Implementation of Principal Competence in Educational Resource Management

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ARTICLE INFO	ABSTRACT
	Purpose – This study aims to identify the challenges faced by school principals in managing resources, as well as formulate strategies or recommendations that can support increasing the effectiveness of school management. **Methodology –** The research method uses a study approach to analyzing research journal trends using bibliometric mapping that allows policy makers, including school principals, to understand the development of innovations that can be applied in school management. Data analysis in this study was carried out on 650 documents that had been collected and selected based on relevance to the research topic. After the initial processing stage, the data was further analyzed using VOSviewer, a bibliometric software that allows visualization of relationships between researchers, institutional collaboration, and mapping of keywords that often appear in the documents analyzed. **Findings –** The results of this study indicate that the implementation of principal competencies in managing educational resources plays an important role in improving the effectiveness of school management and the quality of learning. The use of technology, data analysis, and performance-based approaches are the main focus in educational leadership strategies. The contributions of various countries show that this issue is receiving global attention, with best practices that can be adapted to improve school competitiveness. **Contribution –** With a data-based approach, principals can optimize teaching staff, facilities, and curriculum to create a more adaptive and innovative learning environment.

INTRODUCTION

The urgency of research on the Implementation of Principal Competence in Educational Resource Management lies in the strategic role of the principal as an educational leader in optimizing various available human, infrastructure, and financial resources to improve the quality of educational services. The principal's competence in the managerial aspect greatly determines the effectiveness of resource management, which ultimately impacts achieving educational institutions' overall goals. In the current era of change and global challenges, principals must have adaptive, innovative, and collaborative abilities in managing resources to create a conducive, competitive, and sustainable learning environment. Therefore, this study is important to examine the extent to which the principal's competence is applied in educational resource management and to identify factors that support or hinder its implementation.

The principal has a strategic role in improving the quality of education in schools. Implementing the principal's competency covers various aspects, including managerial, supervisory, entrepreneurial, and social competencies (Choi et al., 2022). A competent principal can manage school resources effectively, create a conducive learning environment, and encourage innovation in learning. With strong leadership, the principal can direct teachers and education personnel to achieve better educational goals (Bingöl, 2019). In the managerial aspect, the principal must be able to plan, organize, implement, and evaluate educational programs (Agung et al., 2023). This ability is demonstrated by how the principal creates strategic plans, manages the budget effectively, and ensures that school administration operates systematically (Mašát, 2023). The principal is also responsible for building a positive school culture where all members of the school community feel comfortable and motivated to develop (Komariah et al., 2022).

The principal, as a supervisor, must be able to guide teachers in improving the quality of learning. This can be done through academic supervision, training, and evaluation of teaching methods applied in the classroom (Karacabey, 2021). The principal can assist teachers in furthering their professional development by offering helpful criticism. In terms of entrepreneurship, the principal also needs to be innovative in identifying ways to raise the standard of the school, including working with different groups or integrating technology into the classroom (Widiastuty et al., 2022) (Ganon-Shilon & Chen, 2019) (Khan, 2023). The social competence of the principal is very important in building good relationships with various parties, including students, teachers, parents, and the community (Reid & Creed, 2021). It will be simpler for a principal with strong communication skills to organize school activities and win over stakeholders in education. The principal can become a motivating leader, effect good change, and guarantee the school's sustainable growth with the best possible application of their competencies (Correia, 2023).

Management of educational resources is important in improving the quality of education in schools (Elfira et al., 2024). Teaching personnel, buildings and infrastructure, and funds allocated to the learning process are examples of educational resources. Effective management guarantees that every aspect of education may operate at its best to accomplish learning objectives (Budi, 2024) (Pálvölgyi, 2024). The principal and education staff must have the right strategy in allocating and optimizing available resources to meet student needs and support improving the quality of education (Oplatka & Or, 2019). Regarding educational staff, resource management ensures that teachers and school staff have adequate competence. This can be realized through training, workshops, and ongoing supervision (Irsyad et al., 2023). Thus, a clear division of tasks that is by the expertise of each teaching staff will increase work efficiency and productivity in the school environment (Jaelani et al., 2019) (Sunaengsih et al., 2019) (Mutiaraningrum, 2022). With qualified and highly motivated teaching staff, learning will be more effective and will be able to create high-achieving students (Feriansyah et al., 2023).

