

A Bibliographic Mapping Study:

Concepts and Their Relationships in Information Literacy before and after COVID 19 Pandemic

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Abstract

AIM: The aim of this study is to reveal the relationship between the concept of information literacy and the concepts with which it is associated in the literature before and after the pandemic. Thus, common keywords were examined. The period between 2016-11-01 and 2019-12-31 was considered as **pre-pandemic**, and between 2020-01-01 – 2022-11-26 as **post-pandemic**, in both groups.

METHOD: Trend analysis on the information literacy pre- and post-pandemic period was performed by **VOSviewer** software and in-app algorithms thereby visualizing Web of Science database on the related concept. The co-occurrence analysis of the keywords of articles conducted to reveal common concepts and the most associated concepts.

RESULT: After the bibliographic analysis of common keywords of the sample articles, 25 most common concepts before and after the pandemic were obtained and visualized. Some distinctive concepts before the pandemic were library instruction, collaboration, and students, while fake news, misinformation, and social media were observed in the post-pandemic period. Occurrences of the concepts in both periods were discussed within the scope of the related literature.

INTRODUCTION

Definitions of Information Literacy (IL):

“...a set of abilities requiring individuals to 'recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information” (ALA, 1989)

«...is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning» (ACRL, 2000).

INTRODUCTION

Changing importance of IL:

As of March 12, 2020, the Covid-19 pandemic, which was declared as a pandemic after spreading all over the world, has shown its impact with lost human lives, economic repercussions and increasing poverty (Ciotti, et.al., 2020).

The outbreak of COVID-19 poses new challenges to concepts of IL. Studies showed the increasing importance of IL especially in the pandemic era:

INTRODUCTION

Before the pandemic:

Stopar and Bartol (2019), researched on Web of Science (WoS) and Scopus based publishing patterns and trends in relation to IL related competencies i.e., digital competences, computer skills, and related abilities in different settings.

A bibliometric analysis from 2001 to 2020 on IL showed that “information literacy and library” is the top-researched topic and considerable increase in publications as per years was observed in this area (**Ali, et.al, 2022**).

Onyancha (2020) examined the evolution of IL research over a 43-year period and mapped of the Scopus database. The researcher revealed that within the specified time frame, the focus of the studies on IL moved out of the library and librarianship, spread to a wide variety of fields in a multidisciplinary structure, and studied in 27 different disciplines besides the social sciences.

INTRODUCTION

After the pandemic:

Guo & Huang (2021) conducted a research with Chinese academic libraries, IL education during the pandemic had several characteristics, such as rapid response to information needs, recommending reliable information resources to users, developing and gathering current information on COVID-19 cases, and resisting misinformation and false information.

Research emphasizes the enhancing of individual immunity against science-related misinformation; this is also named as “infodemic” induced by the pandemic (**Gisoni, et.al, 2022; Singh & Banga, 2022; Naeem & Boulos, 2021**).

INTRODUCTION

After the pandemic:

Research trends studies have emerged in Information Literacy (IL) to determine research manner and changes before and after COVID-19.

Chen, et.al. (2021) captured the related keywords, that is, IL, college students, higher education and academic libraries as a result of the bibliographic analysis within the 2011-2020 period.

Research conducted around the Covid-19 pandemic exposed that the pandemic has created a gap between community and the science in the context of IL and related literacies and competencies. The reflection of this situation on scientific research can be observed with the help of **bibliometric analyzes**.

The current study attempted to comparatively analyze the impact of the pandemic on the scientific production and reveal new challenges undertaken.

METHOD

Article Selection

The data set was extracted from **WoS database** with keywords related to “**Information Literacy**”. The keyword was searched in the database as “information literacy” in double quotes in order to limit the search. Selection criteria was the **publication period** between specified dates:

- 2016-11-01 and 2019-12-31 as **pre-pandemic**,
- 2020-01-01 and 2022-11-26 as **post-pandemic**.

Selected publications were then refined by Document Type (article or proceeding paper or book chapters). Total of the 3141 articles published between 2016 and 2022 were analyzed. While 1701 of the articles were from pre Covid 19, 1440 articles were from post Covid 19.

DATA ANALYSIS

Trend analysis on the IL pre- and post-pandemic period was performed by **VOSviewer** software and in-app algorithms thereby **visualizing WoS database** on the related concept.

