Research Productivity of Design Education

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ABSTRACT

The research conducted to do an analysis of research productivity related to design education research. The methods used in this research is bibliometric. The results of this research found that the number of design education research shows an upaward trend in 2020-2021. Publication data with the keyword original character with the highest number of documents is Plos One with 44 documents. CNRS Centre National de la Recherche Scientifique with 90 documents as an affiliation with the most documents. Subject area in the field of arts and humanities dominates with 722 documents. The most occurrences from the graph shows "species" as the most related item with the original character research trend from 2013 to 2022 in Scopus open access journal database.

Keywords: research, productivity, design, education, bibliometric

INTRODUCTION

Design education is currently increasing quite sharply. A few design study programs such as visual communication design, interior design, fashion design, and others have sprung up and gained considerable interest [1]. This is because in Indonesia itself, the creative industry is the main spearhead of economic progress today. The creative economy is currently a new paradigm that relies on ideas or creativity from human resources as the main production factor [2]. Thus, design education becomes a form to produce creative human resources.

Design education is a discipline with its priority is to study art specifically between its relationship with various arts and the rules and methods that are important issues to build the power of design [3]. The focal point of design education is prioritizing processes that are practical in nature. Therefore, pandemic conditions such as those experienced by Indonesia in early 2020 changed the paradigm of design learning in Indonesia. All learning is done online. This research departs from the understanding that design education is one of the interesting topics to discuss, especially during a pandemic. Research on the learning process during the pandemic has notbeen carried out previously by many researchers. This is like what Ani Cahyadi did who discussed the learning process during a pandemic. As well as about the strategy for implementing online learning after the Covid-19 pandemic carried out by Nurbaiti Widyasari [4].

Similar study has been carried out and discussed from various perspectives and fields, especially from an educational perspective. However, since there is so much research has been produced, the research activity on design education still has opportunity to be discussed. Especially regarding the trend of design education research that is needed to create conducive conditions to the future research. Thus, this research was conducted using visualization tools to analyze knowledge maps from design education. The virtue of this study is to systematically analyze the topic of design education based on the number of publications, the publication source, the country of publication, etc [5]. The main purpose of this study is to analyze the existing literature on design education.

METHODOLOGY

This study used bibliometric analysis methods. Bibliometric is a type of qualitative and quantitative evaluation [6]. These variables were measured using the following criteria institutional, affiliation, productive author, subject area, source document, year of publication, etc [8]. The data is taken from the Scopus indexation database with a period of 2020-2021 or during the Covid-19 pandemic with the keyword based on "TITLE-ABS-KEY" ("design" AND "studies"). Restrictions are placed on the Arts and Humanities subject area. The results found 2.134 documents related with this topic.

RESULTS
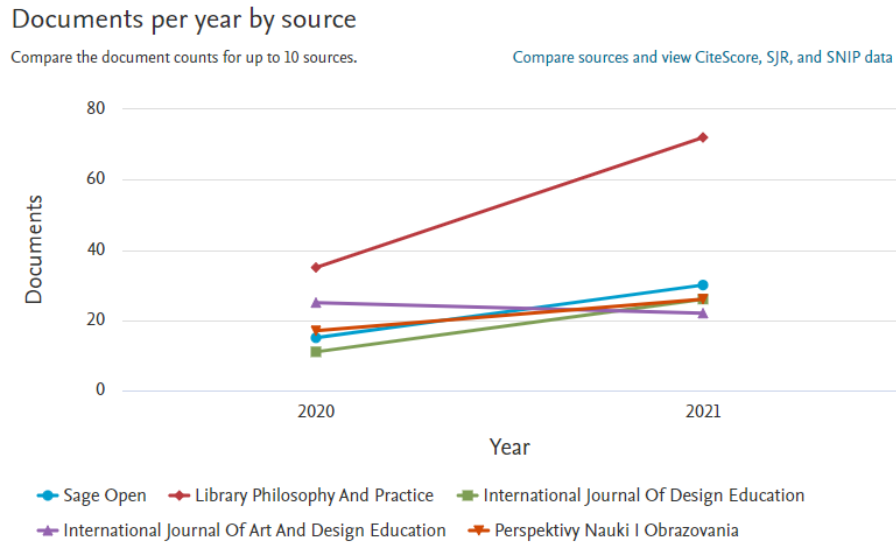
Documents by Years of Design Education Research