Facilities and infrastructure are also determining factors in the management of educational resources. Schools must ensure that existing facilities, such as classrooms, laboratories, libraries, and learning media, are used optimally (Romana, 2024). Maintenance and development of school facilities must be a priority to support the comfort and effectiveness of the teaching and learning process (Basuki et al., 2022). The use of

technology in learning is also one way to improve the quality of education, especially in the current digital era. Management of the education budget must be carried out transparently and accountable (Sulastri et al., 2022). The available funds must be allocated according to the school's needs, from procuring learning tools, improving teaching staff welfare, and developing innovative educational programs (Sunaengsih et al., 2019). Schools can accomplish more ideal learning objectives and establish a high-quality learning environment for teachers and students with effective resource management (Sharifi et al., 2022).

The gap in implementing principal competency in managing educational resources can be seen from the differences in leadership quality in various schools. Some principals understand educational resource management, including educators, facilities, and budgets, while others still have difficulty optimizing available resources. This causes inequality in the quality of education in various schools, especially between schools with competent principals and those lacking good managerial skills. Due to this gap, the main problem is the low effectiveness of using educational resources. Principals who are less competent in managing resources often face obstacles in budget distribution, utilization of facilities, and development of educators. This can hinder improving the quality of learning and cause dissatisfaction among teachers, students, and parents. In addition, the lack of understanding of school principals regarding educational regulations and government policies can also hinder innovation and system improvement in schools.

Previous research on the application of principal competence in educational resource management has been conducted, such as the results of a study that concluded that the performance of elementary school teachers increased through RKTS planning, competency development through training, evaluation through supervision, and the development of positive communication and work culture by the principal (Tanjung et al., 2021). Similar research also found that SMP PGRI 1 Mojokerto City integrates general and extracurricular education to form a complete education through planning superior programs, implementing integrated quality, resource management, and teacher supervision as a basis for evaluation and developing future policies (Yumnah et al., 2023). Further research highlighted the Principal of SMPN 03 Jabung Malang playing an important role in improving the competence of PAI teachers through democratic leadership and participatory strategies, which are manifested in the use of varied learning methods, a conducive classroom climate, and efficient learning media (Masruroh et al., 2022). Furthermore, previous research also concluded that the managerial competence of principals at SMK Samarinda City includes planning, improving teacher professionalism, and supervision. The main obstacle is adaptation to technology. This study adds to understanding managerial competence in vocational education (Amon & Harliansyah, 2022). Similar studies also show that the role of the principal has the power to mobilize and influence his subordinates regarding the tasks that must be carried out (Norniati, 2023).

Based on previous research, this research's novelty offers a new perspective related to the strategies used by school principals in facing the challenges of managing educational resources that continue to grow, such as the use of technology and community involvement in the educational process. With a more integrated approach between management theory and practice in the field, this research is expected to be a reference in improving the quality of education in Indonesia by strengthening the competence of school principals.

The solution that can be implemented is to increase training and mentoring for principals in educational resource management. Continuous practice-based training programs can help principals understand optimal resource management strategies effectively and efficiently. In addition, collaboration between experienced and new principals can be a forum for sharing experiences and best practices. The government and education office must also strengthen evaluation and supervision mechanisms to implement principal competencies better and evenly across all schools. Implementing principal competencies in managing educational resources is key to creating an effective and quality learning environment. Competent principals can manage teaching staff, facilities and infrastructure, and education budgets optimally to improve the quality of learning.

METHODOLOGY

Research Design

The research method uses a study approach to analyzing research journal trends using bibliometric mapping that allows policymakers, including school principals, to understand the development of innovations that can be applied in school management. Through quantitative analysis of scientific publications, trends in the use of technology in managing educational resources can be identified, such as digital-based school management systems, technology-assisted learning strategies, and optimizing educational infrastructure (Narisin et al., 2023). By adopting a data-driven approach supported by research findings in Electrical Engineering, principals can make more informed decisions in allocating resources, improving collaboration with stakeholders, and designing innovative strategies to address the challenges of education in the digital era (Andriani et al., 2024).

