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New Tool Compares Scholars' Research Strengths

Big publisher offers software to track performance in 80,000 areas

By DAVID GLENN

Just as anxious novelists can check their sales rankings on Amazon 24 times a day, academic researchers have a host of online tools for monitoring their citation stats — and those of their rivals.

Google Scholar, Reuters Thomson's citation indices, and Springer's AuthorMapper — those are just a few of the products that claim to reveal which scholars and departments are having the most impact on their fields.

Now status-conscious researchers (and their department chairs and deans) have a new tool to obsess over. This week the scholarly publisher Elsevier unveiled SciVal Spotlight, an online service that attempts to uncover universities' strengths and weaknesses in no fewer than 80,000 areas of research.

"We can do this at a university level as well as at a national level," says Jay Katzen, Elsevier's managing director for academic and government products. "What are your strengths? Who are the researchers in your university who are driving this core competency? Who are the researchers at competing universities who are performing well, in case you want to recruit them?"

But while the product boasts a new methodology, it is unlikely to silence the familiar criticisms of bibliometric research measurements, including the fear that scholars will game the system by over-citing their friends' work and the [complaint](#) that journal citations cannot do justice to the humanities and other monograph-heavy fields.

Still, the company hopes to sell the service to university administrators and federal education departments, especially in Europe and East Asia, where governments are increasingly relying on quantitative measurements of research productivity. The price tag varies by institutional size but could range into six figures.

Because it focuses on narrow subfields, including cross-disciplinary topics, SciVal Spotlight might be embraced by departments and universities that feel that their distinctive strengths are overlooked in some of the cruder research-ranking systems.

Mr. Katzen says that SciVal Spotlight's chief virtue is its fine-grained level of detail. "With Spotlight, we've taken a step back and taken the journal, per se, out of the equation," Mr. Katzen says. Instead of relying on journal-level citation impacts, the Spotlight database analyzes citation patterns for roughly two million individual articles in Elsevier's archive.

Analyzing citations at the level of individual articles offers a much more precise picture of influential work in emerging fields. In nanotechnology, for example, scholars might cite work from journals in physics, chemistry, and engineering — but because the work cuts across several disciplines, the importance of the articles might not be picked up in traditional journal-level citation analyses.

After crunching the cross-citation numbers, Elsevier defined approximately 80,000 clusters, or "distinctive research competencies." (The company did not try to name those thousands of clusters; that would have kept a team of interns busy for a long time. Instead, the system uses references like "competency number 4, whose distinctive key words are 'amino acids' and 'fatty acids.'") The database then takes the research produced by a university and maps it onto those 80,000 clusters.

Beyond Journal Citations

Diana M. Hicks, a professor of public policy at the Georgia Institute of Technology who often writes about university ranking systems, says that the new Elsevier product's value will depend heavily on how intelligently it has defined those 80,000 research areas. (Ms. Hicks spoke to *The Chronicle* last week, before SciVal Spotlight was unveiled, so she could not directly assess the product.)

"It will all depend on how well that part of the engine works," Ms. Hicks says. If the system has correctly identified small subfields that are genuinely of interest to researchers and grant makers — for example, emerging specialized areas in nanotechnology or cell biology — then it could be very useful, she says, because the commonly cited measures produced by the National Science Foundation are not fine-grained enough.

"There is huge value in being able to target narrow areas — to see how well you're doing in optimal electronics, for example," Ms. Hicks says. "You can't just pick five journals and get it right."

Mr. Katzen says that he hopes the product will be of interest not only to administrators, but also to individual scholars who want to keep up with what colleagues are doing in their subfields.

Elsevier's rival Springer has similar hopes for its AuthorMapper citation system, which went live in January. (Unlike the new Elsevier product, AuthorMapper is free.)

"Our journal editors and authors have the task of trying to keep up with these fields," says Brian Bishop, Springer's director of e-product development and innovation. "In scientific communication, you hear a lot, 'Oh, I know everyone in my field. I know the best people.' And that may be true. But everyone's social network can benefit from just a little bit of innovation. It's good to double-check." He notes that at least a few scholars have added AuthorMapper widgets to their blogs, so they can share real-time visual updates of new papers that have appeared in their subfields.

AuthorMapper relies primarily on Springer's own journal database, but Mr. Bishop says that he would love to add metadata from other publishers.

Ms. Hicks, of Georgia Tech, says that research-ranking tools like these are here to stay. But she warns that it is difficult, and probably foolish, to use journal or article-based citation measures outside the hard sciences. "When you get into the humanities, they do a lot of books, and books aren't in the databases," she says. "And their references go back to Aristotle. They don't cite their colleagues; they cite Aristotle. So you don't get the same dynamics with citations. It's not like chemistry."

Following the Money

In the coming weeks, Elsevier also plans to release a second product: SciVal Funding, a database that alerts researchers about new public and private-sector grant opportunities in their fields. Much of the information is electronically aggregated, but some of it is gathered by hand by Elsevier staff members.

"The idea," Mr. Katzen says, "is to reduce the amount of time finding opportunities, writing proposals, and so on. We want to switch the equation, so you can spend more time working on your research." Because the system automatically meshes with Elsevier's database of researchers, he says, scholars need not waste time teaching the database about their scholarly interests. "We'd like to think this is a much better workflow tool than many of the databases that are out there," Mr. Katzen says.

Do these new data products indicate that Elsevier, Springer, and other publishers foresee a day when their core journal-publishing businesses will no longer be so profitable?

"This is the new world order that we're living in," says Mr. Bishop, of Springer. "Suddenly Springer is a software vendor, among other things."

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