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OVERVIEW OF RESEARCH ON DIGITAL TRANSFORMATION IN HIGHER EDUCATION

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Abstract

This study aims to systematize previous international publications on digital transformation in higher education, make statistics, and evaluate according to the most influential authors, organizations, and countries in research on digital transformation in higher education. Research data was collected and analyzed from the OpenAlex database in VOSviewer 1.16.19 software with 206 articles for the keyword "Digital Transformation in Higher Education" filtered in the Summary section. The results show that research on digital transformation in higher education began to appear in 2015, gradually increased from 2020, and peaked in 2023 (68 articles). The study also shows the most influential authors (by number of citations and articles), countries, and universities with the most publications and sources in research on digital transformation in higher education. The research results have contributed to the systematic review of research on digital transformation in general and on digital transformation of higher education in particular.

Keywords: Digital transformation; Higher education; Overview; VOSviewer.

1. INTRODUCTION

Digital transformation has become a priority for many higher education institutions since the second decade of the 21st century. This is an objective necessity for organizations that want to lead change and create innovation with an increased competitive

advantage in education. Digital transformation in higher education is affected by the business sector of the enterprise; digital transformation refers to the changes that digital technology can bring to business operations; changing the business model leads to

changes in products, organizational structures, or automation processes of the company.

"Digital transformation" is the profound transformation of organizational operations, processes, capabilities, and business models to capture the opportunities of technological fusion and its rapid impact on society in a strategic and prioritized manner (Benavides et al., 2020).

In the fast-growing and influential environment of digital transformation, if universities want to survive and stand firm, digital transformation is a key, necessary factor and needs to be implemented comprehensively. Universities face new business models that actively link internal and external customers. According to a report by PwC (2018), many universities are developing to meet the significant change towards using new technology but still lack the vision, capacity, or commitment to implement them effectively. Universities need a comprehensive view of digital transformation in their operations with unique characteristics, influencing factors, and the current situation of implementing the digital transformation process in higher education institutions.

Previous overview studies on digital transformation in higher education have had specific values and contributions from theoretical frameworks, trend assessments, dynamic factors, or those associated with particular contexts (Benavides et al., 2020). In this study, we focus on statistics of studies on digital transformation in higher education with the time from the earliest study (2015) and more updated (to 2023). At the same time, we select the scope of research on digital transformation associated with higher education, which is of great concern to countries and organizations in the context of the strong development of the 4.0 Technology Revolution. This is the gap that we chose to conduct this study. This study aims to summarize research on digital transformation in higher education from 2015 to November 2023. Based on the stated research questions such as trends, most influential publications, authors, countries, and universities with the most publications on digital transformation in higher education. We hope to contribute to the overview document to provide a picture with statistics for scholars, graduate students, students, and national universities about digital transformation in the future.

2. METHOD RESEARCH

Step 1: The author collects previously published overview documents related to digital transformation in higher education and introductory papers on the nature and role of digital transformation in higher education from Data sources on Google Scholar. This collection intended to explain the research's urgency, provide an overview, and point out research gaps.

Step 2: The author uses VOSviewer 1.6.19 software to filter data with the keyword "Digital Transformation in Higher Education" filtered in the "Abstract" Summary of OpenAlex database, accessed November 22, 2023. The results were 206 related articles (Van Eck & Waltman, 2011). The data collected in this software was used to analyze and answer the following research questions:

Q1. International publications on digital transformation in higher education as of November 2023;

Q2. The author has the most influence according to the number of articles and number of citations in international publications on digital transformation in higher education;

Q3. The most influential universities, according to the number of articles and citations in international publications on digital transformation in higher education;

Q4. The most influential countries, according to the number of articles and citations in international publications on digital transformation in higher education.