Data Source

The data sources in this study were obtained through a literature search using leading scientific databases such as Scopus, Web of Science, and Google Scholar. The search was conducted using a combination of the string TITLE-ABS-KEY (Principal Competence, Educational Resource Management) to ensure the relevance and broad scope of the research. The articles and documents obtained were then selected based on the inclusion and exclusion criteria set so that only literature relevant to the research topic was analyzed further. After collecting the literature data, bibliometric analysis was conducted using VOSviewer and Bibliometric R-package software. VOSviewer was used to visualize the network of relationships between keywords, authors, and institutions, while Bibliometrix R-package was used for quantitative analysis, including publication trends, citations, and academic collaborations. This approach identified patterns and developments in research related to principal competence and educational resource management, thus providing deeper insight into scientific contributions.

Data Collection

Data collection in this study was carried out semi-automatically through a systematic literature study method based on Vosviewer, using the main keywords "Competence, School, Management, Resources, Education." Data sources were taken from leading scientific databases such as Scopus, Web of Science, Google Scholar, and ScienceDirect to ensure the quality and relevance of the information obtained. The literature collection process follows strict stages, from searching for documents based on keywords and selecting articles that match the research criteria to in-depth analysis of the documents found. In further filtering, this study limited the publication period to the last 20 years to remain relevant to current educational developments. From the initial selection results, 650 documents were collected and further analyzed using a bibliometric approach with the help of software such as Vosviewer. This analysis allows the identification of research patterns, relationships between key concepts, and developing research trends in educational competence and school management. With this approach, research can provide a more precise mapping of previous literature contributions and the direction of future research development. The implementation stages are:
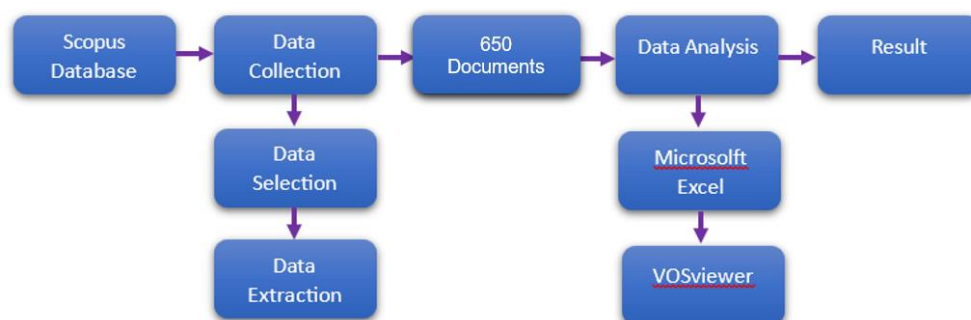

Figure 1. Research Stages

Data Analysis

Data analysis in this study was conducted on 650 documents that had been collected and selected based on their relevance to the research topic. After going through the initial processing stage, the data was further analyzed using VOSviewer, a bibliometric software that allows visualization of relationships between researchers, institutional collaborations, and mapping of keywords that frequently appear in the documents analyzed. Through bibliometric mapping, the most frequently discussed topics, relationships between key concepts, and the roles of key actors in the research can be identified, such as authors and institutions that make the greatest contributions. In the context of implementing principal competency in managing educational resources, the same analysis method can be applied to understand research trends related to school leadership, human resource management, and educational facility management strategies. Bibliometric mapping using VOSviewer allows the identification of key concepts related to the effectiveness of principals in managing resources, including the relationship between educational policies, leadership strategies, and improving the quality of learning. By understanding the relationship between variables in previous studies, deeper insights can be obtained into the factors that influence the success of principals in optimizing educational resources to improve the quality of education in schools.

FINDINGS

Improving the efficacy of school administration greatly depends on the use of principle competency in managing educational resources. The principal's capacity to create data-driven plans enables the best possible use of resources, including curriculum, facilities, and teaching personnel. Numerous methods for managing educational resources have emerged during 2006–2008, with research patterns indicating a notable rise from 2007–2018. This topic saw a spike in interest in 2017 and continued to climb until 2023, reaching a peak of 650 publications in 2024 before a modest fall. Over the past eight years, educational resource management has garnered significant attention and interest worldwide, which is shown in this trend. Principals can apply more flexible, data-driven management techniques that are consistent with the most recent research by comprehending this growth pattern. This will guarantee that decisions are founded on precise and pertinent trend analysis.

