



Knowledge Mapping of Civic Education in Curriculum A Visual Analysis Using Cite Space

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Abstract. In this paper, a scientometric analysis of 382 academic publications on civic education published from 2017 to 2022 is presented to characterise the curriculum education by identifying and visualising the evolution of the collaboration network, the institution and the emerging trends according to the development of civic education. The results indicate that the number of publications in recent years surged, and cover aspects like course study, history research and learning method in different grades. Besides the building of curriculum, the articles also focus on the implementation of curriculum. The most productive network authors are from the USA, China, UK and Canada. However, the in-depth analysis, evaluative involvement and empirical study is seldom mentioned. The paper presents an in-depth analysis of civic education in curriculum to better educate the citizens in the new era.

Keywords: Civic education · Curriculum · Visual analysis

1 Introduction

While peace is the mainstream of the world nowadays, people of different countries still face the problem of unseen changes in a century. A new type of international relations and a shared future for mankind are advocated for the whole world, and the civic education is intensified domestically. Although different countries, like USA, China, Spain, emphasize different ideas on the education, but they share the similar purpose—transfer knowledge, attitude, customs, traditions and policies to the public.

In the paper, CiteSpace is used to analyze the documents on civic education. CiteSpace is one of the the most popular tools for mapping that is designed to present the analytic process by static clusters, which visualize the networks, the article citations and key words.

2 Statistical Analysis of Literature Quantity

2.1 Data Sources

Clarivate Analytics's Web of Science is the world's leading scientific citation search and analytical information platform that has been used in thousands of published academic

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Y. Yau and F. Hage Chehade (Eds.): DESD 2022, ASSEHR 691, pp. 179–185, 2023.

https://doi.org/10.2991/978-2-494069-37-4_24

studies over the past 20 years (Ling Sun et al. 2020). It is used as a tool of research for supporting the broad array of scientific tasks across diverse knowledge domains as well as a dataset for large-scale data-intensive studies.

The paper investigates the core selection of WOS using “ideological and political education” (query 1), “civic education” (query 2) and “curriculum” (query 3) as retrieval objects, document type as “Article”, “Review”, publication date from “2017–03-01” to “2022–02-28”. To find out the documents related to the topic from all fields, query 1 and query 2 was combined with query 3 with “and” to get query 4 and query 5. The final data of documents based on the combine sets of “or” from query 4 and query 5. The 427 results from WOS is exported in the form of Plain text file with full records and cited references.

Citespace 5.8.3R is used in the paper to map out the network by specifying the time slicing, choosing the node types, selecting the criteria and visualizing the cluster view. Finally, 390 documents are selected after the remove of duplicates on March 4, 2022. Time slicing is set per year from Mar. 2017 to Mar. 2022; the text processing includes title, abstract, author keywords (DE) and keywords plus (ID); the node types varies from author, institution, keyword to cited author; links contains cosine and within slices; selection criteria uses scale factor $K = 25$ to include more and fewer nodes; In the process of visualization, to visualize quickly and clearly, Pruning sliced networks and Minimum Spanning Tree (MST) is chosen in a cluster view-static way.

2.2 Data Collection

2.2.1 Number of Documents

According to the Table 1, number of publications in recent years increased from 23 to 115, and 8 documents have been published in the first two months of 2022. It seems that the USA, China, Spain and other countries pay more attention on the civic education than before. Authors from USA, China, Israel, Spain, Australia, Canada, South Africa and UK published more documents in Table 1. USA contributed the most of the documents in the last five years.

Table 1. Documents and of different countries in recent five years

	USA	China	Spain	Canada	South Africa	UK	Israel	Australia	South Korea
2017	8	4	2				2	2	
2018	11	11	9	5	5	4	3		
2019	30	6	4	8	2	2	2		3
2020	32	11	6	4	4	5	2		
2021	45	24	7	6	3	11	4	4	2
Total	126	56	28	23	14	22	13	6	5

University co-works with University of North Alabama while Harvard University with Boston University. What is worth mentioning is that the research group involves in, since San Jose State University cooperated with Civic Engagement Research Group to further study the topic. And the Education University of Hong Kong, Education University of Hong Kong, Australian Curriculum Studies Association and Australian Coll Educators works together to research on the topic.