3. RESEARCH RESULTS

3.1. Published statistics on digital transformation in higher education

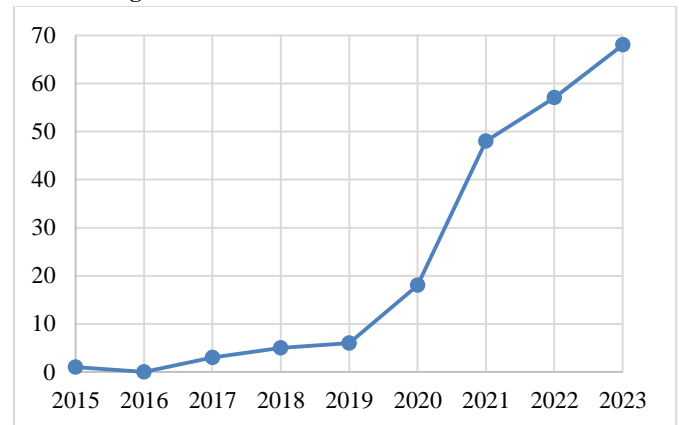


Figure 1. Statistics published by year

(Source: Author compiled from VOSviewer software)

Research on digital transformation in higher education appeared in 2015 through the publication of Haggans, M. (2015) "The Future of the American Campus." After that, there were not many publications from 2017 to 2019. From 2020 to 2023, research on digital transformation in higher education has gradually increased, increasing sharply from 2021, and the number peaked in 2023 with 68 announced (Figure 1).

3.2. Statistics on the most influential authors in research on digital transformation in higher education

The study was conducted based on the number of citations of the article (Table 1, Figure 2). The highest number of articles and citations is shown in Table 2, Figure 3).

Articles with the most citations

Table 1. Articles with the highest number of citations (n = 206)

Document	Citations
Bendik bygstad (2022)	70
mamdouh alenezi (2021)	42
adam marks (2020)	21
jeanette själlberg (2019)	20
manuel área moreira (2021)	20
oleg ye. kaminskyi (2018)	19
alexandrina monteiro (2021)	19
silvia c. farias-gaytán (2021)	17

(Source: Author compiled from VOSviewer software)

