CADRE Early Career

Tips for Writing for Publication

This tool is designed for early career STEM education researchers to offer tips for writing for publication. The advice largely comes from National Science Foundation-funded awardees who have graciously shared information about their own writing and publishing experiences.

Developing an Idea for Your Manuscript

When considering what to write and where to publish, think about your career trajectory, professional goals, and values. Deciding what to publish requires a lot of self-reflection; think about where you are now and consider possible professional trajectories. How does publishing fit into your current career path and your overall research agenda? If you are new to the publishing world, do research and connect with others to help examine the terrain. Understand the assets and limitations of various types of publishing venues (specifically practitioner journals and research journals), and decide the role each kind of publication will play in your professional path.

Think about what is missing from the current body of knowledge in your field and what could make a good contribution. It is critical to determine what you can add to the existing literature on the topic. When looking at your data, consider what new conclusions you can contribute and what new questions arise.

If you are curious about a phenomenon you observed in your research or practice, don't let it pass. Explore the literature to learn what about that phenomenon has already been studied and published. This may be a starting point for a research topic.

You can recycle old ideas, but they might need to be updated. Ask yourself, "Is my argument still relevant? Does it need to be reframed?" Find out what new literature exists and how you can contribute to the current conversation.

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Get organized around your research question. Ask yourself:

- What do I need to do to start to make sense of this question?
- What audience would be interested in this question?
- Who on my research team might want to collaborate?

In addition, consider the following questions:

- Whose ideas and writing style do I like?
- What do I like to read? Why?
- What kind of writer do I want to be?

Make your idea public. Share your research question(s) with your advisor, mentor, or research team. In this way, you'll get useful feedback to help you move forward, but you are also taking ownership over the idea. Continue to consult with these individuals as you progress.

A conference presentation/paper can produce a pre-publication. Presenting an idea that you want to write about at a conference is an opportunity to get feedback from peers before beginning your manuscript. Attendees may even have suggestions for appropriate journals. And even if your conference proposal is rejected, you still receive useful feedback that can help shape your manuscript.

The Writing Process

Focus on the process of writing; don't fixate on the finished product. Liken the writing process to something else in your life—something challenging but manageable, for example, running a marathon. It can make the process less daunting if you connect it with something you already know how to navigate. Think about intentionality, time commitment, and potential obstacles in both undertakings.

Structure your writing time. Create a timeline with daily, weekly, and monthly goals for your writing projects with strict deadlines. Use tools like Excel or Google Docs to create a timeline document that can easily be shared. Remember that identifying a realistic timeline gets easier with practice.

Write every day. Publishing is particularly important for early career professionals. Don't stretch yourself so thin with other professional commitments that you can't make time for publishing. Schedule time to write every day, even if it's only for 30 minutes. Mark it on your calendar. Don't treat it as flexible time; it's easy to put off if you don't make it a habit. Schedule your writing during the time in the day in which you are most productive. Write. It doesn't have to be perfect; it's only a draft. Just get the ideas on paper, and you can polish them later.

Consider finding a writing partner or forming a writing group, and meet consistently. This could include members of your research team, mentors, or even peers outside of your department/field. We do our best work in collaboration with others. Together you can share ideas or review each other's drafts. Find people you trust who will be accountable to your writing commitments and who will provide valuable feedback to make your work stronger. Writing partnerships and groups may or may not result in co-authorship.

You may find it helpful to keep a writing manual on hand (e.g., APA 6th edition). If possible, develop your initial manuscript following the basic guidelines for writing. This will save time in the end and help you develop good writing habits.

It is common to face challenges when analyzing your data and it's normal to feel overwhelmed. Hold on and be patient! With persistence, you will eventually start to see the pattern.

The author(s) that you heavily cited in your study may be a source of help. Don't hesitate to contact them for advice with your coding challenges or other questions. Some researchers may even provide further suggestions for your study.

