

# The academic publishing trap

## Las trampas de las publicaciones académicas

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### Abstract:

Academic journals have undergone profound changes since they were established as the main elements in the evaluation of scholars and scientists in universities and other research institutions. The development of impact and performance indicators based on the number of publications and citations has distorted the choice of topics, the identification of audiences and the characteristics of academic work. Impact indicators and other metrics reproduce biases –thematic, disciplinary and linguistic– that exacerbate the degree of stratification among academics and institutions. It is important to recognize the traps facing academic publications and the distortions they create, in order to design publishing options that strengthen journals and the academic output that supports them.

**Keywords:** scientific publication, bibliometrics, scientific activity, evaluation of academics, science and technology administration.

### Resumen:

Las revistas científicas se han transformado profundamente a partir de su constitución como los elementos centrales de la evaluación de académicos y científicos en las universidades y otras instituciones de investigación. La construcción de indicadores de impacto y de desempeño a partir del número de publicaciones y las citas recibidas ha producido una distorsión en la selección de temas, la identificación de audiencias, y las características del trabajo académico. Los indicadores de impacto y otras métricas reproducen sesgos –temáticos, disciplinarios y de idioma– que profundizan la estratificación entre los académicos y las instituciones. Es importante reconocer las trampas en que se encuentran las publicaciones académicas y las distorsiones que producen, para diseñar alternativas editoriales que fortalezcan tanto a las revistas como a la producción académica que las sostiene.

**Descriptor:** publicación científica, bibliometría, actividad científica, evaluación del profesor, administración de la ciencia y la tecnología.

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## 1. Introduction

At the origins of modern academia and science in the sixteenth century, Francis Bacon (1942) recognised the gathering and systemizing of *existing knowledge* as an activity almost as important as creating *new knowledge*. At the same time, however, he argued the need to break with scholastic knowledge –which primarily consisted of commenting on ancient texts– in order to highlight work based on direct observation. The practice of supporting or comparing new academic contributions, in part or fully, by citing previous works has survived to our days, long after the tradition of examining ancient knowledge<sup>1</sup>. Direct observation soon developed into experimentation, and both led to the need to publish findings in relatively brief texts. This led to the emergence of the academic or scientific article, as well as a new form of periodical publication, in the form of academic or research journals.

Among the antecedent forms which influenced it directly or indirectly were the newspaper, correspondence, the *Messrelationen*, [accounts of measurements, in German in the original], the fair catalogues, and the calendars. Some of these literary forms came into existence at a much earlier date and have persisted until the present day, because their functions have not been completely replaced by the periodical (Kronick, 1962, p. 49).

Scientific publications from the seventeenth and eighteenth centuries can be broadly defined as «a form of literature which was derived from the activities of the universities» (Kronick, 1962, p. 193).

With few changes, these publications –journals, in today’s lingo– became established as the principle means of communicating scientific and academic work. They took the form recognised today as peer-reviewed or refereed journals<sup>2</sup>, which can be characterized as follows: a periodical form of publication that is well-defined and continuous over time, in which the articles are evaluated by the corresponding community of experts<sup>3</sup>, and which publish original texts.

## 2. The international circulation of academic information

During the first half of the twentieth century, academic journals underwent a period of consolidation. In the process, they grew in number and international distribution, their subject matter diversified, and, at the same time, they became ever more specialized. The universe of information and the different types of scientific and academic publications around the world became highly dynamic and varied, as well as increasingly complex, specialized and hard to encompass<sup>4</sup>. This arrangement of the international circulation of information and academic knowledge corresponds to a contemporary scientific system which is complex, but also highly structured (Allen, 2007).

There is currently a wide range of entities (public, private, for-profit, non-profit) at the international, national, regional and local levels that are engaged in ordering, systematizing, classifying, and categorizing academic journals. These pursue varying objectives, ranging from scientific altruism to publishing and information

businesses (Elliott, 2005). The intermediary organizations (between the author and the reader) differ in their contrasting focusses on different markets.

– Distribution: ranging from promoting open access (for example, scientific associations and university publishers, DOAJ, or RedALyC) to commercial distribution via subscriptions (ex. JSTOR, MUSE, Elsevier, or EBSCO).

