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Who Is on the Bandwagon?

Core and Periphery in Mixed Methods Research

3

4 ABSTRACT

5 The rapid growth of mixed methods research over the past two decades matches what Fujimura
6 (1989) called a “bandwagon effect.” This study compares articles from the *Journal of Mixed*
7 *Methods Research*, representing the core of the field, to a more peripheral set of randomly drawn
8 articles. A content analysis of the two sets of articles shows strong differences, with the random
9 sample dominated by convergent designs and lower integration between the qualitative and
10 quantitative results. This research contributes to the field of mixed methods by showing system-
11 atic differences between articles published in its flagship journal versus a broad sample of arti-
12 cles from outside this core set. In addition, it offers recommendations for how to reduce this
13 disparity.

14

15 Keywords: Integration, Research Design, Prevalence, Mixed Methods as a Field of Re-
16 search

17

18

19 The past two decades have seen strong growth in the use of mixed methods, with re-
20 searchers rapidly joining this ongoing trend. A search in the Social Science Citation Index
21 (SSCI) for the term “mixed methods” returns just 13 articles that were published in 1999, which
22 increases to 430 published in 2009, and rises to 4,103 published in 2019. This rapid expansion

23 corresponds to Fujimura's (1989; 1996) concept of a bandwagon effect. Once a bandwagon de-
24 velops, it quickly attracts new supporters, and when a bandwagon persists, it generates a new
25 field of study.

26 Fujimura (1989; 1996) described the early stages in the formation of a bandwagon in can-
27 cer research. For mixed methods, that development phase occurred roughly from 1999 to 2009 –
28 a period that included the publication of the first textbooks and a handbook, the formation of an
29 official journal, and the organization of international conferences. Now that the mixed methods
30 bandwagon is rolling, there is no way that even an enlarged version of the core group responsible
31 for the founding and growth of the field could account for the thousands of publications that ap-
32 pear every year. This dynamic points to a core-periphery structure within the field that extends
33 outward from a core of researchers who concentrate on the development of the field to a more
34 peripheral set of substantively-oriented researchers who rely on resources developed by the core
35 group.

36 I will rely on a content analysis of published articles to investigate two areas of interest
37 from a core-periphery perspective: the types of research designs used in the articles and the ex-
38 tent of integration of the results from the quantitative and qualitative methods. The research
39 question for the first of these areas is whether articles from the core and the periphery use the
40 same designs to guide their combination of methods. The second question is whether the two sets
41 of articles have similar extent of integration of their qualitative and quantitative results. These
42 results address a gap in the literature concerning the degree of consistency between the practices
43 in the central and outlying regions of the field. In particular, authors from the core have empha-
44 sized best practices with regard to research design and integration, but there is no information on
45 how well these standards have diffused into general use.

46 Together, these two research questions raise a bigger question about the extent to which
47 researchers who conduct routine empirical studies follow the developments of methodologists
48 who set the standards within the field of mixed methods. From a methodological standpoint, this
49 amounts to examining whether we live in a world where the practices of a core group of scholars
50 extend smoothly outward to the field as a whole, or whether there is a fundamental discontinuity
51 between what the core advocates and what the rest of the field does in its routine research.

52 **Research Methods**

53 The research conducted for this article falls within what Howell Smith and Shanahan Ba-
54 zis (2021) refer to as a Mixed Methods Research Systematic Methodological Review. To repre-
55 sent work from the core of the field, I selected all articles published in the *Journal of Mixed*
56 *Methods Research (JMMR)* from 2015-2019. Of course, the authors of these articles are not
57 themselves necessarily members of the core of mixed methods researchers. Still, the publication
58 of these articles in JMMR signals that they represent the standards of the core, as reflected in the
59 choices made by the journal editors and their selected reviewers.

60 I used a five-year sample from *JMMR* to include enough articles for a meaningful com-
61 parison between the two sources. The time gap should also provide at least a partial indication of
62 the extent to which the methodologically oriented content of *JMMR* is influencing the wider
63 field. In addition, research design and integration are hardly new issues, so these core standards
64 should already be reflected in both samples. Of course, the diffusion of any set of standards takes
65 time, so it would be interesting for future research to investigate this movement from core to pe-
66 riphery in more detail.

67 To represent work from outside the core of field, I relied on the core collection for the
68 Social Sciences Citation Index (SSCI). I chose the SSCI because of its wide coverage of fields
69 such as education, health, business, and social science.