The number of design education research from 2020-2021 shows an upward trend from 2020 until 2021. In 2020 the publication related to design education topics is 969 documents. Then in 2021 the publication related to design education topics is 1.165 documents.
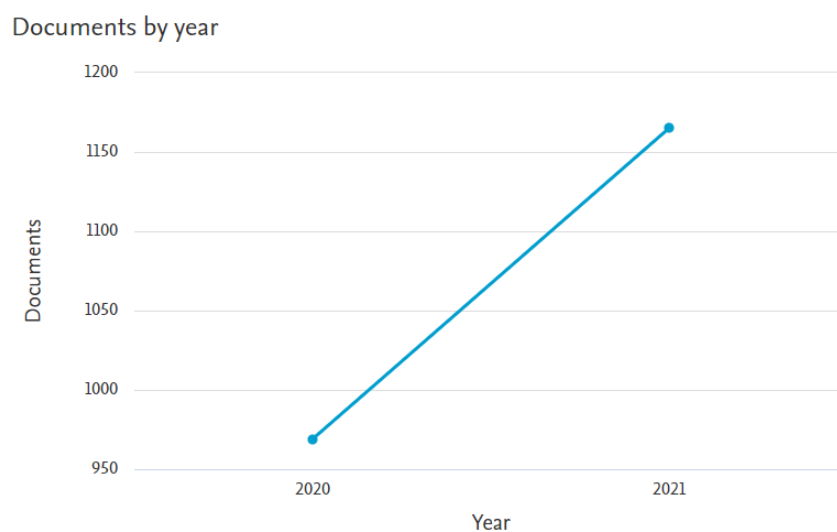
Figure 1. Documents by year of design education topics.
(Source: Scopus, 2022)

**Documents per Year by Source of Design Education Research**

Publication source of design education topics in each year found 5 source with highest number of documents. Library Philosophy And Practice with 107 documents. International Journal Of Art And Design Education with 47 documents. Sage Open with 45 documents. Perspektivy Nauki I Obrazovania with 43 documents. International Journal Of Design Education with 37 documents.

Figure 2. Documents per year by source of design education topics.
(Source: Scopus, 2022)

Documents by Type of Design Education Research

Based on the analysis of Scopus data, there is a percentage of document sources. The data shows that the most documents are article with 1.768 documents. Then book
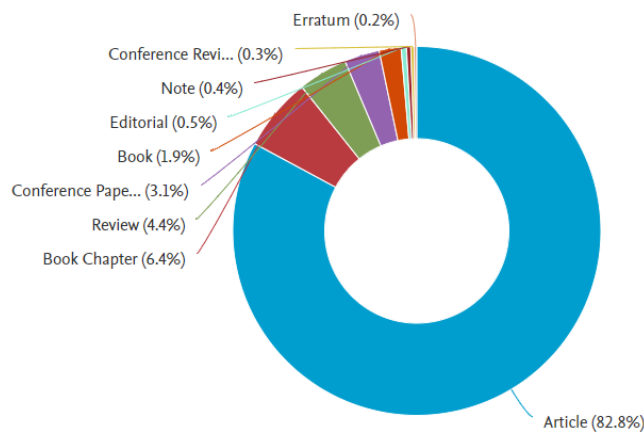
chapter with 137 documents, review with 93 documents, conference paper with 66 documents, book with 41 documents, editorial with 10 documents, note 8 documents, conference review with 6 documents, and erratum with 5 documents.

Figure 3. Documents by type of design education topics.
(Source: Scopus, 2022)

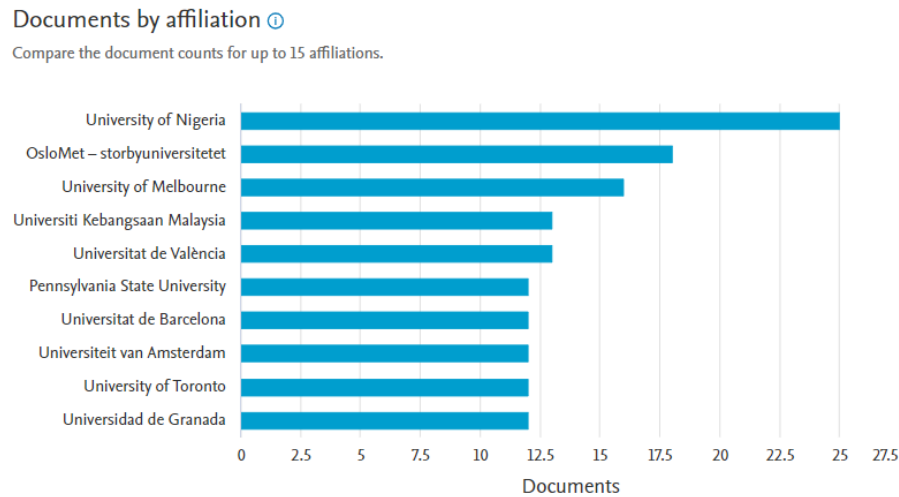## Documents by Country of Design Education Research

