

Research Trend of Independent Curriculum in Elementary School on Scopus Database

Afridha Sesrita¹, Arita Marini², Linda Zakiah³

¹Department of Elementary School Teacher Education
Universitas Djuanda
Bogor, Indonesia
afridha.sesrita@unida.ac.id

²Department of Elementary School Teacher Education
Universitas Negeri Jakarta
Jakarta, Indonesia
aritamari@unj.ac.id

³Department of Elementary School Teacher Education
Universitas Negeri Jakarta
Jakarta, Indonesia
lindazakiah@unj.ac.id



Abstract— This study examines trends in independent curriculum research in social studies in elementary schools (ICES) using bibliometric and wordcloud analysis. Scopus data from 2013 to 2023 includes 56 English-language documents, including articles, books, and others. The findings show a significant increase in ICES-related publications, particularly from 2020 to 2023, with the most important contributions coming from the United States. In ICES research, terms such as curriculum, students, learning, and education often appear. Issues such as educational measurement and collaborative learning, critical thinking, educational computing, and parent-child relationships could be potential future research that could be explored with ICES. This can also be a research topic for Indonesian researchers because an independent curriculum called the Merdeka Curriculum began to be developed in 2020 and will become the Indonesian National Curriculum in 2026. The availability of these publications is still tiny in the Scopus database, which indicates the potential for future research directions related to ICES that Indonesian educators and researchers can explore.

Keywords— Independent Curriculum; Elementary School; Bibliometric Analysis; Wordcloud

I. INTRODUCTION

Globalization has brought significant changes to science, especially in education, which maintains an academic identity and plays a crucial role in developing responsive curricula [1]. Curricula that change according to the demands of the times are designed to address global challenges and are not limited by existing structures, resources, or traditions, thus giving more profound meaning to those changes [2], [3]. This curriculum reform process, leading to the transformation of learning, is complex and involves many policies, implementations, and consequences [4]–[6]. Countries worldwide have adapted their national curricula to achieve their educational goals [7], with a self-paced curriculum allowing students to study according to their individual needs and characteristics [8]–[10]. Effective teachers in managing learning must deeply understand the curriculum before implementing it [11]. Curriculum refers to the primary material of a study program in the education system

[12]. Indonesia has been using an independent curriculum, which was then called the Merdeka curriculum, since 2020. This curriculum began to develop and became a refinement of the 2013 curriculum. The Merdeka curriculum facilitates comfortable and stress-free learning, allowing students to absorb knowledge in a supportive and fun atmosphere [13].

Research on the implementation of ICES has been extensive and covers various aspects, including learning tools and evaluation of its implementation [8], [14]–[20]. While this research continues to evolve along with education policy, WordCloud's use of bibliometric analysis and visualization in the context of ICES is unexplored. Bibliometric analysis is a well-established and structured method for evaluating extensive scientific data [21], [22] and providing insight into global research trends in a particular field through a trusted database [23], [24]. WordCloud, as a text visualization tool, highlights words based on the frequency with which they appear, providing an attractive and intuitive representation [25]–[27]. This analysis can reveal potential topics for future research, guiding bibliometric readers [28].

II. METHOD

This study examines the trend of ICES research in social sciences using bibliometric and WordCloud analysis. Bibliometric analysis of these studies helps explore past research [29], while Wordcloud's more in-depth analysis gives a glimpse into future research directions [28], [30]. The study uses Scopus as a comprehensive primary source, both open and restricted access, to access various databases such as Scopus, Dimensions, Google Scholar, Web of Science, and others. Wordclouds provides a visual summary highlighting keywords and the frequency with which they appear in the document and simplifying the identification of bias in news sources [31].

As a result, the study identified trends from 56 scientific publications, including articles, books, book chapters, conference papers, and reviews, using the keywords "independent curriculum (IC)" and "elementary school (ES)" from 2013 to 2023 in social science and English-language publications. Participants in the study were conducted using the Scopus database, performing a search filter with the PRISMA 2020 flow diagram method, which consists of three stages: identification, screening, and included [32]. More details of the filter flow are shown in Figure 1. Table 1 shows the article search strategy using the keywords "IC" and "ES" for 2013-2023. From this search, 56 publications were filtered with restrictions on the subject area type and publication language type. This publication will be the focus of review and follow-up research.