Tabel 1. Trend in Number of Article Publications on TE Topics (2005–2024)

Year	Number of Articles Published	Information
2005	-	Beginning of analysis period
2006	Increase	Growth of interest begins
2007-2008	Increase	Growth continues until 2008
2009-2016	Fluctuation	Fluctuation in number of publications between
2017	Increase	Increase begins again in 2017
2018-2023	Increase	Increase in publications continues until 2023
2024	69 Articles	Significant increase despite decline in 2024
2024	Annual Growth	Annual growth in TE in global publications

An intriguing growth pattern may be seen in the trajectory of publications on TE issues between 2005 and 2024. Beginning in 2005, the analysis period continues until 2008, as the number of articles increases beginning in 2006. The quantity of publications, however, varied from 2009 to 2016, indicating the dynamics of scholarly interest in this subject. The trend once more demonstrated a steady rise in 2017, suggesting a renewed interest in studies pertaining to TE. The number of articles continues to rise annually during the 2018–2023 timeframe, which is a period of stable growth. With 69 articles published in 2024, there was a notable rise even if there was a minor decline from the year before. All things considered, this pattern mirrors the yearly increase in TE publications worldwide, suggesting that the area is still evolving and receiving more attention from the academic community.
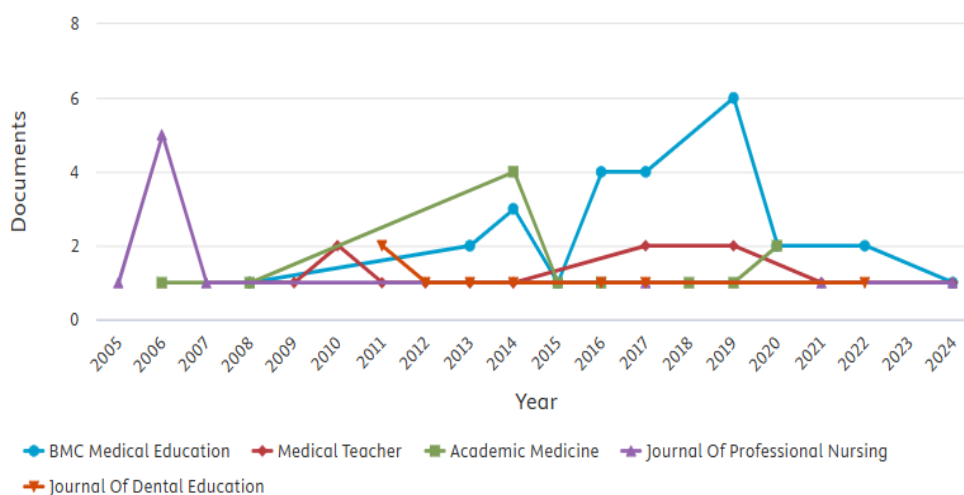
Figure 2. Number of articles published each year

Publication trends of documents from various medical and nursing education journals in the period 2005 to 2024. It can be seen that the number of publications from journals such as BMC Medical Education, Medical Teacher, and Academic Medicine fluctuates with an increase in certain years, such as 2019 which recorded the highest number of publications in BMC Medical Education. Meanwhile, the Journal of Professional Nursing showed a sharp spike in 2006, but did not show consistency in publication in the following years. This indicates that attention to medical and nursing education research increases in certain periods, possibly influenced by academic policies, educational trends, and the need for learning innovation in the health sector. In the context of implementing the principal's competence in managing educational resources, this publication trend can be associated with the importance of adaptive leadership in responding to developments in science and technology. Principals as education managers must be able to analyze research trends to optimize learning strategies and management of educators.

Bibliometric

Research trends in the implementation of principal competencies in managing educational resources in Indonesia are growing, along with the digital transformation in the education sector and the increasing demands for managerial effectiveness (Zhou, 2023). The main focus of current research includes the use of technology in school management systems, the integration of educational data analysis for strategies to improve the quality of learning based on student needs, and the application of cost management in optimizing the use of educational resources (Sari & Lestari, 2024). In addition, studies also highlight the role of Balanced Scorecard-based performance measurement in assessing the effectiveness of principal leadership in achieving educational targets. With the development of the digital era, research is also directed at how principals utilize big data and artificial intelligence to support decision-making based on improving the quality of education and school management. This trend shows that the synergy between principal leadership competencies and educational resource management is key to increasing the competitiveness of schools in Indonesia.