70 Both samples were then limited to empirical studies that used mixed methods. Articles
71 were counted as empirical if they reported both qualitative and quantitative results. Among the
72 most common categories of non-empirical articles were theoretical and methodological presenta-
73 tions, as well as descriptions of study protocols that had yet to be implemented. For *JMMR*, this
74 reduced the total of 102 articles to 60 that reported empirical results.

75 For the SSCI, I searched for articles that used the term “mixed method*” in their title, ab-
76 stract, or keywords to locate a broad-based sample that identified itself with the field. This
77 yielded a total of 4,407 articles in 2019, after eliminating articles published in *JMMR* to avoid
78 double counting. To generate a substantial but manageable number of articles, I drew a random
79 sample of 15% from that pool, yielding 651 articles. During the initial coding process I identified
80 44 articles that were exclusively qualitative, 34 articles that were exclusively quantitative, and 83
81 articles that were non-empirical. This created a final set of 490 eligible articles, of which I was
82 able to locate 421 (86%).

83 The research goals for comparing the designs used in the broad sample from the SSCI to
84 those in the sample from *JMMR* required a systematic typology of mixed methods research de-
85 signs that could serve as a coding system. I followed the procedures of Morgan and Hoffman
86 (2021), who developed the typology of eight research designs in **Table 1**. That article provides a
87 detailed description of these codes and their implementation, where we both coded over 200 arti-
88 cles, and when there were disagreements, we compared notes to reach a resolution. This process
89 proved to be straightforward, and we had an initial agreement rate of over 90%. In the present

90 study, I coded each article based on that previous experience, and found the process to be equally
91 straightforward, but the lack of a second independent coder is a notable limitation for the present
92 study.

93 **Coding Procedures: Extent of Integration**

94 Because there has been so little work on the coding of integration, the current coding sys-
95 tem goes back to the classic work of Greene et al. (1989), which rated the “nature and degree of
96 qualitative and quantitative integration... [during the] data analysis and interpretation/reporting
97 stage” (p. 270). Hence, this approach focuses on the extent of integration between the qualitative
98 and quantitative results through a systematic content analysis of each article’s Results, Discus-
99 sion, and Conclusions sections. This focus on the integration of findings does bypass statements
100 about intents and procedures for integration, but the success of those intents and procedures
101 should be apparent in the extent of integration of the actual results.

102 The coding for the extent of integration in the results ranges from zero to four. Note that
103 the “zero” code picks up cases in which an article’s authors explicitly claimed they were using
104 mixed methods, even though many formal definitions of mixed methods would exclude research
105 that failed to address integration.

- 106 0. The qualitative and quantitative results were presented completely separately.
- 107 1. The Discussion section included a brief interpretation of the two sets of results.
- 108 2. The Discussion section included a detailed comparison of the two sets of results.
- 109 3. The Results section included a systematic analysis that linked the two sets of results.
- 110 4. The Results section used explicit techniques to compare the two sets of results.

111 Although this is the first application of this coding system, it has the advantage of relying
112 on “manifest content” (Elo & Kungas, 2008) based on the placement and length of the statements

113 about integration. This coding system is admittedly exploratory, but if it indeed produces inter-
114 esting results, that will justify the development of more detailed coding systems related to inte-
115 gration. In addition, a count of the number of paragraphs devoted to integration reinforces this
116 attempt to capture the “extent” of integration. Again, the lack of a second coder is a distinct limi-
117 tation.

118 **Results**

119 Figure One shows the prevalence of the eight designs in both the 2019 SSCI sample and
120 the *JMMR* 2015-19 sample. It is obvious that these two distributions are very different, and that
121 the source of this discrepancy comes from the use of complementary designs. In contrast to the
122 65% of the SSCI articles that use complementary designs, only 14% of the *JMMR* articles do.
123 This extensive reliance on complementary designs in the SSCI made the other designs in this
124 sample so infrequent that it overwhelmed additional comparisons with the *JMMR* sample. Thus,
125 the skew in the SSCI sample automatically reduces the share for the other designs, with explora-
126 tory designs making up 14% of the total, followed by a steady descent from explanatory designs
127 (6%) to sampling designs (2%), and only one instance of a transferability design. By comparison,
128 complementary designs were only the third most common design for the articles in *JMMR*. The
129 most common were explanatory sequential designs (26%) and exploratory sequential designs
130 (26%), while articles using convergent, quantization, and multi-part designs each made up 12%
131 of the total. Finally, the two qualitatively-driven designs, sampling and transferability, were quite
132 rare in each sample, which matches Morgan and Hoffman’s (2021) findings from a very different
133 set of articles.