Be creative in framing your data to appeal to different audiences. It's possible to use the same data set for multiple publications aimed at different audiences. This is especially true if you have several research questions addressing different aspects of your project. Think about how to write papers with

different foci or perspectives. As an example, you can write one article about the results of your study and another on your professional development model. As you conceptualize your ideas, figure out how to connect your work with different topics both in and outside of your field. This will require drawing on different literature and assessing the gaps in a particular field and how that relates to your research.

For doctoral students, you don't have to wait until your dissertation is complete before you begin publishing. While you're collecting and analyzing your data, consider submitting a manuscript based on your literature review or conceptual framework. This is good preparation for your future work on projects, when you should also engage in dissemination before the research is complete.

When writing, pay attention to the following:

- Title: wording that clearly conveys what the article is about
- Keywords: words that accurately capture the main focus of the article and function as search terms
- Abstract: a brief summary of the article highlighting key findings
- Headings and subheadings: useful tools for organizing the paper that clearly outline the logic underlying the paper and provide a flow to the narrative
- Guidelines for analysis and interpretation: evidence to justify the study's results and conclusions; clear description of the evolution of the research, including the underlying logic (i.e., flow from initial idea, to collecting data, analyzing the evidence, and summarizing the key findings of the study)

Give consideration to ethical issues such as:

- Plagiarism: Be aware of the guidelines for including figures, tables, data, or wording from other published or unpublished papers without citation.
- Duplicate publication: Do not submit the same paper or parts of the paper to more than one place.
- Falsification or fabrication: Do not alter data or use false data to strengthen the study's findings.
- Human welfare issue: You must always treat human subjects in way that aligns with journal policy.
- Conflict of interest: Be aware of situations in which you are in a position to derive personal benefit from actions made in your professional position.
- Authorship: Be sensitive to issues related to the addition, deletion, or even changing the order of authors on a manuscript.

Navigating Authorship

If you choose to do a group paper, have an explicit conversation with co-authors about responsibilities before you begin, especially if it's the first time you're working together.

There are many ways to determine authorship, so it's important to establish early on what method you intend to use. Sometimes PIs are the first author. Other times the team member who initiated the idea is the first author. Sometimes authorship depends on the level of contribution of each author and is determined after the writing is complete. If all authors have the same level of contribution, names can be listed alphabetically with a footnote to indicate equal contributions.

Find out whether there are policies in place for determining authorship at your institution. In addition, know what your institution values in terms of authorship. What are the cultural norms—the unspoken rules? For example, does your department or institution favor solo or group authorship? How important is first authorship? If you are in a non-academic setting, what priority is there for publishing? How is time for writing compensated?

There are a variety of ways to structure collaborative writing. One person can take on the bulk of the writing with other authors responsible for feedback and revisions. You can delegate sections to different authors and then have one person prepare the final manuscript to ensure coherency and flow. You can all write together, physically in the same room or virtually in a collaborative online space. Writing tasks are often

negotiated based on availability, so figure out what works best for you and your team.

Deciding Where to Submit

When deciding where to submit your work, ask yourself:

- Who is my audience? What are those people reading?
- Where are other articles like this published?
- What journals am I citing in my own work?

Research the journals in your field. Read the requirements for submission and the journal's mission statement. Learn about the journal's culture, research the thematic and methodological interests of the editorial boards, and review recent articles to see what they are publishing. Use resources like Cabell's Directory of Publishing Opportunities as a starting place. All of this will help you get a sense of whether your manuscript is a good fit.

Do some investigative work to determine which journals are credible. Review the articles and assess their quality. Check the citation rate; heavily cited articles are a good indicator that it's a legitimate journal. Your advisors, mentors, or colleagues can offer insight as well.

Research the editorial boards of journals that interest you. A quick search on Google Scholar can offer insight into an editor's work. This is important because editors are responsible for selecting reviewers. The more an editor knows about your area of work, the more likely it is that they will choose appropriate reviewers.

