

Open Access Journals in the Field of Education: An Informative Study

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World Digital Libraries 7(2): 123–132 (2014)

Abstract

The main purpose of the paper is to study the publishing trends of the Open Access (OA) journals in the field of education, available in the Directory of Open Access Journals (DOAJ). An online survey was conducted for the collection of data and a quantitative method was applied for data analysis. Data was collected from 567 education journals during the month of February 2013. They were later presented in tabular forms and analysed using quantitative techniques to reveal findings, in accordance with the desired objectives. The findings show that a maximum number of journals (567) listed in the DOAJ is published in education; from the United States (120, i.e., 21.16 per cent); and during the first decade (2001–10) of the 21st century (393, i.e., 69.31 per cent). The linguistic assessment shows that the OA education journals are published in 32 different languages and English is the principal language adopted by the 75.84 per cent (430) of journals. The results also reveal that the majority of the education journals (496, i.e., 87.48 per cent) does not charge any publication fee from the authors and still 100 per cent of them have maintained their continuity. The study is limited to the DOAJ only and the World Wide Web (www) was not explored. Hence, the findings should be studied with caution.

Keywords: Open Access journals, Online journals, Electronic journals, Education journals

1. Introduction

The higher education institutes and research centres all over the world spend a major portion of their budget on research to generate new knowledge, verify old, and reject fictitious. After conducting research in various disciplines, the research scientists/scholars choose different means to communicate and share their findings with their counterparts across the globe, mostly without any monetary benefit. The journals—print or electronic—are the primary vehicles of communication in scholarly information transfer. However, due to the rapidly increasing cost of journals in addition to shrinking library budgets, it is impossible for any affluent library to subscribe to all the journals for its scholars. To overcome these problems, Open Access (OA) electronic publishing was heralded as a potential solution. The OA idea arises from a small but lively meeting convened in the Budapest by the Open Society Institute (OSI) on December 1–2, 2001. The resulting statement of this meeting, the “Budapest Open Access Initiative,” was made public in February 2002 (Bailey 2006). The initiative received \$3 million funding support from philanthropist George Soros, the founder of the OSI (Sathyanarayana 2008). The *Public Library of Science* received a \$9 million grant from the *Moore Foundation* for OA publishing and announced its first two open-access journals on December 17, 2002 (Seber 2009). Gradually, many institutions, organizations, societies, foundations, individuals, and commercial publishers joined the movement. Leading publishers like Springer, Nature, Oxford, Cambridge, Elsevier, Taylor & Francis, and Sage also launched the OA journals. The Open Access Scholarly Publishers Association (OASPA) was established on October 14, 2008 (www.oaspa.org) in response to the long-time informal discussions among OA publishers, and aims to represent the interests of OA journals publishers globally. This provides a great opportunity for all institutions involved in the OA publishing

to share their experiences and develop common good practices.

1.1 Directory of Open Access Journals

The idea of creating a comprehensive directory of OA journals was discussed at the First Nordic Conference on Scholarly Communication in Lund, Copenhagen (<http://www.lub.lu.se/ncsc2002>). The Directory of Open Access Journals (DOAJ) was launched by Lund University on May 12, 2003 with funding from the Open Society Institute and the Scholarly Publishing and Academic Resources Coalition (SPARC) (Seber 2009). In June 2004, the Open Society Institute (OSI) funded \$1,299,018 to support the open-access projects that included developing the Directory of Open Access Journals (DOAJ), converting a ‘Subscription-based Journal to Open Access’ and ‘Guide to Launching a New Open Access Journal’ (Guerrero and Piqueras 2004). The DOAJ service covers free, full text, quality-controlled scientific and scholarly journals. It also includes journals published by the not-for-profit OA journal publishers and all contents are freely available without delay (for e.g., no embargo period) to the end-user. The publishing models of journals rely on significant donations from private foundations, institutional support, and from those authors or institutions who can afford to make some payment towards the cost of publication. The DOAJ covers all subjects from acoustics to zoology and the maximum number of journals is related to the discipline of education.

2. Literature Review

The growth and development of the OA scholarly publishing have been one of the success stories of the Internet and the World Wide Web. Falk (2004) reported that there were only five journals offering OA mode to their contents in 1992 and the number reached to 1200 in 2004. Hitchcock, Carr, and Hall (1996) conducted a study to identify the quantum of free journals during the

last half of the 20th century and found that 47 out of 83 science, technology, and management electronic titles were free and planned to stay freely accessible. Frantsvag (2010) reported that the Ulrich listed 24,263 journals published by 9,970 publishers in which 229 publishers deal with both OA and traditional access journals and 996 OA journals have been published by them.

