats. Validation strategies proposed by the author included the following: using a systematic process to select participants for qualitative follow-up, to carefully describe unexpected quantitative results, and to observe the interaction between the qualitative and quantitative components of the study. Together with Creswell and Plano Clark (2018) and Fetters (2020), Ivankova's treatise is one of the few publications to highlight the idea that, since each MMR design has a number of characteristic features (such as the order of the components and the type of integration), both quality criteria and validity threats should be conceptualized and operationalized from a design-specific perspective.

Harrison et al. (2020) developed the Rigorous Mixed Methods framework, which refers to four primary and two advanced elements to be taken into account when designing, carrying out, and reporting MMR studies. Primary elements include the description of the data collection and analysis processes used in the quantitative and qualitative components, as well as the integration and the MMR design used. Advanced elements include the rationale for choosing an MMR design and the use of MMR terminology. In the second part of the article, the authors demonstrated the use of their framework to evaluate MMR studies published in six management journals. They concluded that only 9.7% of the articles were partially to highly rigorous, while 65.6% revealed low degrees of rigor. An important contribution of the article is the distinction between the term *rigor*—an objective measure of how well a study has been conducted—and *quality*—a subjective researcher's evaluation influenced by their discipline.

Overviews of Quality Criteria

To address the lack of guidelines in the literature for evaluating primary MMR studies, Heyvaert et al. (2013) carried out a systematic review of critical appraisal frameworks published through 2009. Using a systematic search of 11 databases, together with several complementary search strategies, the authors identified 13 critical appraisal frameworks specifically intended to appraise the quality of MMR studies. They classified the criteria suggested in these critical appraisal frameworks into three types: (1) criteria for evaluating the quality of the quantitative and qualitative components, (2) criteria for evaluating the quality of the mixed methods

components, and (3) general evaluation criteria. The authors also examined other features of the critical appraisal frameworks, such as the extent to which they are user-friendly and the underlying philosophical stances.

Reflections on the Concept of Quality

Hong and Pluye (2019) proposed a conceptual framework to better understand the process of critical appraisal in systematic mixed studies reviews. Those authors highlighted the complexity of this process for three reasons: the heterogeneity of design types included in systematic mixed studies reviews, the diversity of critical appraisal tools published in the literature, and the lack of consensus on the definition of quality. To address this complexity, they distinguished between three dimensions of quality: (1) methodological quality, the extent to which a study is properly carried out; (2) conceptual quality, the extent to which concepts are clearly articulated; and (3) reporting quality, the extent to which the study is transparently and accurately reported. The authors then related each dimension to the different types of objectives that are generally pursued in systematic mixed studies reviews.

In response to the lack of empirical studies on MMR quality, Fàbregues et al. (2019) reported a multiple case study that examined the ways in which 44 researchers in the disciplines of education, nursing, psychology, and sociology operationalize and conceptualize the quality of MMR. The findings revealed two different perspectives on quality: a contingent and flexible perspective and a universal and fixed perspective. By revealing the intrinsic relationship between those perspectives and the four disciplines included in the study, the findings indicated that researchers' practice and views on quality are highly dependent on their social contexts. While researchers in nursing and psychology tended to adopt a universal and fixed perspective, those in sociology and education tended to adopt a contingent and flexible perspective.

Contribution to the Field of MMR Research

This virtual special issue demonstrates that *JMMR* has been an important venue for the ongoing discussion of the topic of quality throughout its history. This compilation of editorials and articles illustrates the diversity of disciplines of researchers addressing the issue of the quality of MMR, as well as the variety of articles on this topic published in the journal, including conceptual, empirical, and review papers. While the articles included in this virtual special issue reflect many points of agreement on the conceptualization and operationalization of the quality of MMR, these articles also reveal several distinct paradigmatic perspectives ranging from transformative to positivistic approaches—a diversity of views consistent with the open-mindedness and heterogeneous nature that characterize the MMR field. Furthermore, they reflect the debates on the quality of qualitative research during the past four decades. As in qualitative research (Mays & Pope, 2000), what constitutes quality in MMR is the subject of a continuing, highly contested debate on the nature, production, and use of the knowledge produced by this methodological approach.

We anticipate that readers will find these articles to be helpful when contemplating the elements that they need to take into account when designing, carrying out, and reporting a high-quality MMR study. We hope that this compilation will stimulate additional dialogue and perspectives within the MMR community regarding future actions to be taken to further develop the notion of quality in MMR. Taking on board the subject of quality is a sign of the maturity of the field. For this reason, quality in MMR needs to be a topic of ongoing discussion and assessment.

ORCID iDs

Sergi Fàbregues https://orcid.org/0000-0003-1141-7613
José F. Molina-Azorin https://orcid.org/0000-0002-6337-0514
Michael D. Fetters https://orcid.org/0000-0001-8521-5681

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