Table 2 shows the top ten sources contributing to TEs (Technology-Enhanced Studies) publications. Education Technology Reviews was the source with the highest number of publications, with 31 articles, focusing on the field of social work. Nurse Education Today contributed 15 publications, related to the Kiang Wu Nursing College of Macau. Social Science & Medicine and the Journal of Computer Science Education each had 12 publications, with a focus on the University of Birmingham and the Department of Computer Science. Pediatrics recorded 22 publications in adolescent medicine, while Computers & Education Technology contributed 7 publications on networked learning. The Australian Catholic University Journal of Religious Education contributed 10 publications, while Education for Innovative Practices had 17 publications related to innovative programs. Computational Engineering was also a significant source with 21 publications

from the Institute of Mathematics and Computer Sciences.

Table 2. Top 10 source titles contributing to TEs

Source titles	Records	Focus area
Education Technology Reviews	31	Department of Social Work
Nurse Education Today	15	Kiang Wu Nursing College of Macau
Social Science & Medicine	12	University of Birmingham, United Kingdom
Journal of Social Policy	11	Department of Applied Social Sciences
Journal of Computer Science Education	12	Department of Computer Science and
Pediatrics	22	Division of Adolescent Medicine
Computers & Education Technology	7	Graduate Institute of Network Learning
Journal of Religious Education	10	Australian Catholic University, Australia
Education for Innovative Practices	17	Centre for Innovative Programmes for
Computational Engineering	21	Institute of Math. and Computer Sciences

State Contribution

The implementation of principal competence in managing educational resources plays an important role in improving the quality of learning and the effectiveness of school management. Competent principals are able to design efficient resource management strategies, ensure the availability of facilities, and develop professional educators. With good leadership, schools can create a conducive, innovative, and modern learning environment (Berestok, 2023). In addition, principals who have high competence can collaborate with various stakeholders, including the government, parents, and the community, to support the sustainability of the Education program (Marmol-Dado, 2024). The ability to plan and manage appropriate resources also allows schools to optimize existing potential, both in terms of infrastructure and curriculum development. Thus, the implementation of principal competence is a key factor in creating a more effective, competitive, and human resource-oriented education system.

Table 3. Top 10 countries contributing to the topic of TEs

Country	Documents	Citations	Total link strength
United States	301	395	15
United Kingdom	86	289	10
Canada	51	196	5
Spain	21	58	5
Australia	21	74	4
Netherlands	21	58	4
Germany	20	58	4
Italy	10	32	4
Belgium	10	253	3
China	10	226	3

Based on the data in Table 3, the United States is the country with the highest contribution to research related to TEs, with 301 published documents and 395 citations and a total link strength of 15. The United Kingdom and Canada follow in second and third place with fewer documents, but still have a significant influence in the dissemination of this research. Meanwhile, countries such as Spain, Australia, and Germany have lower contributions in the number of documents, but still show involvement in the development of related studies. The diversity of contributions from various countries shows the global attention to the topic of TEs and the importance of academic collaboration in improving understanding and implementation in various sectors. In the context of implementing principal competence in managing educational resources, this data can be a reference for educational leaders to adopt best practices from countries with high research

contributions. Competent principals need to have insight into global developments in educational management, including understanding how various countries optimize educational resources through research-based policies. With research from countries such as the United States, England, and Canada, principals can implement more effective strategies in managing teaching staff, curriculum, and educational infrastructure based on scientific research results. This will help in creating a more adaptive, innovative and quality-oriented learning environment.
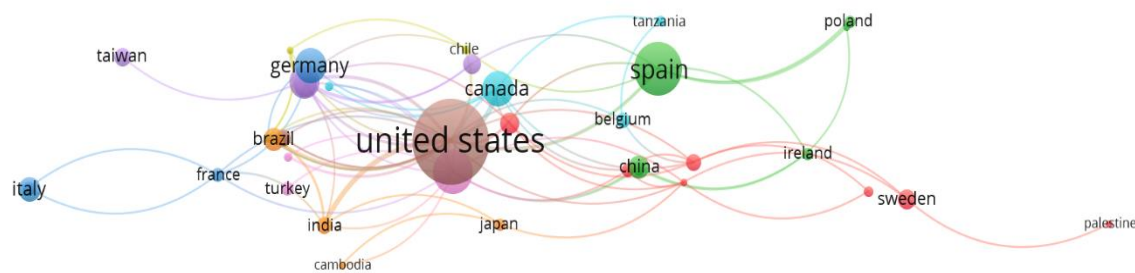