134 Turning to questions about the extent of integration in the results reported in these arti-
135 cles, the data concentrate on the 190 articles from the SSCI sample that used complementary de-
136 signs. The reason for concentrating on complementary designs is that integration was essentially
137 built into the most common other design (exploratory sequential), while the remaining designs
138 generated too few studies for meaningful comparison. In addition, there are only eight cases of
139 complementary designs among the articles in *JMMR*, so it makes sense to summarize them ver-
140 bally, rather than as percentages. Specifically, there were two articles with integration at Level-1
141 with one paragraph each; two articles rated as Level-2 with four paragraphs each; one at Level-3
142 with seven paragraphs; and three at Level-4 with one, six, and seven paragraphs each.

143 Compared to this, over a third of the 273 articles in the SSCI sample (**Table 2**) that used
144 complementary designs had no integration whatsoever (Level-0). For articles that only consid-
145 ered integration in the Discussion and Conclusions sections, 20% had limited mentions of inte-
146 gration averaging just over one paragraph in length, while another 15% had somewhat more
147 detailed comparisons averaging two and a half paragraphs. For articles with integration in the
148 Results section, a quarter contained a systematic comparison, but there were very few instance of
149 a comparative device; those few articles that did use a joint display were shorter than those that
150 used systematic comparisons.

151 At Level-1, the typical content was a sentence or two to the effect that the qualitative and
152 quantitative results were “in agreement.” Combining Level-1 articles with articles at Level-0 re-
153 veals that integration was either absent or minimal in over half of the articles that used comple-
154 mentary designs. At Level-2, the Discussion and Conclusions sections typically contained brief
155 statements about the similarities and differences between the two sets of results, without detailed
156 comparisons. The articles at Level-3 exhibited a strong tendency to organize the results around

157 the quantitative findings, accompanied by a list of qualitative themes that corresponded to each
158 numerical outcome, often including an alternation between statistical results and illustrative quo-
159 tations. Finally, there were only three Level-4 articles that used a joint display or other detailed
160 comparison; by coincidence, this was equal to the number of articles at Level-4 in the much
161 smaller *JMMR* sample.

162 **Discussion and Suggestions for Future Directions**

163 Before considering the implications of these results, it is important to consider the limita-
164 tions of this study. As discussed earlier, the use of a single coder is a notable limitation. In addi-
165 tion, these outcomes are inherently dependent on the choice of the coding system, so an
166 alternative typology could produce different results.

167 **Within these limitations, finding a distinct discrepancy in the use of complementary de-**
168 **signs is especially notable.** The outcome from comparing the *JMMR* studies to the relatively sim-
169 ple designs and low extent of integration in the results of the SSCI articles will be disappointing
170 to many members of the core field of mixed methods. Despite the detailed discussions of design
171 and integration in textbooks and a series of editorials on these topics in *JMMR*, the more periph-
172 eral members of the mixed methods community have not adopted these preferred practices.

173 With regard to the low extent of integration, the source of this problem in the SSCI sam-
174 ple was apparent during the coding process, because these articles frequently relied on a format
175 in which the quantitative and qualitative studies were not only conducted separately but also re-
176 ported in separate portions of their Results sections. This approach typically utilized two differ-
177 ent approaches to the data analysis, with the quantitative analysis relying on pre-determined
178 statistical tests and the qualitative analysis relying on an exploratory search for themes. Too of-
179 ten, both segments of the project were planned and executed in isolation from the other. Thus,

180 although the SSCI sample's widespread emphasis on complementary designs is not inherently
181 problematic, this choice too often served as a generic or default design, with an unquestioned as-
182 sumption that qualitative and quantitative methods would yield meaningfully different insights
183 into the research questions.

184 In terms of recommendations for how scholars outside the core can address this problem,
185 there are techniques for analyzing qualitative data that allow for both exploratory data collection
186 and an integrative stance during analysis. Most of the articles examined here used thematic anal-
187 ysis, to capture the main content of the qualitative data, with the set of themes inductively lo-
188 cated during the analysis process. An alternative would be to use a *hybrid* approach to
189 developing themes (Fereday & Muir-Cochrane, 2006). This process would begin with a deduc-
190 tive codebook derived from the same assumptions that generated the quantitative analysis, which
191 would then be expanded with inductively generated codes that arose during the analysis of the
192 qualitative data. Regardless of the coding mechanics, the essential point is that it is relatively
193 straightforward to introduce elements of the quantitative framework into the qualitative data
194 analysis, and thus to enhance opportunities for integration.