– Cataloguing: from indexing peer-reviewed articles (ex. Web of Science, Scopus and PubMed) to inclusive general inventories (ex. Ulrich's and Latindex).

– Perspective: from generalist, integrationist, and multidisciplinary (ex. Web of Science, Scopus, and Ulrich's) to specialized, disciplinary, and thematic (ex. PubMed, Sociological Abstracts, and Filos).

### 3. Marketing of scientific publications

The academic publishing complex, with its diverse focus, has expanded to include highly varied services. There are large commercial academic publishers that operate internationally (ex. Elsevier, Taylor & Francis, Wiley & Sons, Macmillan/McGraw-Hill, Pearson, Springer, and Santillana). Meanwhile, in the English-speaking world university publishers with a commercial focus are common (ex. Stanford University Press, Harvard University Press, and Cambridge University Press).

Closely linked to the main publishing houses are large groups that supply systemized academic information, such as

Clarivate Analytics with Web of Science (WoS)<sup>5</sup> or Elsevier with Scopus. In addition, a range of profit-making (MUSE, JSTOR and INGENTA) and not-for-profit (DOAJ and CrossRef) companies has developed to distribute academic publications electronically.

A study by Larivière, Haustein, and Mongeon (2015), in which the authors reviewed nearly 45 million documents indexed in WoS between 1973 and 2013, found that over 50% of the texts in 2013 were published by just five publishing groups: Reed-Elsevier, Springer, Sage, Taylor & Francis, and Wiley-Blackwell. The concentration of journals varied by discipline, with 70% of the articles in the social sciences, 53% of those in the natural medical sciences<sup>6</sup>, and 20% in the humanities concentrated in journals published by these groups. Furthermore, the study by academics from the University of Montreal shows how the concentration of academic journals, works published, and citations from these five large groups has increased, due to the acquisition of existing publications and the creation of new ones. The massive growth of the industry and the heavy concentration of academic journals has become cause for concern and debate within academic and research communities virtually everywhere in the world.

#### 3.1. Homogenization of academic journals

The circulation of academic and scientific knowledge through journals and other periodical publications currently takes place under the scenario described (Allen,

2007). Academic journals traditionally take great care in conducting the following tasks: the communication with the editorial bodies, referees, and authors; the selection of articles by peer review; ensuring correct style, editing, and formatting; and the dissemination of content and distribution.

Nowadays, traditional procedures are complemented with the intensive use of information technologies. New ground rules, parameters and requirements have also been imposed on journals. These include national and international indexing, the move to digital delivery instead of, or in addition to, print publishing, and publication in multiple languages (almost always English). The new rules have a convergence effect that homogenizes the form and content around the model of the refereed academic journal, which is included in the leading international indices («Peer review reviewed», 2002; Swartz, 1999).

This homogenization is viewed as a limiting factor for countries and institutions with different traditions and degrees of academic consolidation (Cano, 1995; Ahimbisibwe, Dahdouh-Guebas, Koedam, & Van Moll, 2003; Arencibia-Jorge & de Moya Anegón, 2008; Marginson & Ordorika, 2010). Nonetheless, journals and the bodies that support them seek out an international profile and participation in the global mainstream of knowledge circulation; meanwhile, local academic communities aspire to recognition of the international impact of their work (Dahdouh-Guebas et al., 2003). These dynamics have far-reaching repercussions on areas such as: opportunities

to participate in international projects and networks (Elliott, 2005); systems of performance-based payment and stimuli for productivity; possibilities for career advancement; and national and international academic mobility, among other incentives.

Such trends have also fuelled public discourses and policies that emphasize increasing competitiveness in the knowledge economy at a global level (Ordorika & Pusser, 2007). For this reason, journals face considerable pressure to be included in the main indices and thus increase their level of participation in international knowledge creation and circulation circuits.

