

Bibliometric Investigation of Development and Research Trends in Transformative Education: A Comprehensive Analysis on Scopus Database (1983-2023)

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Abstract

Employing bibliometric analysis techniques, the research delves into all Scopus-database-indexed publications on Transformative Education spanning the years 1983 to 2023. Data analysis was conducted using Excel and R/R-Studio, with VOSviewer employed to visually depict the concurrent presence of keywords and document quotations. A total of 4484 publications meeting the specified criteria were identified. The findings reveal an annual growth rate of 9.26%, with the highest number of publications in the year 2022. Notably, the United States emerges as the leading contributor to these publications, predominantly affiliated with the University of Toronto. The most prolific author in the realm of transformative education is identified as Zembylas, M (Pavlidis, 2015). It's important to note that the bibliometric analysis was confined to Scopus data, and broader inclusion of other national and international databases would have enhanced the comprehensiveness of the study. In presenting a concise overview of the accessible literature in the education field, this study also provides recommendations for future research endeavors.

Keywords: Human, Education, Transformative Learning, Higher Education, Teaching.

Introduction Section

In this ever-developing era, education has a vital role in shaping individuals and society.(Mendoza & Matyók, 2013) However, education can no longer be defined solely as delivering information and skills; education must also serve as a tool to inspire profound changes in how individuals think, feel, and act. In this case, "transformative education" emerges as an innovative approach that aims to create meaningful positive changes in a person's understanding, values, and worldview. (Gal & Gan, 2020)

Transformative education reflects the understanding that authentic learning involves more than simply gathering information (DeAngelis, 2022). It involves interactions between individuals and learning content that trigger deep reflection, personal knowledge construction, and experiences of self-change.(Williams, 2013) The goal is to go beyond superficial and routine understanding to a deeper understanding of oneself, others, and the environment. (Hobson & Vu, 2015)

In this context, research on transformative education becomes increasingly relevant. (Kaminskiene et al., 2020). Given the complexity of the social, environmental, and technological challenges we face today, education must do more than prepare students to face this world. (Souto-Manning & Martell, 2019). It must empower them to become critical thinkers, problem solvers, and responsible global citizens.(Tharakan, 2022) Transformative education opens the door to designing learning experiences (Fenwick & Dahlgren, 2015) that encourage personal and collective growth and promote inclusivity and social awareness. (Hervás & Odina, 2022)

However, even though the importance of transformative education is recognized, there are still many aspects that need to be explored, namely how exactly this approach can be applied in various educational contexts, what impact it will have on students, teachers, and the education system as a whole, and how to measure the success of this approach.(Bellier & Préaud, 2012) , and what are the indicators of significant change.(Estes & Sirgy, 2019)

In this framework, research on transformative education emerges as a bridge connecting educational theory, psychology, and innovative pedagogical practice. (Tharakan, 2022). In this research, we aim to dig deeper into the essence of transformative education, explore various implementation strategies, and identify the concrete benefits that this approach can produce (Esmail & Matthews-Roper, 2022). Thus, this research provides valuable insights for the future development of education, where the ability to adapt, innovate, and embrace change will be the key to individual and societal success (Singh et al., 2018).

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Bibliometric indicators have an essential role in assessing the results of scientific research.(Belmonte et al., 2020) They help in analyzing the relationship between science and technology, (Coloma, 2018) create a broad picture of scientific disciplines, monitor the latest knowledge developments in a particular area, (Kubisch et al., 2022) and have the potential to serve as a guide in future strategic planning(Pearce & Wood, 2019). (Ito, 2022).

