
EARTH SCIENCE JOURNALS IN ERIC: A SCIENTOMETRIC PERSPECTIVE

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ABSTRACT

The Educational Resources Information Center (ERIC) is the largest education database in the world containing millions of bibliographic records of journal articles, research reports, curriculum and teaching guides, conference papers and books. This study presents the information on earth science peer reviewed journal articles available in ERIC. The articles in earth science are covered in 25 peer reviewed journals available in ERIC. The present study reveals that ERIC facilitates access to 25 journals in the field of earth science. Journal of Geological Education has the highest number of articles with 253 articles in earth science. Chang, Chun-Yen author has contributed the maximum number of articles i.e. 11.6 % in Earth science. Journal articles in earth science are more than other publication types available in Earth Science. Most of the journals in earth science are under the major subject heading Science Education. The multi dimensional findings of this study may be referred by librarians, authors, publisher and users.

Keywords: *ERIC, Earth Science, Scientometrics.*

1. INTRODUCTION:

Scientometrics is the study of measuring and analysing science, technology and innovation. "Scientometric is the quantitative study of physical published units or of bibliographic units or of surrogates of either." Scientometrics is concerned with the quantitative features and characteristics of science and scientific research. The study of publication output in a field is a good indicator of status of research work in that field. This paper studies the publication productivity of Earth Science in ERIC.

Earth Science is the study of the Earth and its neighbors in space. Many different sciences are used to learn about the earth and the basic areas of Earth science studies are geology, meteorology, oceanography and astronomy. Today we live in a time in which the Earth and its inhabitants face many challenges. Earth scientists recognized this problem and its solution depends upon a deep understanding of Earth science. The output of the study or research work in earth science available in ERIC database is studied in this paper.

2. EDUCATION RESOURCES INFORMATION CENTRE (ERIC)

The Education Resources Information Centre (ERIC) database is an online digital library of education research and information which begun in 1966. ERIC is sponsored by the Institute of Education Sciences of the United States Department of Education. The ERIC Collection provides access to 1.5 million bibliographic records and contains variety of publication types like journal articles, books, research syntheses, conference papers, technical reports, dissertations, policy papers and other education-related materials.

The mission of ERIC is to provide a comprehensive, easy-to-use, searchable, Internet-based bibliographic and full-text database of education research and information for educators, researchers, and the general public in Adobe PDF format or can often be accessed using links to publisher websites and/or library holdings. ERIC is working on the online submission system of the articles and its updated monthly. This paper studies the earth science journals in ERIC.

3. REVIEW OF LITERATURE:

Stonehill² studied the features and activities of ERIC and recommended that ERIC products and services should be made widely available to diverse audiences by expanding the database and journal coverage. Kapoor³ studied the Citation Analysis of Earth Science in the Annual Review of Earth and Planetary Sciences from 1973 to 1981 and found 82 journals in earth science representing 76% of the total citations out of the 833 titles cited. Anitha⁴ studied the Open Access literature productivity of Earth Science in DOAJ and found that 68 journals of Earth science are available in DOAJ. Brown⁵ has Compared 48 features of four versions of the ERIC and discussed the relative merits of some of the more important features. Robbins⁶ Studied an overview of the mission, structure, and resource base of the ERIC and highlighted the problems in meeting the variety of information needs and resources that are limited by underfunding. Kulczak⁷ studied citations with abstracts from the ERIC database focusing on the subject Public History and provided background information and teaching materials on topics such as museum resources, western women's history and Oregon Trail. Cesarone⁸ studied ERIC documents and journal articles covering the teaching method in the subject early Childhood Education and provided paragraph-length abstracts of nine ERIC documents and seven journal articles, as well as information about ERIC and ordering ERIC documents. And this study concentrates on Earth Science journal in ERIC.

4. AIMS AND OBJECTIVES:

The study aims to identify peer reviewed journal articles on earth science listed in ERIC. The specific objective of the study is to analysis various aspects such as author wise, publisher wise, country wise, year wise, publication type wise, audience wise and language wise distribution of earth science journal articles with reference to ERIC.

5. METHODOLOGY:

The factual data has been collected from ERIC website under the subject category Earth Science. The relevant details regarding the name of journal, author, publisher, country, language, year in which journal was added to ERIC, Publication type and form of publication, etc have been collected and tabulated using MS Excel. The individual journal's publisher website was also consulted through the direct link available in ERIC. Only the peer reviewed journal articles were taken into account excluding the ERIC documents like reports, guide, etc.