#### 4. Distortion in academic publications

At what point did scientific and academic journals cease to be primarily tools for communicating science and knowledge? Since when has the logic of stability and career advancement taken precedence over the logic of knowledge and academic creativity? Such interrogatives paint an overly idealized picture of the purely scientific nature of the academic journals of the past. In reality, these have always been associated with building the careers, prestige and status of individuals or research groups, within academic institutions and scientific associations, and with winning awards. Journals have responded to the interests of the dominant groups — within disciplines, fields of knowledge and institutions— and also to those sponsoring scientific activity.



#### 4.1. The market and accounting in academia

The emergence and subsequent socialization of the call to *publish or perish* dates back to the first half of the twentieth century (Case, 1927; Coolidge & Lord, 1932; Garfield, 1996; Neill, 2008). By the 1980s it had become widespread in universities and research centres throughout much of the world. Hiring, promotion, and continued employment of academic staff in these institutions (including tenure where it exists) have increasingly been decided by the volume and impact of their academic publications.

At least two factors coincided in the establishment of bibliometric measures as a fundamental factor driving academic careers. Firstly, in contemporary societies:

the dominance of the market shapes the new forms of the state, as well as social organization and culture. At present, the dominant social discourse claims that the market and competition are the most effective and equitable social regulators. The «commercialization» of social life permeates all societal institutions, including universities, and public ones in particular, which are under great pressure to redirect their activities and resources to the production of private goods and market-orientated knowledge. The adoption of practices and concepts that are typical of the market and competition, such as notions of profitability, efficiency, and productivity, is evident in processes of authenticating and measuring the «products» of knowledge that fall outside the traditional methods of scientific validation (Ordorika & Soley, 1998, author's translation).

While this may seem obvious, the same argument applies to academic research and knowledge-creation in all sorts of institutions; this is due to the pervasiveness of the market discourse and practices, on the one hand, and the centrality of universities in these activities, on the other.

Secondly, the requirement to measure outputs and the impact of scientific publications was accompanied by instruments that made these quantifications possible. The precursor to current bibliometric systems was the ISI Web of Knowledge (ISI WoK), which was originally produced by the Institute for Scientific Information (ISI) starting in 1960. The company, founded by Eugene Garfield, has identified and systematized scientific articles to create compilations, lists, and indices of articles published in important journals, primarily in the field of medical and health sciences in the United States.

The project originally had two aims: to discover information to enable researchers to stay up to date with scientific output in periodicals, and to retrieve information so that researchers could find relevant articles in a growing stream of literature by building thematic indices. This is how Index Medicus was first established. Eventually the identification project also proposed the development of the concept of citation indices for scientific literature, in what became the precursor of the Science Citation Index, published by ISI starting in 1964 (Ordorika, Rodríguez Gómez, Lozano Espinosa, & Márquez Jiménez, 2009, p. 41).

ISI has developed databases and instruments for monitoring academic pro-

duction in virtually every discipline<sup>7</sup>. The Science Citation Index has been joined by indices for the social sciences (Social Science Citation Index, SSCI) and the humanities (Arts and Humanities Citation Index).

In 1992, Thomson Scientific & Healthcare acquired ISI and renamed it ISI-Thomson Web of Knowledge. Then, in 2008, Thomson bought Reuters and WoK became Thomson Reuters Web of Science (WoS). Finally, in 2016, Thomson-Reuters sold all of its scientific and bibliometric information operations to Clarivate Analytics. The company has continued to operate WoS and the other databases of publications and citations, which cover thousands of journals and can be consulted online. These transitions reflect «a clear transformation in the original project of discovering and retrieving information, in other words ‘systematization to inform’, leading to a new era of impact and scientific output indicators, in other words ‘systematization to measure’» (Ordorika et al., 2009, p. 41).

For several decades, ISI had an almost-exclusive command over bibliometric information. However, in 2004, Elsevier launched Scopus, its own database of abstracts and citations. In August 2017, Scopus listed 22,800 titles and 70 million records dating back to 1778<sup>8</sup>, while WoS listed 33,000 titles and 100 million records since 1900<sup>9</sup>. There are also other specialist databases and indices such as PubMed, with almost 30 million entries going back to 1966; the Chemical Abstracts Service of the American Chemical Society, with 47 million articles and patents; and Education Resources

Information Center (ERIC), an online database with 1.5 million bibliographic records, citations, and abstracts of articles and other educational materials.