Table 1. Search string ICES publication

Search strings
TITLE-ABS-KEY (independent AND curriculum AND elementary AND school) AND PUBYEAR > 2012 AND PUBYEAR < 2024 AND (LIMIT-TO (SUBJAREA , "SOCI")) AND (LIMIT-TO (LANGUAGE , "English"))

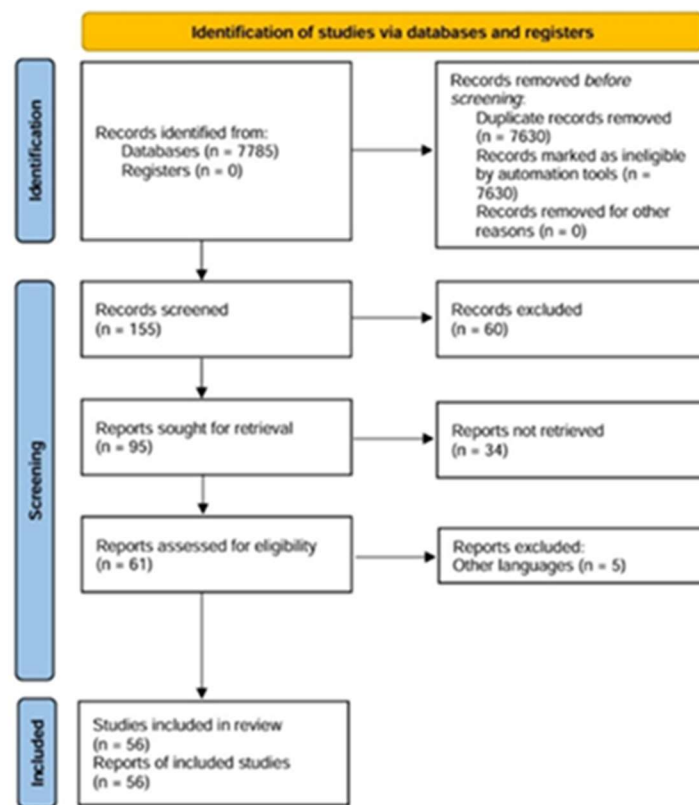


Figure 1. PRISMA 2020 flow diagram ICES publication

III. RESULTS AND DISCUSSION

3.1. Statistical Analysis of Publication Trends

Figure 2 shows the distribution of research by discipline. Social science dominates as a research subject in ICES publications in Scopus. Articles are the most frequent type of publication, followed by books, book chapters, etc., as shown in Figure 3. ICES publications in Scopus show a significant upward trend in 2K13, 2K18, and 2K23, as seen in Figure 4.