6. RESULTS AND DISCUSSION:

The number of journals containing earth science articles covered in ERIC is 25 journals as listed in Figure 6.1. The total number of article in the twenty five journals is 1664 articles. Journal of Geological Education ranks the first with 253 articles followed by Science Teacher journal with 207 articles in Earth science. Science and Children journal is in the third position with 183 articles.

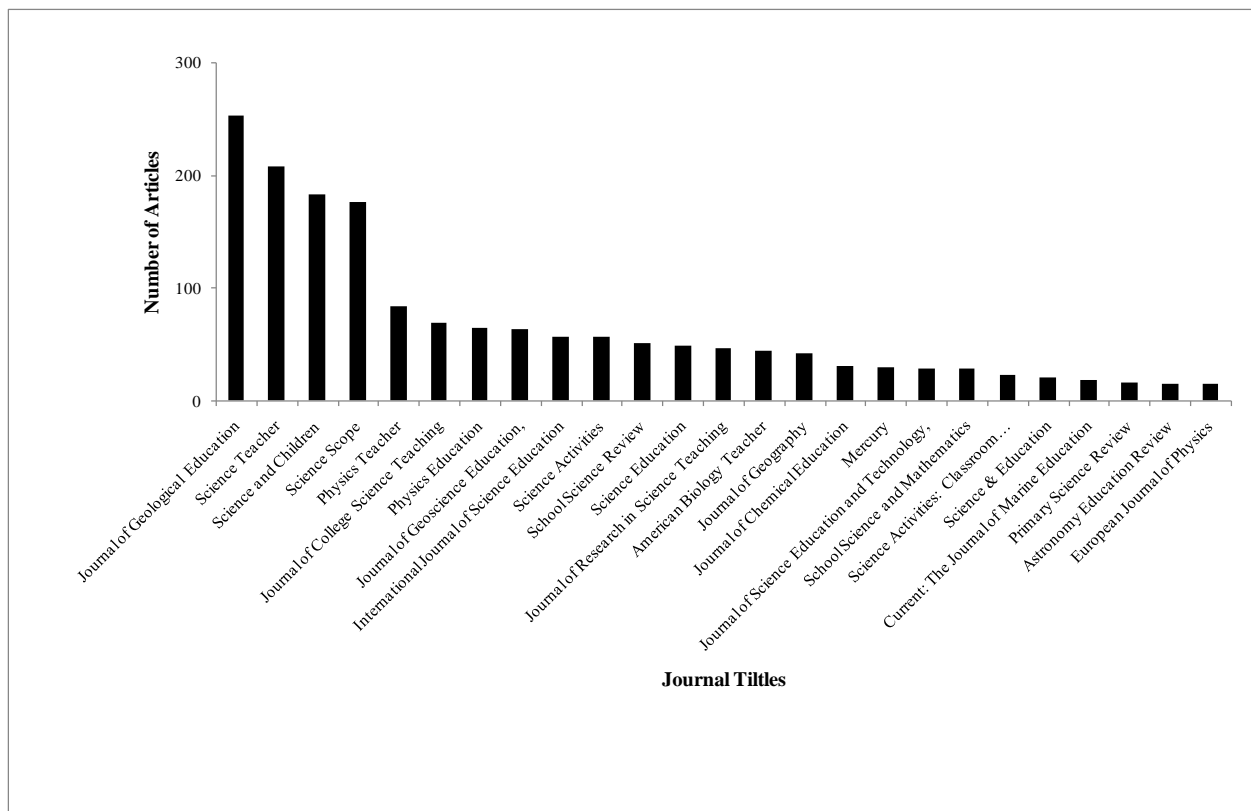


Figure 6.1 Number of articles published in journals of Earth Science

According to the Table 6.1 the author Chang, Chun-Yen from Taiwan, China has contributed the maximum number of articles in Earth science in ERIC. The number of articles contributed by the Chang, Chun-Yen is 22 and Riddle, Bob author from United States holds 19 articles ranking the second position. Author King, Chris from United Kingdom ranks the third position by contributing 18 articles on Earth science. Remaining authors other than the authors listed in the Table 6.2 have contributed only one article each.

