

FOCUS on Research

Newsletter of the



In This Issue

- OPEN SCIENCE in Special Education: Crowdsourcing
- Academic Writing Tips from the Student Reps
- 2021–2022 CEC-DR Doctoral Student Scholars Call for Nominations!

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President's Message

Goals for Enhancing DR's Impact

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I am honored and excited to be entering my term as the incoming president of the Division for Research. I very much value our research community and all the work done by members of this community to support individuals with disabilities, their family members, and educators. I also want to thank the previous leaders of DR and the incredible members of the presidential line and executive committee. A special thanks to Kathleen Lane, who has been an incredible mentor and role model during her tenure as president.

In thinking about goals for this upcoming year, I reflected on a piece written by Barbara McKenna in *Educational Researcher* (Vol. 21, No. 5) in 1992. In this article, she highlighted the career of Marty Kauffman; what resonated with me were his desires to establish better linkages and his goal of making sure that research moves beyond being useful to being usable. As Marty emphasized, “We’ve got to get to usable.”

Using Marty’s words as a jumping off point for this year, as president I hope to focus our division on four issues:

- **Diversity** – Project 20/20, led by Drs. Endia Lindo and LaRon Scott (<https://exceptionalchildren.org/project2020>), is focused on reaffirming CEC’s commitment to social jus-

tice and equity. I would like to push our division to increase the diversity of our membership; to evaluate how we can use our community to support the needs of students with disabilities who are BIPOC, ELL, queer, and from other marginalized groups; and to encourage members to reflect on ways we can include a more diverse group of community members in our research efforts.

- **Connections** – We are stronger together than apart. I would like to spend the upcoming year deepening connections between DR and other divisions. In some candid conversations with other CEC leaders this year, one person reflected an opinion that the CEC community has become over-represented by academics, with less of a voice coming from individuals with disability, their family members, and their educators. I would like DR to work to broaden our membership to include members outside of academia, and I would like DR to establish stronger partnerships with other divisions that include members outside of academia. Relatedly, I would like to continue strengthening the ties that DR has with the National

(continues on page 6)

OPEN SCIENCE in Special Education: Crowdsourcing

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Open-science reforms have the potential to strengthen the credibility of research, help address the replication crisis, and bridge the research-to-practice gap (Adelson et al., 2019; Cook et al., 2018). *Focus on Research* is featuring a series of articles introducing prominent open-science practices. In this article, we focus on crowdsourcing and how it may be used in conjunction with open-science practices such as pre-registration, materials sharing, and open data. In this article, we briefly describe issues in research that crowdsourcing might help to address; what crowdsourcing research is; primary benefits of crowdsourcing research, including facilitating open research practices; limitations and challenges; and an emergent example of crowdsourcing in special education research.

Issues in Special Education Research Addressed by Crowdsourcing

Lack of time and other resources to conduct research is often a source of frustration for researchers, especially for university faculty whose professional duties typically also include teaching classes, advising students, and providing service to the profession, university, and community. It is difficult for special education faculty to implement rigorous, adequately powered studies in applied settings on their own without additional time and resources. To obtain such resources, special education researchers can apply for grant funding. However, the process of obtaining funding is highly competitive and funds are received by a relatively small proportion of faculty. In the context of the prevailing paradigm for conducting research independently and in small groups (Uhlmann et al., 2019), the scarcity of available resources to conduct research has resulted in a significant underutilization of expertise in the field. Essentially, most researchers do not have the resources needed to conduct the high-quality research they are trained to do.

Additionally, conducting adequately powered studies with representative samples is a perennial challenge for special education researchers. Given the relatively

small number of students with disabilities in any given school or classroom, it is very difficult for researchers to recruit study samples that represent a broader population and allow for adequately powered analyses when conducting studies on their own or in small groups, especially for students with low-incidence disabilities. Limited participant diversity is, indeed, a critical issue in education and special education research that can limit the generalizability of research findings (Tipton & Matlen, 2019; West et al., 2016).

What is Crowdsourcing?

Crowdsourcing is one potential mechanism to address the lack of resources, underutilization of research talent, and difficulties around generating large and representative samples in special education research (Makel et al., 2019). Instead of studies being conducted by small research teams or individual researchers, crowdsourcing involves combining resources across researchers to conduct studies that individual researchers could not conduct on their own (Uhlmann et al., 2019). “Crowdsourcing flips research planning from ‘what is the best we can do with the resources we have to investigate our question,’ to ‘what is the best way to investigate our question, so that we can decide what resources to recruit’” (Uhlmann et al., 2019, p. 713). Although many different aspects of research can be crowdsourced (e.g., materials, data analysis), our focus here is on crowdsourcing data collection. In this approach to crowdsourcing, many researchers collect data across many sites.