McVeigh (2004) evaluated a number of OA journals from a regional perspective in the ISI citation databases. The study brought out a striking result. Nearly 15 per cent of the covered titles from Asia-Pacific are available as open access, and over 40 per cent of the titles from Central or South America are OA journals. In contrast, OA journals from North America and Western Europe comprise 1.5 per cent and 1.1 per cent, respectively, of the total coverage from those regions. Lone, Rather, and Shah (2008) found that the top five countries, in terms of the number of journals in the DOAJ, were the USA, Brazil, the UK, Spain, and Germany. India ranked number seven in the list, well ahead of countries, such as China, Australia, and Japan.

Kaufman-Wills (2005) conducted a comprehensive investigation on OA journals of various archives including the DOAJ and revealed that there were only 248 journals in the DOAJ in all disciplines in which 45 per cent were in science and technology, 34 per cent in medicine, 10 per cent in the social sciences, and 7 per cent in arts and humanities. The study also depicted that the typical DOAJ journal published just 41 articles per year. The study further depicted that most of the full OA journals in the DOAJ were published by the commercial (54.8 per cent), followed by not-for-profit associations (14.5 per cent), and academic departments (12.9 per cent), respectively. The study also confirmed that 47 per cent of DOAJ journals charged publication fees to authors or their institutions. Walters and Linvill (2011) examined the characteristics of 663 OA journals in biology, computer science, economics, history, medicine, and psychology

and revealed a great variation in the sizes of OA journals; the largest publishes more than 2,700 articles per year, but half publish 25 or fewer. The results also depicted that just 29 per cent of the OA journals charge publication fees and the number of such journals is higher in the fields of biology and medicine. They also depicted that the OA journal landscape is greatly influenced by a few key publishers in which 28 per cent are commercial, 32 per cent are universities, and 35 per cent are societies/not-for-profit organizations. Coming to humanities and social sciences, little growth is depicted as compared to science and technology. Hu (2012) identified that among the 2,960 scholarly journals indexed by the Chinese National Knowledge Information (CNKI) database in humanities and social sciences, 147 journals offered open access. Rufai, Gul, and Shah (2011) conducted a study to identify the OA journals in library and information science. A total of 144 OA journals in the field of library and information science were obtained from the DOAJ, Ulrichsweb.com, and J-Gate. Among these, 32 journals are indexed by all databases while 29 titles are indexed only by the DOAJ, 11 only from Ulrichsweb.com, and 16 by the Open J-gate. The 144 OA library and information science journals were published from 37 countries in which maximum of 45 titles were published in the United States (31.25 per cent), followed, respectively, by 12 in Brazil (8.33 per cent) and 10 in Spain (6.95 per cent). The researchers also found that universities are the leading publishers of OA journals which published 55 titles, accounting for 38.19 per cent of the total, followed by library associations and research centres/institutes with 32 (22.22 per cent) and 22 (15.28 per cent) titles, respectively. When it comes to the content language(s), 72.92 per cent of journals (105) are unilingual, 19.44 per cent as bilingual (28), 4.17 per cent titles (6) in three languages, 2.78 per cent titles (4) in four languages, and a single title (0.69 per cent) is published in more than four languages. The recent study conducted

by UNESCO (2011) reported that the DOAJ listed 7,300 plus OA journals published from more than 115 countries by 2,985 publishers. The study also revealed that 29 per cent (2040) of journals accepted Author Processing Charges (APCs) whereas 71 per cent (5,063) did not demand any. The APCs were highly demanded by journals published from Africa (60 per cent) followed by North America (44 per cent) and minimum by journals published from South America (7 per cent). Solomon and Bjork (2011) also reported that in August 2011, 1,825 journals (26 per cent) listed in the DOAJ charged (APCs) whereas 74 per cent did not charge any publication fee to the authors.

A sizeable literature is available all over the world on OA journals, in general and the DOAJ, in particular. The results reveal that presently the OA journals are published from various regions and countries in all subject areas and in almost all influential world languages. However, more journals are published in the science and technological disciplines than the social sciences and humanities. The present study will be a step forward to study the impact of the OA scholarly publishing in the field of education.