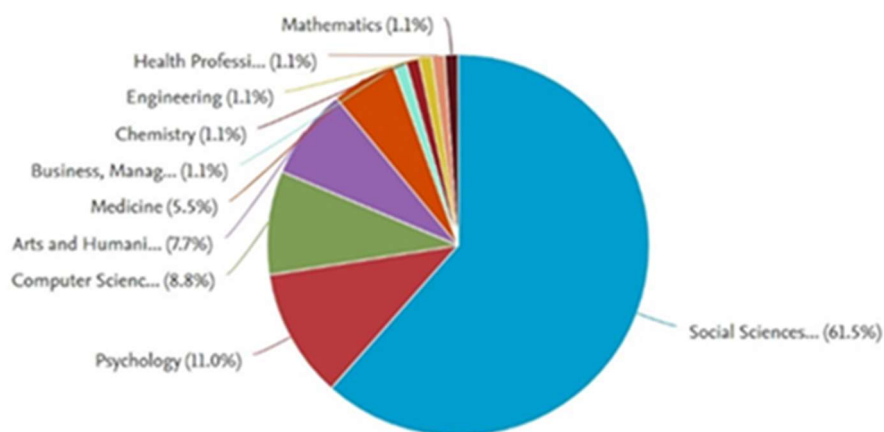


Figure 2. Types of ICES subject fields

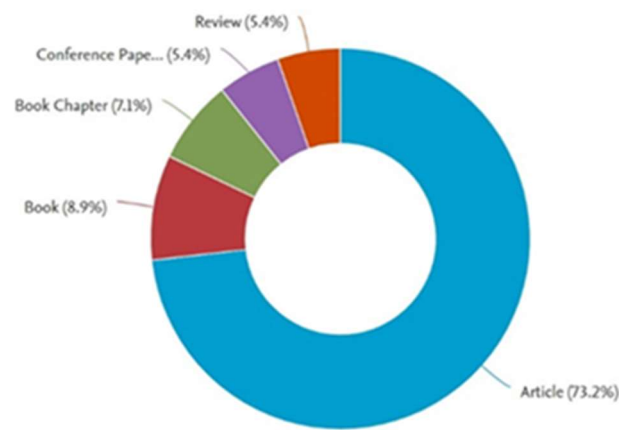


Figure 3. Types of ICES publication

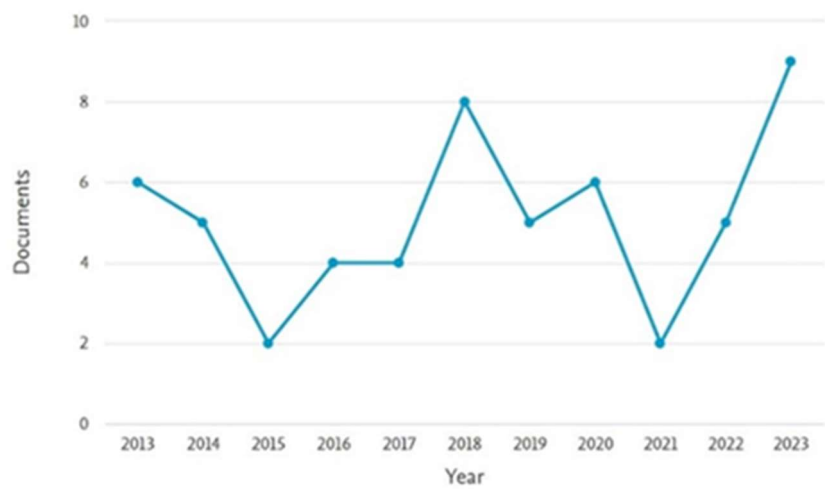


Figure 4. ICES annual issuance trends

3.2. Statistical Analysis of Word Frequency

Analysis to evaluate and classify the frequency of words frequently appearing in ICES publications in Scopus between 2K13 and 2K23. Figure 5 displays the ten words with the highest frequency over time, showing that terms such as 'curriculum,' 'education,' 'human,' and 'humans' were consistently used, as shown in Figure 6.