Crowdsourcing data collection has been implemented in many fields. Some disciplines have utilized laypeople as data collectors to expand the capacity to collect data. For example, in marine science, researchers utilize citizen data collectors to collect nurdles (small plastic pellets) on beaches so they can map where they are found and investigate sources of the plastic pollution (University of Texas, 2020; see <https://www.citizenscience.gov/catalog/#> for opportunities to be a citizen data collector in federally funded projects). In psychology, crowdsourcing has been employed to conduct replications and other large-scale research studies. For example, in the Many Labs 2 study, 186 researchers conducted replications of 28 influential psychology

(continues on page 3)

Open Science (continued from page 2)

studies across 125 participant samples (with over 15,000 total participants) in 36 countries and territories (Klein et al., 2018). Researchers successfully replicated just over half ($n = 15$) of targeted studies. Because many different research labs investigated each effect in multiple samples, researchers were also able to examine variability in effects across labs, administration modes (in labs or online), and cultures. The Psychological Science Accelerator (<https://psysciacc.org>), a network of 1,400 researchers in 71 countries, is currently conducting multiple large-scale crowdsourced research projects in psychology.

What Are the Benefits of Crowdsourcing?

Crowdsourcing may help to democratize the research enterprise by providing a means for significantly more special education researchers to participate in high-quality, large- N studies. Involving more researchers will, in turn, likely diversify study samples. As is evidenced by the work being conducted in psychology, crowdsourcing could also facilitate special education researchers conducting large-scale direct and conceptual replication studies. Instead of a small group of researchers conducting a series of studies over decades to examine the effects of an intervention across different groups of participants, outcomes, settings, and variations in the intervention (Coyne et al., 2016), one or a few large-scale studies could address these questions by systematically varying the samples, outcomes, settings, and intervention components across many sites being studied concurrently.

Although crowdsourced studies are not necessarily open, they typically incorporate many open practices. Studies that involve crowdsourced data collection typically must have study procedures determined, operationalized, and shared with research partners before a study begins, which makes preregistration a simple step and greatly facilitates submitting the study as a registered report. Materials for conducting the study must be shared across labs, which facilitates sharing materials with research consumers. Moreover, as the data are collected by many researchers, it may be less likely for any specific researcher to take ownership of them, perhaps making

it more likely for those data to be open. Extant crowdsourced research also has a strong record of being made available through sharing pre- and post-prints. Indeed, Makel et al. (2019) referred to large-scale collaborations (i.e., crowdsourcing) as Open Science 2.0 due to the alignment of crowdsourcing and open-science practices.

Limitations and Challenges to Crowdsourcing

Unlike crowdsourced studies in psychology that typically consist of a single session with adult research participants using a standard protocol, special education researchers are often interested in investigating complex intervention protocols implemented over extended periods of time with groups of children. These complexities raise challenges such as recruiting participants across sites, ensuring adequate intervention fidelity, standardizing and implementing data collection procedures, and aggregating and synthesizing data sources across research sites. While we envision these challenges will be difficult to overcome, we conjecture they are likely surmountable for much of the research conducted in the field. We reason that if an education program cannot be implemented reliably across research sites, then teachers will unlikely be able to implement the program with fidelity. Indeed, difficulty implementing a program across many researchers might be a telltale sign that the program will not be feasible to implement in school settings.

Crowdsourcing and Special Education

We were fortunate to receive an unsolicited award to develop and pilot procedures for conducting crowdsourced research in special education from the Institute for Education Sciences' National Center for Special Education Research (<https://ies.ed.gov/funding/grantsearch/details.asp?ID=3356>). The Special Education Research Accelerator (<https://edresearchaccelerator.org>) is planning to conduct a pilot efficacy trial of a brief academic intervention for students with high-incidence disabilities in elementary schools during the 2021–2022 academic year with multiple research partners across the United States. The Special Education Research Accelerator cur-

(continues on page 4)

Open Science (continued from page 3)

rently has more than 200 research partners in the United States, with each of the nine U.S. Census regions represented. If you are interested in potentially being a partner in future crowdsourced research, please contact us at <https://edresearchaccelerator.org/about/contact/>. ■