The objective of this study is to recognize and elucidate the development and emphasis of research within the domain of transformative education as documented in various publications. (Nordén & Avery, 2021) recorded in the Scopus database from 1983 to 2023. The determination of 1983 as the starting point is based on information from the Scopus database, which shows two of the first publications related to Transformative Education in that year.(Wallace et al., 2019)

The objective of this study is to recognize and elucidate the development and emphasis of research within the domain of transformative education as documented in various publications. (Boyd & Gordon Myers, 1988). (Alvermann, 2017) based on careful research on teaching authenticity, have found educators who critically reflect on "self, others, relationships, and circumstances that tend to demonstrate authenticity. "With further research, "authenticity" may be discovered as another result of continuous critical reflection.(Walker et al., 2018)

Transformation is a process that changes something from its original shape, pattern, or nature. It also means cross-formation. So, the process must produce changes, and the changes are not just ordinary gradations or levels where the shape, pattern, nature, or even type remains the same as before. So, a change in understanding in the sense of an increase is not a transformation.(Tien et al., 2021)

This process can occur within a person without the help of other people or even environmental stimuli (solely by psychological processes). It can also be due to the encouragement of a stimulus, including other people, whether intentionally or unintentionally. This can also happen due to a person's efforts in a learning activity that he deliberately carries out independently. Therefore, transformation events can occur in informal, non-formal, or formal educational settings.(Maruyama, 2022)

In other words, transformative education can be a learning process and a learning process(Naraian et al., 2012). It is called a learning process if it occurs without the intervention of another party, and it is called a learning process if it occurs due to someone else's intention. The learning process itself can occur either intentionally or unintentionally(Ouellette, 2022). Transformative learning means educators' efforts to change students' perceptions, opinions, assumptions, interests, attitudes, thought patterns, or beliefs to develop their potential to solve their life problems.(Zwiener-Collins et al., 2023)

This study employed the bibliometric analysis approach, acquiring data through a Boolean search on the Scopus database spanning the years 1983 to 2023. The search was executed on August 5, 2023, at 08:30 WIB. Utilizing R and Rstudio, VosViewer, and Microsoft Excel tools, researchers analyzed citations, document content, and networks. The data processing procedure underwent three stages under the supervision of the researchers.

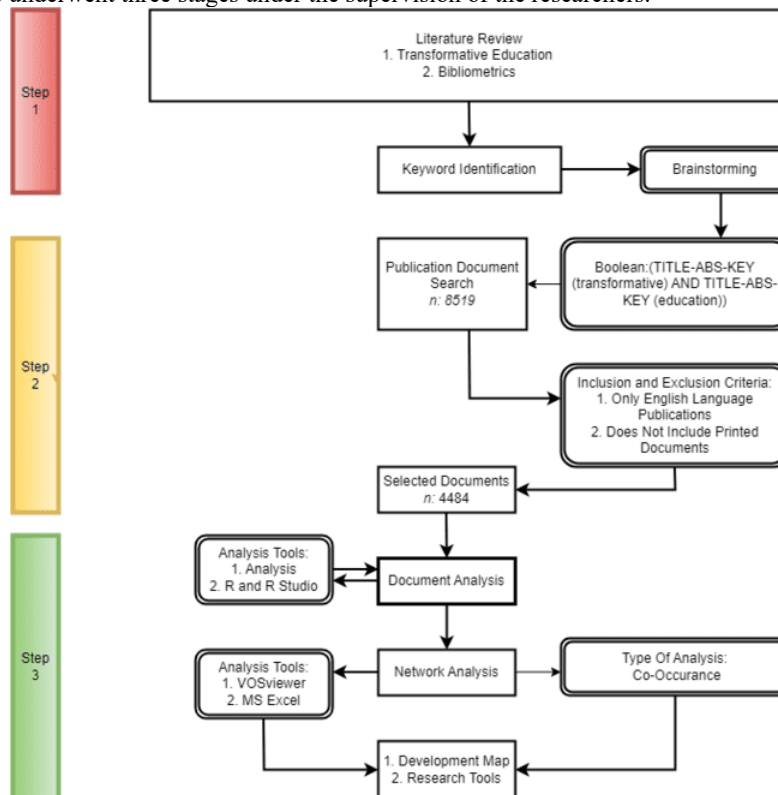


Figure 1.

