

To help inform the special education research community, these briefs feature information on prominent open science practices. Content comes from our series of short articles in the DR newsletter, *Focus on Research*, as well as additional content developed by DR members.

OPEN ACCESS TO RESEARCH

Open science is an umbrella terms that refers to practices aiming to make all stages of science more open and transparent. Although some have argued that open science can make research more trustworthy, impactful, and efficient in special education (Cook et al., 2018), there is a lack of clarity in the field about what open-science practices are, their primary benefits and potential obstacles, and how to access resources for implementing them. In this brief, we discuss arguably the best-known aspect of open science: open access.

Why Open Access?



A primary purpose for research in special education is to inform and improve practice and policy as well as future research. For research to have its intended and full effect, practitioners, policy makers, and other researchers must be able

to have access to it. Unfortunately, most research published in professional journals is behind a paywall and can only be accessed freely by those who are affiliated with a university or other professional

organization with a subscription. Those without such access have to pay to access research content. For example, if a practitioner wanted to access articles from *Teaching Exceptional Children* on an evidence-based practice she was considering using, and she did not belong to CEC and was not a student at university with a subscription, she would have to pay \$36 to access each article of interest. The potential benefit of research is not realized if practitioners, policy makers, and researchers (e.g., researchers in developing countries) cannot access it because they do not have free access and cannot pay for all of the articles in which they are interested.

What Is Open Access?

Tennant and colleagues (2016) defined open access as scholarship that is freely available “to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself” (p. 4). In other words, open access involves providing access to scholarship to anyone on

the internet free of charge. There are multiple types of open access. Gold open access refers to journals that make all articles freely available. Many gold open-access journals charge fees to authors in order to cover costs associated with publishing in the journals. For example, the standard article processing charge for *AERA Open*, a gold open-access journal in education, is \$700 USD (though currently that fee is less during the introductory time period, and is reduced for AERA

members and graduate students). Some gold open-access journals do not charge authors to publish in them (e.g., *Education Policy Analysis Archives*).

A hybrid model is becoming prevalent in special education journals, in which the default is for articles to be behind a paywall, but specific articles are made freely accessible either by the journal or by authors paying a fee. For example, authors can make their article in *The Journal of Special Education*, the DR member-benefit journal, freely accessible to all for \$3,000 USD, which is the standard fee for journals

published by Sage. Green open access allows authors to post or self-archive a version of their article on a personal website or open-access repository. Preprints are one option for making scholarship accessible via green open access, which we will explore in more detail in our next article in this series. Policies regarding what version of an article can be posted, where it can be posted, and when it can be posted vary by publisher and journal. For example, many journals allow for posting of non-formatted versions of accepted articles (or preprints) and formatted versions of articles after an embargo period (e.g., 12 months).

Primary Benefits and Potential Obstacles

As noted previously, open access provides multiple advantages to research consumers (e.g., free access to more research) and researchers (e.g., increasing the audience who accesses and potentially applies their research). Indeed, multiple studies have documented an open-access advantage, in which open-access articles are cited more frequently and have a stronger social media presence than traditional publications (McKiernan et al., 2016; Piwowar et al., 2018). Figure 1, by Danny Kingsley and Sarah Brown, summarizes the potential benefits of open access for different stakeholders. The primary disadvantages or obstacles to making articles open access are cost, scarcity of outlets, and lack of knowledge.

Open access “is still underutilized in education research: The majority of high-ranked education journals are not available via [open access], and Green [open access] archiving practices are neither widespread nor well understood” (Roehrig et al., 2018, p. 466–467). There are few gold open-access journals in education, and none of the highly ranked journals in special education are gold open access. Although hybrid options for making publications freely accessible are now available in many special education journals, cost can be prohibitive. Some researchers are able to cover these costs through grant funding or support from their institutions. Moreover, some