Table 6.1 Author wise distribution –

S.No	Author	No. of article
1	Chang, Chun-Yen	22
2	Riddle, Bob	19
3	King, Chris	18
4	Orion, Nir	15
5	Mayer, Victor J.	14
6	Carpenter, John R.	9
7	Clary, Renee M.	9
8	Wandersee, James H.	9
9	Clary, Renee	8
10	Krockover, Gerald H.	8
11	Fraknoi, Andrew	7
12	Wandersee, James	7
13	Dodick, Jeff	6
14	Finley, Fred N.	6
15	Fortner, Rosanne W.	6
16	Glenn, William H.	6
17	Sneider, Cary	6
18	Blown, E. J.	5
19	Bryce, T. G. K.	5
20	Christman, Robert	5
21	Kennett, Peter	5
22	Keown, Duane	5
23	Marques, Luis	5

ERIC contains Journals, Books, Descriptive reports, Classroom Guides, Research reports, Reference materials, Data, Computer programs, Books, etc.. It may be observed from Table 6.2 that among these publications, Journal holds the first position with 2250 articles of both general and peer reviewed type. In the second place we found the number of descriptive reports available in ERIC is 978 reports. And the number of books on Earth Science in ERIC is only one.

Table 6.2 Publication type wise distribution

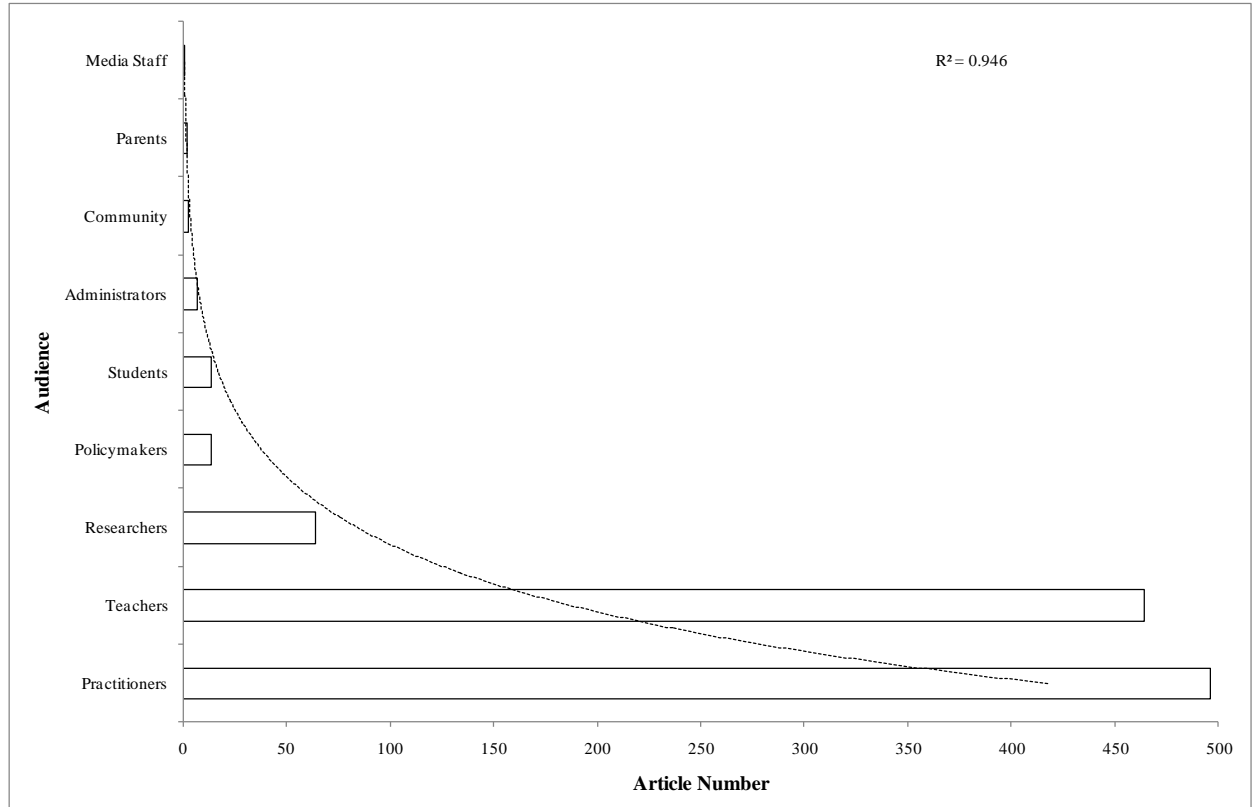
S.No	Publication Type	No. of article
1	Journal Articles	2250
2	Reports – Descriptive	978
3	Guides - Classroom – Teacher	586
4	Reports – Research	417
5	Reports – Evaluative	140
6	Opinion Papers	83
7	Information Analyses	36
8	Reports – General	27
9	Reference Materials - Bibliographies	26
10	Guides - Non-Classroom	24
11	Book/Product Reviews	20
12	Guides - Classroom – Learner	17
13	Tests/Questionnaires	10
14	Reference Materials – General	7
15	Historical Materials	6
16	Computer Programs	5
17	Speeches/Meeting Papers	5
18	Guides – General	3
19	Collected Works – General	2
20	Numerical/Quantitative Data	2
21	Books	1
22	Collected Works – Proceedings	1
23	ERIC Publications	1
24	Legal/Legislative/Regulatory Materials	1
25	Reference Materials- Directories/Catalogs	1