References

- Adelson, J. L., Barton, E., Bradshaw, C., Bryant, B., Bryant, D., Cook, B. G., ... Troia, G. A. (2019, February 18). *A roadmap for transparent research in special education and related disciplines*. <https://doi.org/10.35542/osf.io/sqfy3>
- Cook, B., Lloyd, J.W., Mellor, D., Nosek, B., Therrien, W. (2018). Promoting open science to increase the trustworthiness of evidence in special education, *Exceptional Children* 85(1), 104–118. <https://doi.org/10.1177/0014402918793138>
- Coyne, M. D., Cook, B. G., & Therrien, W. J. (2016). Recommendations for replication research in special education: A framework of systematic, conceptual replications. *Remedial and Special Education*, 37(4), 244–253. <https://doi.org/10.1177/0741932516648463>
- Institute of Education Sciences. (2020, June 25). *NCER funded grants and contracts*. <https://ies.ed.gov/funding/grantsearch/?slctCenter=1>
- Klein, R. A., Vianello, M., Hasselman, F., Adams, B. G., Adams, R. B., Alper, S., ... Nosek, B. A. (2018). Many Labs 2: Investigating variation in replicability across samples and settings. *Advances in Methods and Practices in Psychological Science*, 1(4), 443–490. <https://doi.org/10.1177/2515245918810225>
- Makel, M. C., Smith, K. N., McBee, M., Peters, S. J., & Miller, E. M. (2019, March 26). *Open science 2.0: Large-scale collaborative education research*. <https://doi.org/10.31234/osf.io/ypmjg>
- Tipton, E., & Matlen, B. J. (2019). Improved generalizability through improved recruitment: Lessons learned from a large-scale randomized trial. *American Journal of Evaluation*, 40(3), 414–430. <https://doi.org/10.1177/1098214018810519>
- Uhlmann, E. L., Ebersole, C. R., Chartier, C. R., Errington, T. M., Kidwell, M. C., Lai, C. K., ... Nosek, B. A. (2019). Scientific utopia III: Crowdsourcing science. *Perspectives on Psychological Science*, 14(5), 711–733. <https://doi.org/10.1177/1745691619850561>
- University of Texas. (2020, June 25). *Nurdle Patrol*. <https://nurdlepatrol.org/Forms/Home/index.php>
- West, E. A., Travers, J. C., Kemper, T. D., Liberty, L. M., Cote, D. L., McCollow, M. M., & Stansberry Brusnahan, L. L. (2016). Racial and ethnic diversity of participants in research supporting evidence-based practices for learners with autism spectrum disorder. *The Journal of Special Education*, 50(3), 151–163. <https://doi.org/10.1177/0022466916632495>

Academic Writing Tips from the Student Reps



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As we have entered our latter years in our doctoral programs, most of our time is spent writing, writing, writing, and more writing. We might be writing up program competencies, drafts of manuscripts for research studies we have worked on over the years, proposals for dissertations, writing a practitioner-focused piece from a completed research study, assisting in writing book chapters, and more. We have shared a few tips over the past year in this newsletter, and we wanted to share a whole list of writing tips to kick start a productive writing season!

- **Set concrete goals.** The focus of the goal should be on production over duration. Rather than setting a goal to write for 30 minutes today, try setting a goal for number of words written or paragraphs complete.
- **Track your progress.** Relatedly, when you set your goals, keep track of your progress. Set up an Excel spreadsheet or Google Sheet to track your writing goals each day on the projects that you are currently working on (for example, your dissertation proposal or a collaborative manuscript).

(continues on page 5)

Academic Writing Tips (continued from page 4)

If a visual representation of your progress motivates you, turn your spreadsheet into a graph to show your progress each day!

- **Reward yourself for meeting goals.** Set up a reward system for yourself. If you meet your goal for the week, two weeks, or the month, reward yourself and take pride in moving closer to finishing your writing projects! You can set up larger rewards for milestones—maybe writing 500 words each day for two weeks!
- **Make a “beefy” outline.** When starting a writing project—especially a paper in APA format—it can be helpful to set up all the level headings as a first step (even the Level 2, 3, and 4 headings as needed). This can serve as a general outline, and you can write bullet points under each heading to “beef” it up. Creating the outline first can help ensure that you know where your writing is headed and that one section leads nicely into the next.
- **Set a limit on references to read before writing.** When starting a writing project, sometimes reading articles that relate to your topic can become an excuse to procrastinate and delay getting started on the looming writing project. Once you feel you have a general grasp of the topic you are writing about, begin writing! The more you write, the more you will be able to pinpoint the exact areas in your paper that you need supporting references for. You can use placeholders for references (for example, <citation>) and come back to it while still making progress with your writing!
- **Revisit the introduction throughout the process.** You may have made a “beefy” outline of your introduction and have been filling in pieces along the way, but the introduction can evolve a lot the more time we spend on the project. Writing is an iterative process. You might add pieces to your introduction as you continue to write

other sections to ensure that it flows nicely into the purpose and major takeaways of your paper.