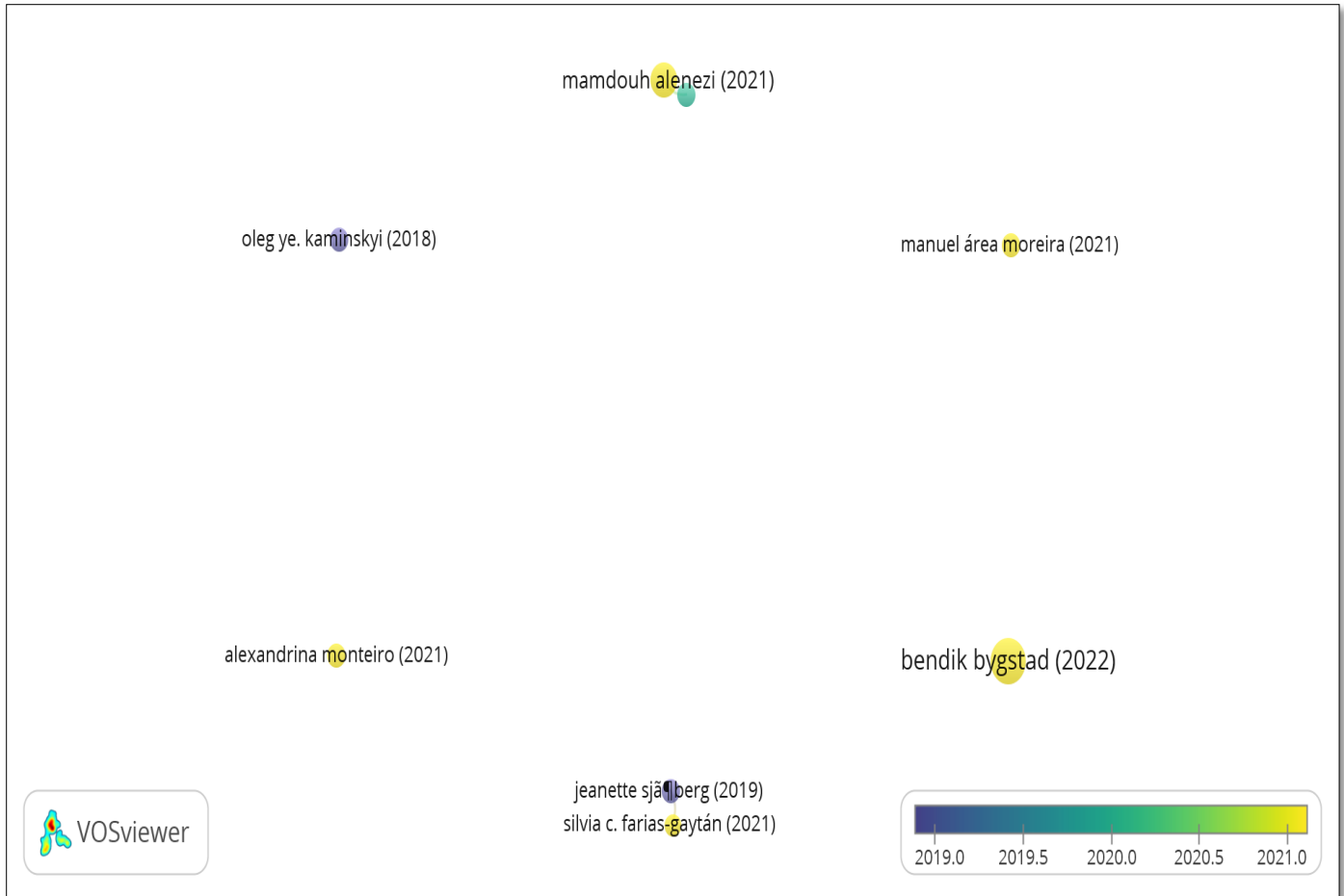


Figure 2. Articles with the most citations on average by year

(Source: Author compiled from VOSviewer software)

Table 1 shows that the article with the most citations is Bygstad et al. (2022), "From dual digitalization to digital learning space: Exploring the digital transformation of higher education" 70 times. Next is the article by Alenezi, M. (2021), "Deep Dive into Digital Transformation in Higher Education Institutions," which has 42 views. The remaining 06 papers were cited 17 to 21 times. Figure 2 adds the execution time of the most cited studies from 2018 to 2023.

The author has the highest number of articles and citations

Considering this criterion, we selected 05 authors with the most articles and citations. Table 2 shows that the authors are divided into two groups: Group 1 is Marks Adam and Al-Ali Maytha with four articles and 39 citations; Group 2 is the remaining three authors with seven papers and 28 citations.

Table 2. Authors with the highest number of articles and citations (n = 206)

Author	Documents	Citations
adam marks	4	39
maytha al-ali	4	39
bayu rima aditya	7	28
ridi ferdiana	7	28
sri suning kusumawardani	7	28

(Source: Author compiled from VOSviewer software)

Considering additional information on the number of articles and citations by author by year, Figure 3 shows the published and highly cited authors from 2020 to 2022.