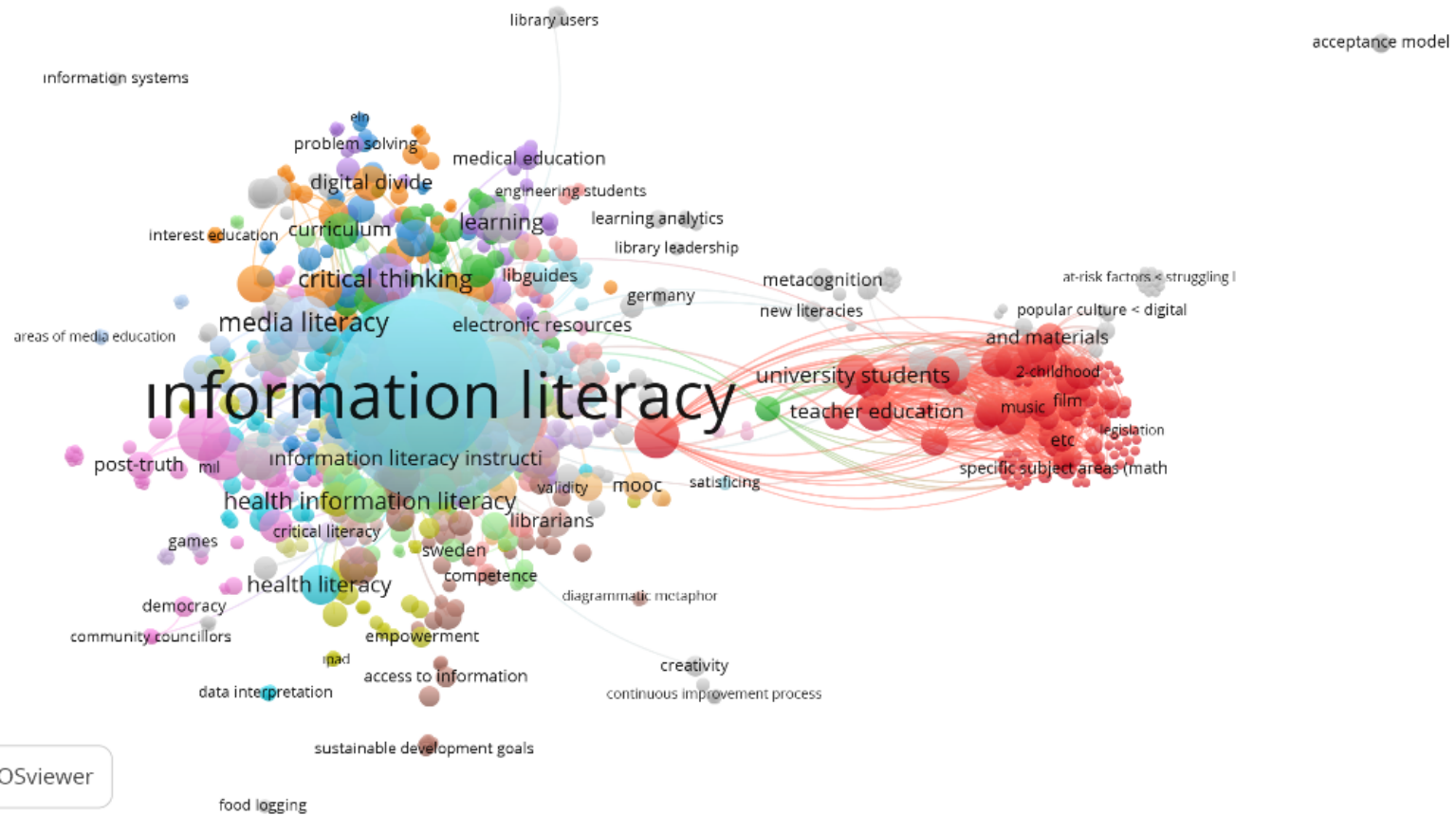
- ❖ To examine the most common concepts, we selected top 25 keywords and the threshold value for determining the frequency of keywords is set to 5.
- ❖ Most associated pairs were analyzed according to the frequency of co-occurrence of keywords with IL.

