Editorial

Use of persistent identifiers: imperative in scientific publishing processes

Uso de identificadores persistentes: imperativo en los procesos de edición científica

Luis Ernesto Paz Enrique [1] * iD

[1] Universidad Nacional Autónoma de México. Ciudad de México, México.

*Corresponding author:
luisernestopazenrique@gmail.com

In today's digital age, where the amount of information generated and stored is overwhelming, the challenge of preserving and accessing it in an efficient and lasting manner arises. Persistent identifiers hold promise as a solution to address this challenge by providing a unique and enduring way to identify and access digital resources. They are unique strings of characters that are assigned to digital resources: documents, images, videos or any other type of file.

Uniform Resource Locators (URLs) are transient identifiers, they can become inaccessible over time. Conversely, persistent identifiers are designed to be stable. They are independent of the location or state of the resource, which means that if you change platforms the identifier is valid. There are different identifier systems, among the best known are the Digital Object Identifier (DOI), the Uniform Resource Name (URN) and the Persistent Uniform Resource Locator (PURL).

These systems use algorithms and centralized registries to assign unique identifiers. The resolution process consists of translating an identifier into the corresponding resource location or metadata, allowing users to access the resource reliably[1] and enabling data integrity over time. In the changing digital environment, platforms can become outdated, so these identifiers offer a way to ensure that digital resources remain accessible even in the future.

In addition to information preservation, persistent identifiers also have the potential to facilitate global collaboration and sharing of digital resources. Resources can be readily shared and referenced by researchers, libraries, museums, and other institutions. This encourages collaboration, reuse and dissemination of knowledge to contribute to the advancement of science and culture.

There are two classifications of persistent identifiers: 1) those oriented to objects or digital sources and 2) those in charge of establishing authorities. Of the former, the following examples stand out:

- **Digital Object Identifier (DOI)** is one of the most widely used persistent identifiers in academia. It is an identification system that assigns a unique identifier to each digital object: scientific articles, technical reports or data sets.[2] DOIs are used to cite and reference articles, which facilitates the replication of studies and the validation of results.

- The **Archival Resource Key (ARK)** is a flexible system that identifies and accesses a wide range of digital resources, including cultural objects, government records or historical archives. The ARK is designed to be independent of the physical location of the resource and offers reliable resolution over time. This identifier has been adopted by institutions, it guarantees the preservation and access to digital collections.

- The **Uniform Resource Name (URN)** is an identifier that is part of the World Wide Web Consortium (W3C) set of standards. URNs are used to identify digital resources. Unlike URLs, which identify the location of a resource, URNs focus on persistent identification of the resource itself. Recognize that they are reliably referenced and accessed, even if they change locations or platforms.

- The **Handle System** is a global infrastructure for the assignment of identifiers with a wide variety of digital resources. They are based on a numeric prefix and suffix that form a unique string.[3] Provides resolution services, converts these identifiers to locations or metadata of the corresponding resource. It is used by library institutions, publishers and government agencies to ensure the persistence and accessibility of resources.

The most commonly used persistent identifiers aimed at researchers and authors are the following:

- **Open Researcher and Contributor ID (ORCID):** is a free international identifier, researchers create an online profile and link bibliographic information to a unique ID.[4] ORCID has become a widely used tool in the scientific community, maintains a updated record of publications, presentations and other academic achievements.

- **ResearcherID:** is an identifier developed by the company Clarivate Analytics, owner of the Web Of Science (WOS) database. Create a profile on WOS, where publications and bibliographic information are collected. In addition, ResearcherID connects the profile with other platforms to expand visibility and reach.

- **Scopus Author ID:** This identifier is developed by the Elsevier company. It is generated automatically for the authors of the publications indexed in the Scopus database. The identifier allows authors to view, manage profiles and posts; connects information with ORCID[5] and other platforms.

In the field of scientific research, journals play a fundamental role in disseminating and preserving knowledge. These institutions should adopt the use of persistent identifiers in order to preserve academic integrity since they facilitate the accessibility and visibility of scientific articles. Journals that use persistent identifiers can ensure that articles are easily cited, found, and accessed over time.

Also, the use of persistent identifiers makes it easier to manage and track publications. Integration into editorial management systems guarantees efficient control of metadata and the unique identification of each article. They contribute to the construction of interconnected

information networks where articles can be linked to other related resources, an aspect that favors navigation and exploration of scientific knowledge. The main benefits of using them are aimed at:

- Uniqueness and consistency: it is guaranteed that each digital resource has an associated unique identifier. This removes the ambiguity and confusion when using other transitory identification methods (URLs for example). Having unique persistent identifiers improves accuracy and consistency in information retrieval, it can be uniquely and accurately identified.

- Durability and accessibility: persistent identifiers are designed to be stable and last over time. This ensures that information is accessible in the long term and information retrieval is easy without worrying about link staleness even if resources are moved, reorganized, or changed platforms.

- Interoperability: digital resources can be linked and referenced from different sources: libraries, databases or repositories. It facilitates the integration and combination of information, improves efficiency, the quality of retrieval and processing. Identifiers can be used by multiple systems and services, which encourages collaboration and integration between them.

- Accurate citation and reference: the citation is facilitated in a reliable and precise way the resources used. Confusions or errors in the identification of the resource are avoided and direct links to the sources are established. This allows validation, replication, accessibility and transparency in research.

The use of persistent citation identifiers benefits the scientific community in terms of metrics. These accurately track and count citations to an article, providing an objective measure of the impact and influence of research. In addition, by using them associated with authors, it facilitates the unique identification and tracking of individual contributions, which improves proper attribution of authorship and recognition of the work done.

Keywords: Persistent identifiers, Science construction, Scientific journals, Science publishing, Consistency

Palabras clave: Identificadores persistentes, Construcción de la ciencia, Revistas científicas, Edición científica, Consistencia

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