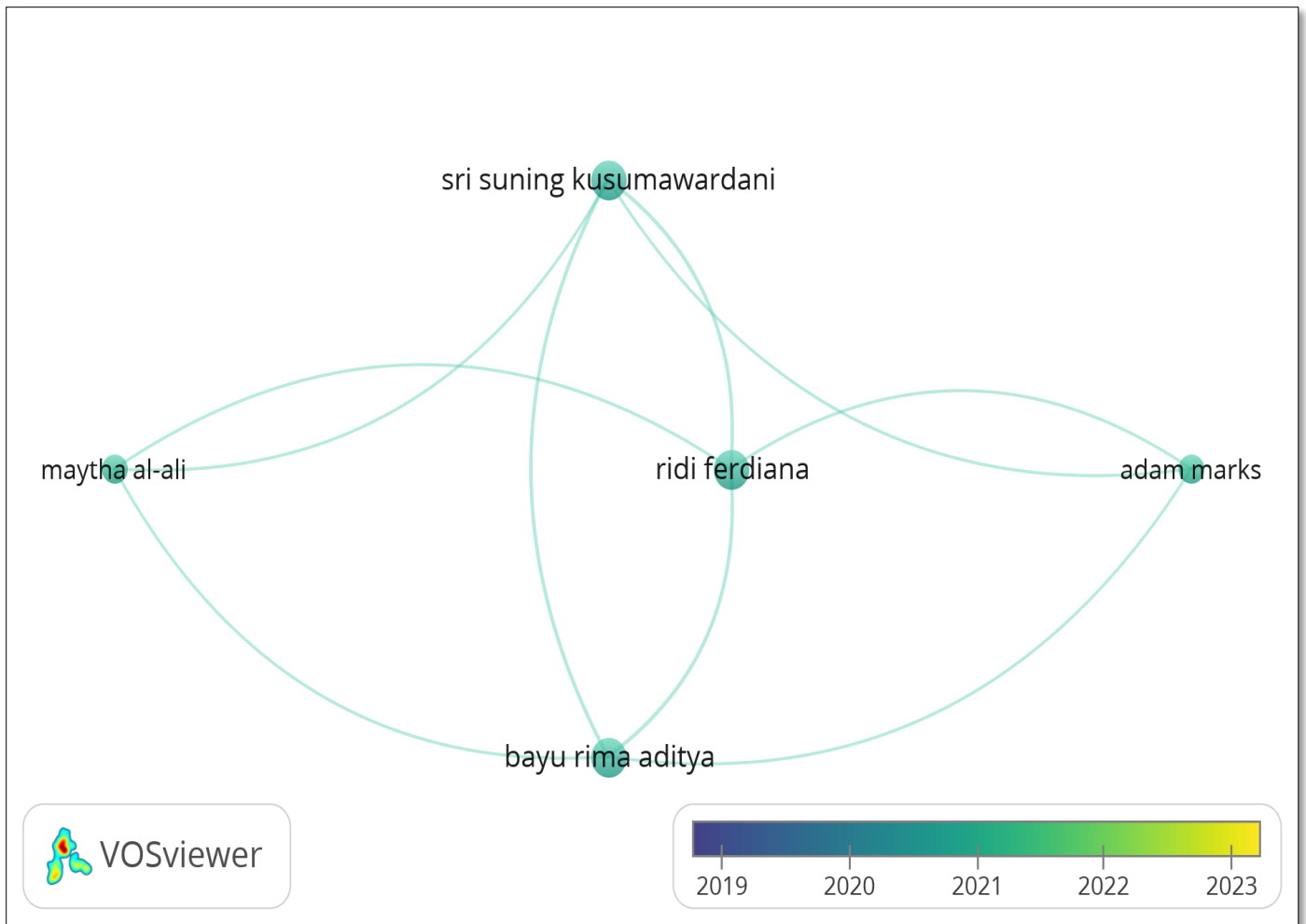


Figure 3. Authors with the highest number of articles and citations on average by year

(Source: Author compiled from VOSviewer software)

3.3. Statistics of universities with the highest number of articles and citations

Statistical results of universities with articles from 3 or more and citations from 2 or more are five schools. The higher with the most publications and the highest number of sources is Universitas Gadjah Mada (Indonesia), which has six articles and 23 citations. Next is Telkom Higher, with five studies and 20 citations (Indonesia). The remaining three schools have several articles of 3. However, the number of citations of Zayed University (United Arab Emirates) is higher than that of the other 02 schools.