During the initial phase, researchers will perform a review of pertinent literature on relevant subjects to ensure alignment with the focus of their upcoming bibliometric research. Additionally, this literature review aids in identifying suitable elements for the study (Bond et al., 2018) keywords that can powerfully reflect the scope of the research.

During the second phase, researchers conducted a search on the Scopus database employing the Boolean operator TITLE-ABS-KEY with the keywords "TRANSFORMATIVE AND EDUCATION," which resulted in 8,519 documents. Then, the researcher carried out filtering using the boolean operators ((LIMIT-TO (SUBJAREA, "soci")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT -TO (LANGUAGE, "english"))), to limit search results to only social science subjects, article document types, document sources in the form of journals, and documents in English. The result was 4484 final relevant documents.

In the third stage, researchers analyzed the final search results using the Scopus analysis tool and R and Rstudio tools. This analysis aims to identify the number of documents originating from various journals annually and explore information about authors, affiliations, country of origin, and research subjects/fields. Following this, an evaluation of the interrelationship among these documents was conducted by visualizing them with VOSviewer, and the data were additionally processed utilizing Microsoft Excel. The steps involved in this research process are illustrated in Figure 1.

Document Analysis

Key Information About Data

Table 1 presents a summary of 4484 documents accumulated over a span of 40 years. It encompasses 9468 authors, 1691 individual authors, a collaboration rate of 13.25% in international authorship, and 188074 references, with an average citation per document of 14.86.

Table 1. Main Information Document

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	1983:2023
Sources (Journals, Books, etc)	1322
Documents	4484
Annual Growth Rate %	16
Document Average Age	6.49
Average citations per doc	14.86
References	188074
DOCUMENT CONTENTS	
Keywords Plus (ID)	2887
Author's Keywords (DE)	9665
AUTHORS	
Authors	9468
Authors of single-authored docs	1561
AUTHORS COLLABORATION	
Single-authored docs	1691
Co-Authors per Doc	2.39
International co-authorships %	13.25
DOCUMENT TYPES	
articles	4484

Documents by Year

The evolution of publications on the issue of transformative education, broken down by year (from 1983 to 2023), is depicted in Figure 2. Documents have been circulating since 1983, with a hiatus from 1983 to 1990. The year 2022 marked the highest publication year.

