



Communicating Empirical Research in Education


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Journal for Research in Mathematics Education (JRME)


JRME has been ranked extremely high. Out of 1,025 education journals worldwide, JRME was ranked 23rd in 2017 and 27th in 2016.



Journal for Research in Mathematics Education (JRME)

Arthur Bakker, ESM EIC

New JRME JCR 3.063

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- A green chalkboard with two pieces of pink chalk and a white arrow pointing upwards.
- **Analysis of 2017 Reviews**
 - **Four Editorials**
 - **Research Questions,**
 - **Theoretical Framing,**
 - **Robust Methods,**
 - **Interpreting findings**

References

Cai, J., et al. (2019). Posing significant research questions. *Journal for Research in Mathematics Education*, 50(2), 114–120.

Cai, J., et al. (2019). Theoretical framing as justifying. *Journal for Research in Mathematics Education*, 50(3), 218–224.

Cai, J., et al. (2019). Choosing and justifying robust methods for educational research. *Journal for Research in Mathematics Education*, 50(4), xxx–xxx.

Cai, J., et al. (2019). So what? Justifying conclusions and interpretations of data. *Journal for Research in Mathematics Education*, 50(5), xxx–xxx.

Research Questions

Concerns about RQs

- Reject: 55% of reviews
- R&R: 23% of reviews
- Accept Pending Revision: 17%

Research Question

- **State the RQ's explicitly.**
- **Justify the RQ's significance.**
- **Use the RQ's to motivate methods.**

Theoretical Framework

We use the term *theoretical framework* broadly to encompass the set of assumptions, theories, hypotheses, and claims (as well as the relationships between them) that guide a researcher's thinking about the phenomenon being studied.



Theoretical Framework

- “Coat Closet” Maxwell (2005)
- “Blueprint” (Grant & Osanloo, 2014).
- “Skeletal Structure of Justification” (Eisenhart, 1991)
- “House Frame” (Spangler & Williams (2019)
- “A Map” (Cai, 2016)

Theoretical Framework

- **The Why: Justifying the Purpose of the Study and the Scope of the Literature Review**
- **The How: Justifying the Design of the Study and the Research Methodology**
- **The What and The So What: Justifying the Presentation of the Findings and the Interpretation of the Findings**



Theoretical Framework

- The theoretical framework - constructed over the course of the study.
- Because the theoretical framework provides a connected set of reasons for the decisions made in conducting the study, only the previous research that made a difference in those decisions is essential to include in the literature review.



Theoretical Framework

- *“The authors introduce many frameworks and constructs in the theoretical framework and the literature review. However, it is not clear which one will be the focus.”*
- *“A number of critical methodological choices were not well justified, and I wanted to know more about the theoretical support for those choices.”*

Robust Methods

- The most common methodological concern: lack of justification

Reject: over 30%

R&R: Over 25%

Accept: Nearly 15%

Robust Methods

Question	Hypothesis	Data	Analysis
Research Question 1	Hypothesis 1	Data 1, Data 2	Analysis 1, Analysis 2
	Hypothesis 2	Data 2, Data 3	Analysis 3
Research Question 2	Hypothesis 3	Data 1, Data 4	Analysis 2, Analysis 3, Analysis 4

Robust Methods

Question	Hypothesis	Data	Analysis	Results	So What?
Research Question 1	Hypothesis 1	Data 1, Data 2	Analysis 1, Analysis 2	Finding 1	Revision of Hypothesis 1 Future Directions for Study
	Hypothesis 2	Data 2, Data 3	Analysis 3	Finding 2	Revision of Hypothesis 2 Future Directions for Study
Research Question 2	Hypothesis 3	Data 1, Data 4	Analysis 2, Analysis 3, Analysis 4	Finding 3	Revision of Hypothesis 3 Future Directions for Study

Discussion Section

- A brief summary of the main results
- Interpreting the results and addressing the “so what” question
- Describing limitations
- Implications of the findings for both research and practice



A Few More Tips

- R&R is a great result
- Noticing Unexpected Findings
- Research for living and for fun
- Seeking collaboration