Figure 3. Network visualization of countries

Network visualization from VOSviewer, which seems to show the relationship between countries based on certain collaborations or connections. The network of interconnectedness between countries in a collaboration, which can be analogized with the role of the principal in managing educational resources. As a leader, the principal must be able to build a network of cooperation with various parties, such as teachers, parents, government, and external institutions, in order to optimize available resources. As in the network visualization, where countries with more connections have greater influence, principals who have good managerial competence will be more effective in coordinating resources to improve the quality of education in schools.

Keywords

The results of the bibliometric analysis that describe the relationship between keywords in various studies related to education, psychology, and health. Keywords such as education, teaching, students, and training show that education is closely related to aspects of resource management and the competence of educators. This visualization confirms that effective school management requires an understanding of the curriculum, learning methods, and cultural diversity in the educational environment. In addition, the role of the principal in ensuring optimal utilization of resources is an important factor in improving the quality of learning. In the context of implementing the principal's competence, management of educational resources includes aspects of educators, facilities, and learning strategies that are in accordance with student needs.

The image below shows results from a bibliometric analysis using VOSviewer software, which visualizes the relationship between keywords in research related to education, psychology, and health. The keywords in the image, such as education, teaching, students, and training, indicate that education and management of educational resources are widely studied in various disciplines. The colors in this visualization represent clusters that connect related concepts, illustrating the relationship between research themes. In the context of implementing Principal Competence in Educational Resource Management, this visualization shows that education is closely related to resource management, such as teacher training, curriculum, and cultural diversity. Principal competence is an important factor in managing various aspects of education, including ensuring that educators have the skills needed to improve the quality of learning. With good management, schools can become a conducive environment for student development. Keywords such as standard, university, and sustainable development indicate that the management of educational resources needs to follow established standards so that education remains quality and sustainable. The principal must utilize resources optimally, including managing teaching staff, school infrastructure, and learning technology. Implementing practical principal competencies in managing educational resources will directly impact the
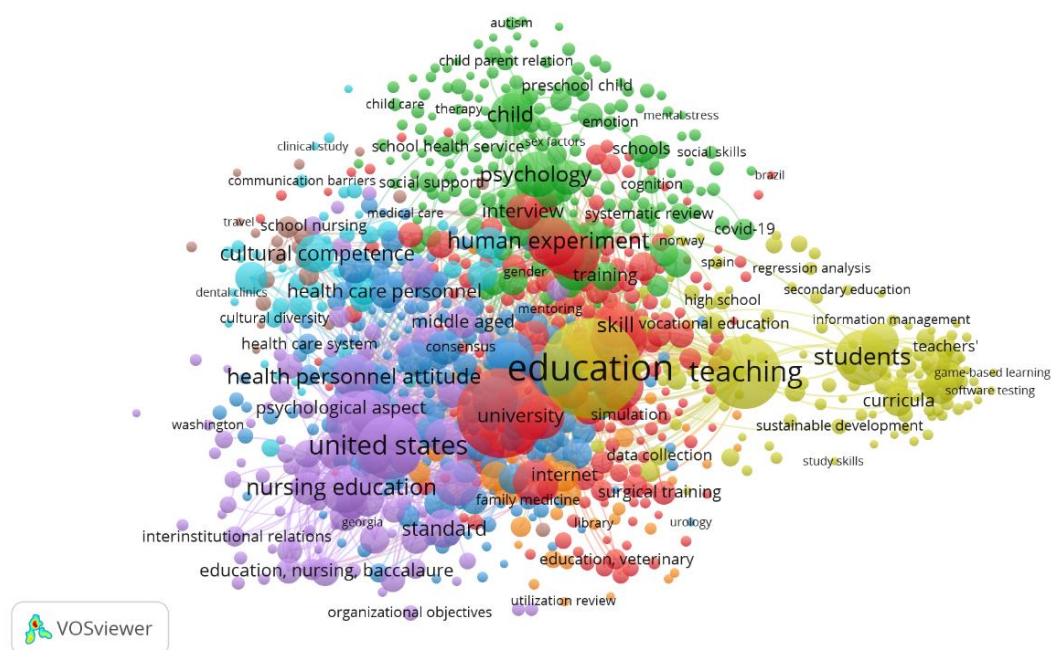
quality of education and student learning outcomes.

