

AERA Open Special Topic Call for Papers

Registered Reports

Special Topic Editors: Justin Reich, Casper Albers, and Hunter Gehlbach

Registered Reports are a new form of empirical research article designed to improve the transparency and reproducibility of hypothesis-driven research. When authors initially submit a Registered Report, they submit their Introduction, focal hypotheses, and Methods section of a paper. Articles can then receive “in principle acceptance” based on the quality of the question and methods rather than on the direction or effect size of the findings. Registered Reports are a promising strategy for ensuring greater transparency in the research process. This approach aligns editorial and author incentives towards publishing important questions with excellent research designs, while avoiding incentives that encourage publication of particular p -values or effect sizes, thereby mitigating publication bias.

For this Special Topic, authors are invited to submit Registered Reports on any topic within the scope of AERA Open provided they are willing to pre-register their main hypothesis or hypotheses. As such, the focus of this Special Topic is not so much on a specific theoretical issue, but on providing an outlet to help facilitate rigorous projects aimed at enhancing rigorous, reliable, and reproducible research.

Why submit a Registered Report?

For studies with a clear hypothesis, pre-registration and the Registered Reports format has three key strengths compared with standard publishing.

1. First, it prevents publication bias (the so-called “file-drawer” problem) by ensuring that editorial decisions are made on the basis of the theoretical importance and methodological rigor of a study, *before* research outcomes are known. See Rosenthal (1979) for more on the “file-drawer” problem.
2. Second, by requiring authors to pre-register their study methods and analysis plans in advance, it will reduce common forms of research bias including p -hacking and HARKing (hindsight bias) while still welcoming unregistered analyses that are clearly labelled as exploratory (Gehlbach & Robinson, 2017; Nosek, Ebersole, DeHaven, & Mellor, 2017; Simmons, Nelson, & Simonsohn, 2011).
3. Third, because protocols are accepted in advance of data being collected, the format provides greater incentive for researchers to conduct important replication studies and other novel, resource-intensive projects (e.g., involving multi-site consortia)—projects that would otherwise be too risky to undertake where the publishability of the outcome is contingent on the results (Makel & Plucker, 2014). Note that Registered Reports are equally useful both for replications and original research.

To the extent that Registered Reports and pre-registration of key hypotheses become established practices in education research, publication bias should decrease, p -hacking will be attenuated, and replication studies might become more common. As a result, authors of meta-analyses and policy-makers would gain much clarity around what works in education.

Submission and Review Processes for Registered Reports

Registered Reports differ from the conventional publication process of regular empirical articles by having two phases.

In the first phase, authors write the Introduction and Methods sections of a paper (including their focal hypothesis/hypotheses), before collecting and analyzing any data. Together with any prepared materials and analysis scripts, the manuscript will then be reviewed by peers. High quality pre-registered protocols that meet strict editorial criteria will then be offered *in principle acceptance*. While registered reports are designed to address a particularly acute set of problems in hypothesis-driven, quantitative, experimental research, we are pleased to accept for review manuscripts that test falsifiable hypotheses using any suitable methods, including novel qualitative and mixed-methods approaches. See Gehlbach and Robinson (2017) for a description of how pre-registration might work for non-experimental studies and see [https://osf.io/e6auq/wiki/Example Preregistrations/](https://osf.io/e6auq/wiki/Example_Preregistrations/) for illustrations. The second phase of peer review occurs after data collection, and resembles the regular peer review process. However, the in principle acceptance *guarantees* publication of the results provided authors adhere to their pre-registered protocol—regardless of the direction or effect size of the findings, provided that pre-specified quality standards are achieved in the final product.

While Registered Reports are focused on testing pre-registered hypotheses, the final manuscript can certainly include exploratory analyses. Registered Reports allow a clear distinction between *confirmatory* (that is, pre-registered) hypotheses testing and *exploratory* analyses (for an example paper making this distinction, see Gehlbach, et al., 2016). Because of this distinction, Registered Reports do not diminish the freedom or creativity of the researcher.

For some examples of Registered Reports, see the following papers:

- Verkoijen, P., & Bouwmeester, S. (2014). Is spacing really the “friend of induction”? *Frontiers in psychology*, 5, 259. (available at <https://www.frontiersin.org/articles/10.3389/fpsyg.2014.00259/full>)
- Rowland, C. A., Bates, L. E., & DeLosh, E. L. (2014). On the reliability of retrieval-induced forgetting. *Frontiers in psychology*, 5. (available at <https://www.frontiersin.org/articles/10.3389/fpsyg.2014.01343/full>)
- Van der Zee, T., Admiraal, W., Paas, F., Saab, N., Giesbers, B. (2017). Effects of Subtitles, Complexity, and Language Proficiency on Learning from Online Education Videos. *Journal of Media Psychology*. (available at <http://econtent.hogrefe.com/doi/full/10.1027/1864-1105/a000208>)

Best Practices from Open Science

We encourage authors to adopt other best practices from open science in the submission and publication of manuscripts. We encourage authors to post pre-prints of both first and second stage submissions for additional public comment, to publicly pre-register their methods and analytic strategies using tools like osf.io, to publish and openly license research tools, to publish analytic scripts, and to share data in publicly accessible repositories in ways consistent with privacy concerns. These practices are constantly evolving, so this is not an exhaustive list, but we encourage authors to consider how they can provide the transparency necessary for effective scientific scrutiny and how they can make their research materials, processes, results, and commentary maximally available so their efforts can provide the greatest possible public benefit.

Publication Timeline:

March 1, 2018: Submission deadline for Phase 1 review (Introduction and Method sections only, including any relevant materials and analysis scripts). (Submit to AERAOpenEditors@aera.net.)

April 30, 2018: Decision for Phase 1 reviews submitted by deadline

May 1, 2018 - June 1, 2019: Rolling acceptance of papers for Phase 2 review (full paper)

August 2018 - September 2019: Ongoing publication of Special Topic articles

Authors are encouraged to direct queries regarding this Special Topic to Justin Reich at jreich@mit.edu. Please consult the AERA Open website (<http://journals.sagepub.com/home/ero>) for general guidelines on manuscript submission. Regarding questions about Registered Reports, please also consult the Center for Open Science, which has compiled an extensive Q&A at <https://cos.io/rr/> that addresses various concerns and questions about Registered Reports, and also has a list of over 40 other journals which already accept Registered Reports.

References

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- Gehlbach, H., & Robinson, C. (2017). Mitigating illusory results through pre-registration in education. *Journal of Research on Educational Effectiveness*. Retrieved from SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3025214
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- Simmons, J. P., Nelson, L. D., & Simonsohn, U. (2011). False-positive psychology: Undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychological Science*, 22(11), 1359-1366. doi:10.1177/0956797611417632
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- Verkoeijen, P., & Bouwmeester, S. (2014). *Is spacing really the “friend of induction”?*. *Frontiers in psychology*, 5, 259. (available at <https://www.frontiersin.org/articles/10.3389/fpsyg.2014.00259/full>)