3. Problem Statement

Education is one of the most important investments of a country for its people. It helps in raising income, reducing poverty, improving health, eliminating inequality, promoting gender justice, fighting corruption, overcoming social problems, solving environmental issues, and encouraging transparency, good governance, peace, and stability. Keeping the importance of education in view, all the countries of the world have joined hands to provide quality education at least up to the primary level to their citizens. Moreover, researchers all over the globe conduct investigations to identify and highlight the problems in the existing educational systems and address them to improve the quality of education. Hence, the education scientists and academicians need to be up-to-date and abreast

with the current research findings in their field of interest that are mostly communicated through journals. The OA journals provide barrier-free access to the research findings. Thus, the present study is very important to highlight the availability of OA education journals at the global level.

4. Purpose of the Study

The main purpose of the paper is to study the publishing trends of the OA journals in the field of education available in the DOAJ. The present study aims to identify:

- The subject-wise number of journals in the DOAJ
- The country-wise number of journals in the DOAJ
- The country-wise number of journals in education
- The period-wise number of journals in education
- The publisher-wise number of journals in education
- The language-wise number of journals in education
- The publication fee-wise number of journals in education
- The intact-wise number of journals in education

5. Scope and Limitations

The study does not explore the whole World Wide Web, but only the DOAJ and therefore, the figures do not represent the actual number of OA journals in education, but merely journals listed in the DOAJ. Hence, the findings should be studied with caution.

6. Methodology

The online survey was conducted for the collection of data and a quantitative method was applied for data analysis. The DOAJ is considered as the best source of information about OA journals. The DOAJ was accessed during the

month of February 2013 to collect the data. It was later presented in tabular forms and analysed using quantitative techniques to reveal findings in accordance with desired objectives.

7. Data Analysis and Discussion

7.1 Subject-wise Information

Till date, the DOAJ lists 8,622 journals covering more than 100 subject areas. The top 10 subjects, in terms of the number of journals listed are education (567), general medicine (531), computer science (363), languages and literatures (348), social sciences (327), business and management (290), biology (289), history (237), mathematics (235), and public health (219), respectively (Table 1). The results depict that the OA journals are being published in all disciplines from acoustics to zoology and the highest number of journals is published in the field of education. The scientific and technological disciplines are ahead in OA scholarly publishing

Table 1: Subject-wise journals (n=8,622)

S.no.	Subject	No. of journals	Percentage
1.	Education	567	6.58
2.	General Medicine	531	6.16
3.	Computer Science	363	4.21
4.	Languages and Literature	348	4.04
5.	Social Sciences	327	3.79
6.	Business and Management	290	3.36
7.	Biology	289	3.35
8.	History	237	2.75
9.	Mathematics	235	2.73
10.	Public Health	219	2.54
11.	Multidisciplinary	211	2.45
12.	Others	5,005	58.05

than social sciences and humanities which adopted the OA policy a little late. However, they have also gathered speed in OA publishing.

7.2 Country-wise Information

Till date, 121 countries have contributed 8,622 journals in the DOAJ and the majority of the journals (1,274) are contributed by the USA, followed by Brazil (808), the UK (575), India (475), and Spain (351), respectively. Egypt, Germany, Canada, Romania, Italy, and Turkey are the other leading countries contributing in the DOAJ (Table 2). The OA movement has become the world domain. Besides the developed countries, the developing countries have also joined the hands in the OA movement and contribute in OA scholarly publishing.

The DOAJ lists 567 journals in the field of education published from almost 100 countries. Among these, maximum journals (120, i.e., 21.16 per cent) are published by the United States, followed by Brazil (76, i.e., 13.40 per cent), Spain (52, i.e., 9.17 per cent), Canada (43, i.e., 7.58 per cent), and Turkey (39, i.e., 6.88 per cent), respectively. The other leading countries are UK, Germany, Australia, Colombia, and France (Table 3). It reveals that the developed countries are leading in OA scholarly publishing in the discipline of education. India does not figure among the top 10 scholarly publishing countries in education but slipped down to number 15 in the rankings.