#### 4.2. From the logic of knowledge to hierarchical evaluation and classification

Publishing articles in *quality* academic journals and measuring their impact by counting citations have become the basic measures for evaluating the productivity of academic and scientific work. In this setting, classifications of academic publications based on quality and impact criteria serve as key filters for controlling entry to general and specialized indices. The most notable cases are WoS and Scopus, which calculate authors’ h-indices and also present their own SNIP, SJR, Cite-score (Scopus), and JCR (WoS) impact indices for journals. Journals, articles, and citations –basic elements for the development of modern science, communication and the critique of knowledge– have become the key elements for evaluating scientists and academics, as well as departments and institutions. At the same time, through indexing and impact indices, these measures have become central components of international university rankings.

#### 4.3. Academics

Since the 1980s, higher education and research institutions in many countries have established *merit-pay* or *performance related pay* systems for researchers and professors (Barber & Klein, 1983; Dennis, 1982; Escudero Escorza, Pino Mejías, & Rodríguez Fernández, 2010;

Grant, 1998). In these cases, academics' incomes comprise a basic salary plus a bonus —often called a stimulus or incentive— in varying proportions. In Mexico, for example, the monthly bonuses paid by the National Researchers System and the incentives provided by individual institutions can account for more than two thirds of academics' total income (Ordorika, 2004).

At the same time, performance evaluations are essentially based on research production indicators. The publication of articles is the most highly-valued type of research output in almost all disciplines; meanwhile, books and book chapters have some value, depending on the subject areas. In that context, publishing articles in indexed journals and citations in the various indices are prerequisites for entering academia and for a successful career, as well as for obtaining larger bonuses. These criteria, which prioritize internationally indexed journals, also affect the choice of topics and the design of research projects; in many cases, they also shape the content, analytic viewpoints, audiences and languages of publication. As shown below, these *options* put academics and researchers, as well as journals published by many countries and universities, at a disadvantage compared with their counterparts in the Global North and English-speaking countries; this is largely due to the language biases and the international mainstream of disciplines and fields of knowledge.

Performance evaluations and performance-related pay lead to stratified income and status within academic groups. They also incentivize competition, undermine collaboration and collegiality, and

oblige academics to prioritize the most profitable research projects. In addition, these forms of evaluation condition and stratify access to research funding, creating a vicious circle in which inequalities accumulate (the Matthew effect).

#### 4.4. Departments and institutions

Performance evaluations of departments and institutions are based on aggregate productivity indicators of lecturers and researchers. Accordingly, journals, articles and citations play a central role in the evaluation of departmental groups, as well as of higher education or research institutions. In addition to publication and impact indicators, there are also budgetary ones; these give rise to «measurements» of efficiency and productivity, through which institutions are rewarded or punished.

#### 4.5. International rankings

Hierarchical classifications of universities, better known as rankings, have become increasingly widespread and influential since the appearance of the Academic Ranking of World Universities (ARWU) in 2003 (Ordorika & Lloyd, 2013, 2014); the ranking, which classifies 800 institutions worldwide, is produced by Shanghai Jiao Tong University in China. Since then, the number and variety of rankings has increased dramatically. There are currently over 18 global rankings, as well as other regional and national ones. International rankings have played a major role in debates about universities in each country and at international meetings. Their influence in the media, public policy and

institutional decisions «cannot be understood outside a global setting that values forms of classification and evaluation, which are in turn strongly shaped by marketing» (Ordorika, 2015, p. 7). Equally influential is the fact that the «best known rankings are presented, more or less explicitly, as ‘objective’ measurements of the quality of all of the world’s universities» (Ordorika, 2015, p. 7).

Most international rankings essentially measure the international circulation of scientific research output, based on citations and articles published in indexed journals. They rely on the WoS and Scopus databases, with which they have established commercial contracts and strategic alliances. For example, *ARWU* uses WoS, while the *Times Higher Education* supplement’s various rankings and those produced by Quacquarelli Symonds (QS) use Elsevier-Scopus (DGEI, 2018).

