

*Science Mapping in Educational Leadership Research:
Bibliometric Analysis, 1907 to 2022*

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Abstract

Educational leadership stands as a prominent research domain in education, where leaders play a guiding role, impacting educational culture and quality. With the pandemic of COVID-19 has compelled a shift to online learning for students, with educators striving to effectively engage learners in this digital landscape. Financial constraints have led to layoffs and cost-cutting in educational institutions, though some schools innovatively expanded. In response, educational institutions must forge fresh leadership strategies tailored to these unique challenges. This study utilized VOSviewer to investigate network diagrams relevant to educational leadership research. By categorizing clusters and analyzing their positional relationships, the study discerned attributes and connections within structured network diagrams, bolstering its argument. This study performed a bibliometric analysis of 8,489 papers published in the Scopus database from 1907 to 2022. Four key themes emerged: educational leadership as a catalyst for equity, inclusivity, and professional growth; educational leadership's intricate interplay with teacher development, student achievement, and school climate; The transformative impact of educational leadership in the COVID-19 era; Educational leadership is a key element in driving school improvement and development. Based on research findings, the post-COVID-19 era necessitates novel educational leadership styles, propelling teaching and learning, nurturing talent, and advancing educational objectives.

Keywords: Educational Leadership, Bibliometric Analysis, Vosviewer, COVID-19, Science Mapping

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Introduction

The analysis of leadership in education involves giving prominence to the roles of administration and management, scrutinizing alterations within the educational system and leadership frameworks facilitating the introduction of systemic changes in schools, centering on the learning procedures and curriculum enhancement, highlighting leadership within the realm of higher education, as well as considering narrative, historical context, and employing meta-analytical techniques. (Rutkiene & Tandzegolskiene, 2021) Lakomski and Evers (2022) referred to the role of methodology in the contemporary educational leadership. In general, it is common to explain how organisations, such as schools, operate to illustrate this. How to explain the value of educational leadership is an open question that relies on experience rather than analytical explanation using methodology as the default option. The ability to solve problems always takes place within certain constraints, and placing these constraints at the centre of research not only requires a wealth of remaining scientific resources, but also leads to a renewal of methodological understanding of how to study educational leadership. Yeh (2013) points out that the discipline of educational leadership is not only a sub-division of the broader study programme of leadership, but also a popular discipline in the field of educational research. Edoun (2011) shows that effective leadership and management of headmasters and school staff is a key factor in the achievement of high standards of student performance and school improvement. It is evident that research in educational leadership is essential for enhancing the effectiveness and outcomes of schools and education systems.

Educational Leadership Research

Educational leadership research has been influenced by external factors such as interdisciplinary integration, measurement and data analysis, resulting in the emergence of outcomes and issues such as disciplinary systems, theories and philosophies, metaphors, variations, levels and themes of analysis, and research orientations and methodologies (Yeh, 2013). Since the millennium, as the modern society has entered into the information age of the Internet, the ease and richness of access to information have been very different from the past. "Visual communication" is often considered as one of the most efficient communication methods in modern communication. Teams that are good at using visual aids in their work are more than twice as efficient as teams of the same level (Krum, 2013).

This research methodology allows for the visualization of past research patterns, and the conceptual clusters extracted from the analysed papers furnish solid support for our research arguments (Prelicean & Bejinaru, 2021). The strength of infographics lies in their capacity to convey a significant amount of information within a minimal space while maintaining precision and clarity. As visual presentations, as opposed to oral or text-based presentations, they can swiftly narrate a story, illustrate relationships, and unveil structure. (Dunlap & Lowenthal, 2016). Yeh (2013) research affirms that educational leadership research is a constantly developing and evolving field that requires the consideration of multiple factors and the search for new research perspectives and themes to facilitate the development and practice of educational leadership. Future educational leaders will need to have new ways of thinking and use their wisdom to lead. This includes a deep understanding of events both inside and outside the organisation, and the ability to make sound judgements through keen knowledge. At the same time, future educational leaders will need to be adept at using network technologies to expand, disseminate and share knowledge, build partnerships, achieve leadership quality, and build competitive advantage within and outside their organisations (Tsai, 2009). The conceptual clusters retrieved from the analysed literature

therefore provide the researcher with a basis and help to identify research directions such as the most discussed issues related to educational leadership, links between practice research and emerging issues in the topic. It is clear that technological developments have influenced leadership research in various fields, but the impact on educational leadership research is rare.

The WHO has stated that there is a high risk of the COVID-19 virus spreading to the rest of the world (World Health Organization, 2020). In March 2020, the WHO made an assessment that COVID-19 could be characterised as an epidemic. The outbreak has forced most countries and regions around the world to put in place policies to prevent the epidemic, which include the closing of schools and switching to digital teaching. The spread of the novel coronavirus has led to profound changes in social interactions and organisation, as well as the education sector has not been spared (Murphy, 2020). This global crisis has not only changed the way people live their lives, but has also had a profound impact on the education sector.