Make sure your work fits but also offers something new. Pay close attention to the publishing trends over the past couple of years. Read relevant articles in a journal you want to publish in, and cite those works in an authentic way. Connect your work with the work these journals are publishing so that you know you're reaching your intended audience. Add your voice to the conversation they are already having.

Keep an eye out for special journal issues that relate to your area of interest. Special issues typically have quicker review processes and less competition. Editors will likely be more willing to work with you to make your article fit.

Research the review processes for different journals. The average length of the review process varies depending on the journal. Figure out the journals' timelines. Do they review monthly? Every 6 months? How often do they publish issues? Decide how quickly you need to publish and how long you can wait for a response. Journals with the highest impact have a greater number of submissions; therefore, the review process is much longer. Junior scholars typically can't wait 2+ years for their first publication. Understanding the review processes for different journals will help you find one that fits your timeline.

Reach out to lead editors with pre-submission inquires. This is especially useful if you are unfamiliar with the journal. Keep in mind, however, that editors are committed to reviewing full manuscripts rather than preliminary ideas. Send a concise message and brief abstract to gauge whether your idea is a good fit for a particular publication. Rely on advisors or mentors for more substantive feedback on the quality of your idea. Understand that editorship changes, which can affect what a journal is looking for. Decide how committed you are to making your work fit that particular outlet.

If you're just starting out in a line of research or as first author, begin with modest aspirations. Pay attention to the credentials of the authors in various journals. Be realistic and consider options beyond just the top tier journals. Ask colleagues/peers to help you identify an appropriate starting point. This does not mean you shouldn't submit to top tier journals, but that you should explore other options as well. Even if your manuscript is rejected by a top tier journal, these publications usually have great reviewers who provide high-quality feedback that can help strengthen your manuscript or even influence the overall direction of your research.

Diversity in publication matters, especially in academia. You want to be publishing in a variety of journals. Figure out what is common practice based

on your career goals. Publishing is always good—no matter what—but do your research and connect with people who are doing the type of work you want to be doing. Where are they publishing? Find commonalities between their trajectories and your own. This is an area where networking/mentoring can really help. It is also becoming increasingly important to have international experience and collaborations; American and European journals have many similarities, and many scholarly topics are universal.

While collaboration and diversity in publication are important, it's also crucial that you continue to develop your own area of research. This is especially important for early career scholars who might not yet have a clearly established research direction when they begin publishing. Your list of publications should have a central focus, and your articles should build on previous studies and contribute to the development of your research trajectory.

In higher education, know what is expected for tenure at your institution. Once you have tenure, you will have more freedom in terms of publishing. Until then, it's important to think about what academic departments and institutions prefer or require, and how that aligns with your career goals. What types of publications count toward tenure? Are there specific journals you must publish in to be eligible for tenure? Is there a preference for research journals over practitioner journals? How important are journals' acceptance rates, citation rates, or impact factors? There can be different expectations for publications at every level of the tenure process, so having mentors both within and outside of your department can help you navigate this.

With every research article you write, consider writing a parallel practitioner piece. This is good practice for communicating with different audiences, as it requires you to frame your research using clearer, more concise language. This also makes your work more visible and accessible. In addition, periodically taking off your researcher hat can help keep you grounded in the broader communities within your discipline.

If your research interests are interdisciplinary, think about which fields could benefit most from your work and which journals will provide a better entry point. If your work involves science education and English Language Learners (ELL), for example, ask yourself what is needed in those fields. Do science journals need an ELL perspective, or do ELL journals need a science education perspective?

You can find a home for almost anything you write if you do your research on various outlets and present your work appropriately. When conducting a study, your main focus is often on publishing your findings in a peer-reviewed research journal, but there are many other avenues for getting your work out there, such as blogs, project websites, conference papers, or online publications. Websites like ResearchGate and Academia allow for self-distribution. The world of publishing is much bigger than peer-reviewed journals! This is even true for once-rejected manuscripts. Rework, reframe, and figure out some way to get your work out there.