In the process, international rankings reproduce the biases towards the elite American research universities, of which Harvard University is the leading example. For this reason we have described the rankings as *harvardometers* in other texts (for ex., Martínez Stack, Lloyd, & Ordorika, 2015, p. 194). Many authors (Berry, 1999; Bowden, 2000; Federkeil, 2008; Florian, 2007; Ishikawa, 2009; Provan & Abercromby, 2000; van Raan, 2005; Ying & Jingao, 2009) have observed that «problems and limitations with the rankings, such as a lack of transparency in their methodologies, the bias towards the English language, and their homogenizing influence, frequently exceed their potential benefits» (Ordorika & Lloyd, 2013, p. 217).

## 5. Distortion in academic publications

The policies and systems for evaluating and remunerating academic, scientific, and technological work have subjected authors and journals —especially those outside the English-speaking world— to enormous pressures to seek inclusion in the main indices, increase their impact, and expand the international circulation of content. This creates tensions and contradictory dynamics for the development of journals and their editorial policies. Examples include the use of English to pursue external audiences in lieu of their own language —in our case Spanish— and the local, regional, and national relevance of the topics and problems tackled. A third issue is the widespread tendency to equate the quality and pertinence of content with the number of article citations or the journal impact factor.

### 5.1. Impact factor and quality of content

The correspondence between impact factors and the quality of content has been disputed virtually since the moment it became a key indicator in the evaluation of journals and academics across disciplines (Saha, Saint, & Christakis, 2003; Favaloro, 2008; Simons, 2008; Archambault & Larivière, 2009). In this sense, the San Francisco Declaration on Research Assessment (DORA) stands out among the strongest criticisms. The declaration was drafted by delegates at the Annual Meeting of the American Society for Cell Biology (ASCB) in May 2013, and as of June 2018, it had been signed by 485 academic and scientific organizations and



12,038 lecturers and researchers from throughout the world (American Society for Cell Biology, 2013).

The Journal Impact Factor is frequently used as the primary parameter with which to compare the scientific output of individuals and institutions. The Journal Impact Factor, as calculated by Thomson Reuters, was originally created as a tool to help librarians identify journals to purchase, not as a measure of the scientific quality of research in an article. With that in mind, it is critical to understand that the Journal Impact Factor has a number of well-documented deficiencies as a tool for research assessment. These limitations include: A) citation distributions within journals are highly skewed; B) the properties of the Journal Impact Factor are field-specific: it is a composite of multiple, highly diverse article types, including primary research papers and reviews; C) Journal Impact Factors can be manipulated (or «gamed») by editorial policy; and D) data used to calculate the Journal Impact Factors are neither transparent nor openly available to the public (American Society for Cell Biology, 2013).

The final part of the declaration includes a set of general recommendations and specific guidelines for funding foundations and agencies, institutions, publishers, organizations that provide metrics, and researchers. Regarding publishers, their suggestions are to:

1) Greatly reduce emphasis on the journal impact factor as a promotional tool, ideally by ceasing to promote the impact factor or by presenting the met-

ric in the context of a variety of journal-based metrics. [...] 2) Make available a range of article-level metrics to encourage a shift toward assessment based on the scientific content of an article rather than publication metrics of the journal in which it was published. [...] 3) Encourage responsible authorship practices and the provision of information about the specific contributions of each author. [...] 4) Whether a journal is open-access or subscription-based, remove all reuse limitations on reference lists in research articles and make them available under the Creative Commons Public Domain Dedication. [...] 5) Remove or reduce the constraints on the number of references in research articles, and, where appropriate, mandate the citation of primary literature in favour of reviews in order to give credit to the group(s) who first reported a finding (American Society for Cell Biology, 2013).

Despite these criticisms and the validity of the recommendations, the bodies that evaluate journals and academics maintain the central position of impact indices and factors. Journals attempt to increase their positions in the indices permanently and reproduce them as proof of the quality of the publication within the academic community. For journals from outside the English-speaking world, pursuing high indicators is an uneven contest; it forces them to abandon their original language and adopt English or publish in both languages — a very costly enterprise. In addition, in their quest for high index scores, journals redirect editorial policies towards topics of international interest and global audiences.