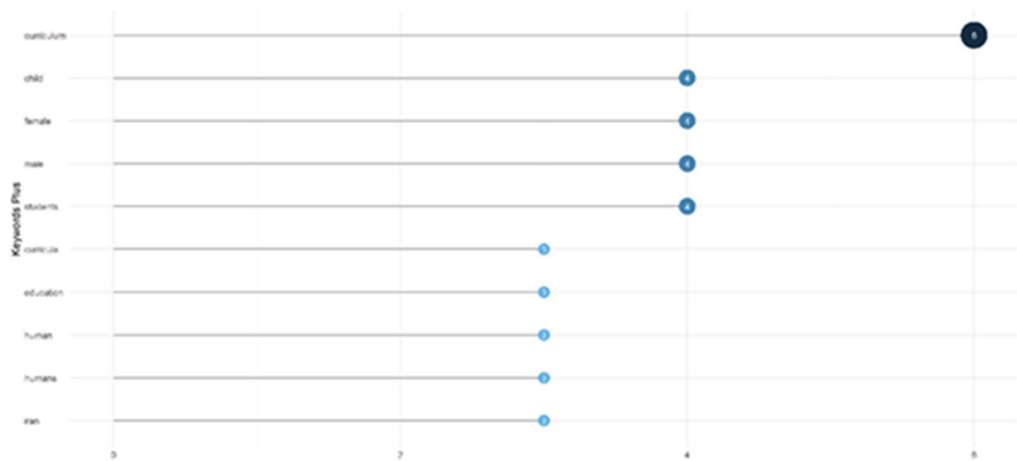


Figure 5. Top ten word frequencies ICES publication

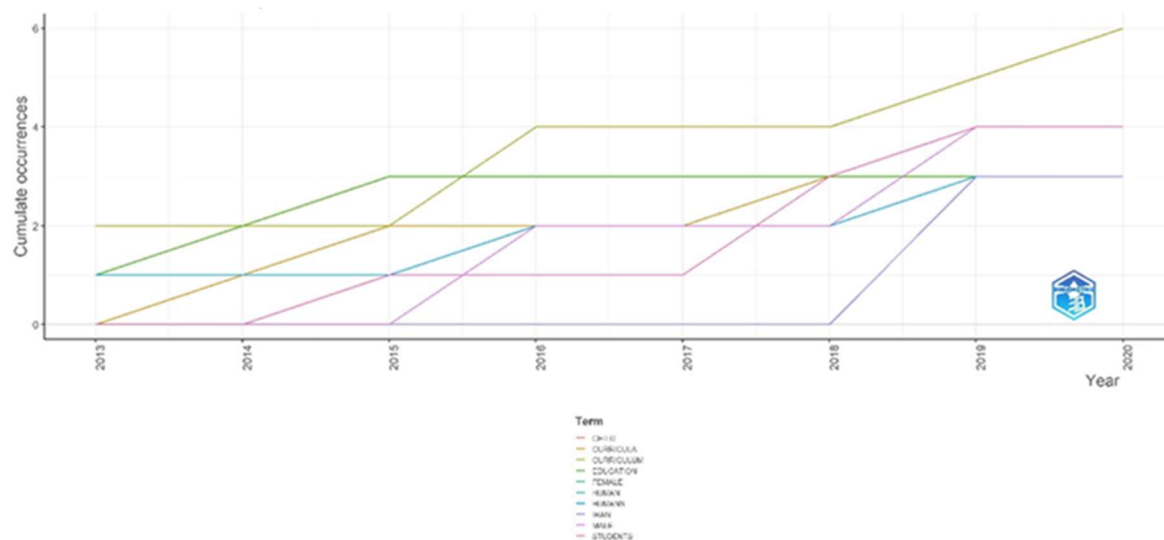


Figure 6. Top ten data frequency graph ICES publication over time

3.3. Statistical Analysis of Publishing Countries

Table 2 classifies countries based on the number of ICES publications in Scopus, with the United States leading at nearly 41%, followed by Indonesia at almost 13%, and the United Kingdom at 8%. Iran, China, Finland, and other countries were also recorded. Figure 7 shows this visualization, with darker blue indicating a more significant contribution and lighter blue indicating a more minor contribution. Countries that do not have ICES publications are marked in gray.

Table 2. Countries producing ICES publications

No.	Country	Freq	No.	Country	Freq
1	USA	70	12	GREECE	3
2	INDONESIA	21	13	TURKEY	3
3	UK	13	14	AUSTRALIA	1
4	IRAN	10	15	CANADA	1
5	CHINA	9	16	CROATIA	1
6	UKRAINE	8	17	INDIA	1
7	SLOVENIA	7	18	ISRAEL	1
8	UNITED ARAB EMIRATES	6	19	JAPAN	1
9	SERBIA	5	20	POLAND	1
10	GERMANY	4	21	QATAR	1
11	FINLAND	3	22	SOUTH KOREA	1