Table 3. Universities with the highest number of articles and citations

Organization	Documents	Citations
telkom university	5	20
universitas gadjah mada	6	23
zayed university	3	18
aalborg university	3	2
university of agder	3	8

(Source: Author compiled from VOSviewer software)

Figure 4 adds publication and citation information by year; accordingly, the publications and citations of schools are concentrated from 2021 to 2023.

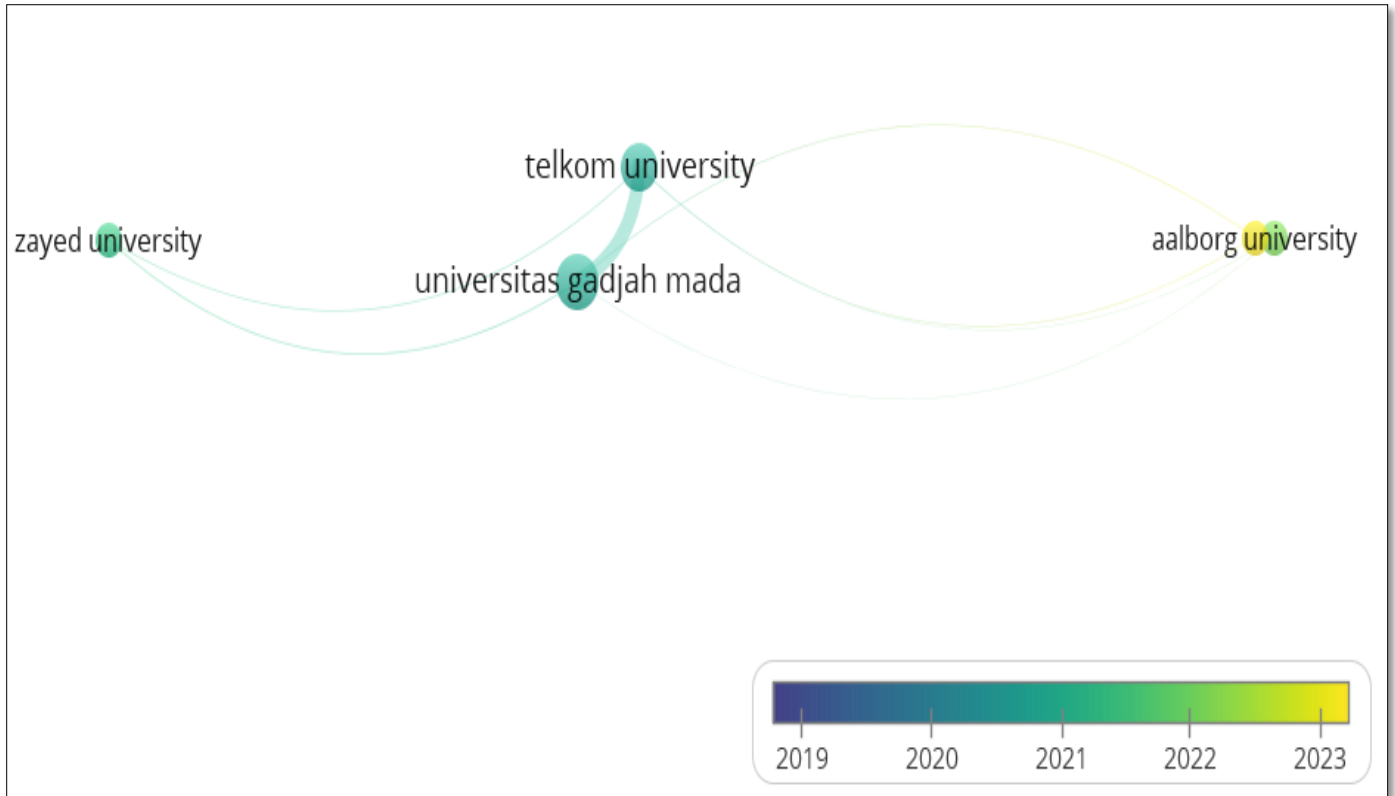


Figure 4. Universities with the highest number of articles and citations by year

(Source: Author compiled from VOSviewer software)

3.4. Statistics of countries with the highest number of articles and citations

Table 4 lists the eight countries with the most articles and citations on digital transformation in higher education. Accordingly, Russia is the leader (22 publications and 28 citations), followed by Indonesia (9 publications, 23 citations). Ukraine and Spain have the same number of articles, ranking third; however, Spain's citations are nearly twice as high as Ukraine's. Norway ranks 5th in number of articles but has the highest number of sources (82). The remaining three countries have the same publications (5 papers), but the UK's authorities are higher than the other two countries.