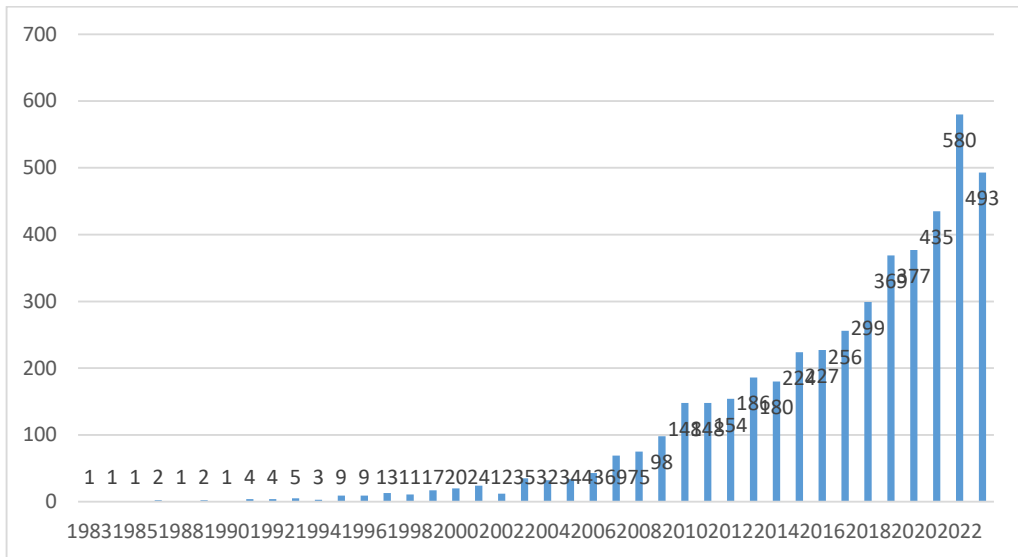


Figure 2. Documents by Year

Most Relevant Writers

Figure 3 shows the ten most influential authors in publications about Transformative Education. Zembylas, M leads with the number of publications of 18 documents, McAllister, M with 13 documents, Gericke, N and Sauto-Manning, and M Alonso with nine documents. Dan Pugh, KJ with 7 Documents

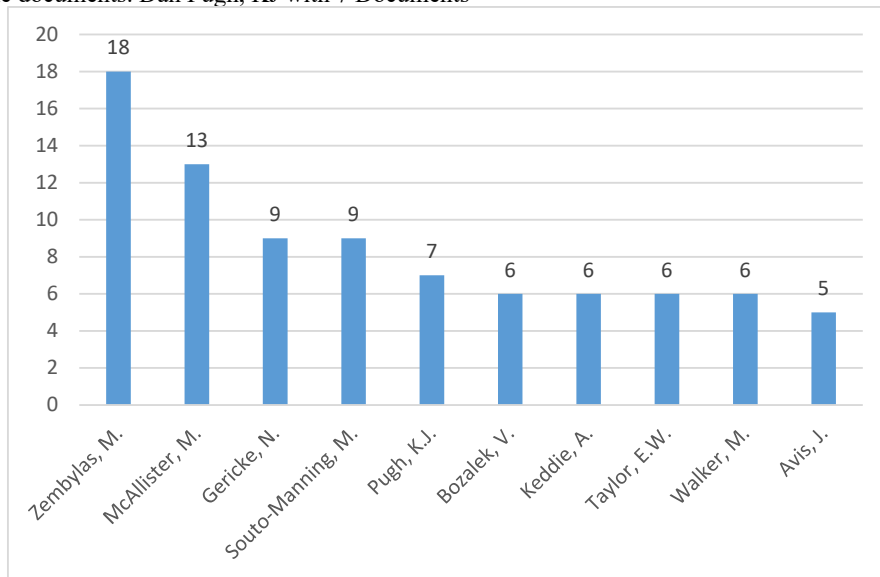


Figure 3. Documents by Author

Documents by affiliation

Figure 4 shows the ten most influential affiliates in publications about Transformative Education. The University of Toronto and Griffith University lead with the number of publications with 50 documents, followed by Columbia University with 49 documents, The University of British Columbia with 47 documents, and Monash University with 39 documents.

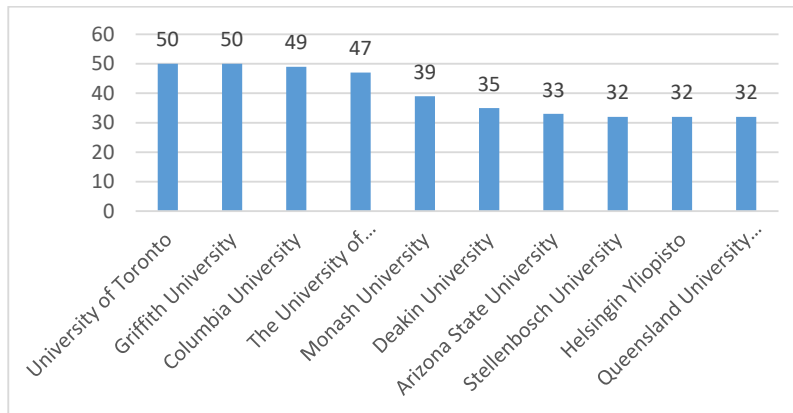


Figure 4. Documents Based on Affiliation

Documents by country

Figure 5 shows publications by country with the theme of Transformative Education. The United States leads publications with a total of 1620 documents. The United Kingdom followed them with 608 documents. Countries on the European continent dominate with 6 countries, while countries outside the European continent occupy the second most dominant position. This shows that countries on the European continent popularly carry out research with the theme of Transformative Education.

