

Encontro de Usuários de Sistemas de Publicação - SISPUB



Crossref Services and Crossref integrations with OJS

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RESUMO

Crossref is a not-for-profit membership organization for scholarly publishing working to make content easy to find, cite, link, and assess. Crossref provides services for the publishing community such as Content Registration with Digital Object Identifiers (DOIs) and funding data, Cited-by linking, Similarity Check for editorial originality and Crossmark for updates and retractions. Crossref has continued to grow since it was founded in 2000, and now works with over 7,000 members around the world. From these members, Crossref has indexed 87 million metadata records, and makes them available through Application Programming Interfaces (APIs) and search services, so that the content that Crossref members publish can be discovered and linked to as widely as possible. Along with the development of these services, Crossref has been working with the Public Knowledge Project (PKP) to help organizations who use OJS deposit DOIs and ORCID iDs and participate in other services like Similarity Check. Crossref and PKP aim to continue this collaboration in 2017 to develop the OJS/Crossref plugin so that it can support more Crossref services such as reference linking, funding data, Cited-by linking and Crossmark. This will benefit Crossref members, but also the wider research community including researchers, funders, libraries and service providers who use Crossref metadata to find content. This proposal will cover an update on Crossref services, the OJS/Crossref plugin and the planned developments to the plugin for Crossref members.

Palavras-Chave: Crossref, Digital Object Identifiers (DOIs), metadata, Similarity Check, Open Journal Systems (OJS)

INTRODUÇÃO

Crossref (<https://crossref.org>) is a not-for-profit membership organization for scholarly publishing working to make content easy to find, cite, link, and assess. Crossref provides services for the publishing community such as Content Registration with Digital Object Identifiers (DOIs) and funding data, Cited-by linking, Similarity Check for editorial originality, and Crossmark for updates and retractions.

Crossref has continued to grow since it was founded in 2000, and now works with over 7,000 members from around the world, including over 600 members from Brazil. There is also large growth in members from countries such as Turkey, Indonesia, South Korea and Malaysia. The majority of new Crossref members are small, not-for-profit, open access publishers who do not have a large technical staff to dedicate to implementing Crossref services. However, it is important that these smaller, international publishers are able to join Crossref, to register content and metadata (including DOIs), so that their publications

can be discovered and linked to using the same databases and processes that exist for larger organizations. It is also important that they can participate in additional Crossref services that will help their editorial processes. Many of these publishers use OJS to manage their publishing workflows, so integrating with OJS is an important part of supporting Crossref publisher members.

CROSSREF SERVICES

It is worth highlighting some of Crossref's additional services and why they are important. Crossref members are doing more than just registering DOIs and the information (metadata) associated with their publications. Some key services to highlight include reference linking, Cited-by, Similarity Check, funding data, ORCID auto-update and Crossmark.

Reference linking means hyperlinking using Crossref DOIs in article reference lists. This makes it possible for readers to follow that link from the reference list in the article they're reading to a related work. Because publishers maintain their DOIs and metadata with Crossref, if the content moves, the DOI links stay intact (the publisher updates that information with Crossref). That way the links work persistently, ensuring a reader can always get to the information they want on and follow the thread of the research.

Crossref members are required to link their references, using the DOI, to content from other Crossref members. This reciprocal arrangement means that publishers do not have to create individual agreements among themselves to agree to this, and it means that the research can travel further when all publishers link their references and content together for the long term.

Reference linking is a way of looking back to see what research papers have used and built from (or disagreed with!), but Cited-by linking lets publishers and readers see what other Crossref content goes on to cite that paper in future. They can then navigate to that content if they are interested in doing so. There are many online citation indexing services that offer similar information, but with Cited-by lets Crossref members display the Cited-by links on their content on their own website. Cited-by also looks across the whole Crossref database, which may contain content that isn't indexed in other services so publishers may see different results or links to their content than in other services.

This benefits the readers of the content because they can get a sense of how often the content has been cited and can easily click the links to go to the citing content. How often

something is cited can also be useful information for the wider research community such as funders, bibliometricians and librarians.

Reference linking and Cited-by were implemented early in Crossref's history, but in 2008, Crossref added Similarity Check to its range of services. Similarity Check helps publishers and editors make sure that the submissions they receive are original before they decide to publish them. It lets them upload submitted papers to the iThenticate service, provided by Turnitin (<http://ithenticate.com>), and these are then compared against a unique database containing tens of millions of full-text scholarly articles, books, conference papers from other Crossref members, other academic content and billions of web-pages. iThenticate then produces a report for the editor or publisher showing any matches it finds to other works in that paper. Reviewing this report helps check if the work is original and if it references other work correctly so that Crossref members do not have to risk publishing work that has already been published elsewhere, and therefore infringes on the copyright of another publisher.