- **Write linearly or nonlinearly.** Some people write in a linear fashion, starting at the introduction and addressing each section in turn. Some people find it easier to jump around in sections, going from a section that seems too complex to a section where the words flow easier. Mixing up the order of the sections you write can keep the writing process exciting as you progress through the paper and could help prevent you from getting stuck.
- **Re-read sections.** If you do end up getting stuck, you can re-read and edit sections you have already written. Revisiting sections can help refresh your memory on where the narrative is headed and get you back in the writing groove. Before you know it, you will find yourself adding a few more lines here and there and possibly rolling right into the next section!
- **Don’t give up!** When you feel stuck on a writing project, it can be easy to feel defeated and to want to give up. Instead, switch to an easy (and sometimes monotonous) but necessary task, like formatting tables and appendices or putting together and formatting your reference list. This way you are still moving forward on your project, and you do not leave these time-consuming tasks for the end when you are trying to wrap up the project.

We hope these writing tips are helpful and can kick start a productive fall writing season!

An additional helpful tool for your writing:

- **Putting together your reference list.** You can use <https://www.crossref.org/> to find article Digital Object Identifiers (DOIs). If you are constrained by page limits, you can also use <https://shortdoi.org/> to produce APA-approved shortened DOIs, which can save lines (and pages)! ■

2021–2022 CEC-DR Doctoral Student Scholars Call for Nominations!

DUE DATE: SEPTEMBER 30, 2021

Directions/Nomination Form are available at www.cecdr.org

The Division for Research invites nominations for outstanding doctoral student scholars to participate in the 2021–2022 Doctoral Seminars in Special Education Research. Selected student researchers will participate in generative discussions and professional development

led by distinguished researchers recognized for making outstanding scientific contributions in special education. Three virtual seminars and online forums will be held during this coming academic year, culminating in a final colloquium bringing students and researchers together in a session dedicated to graduate student development at the **2022 CEC convention in Orlando, Florida**.

See **Professional Development** on the DR website at cecdr.org for the **nomination form** and **directions** outlining the nomination process, preparation of the nomination packet, and directions for faculty nominators.

Don't forget the due date for submissions is September 30th! ■



President's Message *(continued from page 1)*

Center for Special Education Research within the Institute of Education Sciences and with other funding agencies who support research in the area of special education.

- **Usability** – The ivory tower is a lovely place to be; however, the reason most of us belong to DR is because we care about improving outcomes for students with disabilities, their family members, and their educators. I intend on organizing a group of individuals who can provide guidance to our DR members regarding advances in designing and disseminating our research to ensure that we are having the broadest impact. A call for participation will be forthcoming. Social media and other technology-based outlets have great potential to help us bridge research-to-practice gaps. And, as I am nearing my fifth decade of life, I know that there are many other people (mostly much younger, but also some talented folks probably older!) who have a wealth of information to share.
- **Advocacy** – A few years ago a group of colleagues and I wrote a paper with a lofty set of goals for the

field of special education. One reviewer pushed back, noting that we complained about the current state of affairs and suggested that how we educate students with disabilities could be better without offering any actionable steps to move in this direction. Point well taken. Advocacy and getting involved with the messy aspects of legislation and lobbying—both at the national and local levels—is precisely what DR members need to do. The Special Education Legislative Summit (<https://exceptionalchildren.org/sels>) is one way to get involved in this arena. However, I think it is likely that DR could enhance our efforts to ensure that legislators view our members as a resource and that we can energize our members to increase their advocacy efforts.

I very much look forward to working the DR and CEC leadership and other members to advance these goals during my year as president. I would greatly appreciate any advice, suggestions, or other input for how we might accomplish these aims. Feel free to email me at chris.lemons@stanford.edu. Thank you all for the amazing work you do to ensure that rigorous, meaningful research is used to guide how we support individuals with disabilities, their family members, and their educators. ■