## 5.2. Language bias

Publications in journals indexed in Web of Science (WoS) and Scopus are

in turn highly skewed in favour of English-speaking academics and institutions. Following are some examples:

TABLE 1. Distribution of academics in higher education.

World	12,500,000
Spanish-speaking countries	1,200,000
%	9.6%

Source: UNESCO, retrieved February 2018.

According to data from UNESCO and the OECD, there are an estimated 12.5 million full-time lecturers (or equiva-

lents) in higher (tertiary) education. Over 1.2 million of these (almost 10%) are from Spanish-speaking countries.

TABLE 2. Periodic academic publications in Spanish.

	Total	Journals	Academics	Spanish	% A/S
Total	766,893	247,865	139,356	8935	6.4%
Abstract or index	177,458	120,301	94,338	5815	6.2%
JCR WoS	11,772	11,573	11,392	278	2.4%
SJR Scopus			23,222	896	3.9%

Source: Ulrich's Directory, retrieved February 2018.

According to Ulrich's Directory, there are over 766,000 publications of all types in the world; of those, 139,356 are academic or research journals and just 6.4% are in Spanish. Meanwhile, Scopus lists just 896 journals published in Spanish-speaking countries and there are only 278 in WoS. Between 2000 and 2018 the

number of journals in Scopus grew from 297 to 896, an increase of roughly 200%. The dearth of academic research journals in Spanish is apparent if we compare the total share of those publications in 2014 (3.5%) with that of academics in Spanish-speaking countries (9.6%).

TABLE 3. Academic journals by language of publication.

Language Countries	2000	2014	Diff.
English	84.5%	83.8%	-0.8%
Spanish	2.0%	3.5%	1.4%
Other	13.4%	12.8%	-0.7%
Total	100%	100%	---

Source: Ulrich's Directory, retrieved February 2018.

That said, academic output from the Spanish and Portuguese-speaking world, judging by articles indexed in Scopus between 2000 and 2015, shows significant growth during the period: 137% in Latin America, Spain, and Portugal. However,

this critical mass of academic publications, authors, and citations has not been matched by an equivalent increase in the number of journals from these countries indexed in the database.

TABLE 4. Academic output indexed in Scopus (2000-2015) from Spain, Portugal and Latin America.

Country	2000	2015	Difference Period	% Difference	% 2000	% 2015
SPA	27,924	78,049	50,125	80	43.1	35.8
BRA	14,042	61,417	47,375	237	21.7	28.2
POR	4143	20,304	16,161	290	6.4	9.3
MEX	6133	18,705	12,572	105	9.5	8.6
ARG	5273	11,728	6455	22	8.1	5.4
CHI	2163	9946	7783	260	3.3	4.6
COL	818	7339	6521	697	1.3	3.4
CUB	1251	2083	832	-33	1.9	1.0
VEN	1293	1762	469	-64	2.0	0.8
PER	233	1479	1246	435	0.4	0.7
URU	349	1282	933	167	0.5	0.6
Rest of LatAm	1123	3886	2763	146	1.7	1.8
Total	64,746	217,993	153,247	137	100.0	100.0

Source: Scopus, 2018.

TABLE 5. Scopus education journals in Spanish (2016).