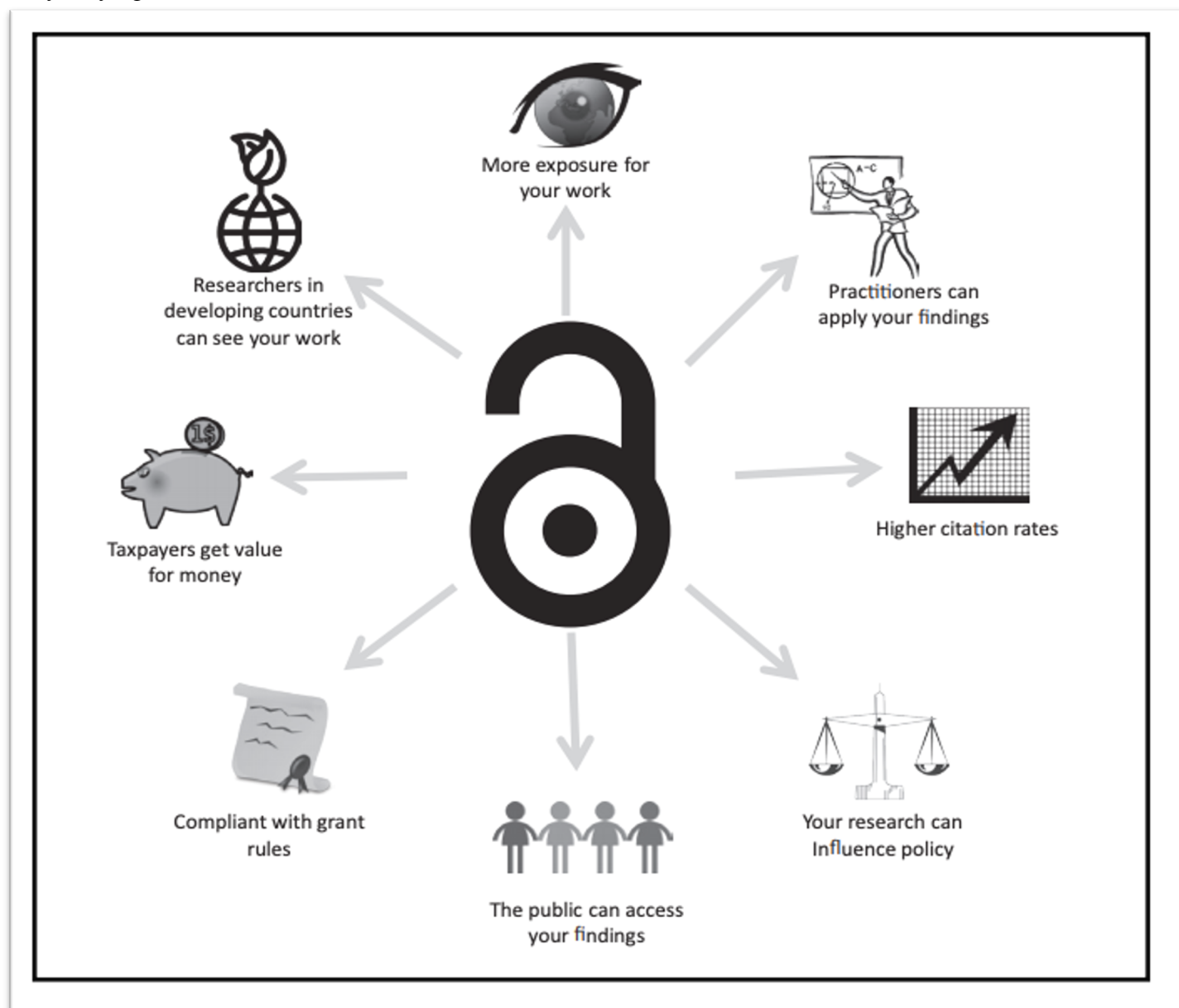
RESOURCES

- Roehrig et al. (2018) provide an excellent overview of open access specific to education journals.
- We also recommend Piwowar et al. (2018) and Tennant et al. (2016), both of which are published in open access journals, for general discussion of open access.
- See <https://doaj.org> for a directory of open access journals.
- Journal policies regarding open access can be searched at <http://sherpa.ac.uk/romeo/index.php>, and can generally be found on journal and publisher websites.
- The wikpage http://oad.simmons.edu/oadwiki/Main_Page provides links to many resources about open access, including blogs and FAQs.
- See <https://openscience.com/green-gold-gratis-andlibre-open-access-brief-overview-for-beginners/> for an overview of gold, green, hybrid, and other types of open access.
- Foster Open Science provides a free online course in open access at <https://www.fosteropenscience.eu/learning/open-access-publishing/#/id/5a326071c2af651d1e3b1c14>.
- Unpaywall has harvested open access content and made it searchable at <https://unpaywall.org> (see Else, 2018).

journals allow for articles to be made open access if required by certain funding agencies. Researchers should also take care to avoid “predatory” journals that publish research for a fee but do not adhere to scientific or ethical standards.

For more information and resources on open access see the open-access section of the Scholarly Publishing and Academic Resources Coalition’s (SPARC) website at <https://sparcopen.org/open-access/>.

Figure 1
Benefits of Open Access



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- ***Why is it so expensive to publish OA, and how can researchers, especially early-career researchers, fund OA manuscripts?***
 - Journals charge article processing fees to cover costs of publishing. If funding is not available through grants or from their institution, researchers should share their work as a preprint or postprint to ensure OA.
- ***When should I post a preprint?***
 - Before submitting for publication when seeking feedback or collaborators.
 - In conjunction with a journal submission when seeking to speed the dissemination process.
 - After peer review (postprint) when the author is concerned about compromising blind-peer review.
- ***How and where can I share my pre or postprint?***
 - Journals and publishers each have distinct policies for how preprints and postprints can be shared. Most special education journals allow authors to post preprints to preprint repositories, social media, personal blogs or websites, and institutional repositories. Authors should always check journal and publisher policies before sharing their preprint or postprint.



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