Other Crossref services involve simply providing more publication or associated metadata to Crossref when DOIs and metadata are deposited. This can include things like license information to show how the paper can be used, or information on the archiving arrangements the publisher has set up.

However, it is becoming equally important for publishers to provide standardized information on who has funded the research they are publishing. Funding organizations are doing more work to make sure they can track the outputs of the research they have funded, but to do this they need funding information to be collected by publishers in a way that means that funders can be identified correctly and compared across different countries, publishers and publications. For Crossref members, this information can be collected from authors when they submit to a journal. Authors can choose from a list of thousands of funders and their unique IDs listed in the Crossref Funder Registry, a unique list of funders and identifiers associated with each organization to clearly and persistently identify them. This list can be integrated into manuscript submission systems so that the process is as integrated as possible for authors.

Publishers include the funder (and identifier) the author chose in their metadata when they register content with Crossref. Crossref then makes the funding data openly available, so it can be used by anyone who is interested, meaning that everyone can have transparency into scholarly funding and its results, researchers can read the work in context, publishers

can track the funders driving content to their journals, funders can see the results of their grants.

Publishers can also collect ORCID iDs from their authors. An ORCID iD is a unique identifier for an individual. It allows everyone (authors, publishers, funders, and research institutions) to identify the work from a specific author, and accurately attribute it. Crossref members can collect ORCID iDs from their authors and co-authors, and when that information is deposited with Crossref along with the article details it means that articles can be searched and discovered by using the author's ORCID iD.

More than that however, when Crossref sees an ORCID iD in the metadata a publisher deposits, they will automatically pass that information to ORCID and the author will receive a notification to their ORCID inbox that asks them if they want the paper to be added to their ORCID record. If they give permission for this article (and for future publications if they choose to do so) then the papers will be automatically added to their ORCID record. This will ensure their ORCID record is as complete as possible, but it will also save them time and effort in updating the record manually. As of April 2017, Crossref has already pushed over 350,000 publications to ORCID records and this number is continuing to grow as more publishers integrate ORCID.

Another service that is growing is Crossmark. This service is a simple button, seen on the HTML or PDF of the paper. When clicked on, it brings up a pop-up box that gives readers quick and easy access to the current status of a piece of content. A reader can use Crossmark to see if content has been updated, corrected or retracted and access valuable additional metadata provided by the publisher. The benefits are that publishers can reassure readers that they're keeping their content up-to-date and showcase additional metadata. It means researchers and librarians can easily see the changes to the content they are reading, find out who funded the research, what licenses apply to the content and more. Anyone can access the Crossmark metadata through Crossref's REST API, providing opportunities for integration with other systems and analysis of changes to the scholarly record.

CROSSREF AND PKP/OJS

Many Crossref members use the Open Journal Systems (OJS) platform to manage their content. Because of this, PKP and Crossref have been working together to help OJS users start to participate in more than these services. This includes an arrangement for PKP to act as a Sponsoring Affiliate for Crossref, so that OJS-based publishers may choose to join

Crossref through PKP. It also includes work on a Crossref-supported plugin for OJS (<https://pkp.sfu.ca/wiki/index.php?title=CrossRef>) which has been included since OJS version 2.4.5 and continues to be developed.

The Crossref plugin for OJS provides support for deposits so that Crossref members can more easily register their content from within OJS. It allows for automatic deposits to Crossref systems so that DOIs and other metadata can be registered quickly and easily.

The metadata that OJS can currently deposit includes bibliographic information on the paper, but also additional useful information such as ORCID iDs, license information, full-text links to enable participation Similarity Check (from version 2.4.6 onwards), full-text links for text-mining.

The plugin is the foundation for further integration of more Crossref features and services, such as the deposit of funding information, references and the integration of Cited-by and Crossmark. Crossref and PKP aim to focus work on these developments in 2017.

This will benefit Crossref members, but also the wider research community including researchers, funders, libraries and service providers who use Crossref metadata to find content. This proposal will cover an update on Crossref services, the OJS/Crossref plugin and the planned developments to the plugin for Crossref members.

CONCLUSION

Crossref is continuing to work with a growing number of publisher members from around the world. This allows publishers to take advantages of various services including Similarity Check, content registration, ORCID auto-update and Cited-by. However, there needs to be integrations with platforms like OJS and other tools to help publishers make use of DOI registration and other services simply and easily. Crossref and PKP are collaborating on this, starting in 2014 with the release of the Crossref/OJS import/export plugin. Crossref and PKP plan to further develop this plugin to ensure that Crossref members can easily choose to participate in more services which may add value to their publishing processes and help their content be discovered and used.