Submission and Review

Follow all formatting requirements, and submit your manuscript along with a convincing cover letter.

The review process is complex. Papers are evaluated on at least four factors: competitiveness, topic centrality, methodological alignment, and harmony between manuscript and journal. Upon receipt, manuscripts are first assigned to reviewers. Reviewers read the paper and submit a written review to the editor. (Reviewers only make recommendations; the editor makes the final decision on the paper.) Once a decision is reached, the editor can accept the paper, accept the paper with minor revisions, ask the author to revise and resubmit (to be reviewed by the editor, the same reviewer, or different reviewers), or reject the paper. Remember that it's very rare for an article to be accepted without at least some revisions.

After dedicating so much time and energy to preparing your manuscript, receiving critical feedback from reviewers can be an emotional

experience. Read the letter, take a break, and return to it later. Then reread your manuscript in light of the feedback you've received. Give yourself time to process your emotions before jumping into the revisions. Keep in mind that feedback is meant to make your writing stronger and more meaningful, even if you don't yet see the potential. Reviewers can be very insightful and help you take your paper to the next level. Don't be disappointed by critical feedback; be delighted that you have an opportunity to write an even better paper!

You can disagree with feedback from reviewers and discuss your concerns with the editor who shared the comments with you. Likewise, if you receive contradictory feedback from reviewers, you can consult with the editor for advice about which revisions to focus on.

The time needed for revisions depends on the feedback given. Reframing or reorganizing takes less time than reanalyzing data, for instance. You'll receive a timeframe for resubmission in your letter and can negotiate, if necessary.

Address every comment in the revision, and submit a response letter. This may seem daunting, but bear in mind that it will ultimately make your manuscript stronger. Be very pointed in your responses. Explain how you addressed the feedback, where you addressed it, and why you think it strengthened the manuscript. Acknowledge the comments you disagree with, and provide a rationale if you did not address them in the revision. Compose a solid response letter, as it reframes the manuscript and will influence the review of the revised version.

Revisions are usually submitted to the same reviewers, but not always. It's different for every journal. You can request that the same reviewers read your revised version. If you don't, you could end up with completely different feedback.

It can be challenging to revisit your manuscript since you've likely shifted your attention to something new. Conserve the energy you need to get back into that mindset. Prioritize other tasks accordingly. Don't allow yourself to lose steam at the end.

Prepare for the long haul. Getting published will take a long time. While your writing timeline depends on your own schedule, it can take up to a year or more from the time you submit until your article is finally published. Plan for at least 2 to 3 years before you see your initial idea in print.

Because the writing/review/publication process is so time consuming, plan ahead and try to always keep different manuscripts at various places in the writing and publication cycle.

Dealing with Rejection

If your article isn't accepted by one journal, look at an alternative journal. One of the most common reasons for rejection of a manuscript is that it's not a good fit for that particular journal. If your submission was rejected or you're unhappy with the feedback from a journal, rewrite and submit elsewhere. Take the reviewer's comments seriously, though, even if you plan on submitting to another journal. The feedback will make your next submission stronger.

People generally want you to be successful in your career; take advantage of that. Even when you receive bad news, contact the editor to discuss feedback. See it as a learning opportunity. This is particularly important for young scholars.

Additional Resources

- Eight (8) Reasons I Accepted Your Article
- Eight (8) Reasons I Rejected Your Article
- Composing a Compelling Cover Letter
- How to Get Published in an Academic Journal: Top Tips from Editors
- How to Publish in Scholarly Journals
- How to Write a Good Title for Journal Articles
- Publications for STEM Educators, Policymakers, and Researchers
- My Writing Productivity Pipeline
- Scimago Journal & Country Rank
- Web of Science
- Writing a Journal Cover Letter