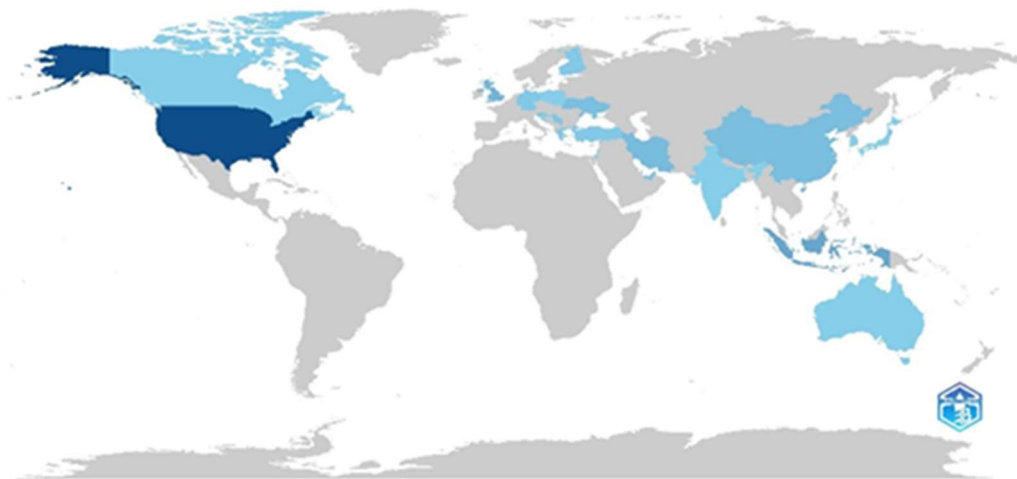


Figure 7. Distribution of countries producing ICES publications

Figure 8 shows ICES publication trends from 2K13 to 2K23. The United States leads with the most significant contribution and annual consistency, starting from 2K13 and showing substantial increases up to 2K23. China, which began publishing in 2Q14, showed steady growth through 2K23. Starting in 2K16 with 13 publications, the UK has maintained that number yearly. Indonesia, which began in 2K18, experienced a significant jump from 2K21 to 2K23. Starting in 2K19, Iran became the fifth most crucial contributor to 2K23.