In China, the universities linked together to work on the thesis. For example, Changsha University of Science and Technology, Huzhou University and Dongguan Polytechnic studied on the same subject. The cooperation between Education University of Hong Kong and University of Johannesburg indicates that the co-research started to show up. All of the changes intensifies the exchanges of institutions in the world. So the Key Lab Energy Monitoring & Edge Comp Smart City and University of Texas at Austin worked together and published three qualified documents respectively. The trend of working together to investigate the field formed gradually, and even at the beginning of 2022, universities in the United States and China starts their journey of research.

Since the increasing ideological education in higher education can bring new viewpoints of futuristic epistemology to students (Davids 2018), the institutions are mainly in universities, the researching objectives are young people or university students. The middle school teachers and primary school teachers may wandering outside of the gate, which makes the researches have no deep roots at the beginning. And the application of researches relies on the governance, so the government who make the rules must be involved in.

2.3.3 Contents of Researches

The researches on civic education mainly focus on the admission of diversity, investigation of cultivating good citizen, integrating empathy or politics into education and reinforcing the impact on citizens just like USA and China did. Both of the two countries emphasize the importance of political participation and engagement in the education of young people. In the latest three years, the researches covers more aspects—Canada and Sweden focused on the aesthetics and art; Israel and Sweden involved in critical thinking in the curriculum; South Korea referred to the objectives including children in their childhood and adolescent. Active citizenship, intercultural competence, human right, discourse analysis and adaptive curriculum are the topics authors interested in. The documents also focused on the higher education or undergraduate research since most of the institutions are the universities (Table 2).

Participation is the most important way of involving objectives in the education according to the research. Attitude, human right, service, democracy and policy are the contents of learning to implement civic education. School, curriculum, classroom and program are the carriers of civic education since knowledge and attitudes can be taught. In the recent five years, many authors turn to the implementation of civic education, but the impact and implementation of it which should be given special attention to is not obvious in the data.

The authors converse to specific fields, just like Art or Aesthetics, which diversifies the aspects of research. More and more topics appears in the research, such as service and critical thinking. Service-learning enables students to make connections between

Table 2. Top key words with frequencies and centrality

Count	Centrality	Keywords	Count	Centrality	Keywords
60	0.1	Civic education	14	0.25	Participation
35	0.15	Citizenship education	13	0.1	Classroom
29	0.15	School	11	0.1	Human right
29	0.12	Civic engagement	9	0.14	Service
27	0.11	Curriculum	8	0.1	Democracy
25	0.1	Knowledge	7	0.1	Experience
25	0.11	Citizenship	7	0.1	Policy
16	0.17	Attitude	4	0.15	program
16	0.1	Impact			

the knowledge learned in courses and the real-world issues, so that the students can solve certain environmental problems with the problem-solving skills in this particular domain (Mironesco 2022). There is an unarguable need to rethink civic responsibility, especially for the youth age from 15–29 under the circumstance of public health crisis. However, there is no traditions, culture or history listed in the research.

3 Conclusion

This study illuminates how authors from all over the world research on different aspects of civic education in the recent five years. It also shows how the authors cooperate with each other and the main points they are interested in. In addition to the policy, civic education may integrate some historical stories, culture or moralities into the curriculum to enrich the contents of civic education. And the research must focus on the empirical and intercourse learning that will deepen the significance of civic education. The cooperation with government is of great importance in the implement of laws or regulations to promote the researches.

The given data in this article derives from WOS and covers the last five years' researches from Mar. 1, 2017 to Feb. 28, 2022. The visualization shows us the trend in civic education as well as the deficit of researches, and authors may focus on the various content and specified empirical learning in the future.

Acknowledgments. This work is supported by Plan for Ideological and Political Education in Wuhan City Polytechnic (Grant No.16).

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