Among the 25 Earth Science Journals available in ERIC, 88 % of journals are published in United States and 8 % from United Kingdom as shown in Table 6.3. Seven journals are published in Virginia, USA and four journals from Columbia, USA. School Science review and Primary Science are the two Journals which are published in the United Kingdom, Europe. Science and Education journal is the only journal published from Netherland.

Table 6.3 Country wise distribution

S.No	Country	No. of Journals
1	Virginia, United States	7 (28%)
2	District of Columbia, USA	4 (16%)
3	Philadelphia, PA, USA	4 (12%)
4	Newyork, United States	3 (12%)
5	New Jersey, United States.	3 (28%)
6	United Kingdom, Europe	2 (8%)
7	California, USA	1 (4%)
8	Netherland	1 (4%)
	Total	25

The articles are classified based on the content and its user. The user of the articles is termed as audience. Based on the level of education and requirement of the audiences, the journal articles are classified under nine major headings as shown in Figure 6.2. It is revealed from the above table that the number of articles for Practitioners is on the top with 47 % followed by teachers with 464 articles i.e., 44 % and next the researchers with 6 % of the total documents available in ERIC.

**Figure 6.2 Number of articles Vs Audiences**

The Journals on Earth science were added to ERIC from 1978 to 2007. The maximum number of Journals added to ERIC was in the year 1979 (i.e) Nine Journals. In the Second position as shown in the Figure 6.3 the number of journals added to ERIC was in the year 1978. Two Journals were added in the year 1980 and 1999.

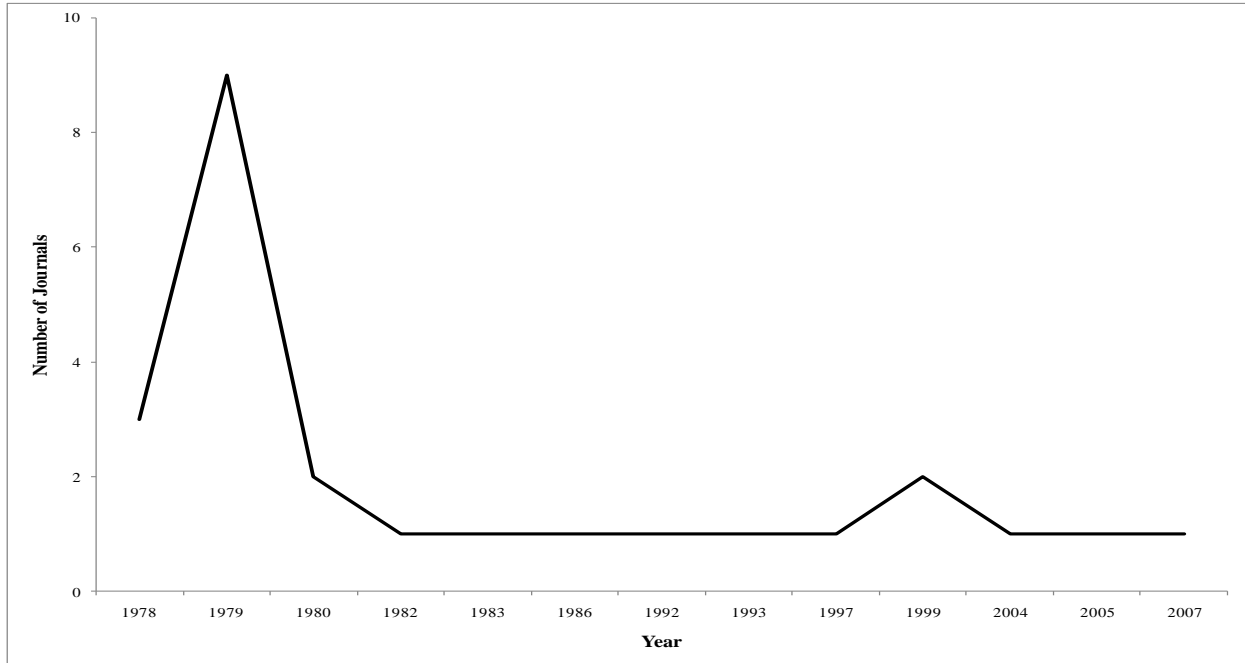


Figure 6.3 Year wise number of Journals published

Earth science journals available in ERIC are published by fourteen publishers. National Science Teachers Association holds the first position by publishing 4 Journals in Earth Science. Institute of Physics Publishing is in the second position with three journals. And the third place is shared by six publishers as shown in Figure 6.4 and remaining publisher has published one journal each.