This study analyses the status of educational leadership research recorded in the Scopus database, using bibliometric analysis for keyword co-occurrence network map analysis. This analysis provides a broad perspective on educational leadership research and a sequence of research priorities and hotspots to understand the impact of educational leadership research on the education sector, and the use of modern technological tools to be able to anticipate the future with foresight and bring new developments and achievements to schools and education. The following research questions are posed in this study:

RQ1: What are some of the issues of concern in educational leadership research?

RQ2: What are some of the implications of educational leadership research for teaching and learning?

To address these research questions, this study used the software tool VOSviewer to conduct a science mapping reviews analyse bibliometric, analysing an overview of 8,489 eligible published papers in the Scopus database. The bibliometric analysis included co-occurrence analysis visualisation.

Literature was clustered and analysed according to the network diagram to observe changes in the distribution and development of educational leadership research and to identify links between the thematic distribution of these research concerns. The findings will analyse the dialogue between scholars in the relevant fields, be analysed through knowledge mapping, and provide insights that can guide the further development of educational leadership research and greatly support the understanding of educational leadership in the post-epidemic process.

Conclusions and Discussion

Conclusion

The study identified four themes that address key aspects of educational leadership research that are critical to understanding and improving leadership in education systems. Below are the conclusions and summaries for each theme:

Educational leaders play a critical role in shaping school culture and climate to ensure equitable and inclusive educational opportunities. They can promote social equity through policy, resource allocation, and decision-making. Effective educational leaders also

encourage teacher professional development and provide training and support to improve the quality of education and promote student success.

Educational leaders' support and mentoring of teachers is critical to improving the quality of teaching and learning. They can empower teachers by providing feedback, resources, and professional development opportunities. Educational leaders' decision-making and leadership styles can have a direct impact on student achievement. Effective leaders can motivate teachers and students and promote academic achievement. School culture and climate are shaped by leaders, which is critical to the development and well-being of students and teachers.

The COVID-19 outbreak presents unprecedented challenges to education systems, requiring leaders to quickly adapt to changes and develop response strategies. Education leaders need to coordinate efforts in areas such as online learning, health and safety initiatives, and supporting student mental health. Their leadership is especially important during this period. This period also provides opportunities for education leaders to drive innovation and improve education systems.

Educational leaders play a key role in the long-term vision and goals of the school, and they can drive school improvement and development through strategic planning and goal setting. Leaders need effective communication and team-building skills to ensure that all stakeholders are involved in school improvement. Educational leaders also need effective resource management skills to ensure that the school is adequately supported to achieve its goals.

Overall, the study of educational leadership addresses several key areas, including social equity, educational quality, school culture, and crisis management. Educational leaders play a critical role in driving improvement in schools and education systems and need to constantly adapt to change and develop effective strategies. Examining these topics helps us better understand the importance of educational leadership and guides for improving educational quality and student success.

Discussion

It is recommended that further research should delve into the specific impact of different school cultures on students' academic achievement, especially in a multicultural environment. Educational leaders are encouraged to focus on specific strategies to effectively support teachers' professional growth, including what types of feedback, training, and professional development opportunities to provide and how to effectively integrate these supports.

It is recommended to study successful digital teaching cases of education leaders in coping with COVID-19 to extract best practices, especially focus on effective strategies for coordinating online learning, safeguarding health and so on.

These recommendations help to improve the practical application value of research in the field of education and provide more specific guidance for educational leaders to address current and future educational challenges.

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References

- Chin-Tien Tsai (2009). Shaping Educational Leader of the Future. *Academic Transactions on Education*, 2 (2), 15-37.
- Dunlap, J. C., & Lowenthal, P. R. (2016). Getting graphic about infographics: design lessons learned from popular infographics. *Journal of Visual Literacy*, 35(1), 42-59.
- Edoun, E. I. (2011). Management Leadership in Governance in Education. In *Proceedings of the 7th Conference on Management Leadership and Governance*. Reading: Academic Publishing Limited.
- Krum, R. (2013). *Cool infographics: Effective communication with data visualization and design*. John Wiley & Sons.
- Lakomski, G., & Evers, C. W. (2022). The importance of context for leadership in education. *Educational Management Administration & Leadership*, 50(2), 269-284.
- Murphy, M. P. (2020). COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy. *Contemporary Security Policy*, 41(3), 492-505.
- Prelicean, G., & Bejinaru, R. (2021, November). Academic Leadership Strategies of Entrepreneurial University: A Bibliometric Literature Analysis. In *ECMLG 2021 17th European Conference on Management, Leadership and Governance* (p. 361). Academic Conferences limited.
- Rutkiene, A., & Tandzegolskiene, I. (2021, May). APPROACHES TO THE LEADERSHIP IN EDUCATION. In *SOCIETY. INTEGRATION. EDUCATION. Proceedings of the International Scientific Conference* (Vol. 1, pp. 549-559).
- World Health Organization. (2020). *Mental health and psychosocial considerations during the COVID-19 outbreak, 18 March 2020* (No. WHO/2019-nCoV/MentalHealth/2020.1). World Health Organization.
- Yeh, L.-C. (2013). What Can We Study in Educational Leadership? *School Administration*, (84), 1-35.

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