7.3 Period-wise Information

In Table 4, the data is classified as per the date of publication. The results show that the highest number of journals (393, i.e., 69.31 per cent) were published during 2001–10 and the minimum numbers (16, i.e., 2.82 per cent) up to 1990 (Table 4). It indicates that after the Budapest Open Access Initiative in 2002, the OA journal publishing has taken the speed and that newly established journals have mostly preferred the OA publishing model and few traditional journals have also shifted to the OA

Table 2: Country-wise journals (n=8,622)

S.no.	Country	No. of journals	Percentage
1.	United States	1,274	14.78
2.	Brazil	808	9.37
3.	United Kingdom	575	6.67
4.	India	475	5.51
5.	Spain	447	5.18
6.	Egypt	351	4.07
7.	Germany	280	3.25
8.	Canada	257	2.98
9.	Romania	253	2.93
10.	Italy	237	2.75
11.	Turkey	213	2.47
12.	Colombia	208	2.41
13.	France	175	2.03
14.	Iran	172	1.99
15.	Poland	144	1.67
16.	Chile	142	1.65
17.	Argentina	136	1.58
18.	Switzerland	134	1.55
19.	Mexico	126	1.46
20.	Australia	125	1.45
21.	Others (101 countries like New Zealand, Japan, Pakistan, Croatia, Serbia, Venezuela, Malaysia, Portugal, etc.)	2,090	24.24

model as well. The noteworthy oldest education journals which has shifted to the OA model are—*Mélanges CRAPEL* (1970), *Journal of Extension* (1978), *Journal of Research in Rural Education* (1982), *Educar* (1982), and *Canadian Journal of Educational Communication* (1986).

Table 3: Country-wise journals in education (n=567)

S.no.	Country	No. of journals	Percentage
1.	United States	120	21.16
2.	Brazil	76	13.40
3.	Spain	52	9.17
4.	Canada	43	7.58
5.	Turkey	39	6.88
6.	United Kingdom	29	5.11
7.	Germany	18	3.17
8.	Australia	17	3.00
9.	Colombia	16	2.82
10.	France	10	1.76
11.	Venezuela	09	1.59
12.	Italy, Romania	07	1.23
13.	Chile, Mexico, New Zealand, Malaysia, and Portugal	05 (each)	0.88
14.	Denmark	04	0.71
15.	Others (Sweden, Japan, India, Pakistan, etc.)	113	19.93

Table 4: Publication date-wise information (n=567)

S.no.	Time period	Number	Percentage
1.	≥1990	16	2.82
2.	1991–2000	108	19.05
3.	2001–2010	393	69.31
4.	2011–2012	50	8.82

7.4 Publisher-wise Information

OA journals in education are mainly published by academic and research institutions (61.55 per cent) followed by private publishers (23.10 per cent) and associations and societies (10.58 per cent), respectively (Table 5). The results depict that

Table 5: Publisher-wise information (n=567)

S.no.	Publisher type	Number	Percentage
1.	Universities	292	51.50
2.	Institutes	32	5.64
3.	Research Centres	20	3.53
4.	Colleges	5	0.88
5.	Private Publishers	131	23.10
6.	Associations	42	7.41
7.	Societies	18	3.17
8.	Networks	6	1.06
9.	Others	21	3.70

publishers from all sectors—public and private, academics and societies, universities and schools, associations, and individuals—are contributing in OA scholarly publishing. However, the academic institutions especially universities lead the race as their basic aim is not only to generate new knowledge, but also to share it among others for the improvement of the nation, in particular and the world, in general.

7.5 Language-wise Information

The linguistic assessment of the journals shows that 62.43 per cent of journals (354) are monolingual, 24.51 per cent (139) bilingual, 8.64 per cent (49) trilingual, and 25 journals are published in more than three languages in which one journal is published in eight languages and two journals in seven languages (Table 6).

The OA education journals are published in 32 different languages. English is the principal language adopted by the 75.84 per cent of journals (430) followed by Spanish (140, i.e., 24.69 per cent) and Portuguese (108, i.e., 19.05 per cent), respectively (Table 7). One journal namely *Revista Electrónica de Enseñanza de las Ciencias (REEC)* is published in eight languages comprising of Spanish, Portuguese, Catalan, Basque, Galician, French, Italian, and

Table 6: Linguistic information (n=567)

S.no.	Language type	Number	Percentage
1.	Monolingual	354	62.43
2.	Bilingual	139	24.51
3.	Trilingual	49	8.64
4.	Four Languages	16	2.82
5.	Five Languages	05	0.88
6.	Six Languages	01	0.18
7.	Seven Languages	02	0.35
8.	Eight Languages	01	0.18

Table 7: Language-wise information (n=567)