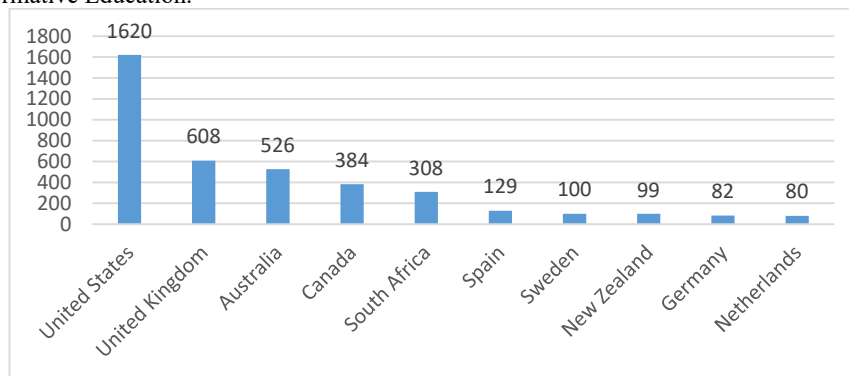


Figure 5. Documents by Country

Three-Field Plot

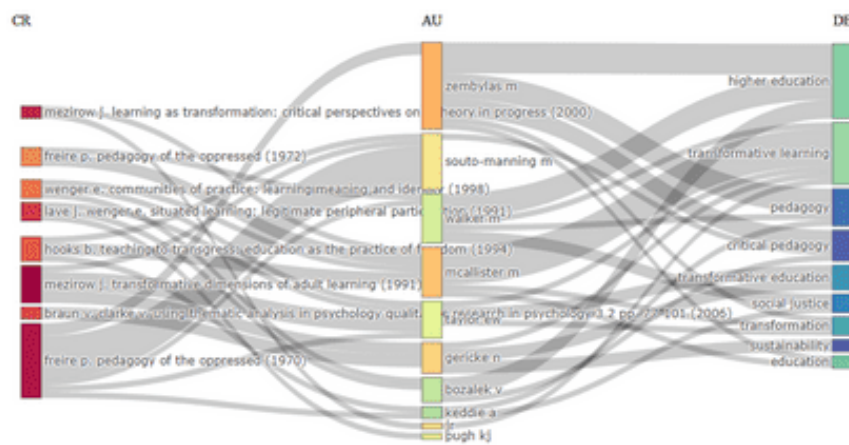


Figure 6. Document Based on Three-Field Plot Graph

Three elements are visible in Figure 6: the author's name, the journal citation, and the keywords utilized. Gray plot lines that are related to one another then join the three components. Each journal lists the authors who contribute most frequently to its publications based on the name of the journal, particularly for those that address the topic of transformative education. The number of articles related to that theme is indicated by the size of the plot. It appears from the above image that there are eight journals. 'Pedagogy of the Oppressed,' indicated in dark red, is the journal that publishes the most research on the topic of transformative education. It is associated with multiple authors, including Zembylas M, Sauto Manning, Walker M, Taylor Ew, and Keddie A.

Based on the picture above, there are ten authors. The size of the bar chart shows how many research publications each author has published. Among the ten authors who wrote the most articles on the theme of transformative education were Zembylas M, Sauto Manning, Walker M, Mcallister M, and Taylor Ew.

There is a third element: each research topic is connected to an author who has written extensively on transformative education. From the results of the analysis, there are nine keywords. Higher education and Transformative education are at the top. This shows that the word is closely related to research related to transformative education.