195 Another recommendation for how to improve the integration the results from comple-
196 mentary designs is what Guetterman et al. (2015) term a *joint display*, which is "a table or figure:
197 that simultaneously arrays the quantitative and quantitative results" (p. 555). Joint displays are
198 especially useful for complementary designs because they provide an explicit procedure for
199 bringing the two sets of results together. **Hopeful signs include the increasing number of citations**
200 **to Guetterman, et al. (2015) in the SSCI and** the attention joint displays are receiving in text-
201 books (e.g., Creswell & Plano Clark, 2018; Fetters, 2020). Still, there is a risk that joint displays

202 will gain acceptance among the core members in the field, without an equivalent impact on prac-
203 tices in the periphery. Hence, it is important to think about actions that are targeted outside the
204 core itself.

205 As a recommendation for what the core of the field can do in this regard, rather than try-
206 ing to influence the practices of thousands of individual researchers, it would be more effective
207 to target the journals in which those authors wish to publish. One way to accomplish this would
208 be to generate a statement about standards for the review of mixed methods research. Currently,
209 the closest match to such a set of standards is the American Psychological Association’s Mixed
210 Methods Articles Reporting Standards (APA, 2018), but the guidance these “standards” provide
211 for both authors and reviewers is essentially a checklist. An alternative would be a set of recom-
212 mendations on quality issues that explicitly emphasizes integration and how to achieve it.

213 To produce such a statement, those at the core of the field of mixed methods can build on
214 a considerable body of research on quality standards, as summarized in articles such as Fa-
215 bregues, Pare, & Meneses (2019) and Plano-Clark (2019). Ideally, such a statement would come
216 from an authoritative source, such as the Mixed Methods International Research Association.
217 The goal would be to send such a statement to the editors of journals that are likely to publish ar-
218 ticles using mixed methods; for the full SSCI dataset in 2019, there were fewer than 50 journals
219 that published ten or more articles per year, so this should be a workable task.

220 A final recommendation would be a similar statement on the core curriculum for graduate
221 education. This would focus on how design and integration issues should be covered in introduc-
222 tory courses that discuss mixed methods, since these topics are inherently central to full-length
223 courses on mixed methods.

224

Conclusions

225 Overall, this research contributes to the field of mixed methods by comparing a large,
226 random sample of articles using mixed methods to a set of articles representing the core of the
227 field. The results demonstrate a clear difference between the research choices made by the more
228 peripheral and more central segments of the field.

229 The picture of the field that emerges is not a cause for celebration. The current results im-
230 ply that the core of the field (i.e., those who publish in its flagship journal) is only weakly at-
231 tached to the larger periphery (i.e., those who use claim to use mixed methods in their research).
232 This disconnect raises doubts about how those at the core of mixed methods as a field can im-
233 prove research design decisions and efforts at integration across the research community as a
234 whole. This need for effective strategies re-emphasizes the final recommendation above for di-
235 rect communication with editors of the journals where mixed methods actually appear.

236 Although many of the researchers at the core of mixed methods would undoubtedly pre-
237 fer a world where experts can straightforwardly promote their knowledge to others who claim to
238 be members of the field, these results suggest that is not currently the case. Instead, the band-
239 wagon of mixed methods has definitely gained momentum, but there is a very real question as to
240 whether it is rolling out of control.

241

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243

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- 271

272 **Table 1.** Coding Categories for Articles Using Mixed Methods Research.

Category of Design	Definition
Convergent	QUAL and QUAN studies are compared to determine how similar they are; each method receives equal priority.
Complementary	QUAL and QUAN studies are combined to serve separate purposes within a division of labor between the two methods.
Exploratory sequential	qual study is used as an input to develop a QUAN study (qual → QUAN).
Explanatory sequential	qual study follows a QUAN study to help understand the results (QUAN → qual).
Sampling sequential	quan study is used as an input to locate cases for a QUAL study (quan → QUAL).
Transferability sequential	quan study follows a QUAL study to examine the broader applicability of its results (QUAL → quan).
Multi-Part	Sequential designs that involve three or more steps.
Quantization	Qualitative data are converted into quantitative codes and counted.