The countries with design education research that are in the top ten list: (1) United States with 422 documents, (2) Spain with 157 documents, (3) United Kingdom with 156 documents, (4) Australia with 140 documents, (5) Indonesia with 88 documents, (6) Turkey with 81 documents, (7) China with 71 documents, (8) China with 71 documents, (9) Canada with 69 documents, and (10) Nigeria with 66 documents.
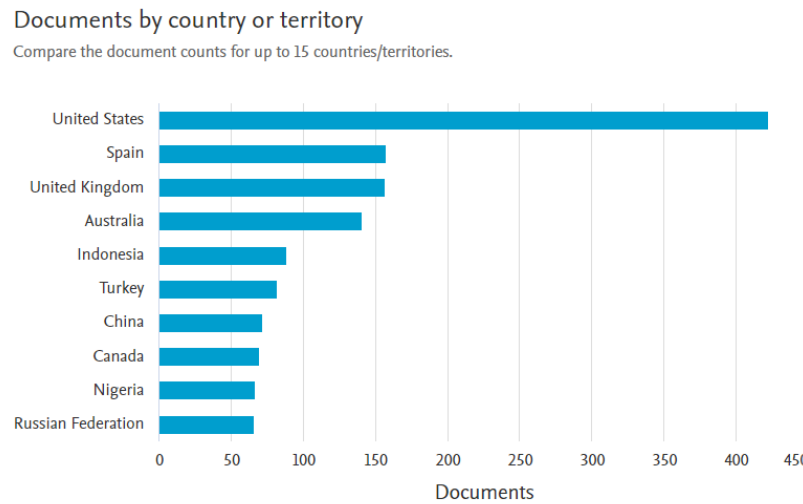
Figure 4. Documents by country of design education topics.
(Source: Scopus, 2022)

Documents by Affiliation of Design Education Research

The affiliation with design education research that are in the top ten list is (1) University of Nigeria with 25 documents, (2) OsloMet – storbyuniversitetet with 18 documents, (3) University of Melbourne with 156 documents, (4) Universiti Kebangsaan Malaysia with 13 documents, (5) Universitat de València with 13 documents, (6) Pennsylvania State University with 12 documents, (7) Universitat de Barcelona with 12 documents, (8) Universiteit van Amsterdam with 12 documents, (9) University of Toronto with 12 documents, and (10) Universidad de Granada with 12 documents.

Figure 5. Documents by affiliation of design education topics.
(Source: Scopus, 2022)

The Most Cited Documents of Design Education Research

The calculation of document citations with the research topic education research found 10 documents with the highest number of citations, shown at Table 1.

Table 1. The top 10 cited documents of design education research

No	Document title	Authors	Year	Source	Cited by
1.	Online University Teaching During and After the Covid-19 Crisis: Refocusing Teacher Presence and Learning Activity [7]	Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., Koole, M.	2020	Postdigital Science and Education 2(3), pp. 923-945	756
2.	Post-Covid-19 Education and Education Technology 'Solutionism': a Seller's Market [8]	Teräs, M., Suoranta, J., Teräs, H., Curcher, M.	2020	Postdigital Science and Education 2(3), pp. 863-878	207

3.	A review on machine learning in 3D printing: applications, potential, and challenges [9]	Goh, G.D., Sing, S.L., Yeong, W.Y.	2021	Artificial Intelligence Review 54(1), pp. 63-94	194
4.	Informing and transforming language teacher education pedagogy [10]	Johnson, K.E., Golombek, P.R.	2020	Language Teaching Research 24(1), pp. 116-127	90
5.	Can gamification help to improve education? Findings from a longitudinal study [11]	Putz, L.-M., Hofbauer, F., Treiblmaier, H.	2020	Computers in Human Behavior 110,106392	83
6.	Transformational Leadership and Job Performance: The Mediating Role of Work Engagement [12]	Lai, F.-Y., Tang, H.-C., Lu, S.-C., Lee, Y.-C., Lin, C.-C.	2020	SAGE Open 10(1)	81
7.	Mobile instant messaging or face-to-face? Group interactions in cooperative simulations [13]	Yuan, C.-H., Wu, Y.J.	2020	Computers in Human Behavior 113,106508	71
8.	What explains the relationship between spatial and mathematical skills? A review of evidence from brain and behavior [14]	Hawes, Z., Ansari, D.	2020	Psychonomic Bulletin and Review 27(3), pp. 465-482	68
9.	LADA: A learning analytics dashboard for academic advising [15]	Gutiérrez, F., Seipp, K., Ochoa, X., (...), De Laet, T., Verbert, K.	2020	Computers in Human Behavior 107,105826	63
10.	Translanguaging in the context of mainstream multilingual education [16]	Duarte, J.	2020	International Journal of Multilingualism 17(2), pp. 232-247	59

CONCLUSION

Based on the results from Scopus database we found that the number of design education research shows an upaward trend in 2020-2021. Publication data with the keyword original character with the highest number of documents is Plos One with 44 documents. CNRS Centre National de la Recherche Scientifique with 90 documents as an affiliation with the most documents. Subject area in the field of arts and humanities dominates with 722 documents. The most occurrences from the graph shows "species" as the most related item with the original character research trend from 2013 to 2022 in Scopus open access journal database.

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