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

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 have arisen.

If your institutional access to journals is limited, consider alternative ways to access current literature in your field. Keep an eye out for open-access days for particular journals or open-access articles. You can access articles through ResearchGate or Academia, and use the platforms to find authors to reach out to about their work. If you find an abstract that appeals to you, contact the author (their email addresses are included). Authors are usually able to share copies of their articles privately.

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

For doctoral students, you do not have to wait until your dissertation is complete before you begin publishing. While you are 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.

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.

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 even if you think they are underdeveloped. In this way, you will 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.

As an early career researcher, focus on publishing first (from your dissertation or other data you collected during graduate school) and then begin thinking about writing grants. Projects require a lot of work before you have results to publish. Make sure you are in a position to be publishing.

The Writing Process

Focus on the process of writing; do not fixate on the finished product. Liken the writing process to something else in your life—something challenging but manageable, for example, running a marathon. You 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. Know that writing is hard, iterative work and that going through multiple drafts is normal. When you read an article by more experienced colleagues, remember that you are seeing their final product, not the messy process that led to the publication.

Structure your writing time. Create a timeline with daily, weekly, and monthly goals for your writing projects with strict deadlines. Developing a writing management system will help you track your progress and manage multiple writing projects. 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.

Set aside large blocks of time early in the process to get your head around your data, the message you want to communicate, and how you are going to situate it in existing literature. Having a firm grasp on this in the beginning will make it easier to devote smaller amounts of time to filling in the details, which will help with productivity.

Write regularly. Publishing is particularly important for early career professionals. Do not stretch yourself so thin with other professional commitments that you cannot make time for publishing. Figure out a system that works best with your schedule and for your writing style, and stick to it. Consider scheduling time to write every day, even if it is for only 30 minutes. Or, set aside several large blocks of time during the week. Mark it on your calendar.

Do not treat it as flexible time; it is easy to put off if you do not make it a habit. Schedule your writing during the time of day in which you are most productive, and then write. It does not have to be perfect; it is 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 is 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. Do not hesitate to contact them for advice. Some researchers may even provide further suggestions for your study.

Be creative in framing your data to appeal to different audiences. It is 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, assessing the gaps in a particular field, and determining how your research will build on the literature and address existing gaps.

When writing, pay attention to the following:

- Make sure the wording of your **title** clearly conveys what the article is about.
- Choose **keywords** that accurately capture the main focus of the article and function as search terms.
- Develop the **abstract** by providing highlighting key findings and summarizing the article.
- Use **headings and subheadings** as tools for organizing the paper, clearly outlining the logic underlying the paper, and providing a flow to the narrative.

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 issues: You must always treat human subjects in a way that aligns with research and 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 changing of the order of authors on a manuscript.
- Critique: If you are critiquing the work of others, do so in an appropriate and scholarly way.
- Self-citation: Be mindful of too much self-citation. You are one voice attempting to join a bigger conversation that has been going on for some time. Make sure your work builds on those you are citing and that you do justice to the conversation occurring in the field.

Navigating Authorship

If you choose to write a paper with others, have an explicit conversation with co-authors about responsibilities before you begin, especially if it is the first time you are working together. Discuss and document the agreements. Consider defining levels of co-authorship:

What level of contribution is expected for first author, second, third, and so on? At the same time, understand that setting concrete, universally applicable guidelines is difficult since circumstances can change during the course of the writing process. Revisit your co-authorship agreement at the end to make sure the contributions and levels of effort match with what was initially agreed.

There are many ways to determine authorship, so it is important to establish early on what method you intend to use. Sometimes project leads are the first or last author. Other times the team member who initiated the idea is the first author. Some teams choose to rotate first authorship. 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 or randomly 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?

If you decide to do a postdoctoral fellowship, be sure to carve out a body of work within your PI's larger project to make a unique contribution with your name on it. Some institutions do not consider single-author articles you publish during graduate school or from your dissertation to be truly solo papers since you are under the direction of your advisor or PI. You may not improve your career prospects greatly if you publish only with the project team. When listing co-authored papers on your CV, note your specific contribution.

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.

Being first author often means more than just leading the writing process. It also entails attending to the administrative tasks required for revising and/or resubmitting. First authors should be charged with structuring reviewers' comments and leading discussions about revisions with 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. Every journal has a different style. Read the requirements for submission and the journal's mission statement. Determine the journal's standard of rigor, scope of topics, and breadth of the literature that should be included in references. Review several issues of a journal, and pay attention to the methods that make it through the review process. Ask yourself questions like:

- Is the main point I want to make consistent with the topics covered by the journal?
- Do I need to modify the way I am writing the article to match the style of the journal?

Do some investigative work to determine which journals are credible. Know that weight given to impact factor varies by field. Review the articles and assess their quality. Check the citation rate; heavily cited articles are a good indicator that the journal is legitimate. Your advisors, mentors, or colleagues can offer insight as well.

Review your reference list to see where the people you are citing have published and read those journals.

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 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 you know you are 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 and timelines 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 six 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 cannot wait two plus 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 are 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 should not 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 is 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 is 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 plain language that is clear and concise. 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 journals will provide a better entry point to each disciplinary field, as well as which journals may align with the area of convergence that your interdisciplinary work features. If your work involves science education and English Learners (EL), for example, ask yourself what is needed in those fields. Do science journals need an EL perspective, or do EL 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.

Think creatively about ways to broaden your dissemination outside of your particular field or subfield. How could your work appeal to parents or your broader community? Consult with your institution's communications department about op-eds, interviews, or other ways of communicating with the general public.

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, a manuscript is 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 is 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 have 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 do not yet see the potential. Reviewers can be very insightful and help you take your paper to the next level. Do not 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. Pay attention to the editor's comments for clues about what is most important to address.

The time needed for revisions depends on the feedback given. Reframing or reorganizing takes less time than reanalyzing data, for instance. You will 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. Rather than responding by reviewer, consider categorizing your feedback into comments about methods, analysis, interpretation of results, etc. Responding to comments by theme may be easier. 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 is different for every journal. You can request that the same reviewers read your revised version. If you do not, you could end up with completely different feedback.

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

Once you have taken care of revisions, reflect on the feedback you received to determine which areas of your writing you need to improve (e.g., connecting your theoretical framework to your results). Next time you will know to pay particular attention to those areas as you write so you do not repeat the same mistakes.

Prepare for the long haul. Getting published will take a long time. While your writing timeline depends on your own schedule, it can take more than a year 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 is not accepted by one journal, look at an alternative journal. One of the most common reasons for rejection of a manuscript is that it is not a good fit for that particular journal. If your submission was rejected or you are unhappy with the feedback from a journal, rewrite and submit elsewhere. Take the reviewers' 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 succeed 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

- Edanz Journal Selector
- Eight (8) Reasons I Accepted Your Article
- Eight (8) Reasons I Rejected Your Article
- 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
- How to Write the Best Journal Submission Cover Letter
- Publications for STEM Educators, Policymakers, and Researchers
- My Writing Productivity Pipeline
- Writing a Journal Cover Letter
- Writing Group Starter Kit

Additional resources available at cadrek12.org.