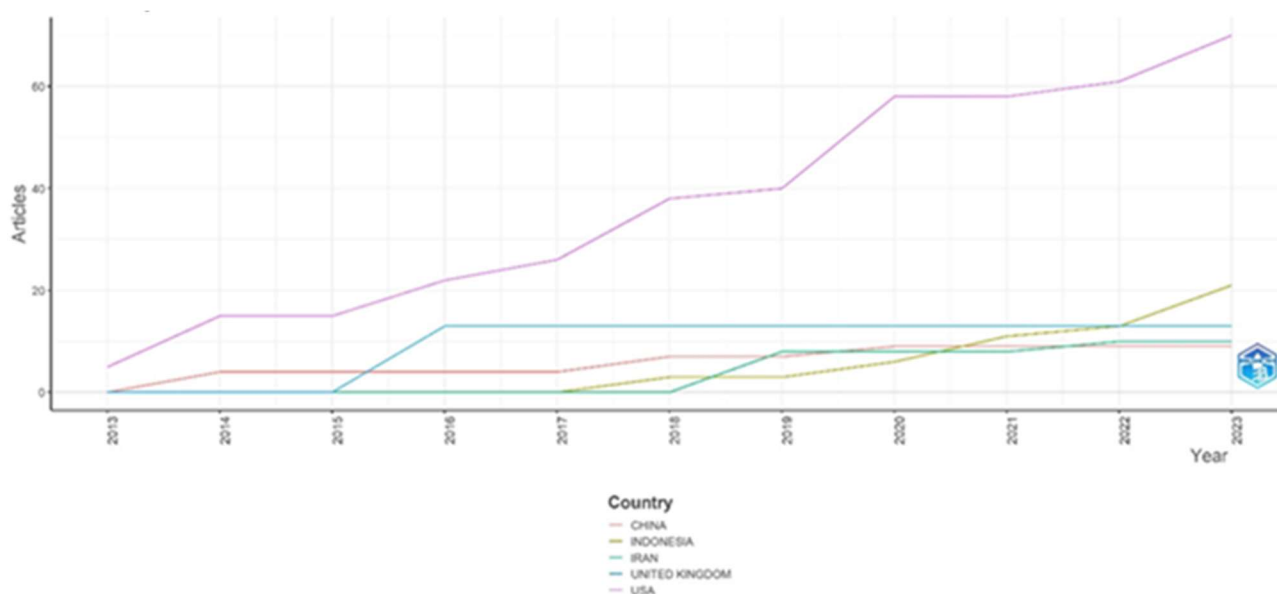


Figure 8. Graph of the development of the top five countries of ICES publications

3.4. Statistical Analysis of Publishing Countries

Table 3 shows that from 2K13 to 2K23, 173 authors contributed to one ICES publication, so the proportion of authors value is 1. The University of Manchester leads with 12 articles, followed by Shahid Beheshti University of Medical Sciences with eight and National Sun Yat-Sen University with seven articles. More details are presented in Figure 9.

Table 3. Author Productivity through Lotka's Law

Documents written	N. of Authors	Proportion of Authors
1	173	1

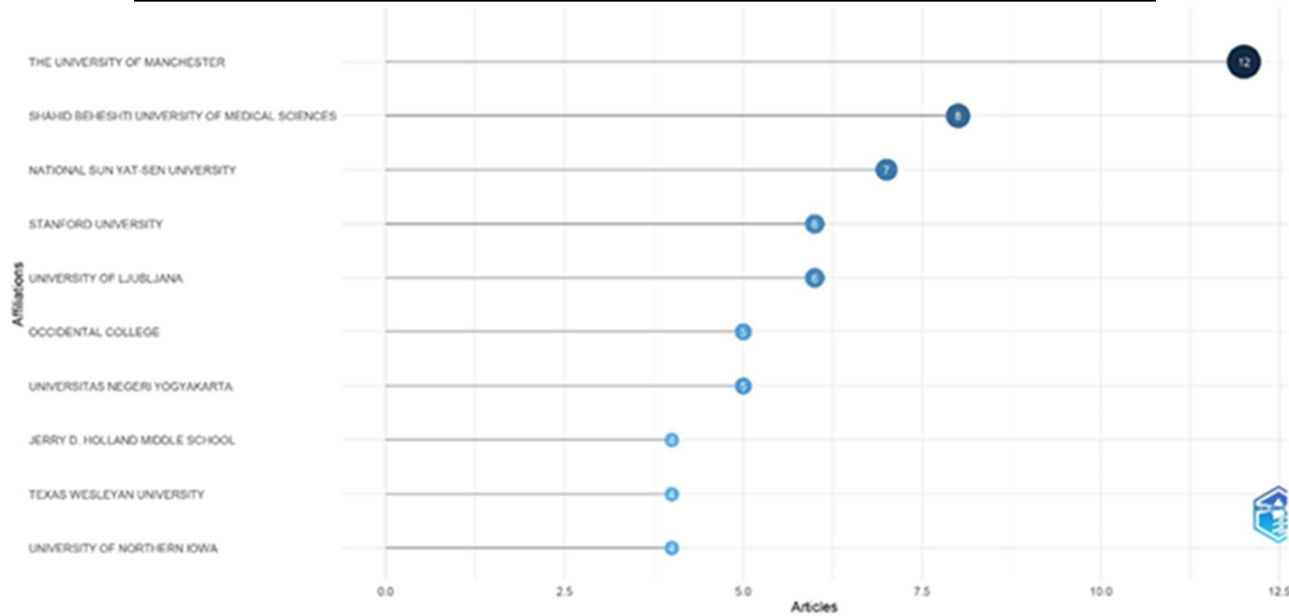


Figure 9. Distribution of the ten most affiliates producing ICES publications

3.5. Source Statistical Analysis

Figure 10 displays statistics on the distribution of ICES publication sources. Universal Journal of Educational Research has the most publications, followed by Cypriot Journal of Educational Sciences and Acta Koreana. Cakrawala Pendidikan, BMC Medical Education, Computer in the Schools, and several other sources have publications equivalent to Acta Koreana.