Table 4. Countries with the highest number of articles and citations

Country	Documents	Citations
russia	22	28
indonesia	9	23
ukraine	8	28
spain	8	53
norway	7	82
united kingdom	5	30
germany	5	12
turkey	5	3

(Source: Author compiled from VOSviewer software)

Figure 5 adds publication and citation information by year and country; accordingly, the publications and citations of countries are concentrated from 2021 to 2022.

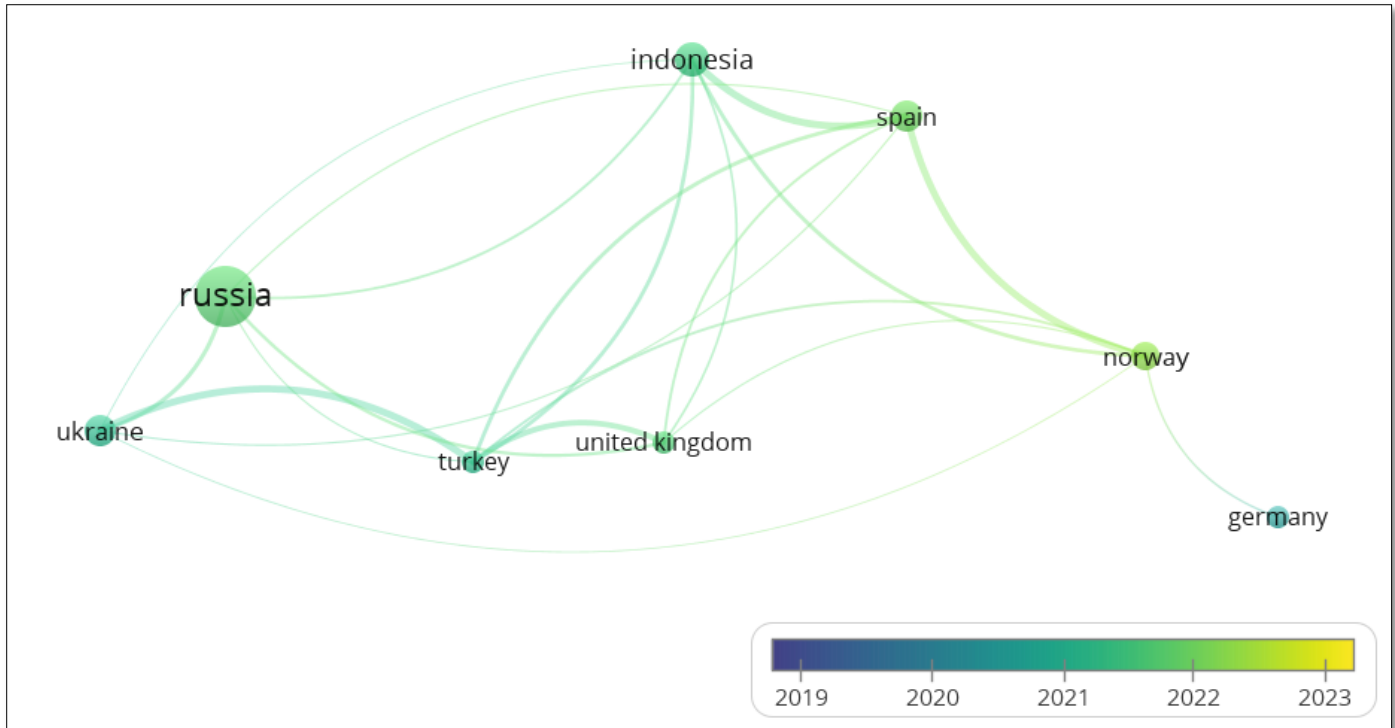


Figure 5. Countries with the most articles and citations by year

(Source: Author compiled from VOSviewer software)

