

Library Analytics: Shaping the Future — Let's Talk Research

by **Tamir Borensztajn** (VP SaaS Strategy at EBSCO) <tborensztajn@ebSCO.com>

Column Editors: **John McDonald** (EBSCO Information Services) <johnmcdonald@ebSCO.com>

and **Stephanie S. Buck** (EBSCO Information Services) <ssbuck@ebSCO.com>

Research is under pressure. In late July, leaders of the **European Union** agreed on funding **Horizon Europe**, the EU research program, but with billions of euros cut from the budget. **David Crotty**, the Editorial Director Journals Policy for **Oxford University Press**, subsequently noted in *The Scholarly Kitchen* (<https://scholarlykitchen.sspnet.org/2020/08/04/two-steps-forward-one-step-back-the-pandemics-impact-on-open-access-progress/>) that the impacts of the current economic crisis on research budgets may bode poorly for institutional spending on research infrastructure. Still, as **Crotty** also rightfully points out, the need to fund research and drive open science practices, are certainly well understood and recognized. The question at hand then may well be one of urgency; do we need to solve pervasive problems in research *today* notwithstanding the world's current economic predicament?

If the coronavirus pandemic has brought certain challenges to the forefront, those have centered on research. Think of the need today to conduct research and disseminate its findings at near-record speed; the need to support improved collaboration between researchers across geographies; or the need to understand what in fact is trustworthy versus false and even predatory in nature. Assuming then that we must address these challenges with a sense of urgency, when and how can or even should libraries play a role?

Libraries have traditionally fulfilled a function, not just as mere stewards of information, but as impartial institutions that disseminate free, reliable information to the public at large. Libraries have thereby supported platforms — such as the library catalog, the discovery service or research databases — that provide access to said information. The importance of these platforms, and the content they contain, cannot be overstated. Researchers at any level after all, expect to find and use the most relevant and trustworthy information in any area of research. At the same time, the platforms and services that libraries offer should be part of a potentially larger purpose to support not just the *access* to information and published research as such but the *conducting* of research as well. In doing so, libraries can help address the pressing challenges of research while, at the same time, gaining visibility into the research output, collecting and preserving it, and understanding its impact within the context of managing the institution's overall collections.

Conducting research, of course, involves many different activities from ideation to data gathering, running the analysis, peer review and publishing. Along the way, researchers consult and use a variety of applications — some of which may fall within the library's domain and others that may be thought of as outside the scope of the library's services all together. Yet it makes sense, across this continuum, to examine which additional services can be provisioned by the library as we seek to attain the objectives noted above. To do so, we must look at the

intersection between the researcher's goal, the library's mission and the broader institutional aims.

Starting with the researcher, it goes without saying that certain goals hold true irrespective of the area of research. Any researcher will express a desire for greater efficiencies in their work, the opportunity to improve collaboration with peers or the ability to gain better recognition for the work that is done. The library, on its part, will welcome the ability to readily collect the researcher's work, to disseminate it for teaching and learning, and to preserve it for long-term access and use. The institution then, more broadly, will certainly want to understand the impact of the work that was done by its researchers. Libraries can sit at the intersection of these goals by provisioning mission-critical platforms that improve how research is conducted, support the collection and dissemination of the output and provide the insights into the impact of the research.

There are a few good examples to illustrate the approach. Take the development of research methods: the processes and steps that are documented and used in the course of a study or experiment. Researchers will benefit from tools that enable them to readily find and access publicly available methods, that make it easier to organize and share their work through a "standardized" service, that support tracking any changes to methods over time, and that ensure that work can be properly cited. The same holds true for any computational code and data that has been used in the course of a research study. Here, additionally, researchers will also derive benefit from tools that make it easier to get started by enabling or "prescribing" the coding environment and any dependencies and by ensuring that the analysis can be run at any given time by anyone without any concern for outdated code.

For the library then, providing its researchers with better, centralized and open tools to do their work, creates an opportunity for improved stewardship over the research output. The library can, after all, leverage the solutions used by researchers to collect any methods, computational code or data and make the output available for immediate discovery as "first class citizens" within the collection alongside its journals or eBooks. In this manner, research methods, code and data may be properly leveraged in teaching and learning and help foster the advancement of research generally.

Naturally, the academic institution gains when its researchers can improve how they work, speed the time from ideation to dissemination and drive collaboration between peers. The institution, moreover, can point at adherence to open science goals or mandates and its contribution to the reproducibility of science. But beyond these important intentions, if researchers have centralized platforms — provisioned by the library — different insti-

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tutional stakeholders can derive insight into the impact of the work that has been done. How often, for example, was the research by any given researcher re-used in support of open science mandates? To what extent were publicized methods “forked” or an analysis used or cited by members of the scientific community? Or what contribution specifically did a researcher have to a specific field of scientific inquiry?

As we talk about research, the library occupies an exceptional position to facilitate solutions to pressing problems. At its core, the library functions as the “hub” that transacts the flow of infor-

mation, collects and preserves it and ensures its unreserved availability and accessibility. By expanding its role to provision centralized platforms where research is conducted, the library can advance the ways in which information is disseminated, help support open science goals and deliver much-needed insight into the work that is being done by the institution’s researchers. In an environment where, more than ever, the sharing of research and scientific advances is of the essence, so are our libraries. By facilitating not just the access but the conducting of research as well, libraries can help address the problems of research today, support its timely dissemination and help us understand its impact overall. 🌱