Pos.	Title	SJR	SJR quartile	h-index	Doc. Total (2016)	Doc. Total (3 years)	Total citations (3 years)	Citable docs (3 years)	Cites/Doc. (2 years)	Country
95	<i>Comunicar</i>	1.162	Q1	18	40	128	279	121	2.41	SPA
198	<i>R. de Psicodidáctica</i>	0.752	Q1	16	20	57	126	57	2.42	SPA
282	<i>R. de Inv. Educativa</i>	0.593	Q2	7	32	93	93	88	0.98	SPA
360	<i>Educación XXI</i>	0.466	Q2	8	33	101	93	97	0.94	SPA
431	<i>R. Mexicana de Inv. Educativa</i>	0.390	Q2	4	52	157	58	142	0.16	MEX
441	<i>R. de Educación</i>	0.382	Q2	13	18	181	123	178	0.47	SPA
457	<i>R. Complutense de Educación</i>	0.361	Q2	6	67	101	62	100	0.52	SPA
460	<i>Enseñanza de las Ciencias</i>	0.358	Q2	8	32	168	69	153	0.43	SPA
474	<i>Estudios Sobre Educación</i>	0.345	Q2	5	19	59	27	59	0.50	SPA
510	<i>R. Eureka</i>	0.317	Q3	3	50	79	40	75	0.53	SPA
556	<i>R. Española de Pedagogía</i>	0.280	Q3	9	18	50	17	49	0.42	SPA
605	<i>Aula Abierta</i>	0.246	Q3	2	13	33	8	32	0.25	SPA
638	<i>Teoría de la Educación</i>	0.228	Q3	6	21	97	58	97	0.70	SPA
641	<i>Educación Médica</i>	0.227	Q3	8	89	39	18	28	0.64	SPA



Pos.	Title	SJR	SJR quartile	h-index	Doc. Total (2016)	Doc. Total (3 years)	Total citations (3 years)	Citable docs (3 years)	Cites/Doc. (2 years)	Country
664	<i>R. Cubana de Educación Médica Superior</i>	0.219	Q3	7	74	218	42	199	0.15	CUB
695	<i>R. Electrónica de Inv. Educativa</i>	0.208	Q3	4	46	100	25	97	0.27	MEX
703	<i>Formación Universitaria</i>	0.206	Q3	6	71	120	91	116	0.71	CHI
719	<i>Estudios Pedagógicos</i>	0.197	Q3	8	87	186	57	183	0.22	CHI
723	<i>Profesorado</i>	0.196	Q3	4	43	164	50	164	0.31	SPA
782	<i>Perfiles Educativos</i>	0.164	Q4	3	27	189	27	163	0.20	MEX
835	<i>R. Electr. de Inv. y Evaluación Educativa</i>	0.142	Q4	10	27	46	15	46	0.31	SPA
855	<i>R. Iberoamericana de Educación Superior</i>	0.136	Q4	2	33	27	5	27	0.19	MEX
860	<i>R. Lat. de Inv. en Matemática Educativa</i>	0.134	Q4	5	5	67	8	58	0.07	MEX
887	<i>R. de Pedagogía</i>	0.125	Q4	4	23	19	2	16	0.00	VEN
931	<i>Magis</i>	0.115	Q4	4	24	68	9	62	0.12	COL
934	<i>R. de la Educación Superior</i>	0.115	Q4	1	26	57	5	51	0.10	MEX

### 5.3. Disciplinary biases

The indexing of journals in the WoS and Scopus databases also reveals significant disciplinary biases. Initially, both had a strong concentration of journals in the areas of health and some natural sciences, and while the two indices have since diversified, they are still in the process of developing systems for measuring impact in the social sciences and humanities. Of the 36,831 journals listed by the Scimago Journal Ranking, which is based on Scopus, *Nature* has the highest h-index with 1011. In contrast, the top education publication is the *American Educational Research Journal*, which is ranked 1813th and has an h-index of 89. Even more striking, the top-ranked education journal from a Spanish-speaking country is *Comunicar* in 11,236th place with an h-index of 18. The following table shows the rankings of Spanish-language journals.

## 6. Final comments

This article was inspired by the 75th anniversary celebrations of the **revista española de pedagogía**. It argues the need for in-depth reflection into the radical changes academic and scientific journals have undergone since the last quarter of the 20th century. We have reviewed some of the changes that have occurred since article publication and citations became the primary basis for evaluating scientific and academic work. In this context, we argue that the editorial policies of journals have become distorted as a result of the new demands and expectations.

This shift has had a generalized impact on academic journals throughout the

world. However, it is apparent that those located on the periphery of the dominant countries in academia and science, as well as ones that publish in languages other than English, face conundrums that are more complex and harder to solve. These are traps for academic publications, as well as for the authors who publish in these journals, and whose working conditions and forms of academic communication have changed radically.