CONCLUSION

Based on keyword statistical data on digital transformation in higher education collected as of November 2023 with 206 articles from the Vosviewer OpenAlex database, we did a statistical analysis to answer the stated research questions. The results show that research on digital transformation in higher education started in 2015 and gradually increased from 2020, peaking in 2023 (68 articles).

The study shows that the most influential authors, according to the number of citations, are Bygstad et al. (2022) "From dual digitalization to digital learning space: Exploring the digital transformation of higher education" with 70 times and Alenezi, M. (2021) "Deep dive into digital transformation in higher education institutions" with 42 times.

The universities with the most published and cited research on digital transformation in higher education are Universitas Gadjah Mada (6 articles, 23 citations) and Telkom Higher (5 articles and 20 citations). These two schools are both in Indonesia.

The countries with the most publications and citations in research on digital transformation in higher education are Russia (22 publications and 28 citations) and Indonesia (9 publications and 23 sources). Norway ranks 5th in number of articles but has the highest number of citations (82).

Digital transformation in higher education has been an issue of concern since 2015, and the level of interest is increasing through the number of articles and citations. The research results have contributed to the literature review, serving as a basis for research on digital transformation in general and digital transformation in higher education for reference. Data collected from more extensive sources such as Scopus or Google Scholar is also a suggestion for further research.

REFERENCES

1. Alenezi, M. (2021). Deep dive into digital transformation in higher education institutions. *Education Sciences*, 11(12), 770.
2. Benavides, L. M. C., Tamayo Arias, J. A., Arango Serna, M. D., Branch Bedoya, J. W., & Burgos, D. (2020). Digital transformation in higher education institutions: A systematic literature review. *Sensors*, 20(11), 3291.
3. Bygstad, B., Øvrelid, E., Ludvigsen, S., & Dæhlen, M. (2022). From dual digitalization to digital learning space: Exploring the digital transformation of higher education. *Computers & Education*, 182, 104463.
4. Haggans, M. (2015). The future of the American campus. *On the Horizon*, 23(1), 25-32.
5. Kaminskyi, O. Y., Yereshko, Y. O., & Kyrychenko, S. O. (2018). DIGITAL TRANSFORMATION OF HIGHER EDUCATION IN UKRAINE: TRAJECTORIES OF DEVELOPMENT IN THE CONDITIONS OF NEW TECHNOLOGICAL AND ECONOMIC ORDER. *Information Technologies and Learning Tools*, 64(2), 128–137. <https://doi.org/10.33407/itlt.v64i2.2083>
6. Monteiro, A., & Leite, C. (2021). Alfabetizaciones digitales en la educación superior: Habilidades, usos, oportunidades y obstáculos para la transformación digital. *Revista de Educación a Distancia (RED)*, 21(65). <https://doi.org/10.6018/red.438721> (Original work published 9 de agosto de 2020)
7. Sjöberg, J., & Lilja, P. (2019). University teachers' ambivalence about the digital transformation of higher education. *International Journal of Learning, Teaching and Educational Research*, 18(13), 133-149.

8. The 2018 Digital University: Staying Relevant in the Digital Age; PwC: Leeds, UK, 2018. Available online: <https://www.pwc.co.uk/assets/pdf/the-2018-digital-university-staying-relevant-in-the-digital-age.pdf> (accessed on October 17, 2018).
9. Van Eck, N. J., & Waltman, L. (2011). VOSviewer manual. *Manual for VOSviewer version, 1(0)*.