Corresponding Author's Countries

The following table shows the countries of the corresponding authors in a scientific study. Regarding Single Country Publication (SCP), the USA dominates with the most significant number of corresponding authors, followed by the United Kingdom and Australia. Likewise, from the Multiple Country Publication (MCP) perspective, the most significant international collaboration is seen between corresponding authors from the USA, followed by the United Kingdom and Australia.

Continental dominance also reflects an exciting picture. The USA consolidates its position as a significant leader in SCP and MCP, underscoring its significant contributions to the global scientific literature. On the other hand, the dominance of the United Kingdom and Australia in the MCP suggests significant cross-continental collaboration to develop deeper scientific understanding.

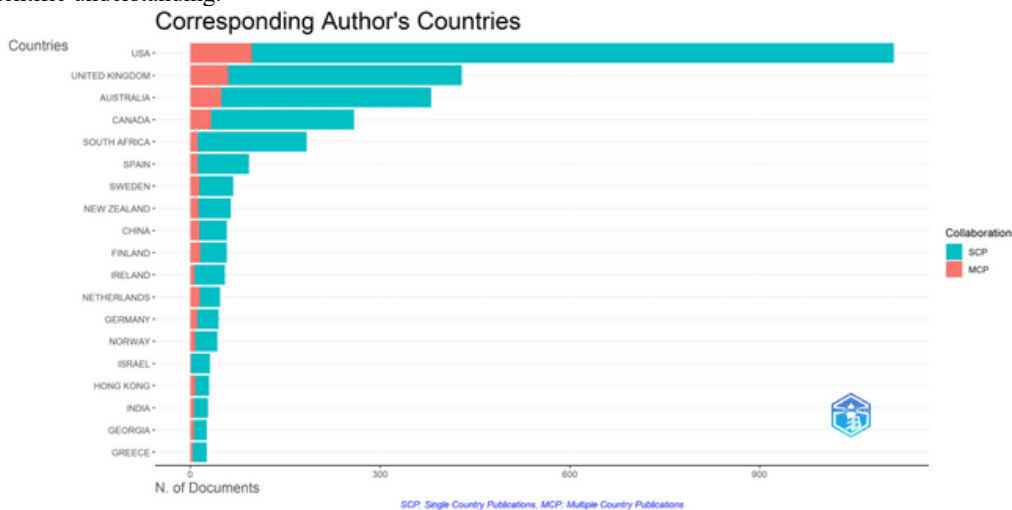


Figure 7. Based on The Countries of The Corresponding Author

Most Global Cited Document

Data analysis found that the paper with the most considerable total citations was Garrison Dr, 2004, with the most significant total of 2227 citations. Apart from that, from the list of papers studied, it was identified that Harvey L, 1993 was the document with the largest TC per year. Interestingly, the analysis results show a positive influence between Total Citations (TC) and Tc per Year, indicating that papers with higher TC also tend to have higher Tc per Year. However, based on existing data, no clear relationship exists between the year the paper was published and Total Citations (TC). This indicates that the year of publication may not significantly influence the number of citations obtained by a paper.

Table 2. Documents Based on the Most Global Cited Document

Paper	Total Citations	TC per Year	Normalized TC
Garrison Dr, 2004, Internet Higher Educ	2227	111.35	23.79
Harvey L, 1993, Assess Eval High Educ	920	29.68	4.43
Mezirow J, 2003, J Transform Educ	758	36.10	14.45
Dwivedi Yk, (2021). Int J Inf Manage	689	229.67	109.47
Angeli C, 2009, Comput Educ	673	44.87	21.13
Cochran-Smith M, (1999). Educ Res	575	23.00	8.81
Sipos Y, (2008). Int J Sustain High Educ	450	28.13	12.23
Johnson Ke, (2006). Tesol Q	416	23.11	11.42
Mezirow J, 1996, Ad Educ Q	387	13.82	5.83
Mann Kv, (2011). Med Educ	318	24.46	10.83