S.no.	Language	No. of journals	Percentage
1.	English	430	75.84
2.	Spanish	140	24.69
3.	Portuguese	108	19.05
4.	French	54	9.52
5.	German	32	5.64
6.	Turkish	26	4.59
7.	Catalan	11	1.94
8.	Chinese, Italian	10 (each)	1.76
9.	Russian	8	1.41
10.	Danish, Swedish	7 (each)	1.23
11.	Malay	5	0.88
12.	Galician, Norwegian	4 (each)	0.71
13.	Romanian, Slovak, Lithuanian	3 (each)	0.53
14.	Arabic, Basque, Czech, Indonesian, Japanese, Persian, Ukrainian	2 (each)	0.35
15.	Bulgarian, Croatian, Georgian, Serbian, Slovene, Thai, Vietnamese	1 (each)	0.18

English. It depicts that the OA movement is crossing the linguistic boundaries and articles are published in all the most influential world languages of the world. However, it is a matter of concern that not a single OA journal is published in Hindi, in the field of education.

7.6 Publication Fee-wise Information

There are three basic sources of revenue which the publisher can utilize namely, (1) authors, (2) readers, and (3) sponsors (West, Bergstrom, and Bergstrom 2013). Publishers regularly employ each of these sources, sometimes in combination for their survival and continuity. The most prominent publishing model alternative to the 'reader-side funding' model is 'author-side funding' in which authors bear the costs incurred in the publication of their articles, usually through their funding agencies and distribute their content freely to readers. The present study depicts that the majority of the education journals (496, i.e., 87.48 per cent) in the DOAJ do not charge publication fees to authors and just 9.52 per cent of journals (54) require the payment of fees (Table 8). Publication fees or APCs have become the predominant means for funding professional OA publishing. Now it is a debatable question that who should pay the APCs—author, his institution, or any funding agency like University Grants Commission. The author/researcher uses his mind, time, and labour to generate new knowledge for the benefit of whole global community and obviously; he/she should not pay

Table 8: Publication fee-wise information (n=567)

S.no.	Publication fee	No. of journals	Percentage
1.	Yes	54	9.52
2.	No	496	87.48
3.	Information Missing	9	1.59
4.	Conditional	8	1.41

from his own pocket. The institutions or funding agencies should come forward to support the author as well as OA journals. This will not only benefit the institutions but also their academic scientists by obtaining free access to scholarly information.

7.7 Present Status of Journals

The present study shows that all the journals (100 per cent) have maintained their continuity and 1.76 per cent (10) journals have changed their names but continue in their new names (Table 9). This is an eye-opener for all, especially for the critics that the OA publishing model is viable. It requires continuing support of authors, researchers, philanthropists, research organizations, institutes, associations, and many other concerned agencies. This new model of publishing will not only bridge the barrier created by the traditional commercial journal publishers, but will also open a new chapter in information and knowledge sharing among the research scientists.

8. Future Research

The present research is based on quantitative analysis of the OA education journals. In the future research, the focus should be on qualitative research in order to judge the quality of the OA journal articles which can be determined by evaluating journals and their publishing bodies, impact factor, coverage in indexing and abstracting services, authors and their institutions, h-indexes, and other similar parameters.

Table 9: Status-wise information (n=567)

S.no.	Present status	No. of journals	Percentage
1.	Continued	557	98.24
2.	Ceased	00	0.00
3.	Continued with Other Name	10	1.76

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Capabilities and Governance of Nanotechnology in the Developing World

Insights from India

Editors

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Manish Anand**

2013 • ISBN: 9788179935675

Pages: 248 • Binding: Hardback

Size: 230 × 150 mm • Price: ₹500.00

This book seeks to examine developments, opportunities, concerns and challenges in nanotechnology from a developing country perspective raising complex questions and issues in the course of the responsible development of nanotechnology. It covers a range of issues such as potential R & D prospects, S&T capacities and innovation systems, issues of environment, health and safety, risk and regulatory preparedness, and prospective socio-economic and ethical repercussions, with a focus on Indian developments. Based on half a decade of interdisciplinary research and informed by multi-stakeholder insights on the aforementioned aspects, it proposes options for effective and inclusive governance for nanotechnology in India.

Key features

- Through its chapters, this publication explores the landscape of nanotechnology developments in India and also examines the opportunities, concerns, and challenges that this socially transformative technology can present from a developing country perspective.
- It covers themes as diverse as potential R&D prospects, innovation frameworks, risk governance and regulation, S&T capability, and multi-level governance offering various options and imperatives for India's effective engagement with this technology.
- Describes the need to enhance national capacities to responsibly engage with nanotechnology in developing country contexts. The book describes a framework for inclusive and effective governance for nanotechnology in India.

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