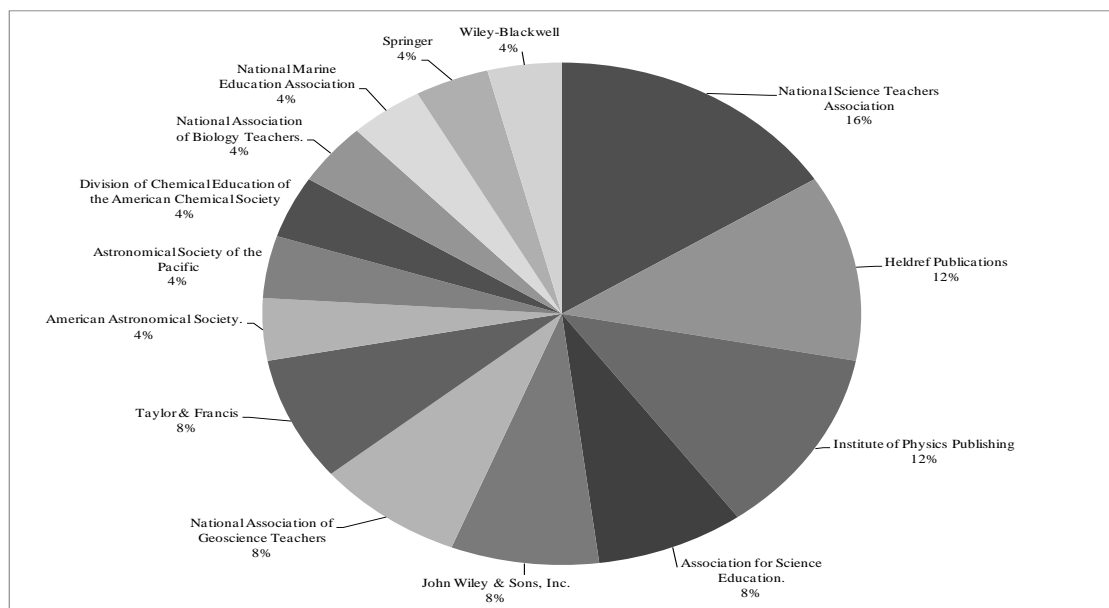


Figure 6.4 Publisher wise distributions

All the journals published in Earth science in ERIC are in English. Among the 25 journals, 20 Journals are published only in English Language. Journal published in other language are German and Dutch with three each. Journal of Geography published by Taylor & Francis, Ltd is the only Journal published in all the three language as shown in Table 6.4.

Table 6.4 Language wise distribution of Journals -

S.No	Language	No. of Journals
1	English (only in English)	20
2	English and German	2
3	English and Dutch	2
4	English, German and Dutch	1
	Total	25

Table 6.5 Physical form wise distribution of Journals –

S.No	Journal type	No. of Journals
1	Only Print	16
2	Online and Print	9
	Total	25

In the digital era the access of e-journals is comparatively equal to that of the printed journal. From table 6.5 it's clear that out of the 25 journals on Earth science in ERIC, 9 journals are available in both printed and electronic form. The number of journals available only in printed form is 16 journals. In the near future all the journals may have electronic version to serve the need of the user.

FINDINGS:

The Education Resources Information Center (ERIC) database act as an internet-based digital library of education research and information which concentrates on collection development, content authorizations and agreements, acquisitions and processing, database and website operations and communications of various disciplines. The present study reveals that ERIC facilitates access to 25 journals in the field of earth science. Journal of Geological Education has the highest number of articles with 253 articles in earth science. Chang, Chun-Yen authored the maximum number of articles i.e 11.6 % in Earth science. Journal articles in earth science are more than other publication types available in Earth Science. Most of the journals in earth science are under the major subject heading Science Education. The number of Earth science journals added to ERIC in the year 1979 is the highest and the last journal was added in the year 2007. National Science Teachers Association has published the maximum number of journals. All the 25 journals are published in English language out of which 9 journals are available on line. ERIC already enables the user to contribute to the ERIC database and get copies of ERIC documents and Journal Documents. Since Open access to scientific journals is beneficial to scholars and all type of audience, all the documents may be made full text available on ERIC.

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