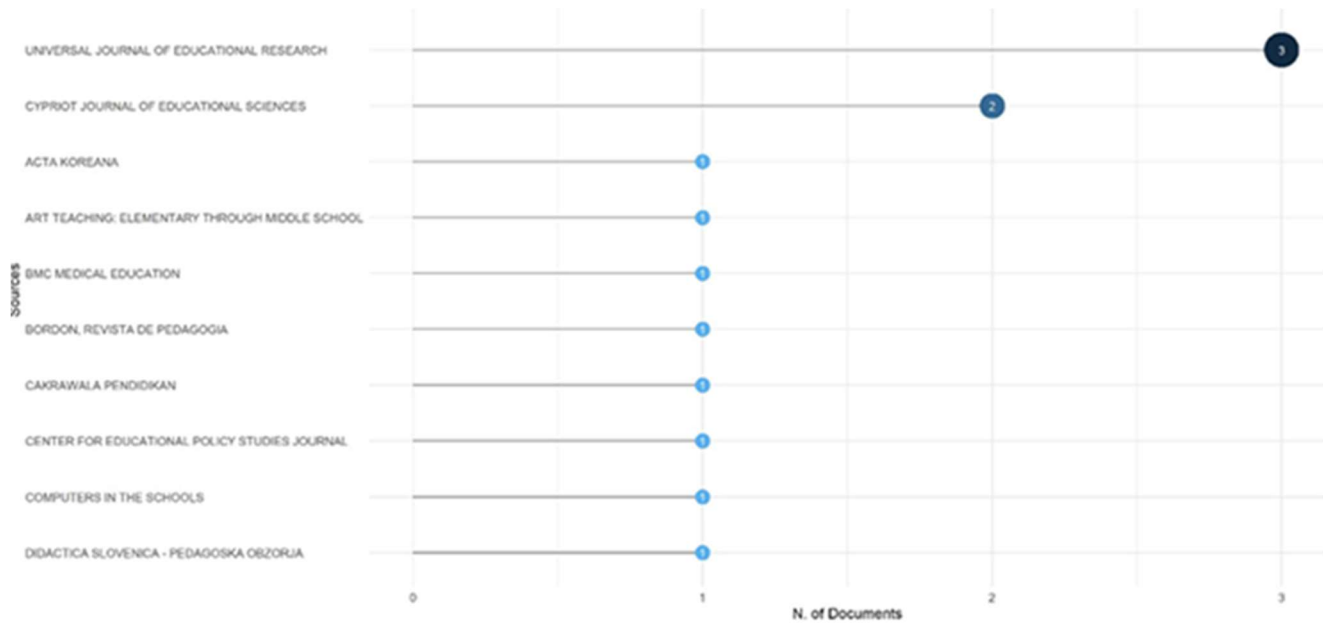


Figure 10. Ten relevant sources of ICES publications

IV. CONCLUSION

The study presents a bibliometric analysis with WordCloud publications for ICES in social sciences from 2K13 to 2K23. Curriculum, students, education, elementary school, learning, thinking, child development, and child behavior seem to have a close relationship. The study provides objective information about self-paced curriculum research in elementary schools, including authors, affiliations, journal origin, publishing country, and other data from Scopus visualized using R software.

Based on bibliometric analysis studies with WordCloud publications for ICES, several topics and research themes can be recommended. Educational measurement, collaborative learning, critical thinking, educational computing, and parent-child relationships can be potential future research that can be explored with ICES. This can also be a research topic for Indonesian researchers, as the independent curriculum, called the Merdeka curriculum, began to be developed in 2K20 and will become the Indonesian national curriculum in 2K26.

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