273 From Morgan and Hoffman (2021).

274

275

276 Table 2. Extent of Integration of the Results for SSCI Articles Using Complementary Designs

277		Frequency	Mean Number	Standard
278			of Paragraphs	Deviation
279	Level-0	34.6%	0*	
280	Level-1	26.8	1.3	0.7
281	Level-2	14.9	2.6	1.5
282	Level-3	22.3	5.6	4.1
283	Level-4	1.5	4.0	2.4

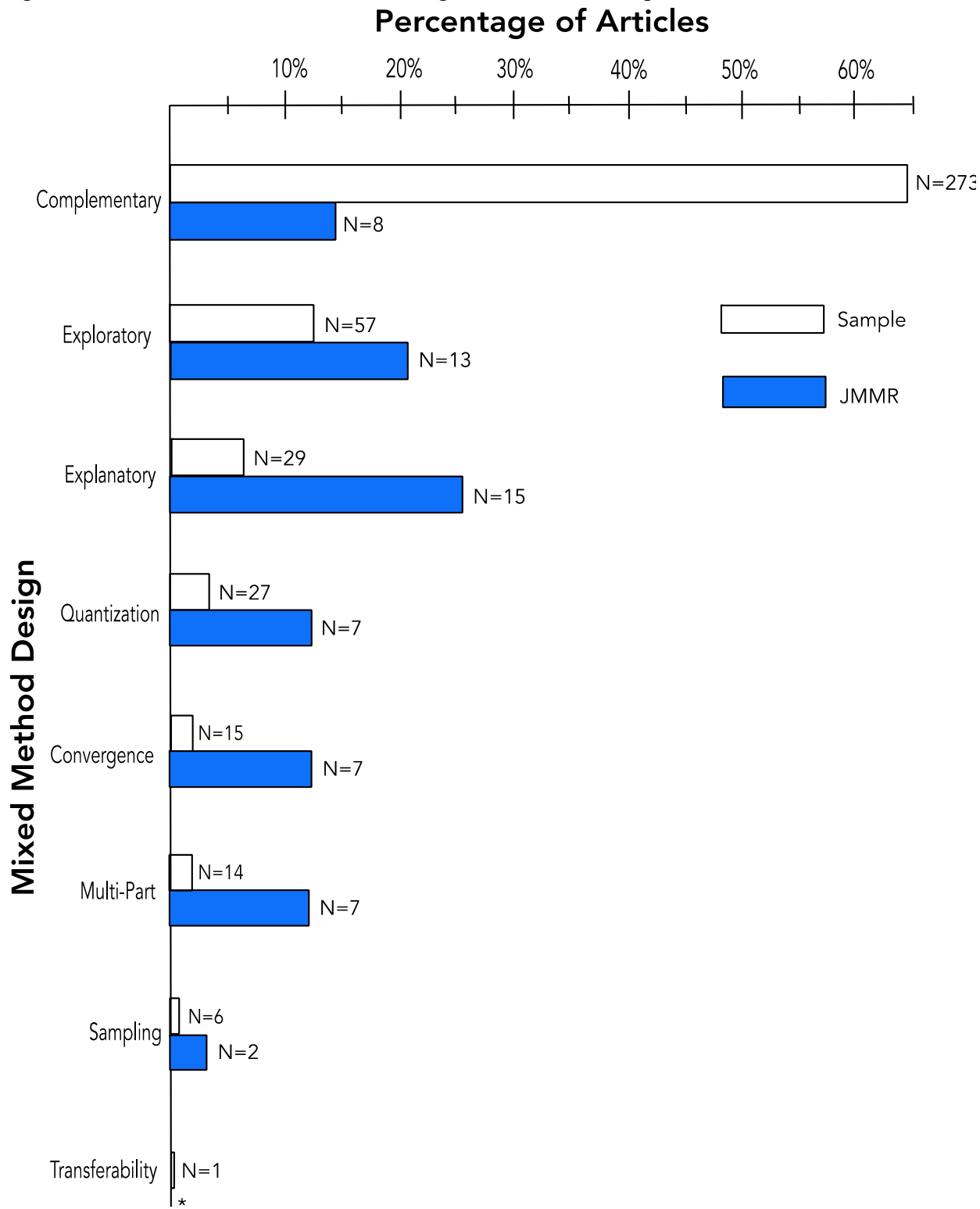
284 N = 269; * By definition

285

286

287

288 Figure 1. Prevalence of Different Designs in the SSCI Sample and *JMMR*



289

290 SSCI Sample N = 421; JMMR N = 60. *Not observed in this data set