Academics and scientific publishers have started to criticize the current nature of the systems governing scientific publications and evaluations; they note that these policies have challenged researchers, journals, and research itself in very diverse areas of knowledge. Accordingly, thousands of academics and researchers have signed on to the criticisms and proposals of the San Francisco Declaration and made them their own.

From the journals' position, there is a need to continue to dig deeper into this topic and prepare alternatives; this is particularly true for journals published in languages other than English and in countries or regions that are less competitive in the international scientific system. From that perspective, there is a need to establish editorial agendas, priorities and policies that make it possible to confront two conflicting realities. On the one hand, it is important to continue with efforts towards integration in the international spaces where scientific knowledge circulates. On the other, we must guarantee the relevance of these publications – in terms of topics and analytic perspectives – in the local, regional, and national spheres. Integrating these two pathways

is not easy: it must start with the recognition of the specificity of the journals in each field and discipline.

Certain topics are transcendental for the development of academia and science in these countries. Of particular importance, in our opinion, is the defence of original languages—in this case Spanish—as languages of science and knowledge. This framework enables us to define strategies for international integration based on national capacities for creating knowledge that is locally-relevant or geared towards international exchanges.

In order to achieve this, we must strengthen academic journals so that they are in a position to achieve international integration, while addressing national and international topics from a local perspective and in the authors' native languages. It is a question of avoiding traps and correcting distortions; in sum, putting knowledge back at the centre.

### Notes

- <sup>1</sup> The notions of «academic» and «scientific» refer to two different but closely-related fields in intellectual work. The two terms are often used as equivalents or synonyms. This is the case in this article.
- <sup>2</sup> Many handbooks and websites of universities, journals, and academic publishers provide guidelines for determining what qualifies as refereed academic journals. Almost all of them agree on the following elements: articles are written by academics or researchers who are experts in a discipline or field of knowledge; technical or academic language is used; the texts are almost always original; they are long and detailed texts about a particular field or discipline; they include complete references to their sources; in almost all cases they are refereed or evaluated by peers; they include information

about the authors; they are published by academic associations or organizations.

- <sup>3</sup> In general terms, three forms of peer review are recognized: double blind review (the articles are sent to reviewers outside the journal, and the identity of the reviewers is kept secret); review by an editorial committee or board (the article is evaluated by members of an internal editorial body, while the author's identity can either be hidden or made public); and refereeing by experts in the field (the article is reviewed by experts, whose identity may or may not be kept secret).
- <sup>4</sup> For an idea of this universe, see Tenopir, Baker, Robinson, & Grogg, 2006 and Veugelers, 2009.
- <sup>5</sup> As noted below, Web of Science originated from the search systems developed by the Institute for Scientific Information. The rights were then acquired by Thomson Corporation (subsequently Thomson-Reuters) in 1992 and by Clarivate Analytics in 2016.
- <sup>6</sup> The concentration of journals in the natural and medical sciences published by these companies is less pronounced, thanks to the power of the editorial groups of the American Chemical Society (ACS Publications) and the American Physical Society.
- <sup>7</sup> ISI was originally comprised of the following databases: the Index Chemicus, Current Chemical Reactions, Current Contents, Automatic Subject Citation Alert (now called Research Alert), and the Science Citation Index.
- <sup>8</sup> [https://www.elsevier.com/\\_\\_data/assets/pdf\\_file/0007/69451/0597-Scopus-Content-Coverage-Guide-US-LETTER-v4-HI-singles-no-ticks.pdf](https://www.elsevier.com/__data/assets/pdf_file/0007/69451/0597-Scopus-Content-Coverage-Guide-US-LETTER-v4-HI-singles-no-ticks.pdf)
- <sup>9</sup> [https://cdn.clarivate.com/wp-content/uploads/2017/05/d6b7faae-3cc2-4186-8985-a6ec-c8cce1ee\\_Crv\\_WoS\\_Upsell\\_Factbook\\_A4\\_FA\\_LR\\_edits.pdf](https://cdn.clarivate.com/wp-content/uploads/2017/05/d6b7faae-3cc2-4186-8985-a6ec-c8cce1ee_Crv_WoS_Upsell_Factbook_A4_FA_LR_edits.pdf)

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