Research questions:

- What are the common concepts on maps before and after Covid-19?
- What are the most associated concepts with IL on maps?

FINDINGS

Most common concepts before the pandemic:



FINDINGS

Most common concepts before the pandemic:

Concept	Occurrence	Total link strength
Academic libraries	93	342
Higher education	86	288
Library instruction	55	191
Digital literacy	50	165
Assessment	42	138
Collaboration	32	113
Media literacy	29	111
Education	29	87
Students	27	85
Critical thinking	26	66
Fake news	25	86
E-learning	24	66
Libraries	21	75
Social media	21	73
ACRL framework	20	67
Internet	19	136
Health information literacy	19	36
Research	17	58
Digital competence	17	51
Learning	16	42
University students	15	155
University libraries	15	65
Graduate students	15	47
Health literacy	15	46
Plagiarism	15	36

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Most common concepts on the map

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Most common concepts after the pandemic:

Concept	Occurrence	Total link strength
Higher education	76	311
Academic libraries	61	242
Assessment	35	227
Digital literacy	56	202
Fake news	46	178
Media literacy	48	178
Misinformation	43	167
Covid-19	46	155
Social media	36	144
Education	34	142
Students	34	142
Library instruction	37	141
Critical thinking	36	126
Health literacy	33	103
Disinformation	29	110
Media and IL	26	96
Libraries	22	116
Digital divide	15	89
Internet	12	105
University students	11	121
Writing	11	174
Critical analysis	3	89
Comprehension	3	89
Family literacy	3	108

Table 2.
Most common concepts on the map

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DISCUSSION

Results of this bibliographic mapping study revealed that there was a change before and after Covid-19 pandemic in terms of research concerned with IL. Although there were common terms both in the maps such as academic libraries, higher education and library instruction, new concepts emerged just after the pandemic:

- misinformation
- covid-19
- disinformation
- family literacy

DISCUSSION

Similar findings:

Baber, et.al. (2022) reached the similar results with digital literacy. They reported pre-during pandemic concepts as fake news, competence, educational technology, health literacy, self-efficacy and covid-19.

Nadi-Ravandi and Batooli (2023) also put forth the occurrence map of the scientific products of the library subject area and the Covid-19 pandemic, they extracted four clusters;

- libraries and librarians,
- use of media and social networks,
- information and communication technologies,
- online library services
- information and news.

They reported the most frequently used keywords in associated with the library were *misinformation, fake news, IL and crisis management.*

DISCUSSION

Another salient finding of this study is the changes in the total link strengths of the common concepts in both periods. After the pandemic, there was remarkable increases in the co-occurrences of terms, that is, fake news, social media, critical thinking and health literacy. **Fake news** is one of the important topics covered in IL literature, especially in the covid-19 process.

Social media has been considered together with IL and an increase in the tie strength has been observed. Because it has a pivotal role in disseminating information, the importance of the term come into prominence during the pandemic.

DISCUSSION

Health literacy was another concept with an increased occurrence of IL after the pandemic so its total link strength was considerably increased. It played a vital role in saving lives during the pandemic. In this period when accurate information is of critical importance, relying on low-quality information sources could create and reinforce people's misperception, combined with socioeconomic vulnerabilities, this also leads to low compliance with Covid-19-related public health measures, poor health outcomes and low anxiety levels regarding Covid-19 (Chen, et.al, 2023; Ruedin, et.al., 2022; Uğraş, et.al., 2022)

CONCLUSION

Covid-19 showed its effect on scientific research trends in the field of IL, as it does in all areas of life. This study makes a comparison of the concepts related to IL, which have increased in importance or come to the fore during the pandemic period.

Limitations: The time periods included in the analysis cover a period of approximately three-years before the pandemic and a period of two-years afterward. In order to observe visible changes in research trends, it would be useful to conduct a study over a larger time period. Another limitation of this study is that it is limited to the visualization and mapping of the concepts. Thus, this study revealed the impact of the pandemic on IL research, and discussed possible reasons.

In future studies, comparative analyses can be conducted for both periods in terms of different refinement criteria such as research categories or regions. Nonetheless, the economic effects that have emerged as a result of the pandemic, and the diminishing effect of it since 2023, could cause research to focus on new and different concepts.

Thank you for listening!



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