Network Analysis

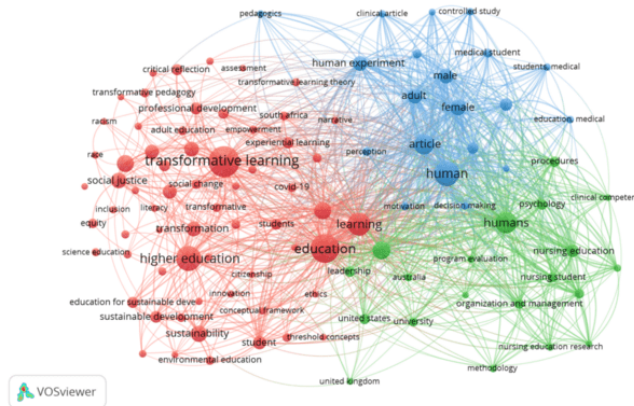


Figure 8. Document Based on Occurrence Network Analysis

The picture above is an occurrence analysis from research on transformative education, with a minimum cluster size of 1. There are 4 clusters formed. Cluster 1 has 62 items, cluster 2 has 20 items, cluster 3 has 20 items, cluster 4 has 2 items. The keyword "transformative learning" is the dominant keyword with a total link strength of 1145.

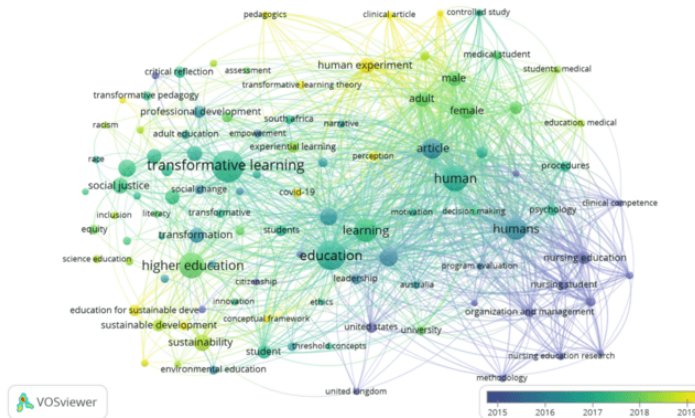


Figure 9. Document Based on Overlay Keyword Network Analysis

Cluster 1: Transformative Learning, Higher Education, Teacher Education, Sustainability, Social Justice, Pedagogy. This first cluster focuses on transformative learning, higher education, teacher education, sustainability, social justice, and pedagogy. These keywords often appear together in research exploring how education can be a tool for social change, increased equity, and empowerment through innovative learning strategies.

Cluster 2: Humans, Curriculum, Nursing Education, Psychology, Organization and Management

The second cluster highlights themes related to human aspects, curriculum, nursing education, psychology, and organization and management. Research in this cluster may explore the interaction between humans and education, effective curriculum development, educational strategies in nursing, psychological understanding in educational contexts, and management and management of educational institutions.

Cluster 3: Human, Female, Human Experiment, Male. The third cluster focuses on themes related to human dimensions, such as gender (female and male) and human experiments. Research in this cluster may explore issues related to gender differences in educational contexts, experiments involving human participation in education, and their impact on learning outcomes.

By combining keywords and their frequency of occurrence in these clusters, researchers can better understand the focus and direction of existing research in the field of education. Each cluster represents a group of interrelated topics, helping to form a picture of the various aspects researchers explore and discuss.

Conclusion

Publications with the theme of Transformative Education will peak in 2022. The most relevant author is Zembyas, M, with 18 publications. The affiliates with the most publications are the University of Toronto and Griffith University, with 50 publications. The country with the most publications is the United States, with 1620 documents. The largest MCP is the United States. Garrison Dr, 2004 has the most significant total of 2227 citations. The limitations of this research are only exploring Scopus-indexed datasets and only analyzing documents with English language journal article types without considering other global indexations. Language and document types are only limited to English language journal articles.

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