Figure 4. Network visualization of TExt

This study focuses on applying principal competence in educational resource management, which is increasingly relevant to developing research topics in education. In recent years, research related to educational leadership and resource management has received increasing attention, especially in improving the quality of education. Using bibliometric analysis tools such as VOSviewer, which can map the relationship between various research topics, we can see how principal competence and resource management are interconnected in global education literature. Bibliometric analysis allows the identification of key trends in related publications and the finding of research gaps that can be the basis for further studies. Therefore, this study is important for understanding the role of principals in educational management. However, it is also relevant in current research trends focusing on managerial effectiveness and improving the quality of education through more comprehensive data analysis.

DISCUSSION

Bibliometric analysis in research on implementing principal competency in managing educational resources provides an overview of research trends that have developed over time. This approach has experienced increasing attention along with the digital transformation in the education sector. Bibliometric results show that the current focus of research includes the use of technology in school management, the integration of data analysis to improve the quality of learning, and the effectiveness of principal leadership in managing educational resources. In addition, various academic journals have contributed to the development of this research, such as Education Technology Reviews and the Journal of Computer Science Education, which indicate that technology plays an important role in school management innovation. In addition, bibliometrics also reveal the contributions of various countries in this study, with the United States, the United Kingdom, and Canada being the countries with the highest number of publications. This shows that studies related to the management of educational resources have become a global concern, especially in efforts to improve the managerial effectiveness of principals. Through keyword analysis, it was found that terms such as education, teaching, students, and training often appear, indicating a close relationship between the management of educational resources and the competence of educators and learning methods. By understanding this research trend, principals can adopt evidence-based strategies to optimize school management, improve the quality of

learning, and create a more innovative and adaptive educational environment to the times.

The contribution of various countries to research on the implementation of principal competency in managing educational resources shows that this topic has received widespread attention at the global level. Based on bibliometric analysis, the United States has the highest number of publications, followed by the United Kingdom and Canada. These countries have advanced education systems and are supported by strong research-based policies, so research related to educational resource management is growing rapidly. In addition, countries such as Spain, Australia, and Germany also contributed, although in smaller numbers. The diversity of countries involved in this study shows that the issue of principal leadership and managerial effectiveness in education is a universal challenge that requires an evidence-based approach to improve the quality of learning. In Indonesia's implementation context, research results from countries with high contributions can be used as a reference in designing more effective educational resource management strategies. Principals can learn from best practices implemented in developed countries, such as applying technology in school management, using analytical data for decision-making, and integrating research-based approaches in educational planning. In addition, academic collaboration between countries is also an opportunity for researchers and education practitioners in Indonesia to contribute to the global discussion on school leadership. By understanding global research trends, school principals can develop management strategies that are more innovative and adaptive to changing times, thereby increasing the school's competitiveness at the national and international levels.

Keywords in research on implementing principal competency in managing educational resources reveal various main concepts that are often studied. Keywords such as education, teaching, students, and training show that research in this field is closely related to efforts to improve the quality of learning and the competence of educators. In addition, the emergence of terms such as curriculum development and school management confirms that the effectiveness of principals in managing educational resources depends not only on leadership but also on appropriate curriculum planning and innovative managerial strategies. Other keywords, such as technology integration and data-driven decision-making, also reflect the latest trends in research, which show that the use of technology and data analysis is increasingly important in supporting evidence-based decision-making in the school environment. Furthermore, keywords such as standard, psychology, and sustainable development indicate that quality education must be based on specific standards and pay attention to aspects of the psychological well-being of students and educators. This shows that the role of the principal is not only limited to administrative management but also includes the responsibility to create a healthy and sustainable learning environment. Visualization of the relationship between keywords also reveals the relationship between educational resource management and aspects of leadership, learning innovation, and social inclusion in education. By understanding this relationship pattern, school principals can more easily design strategies that align with the needs of modern education, ensuring that the schools they lead can develop according to global dynamics and the demands of the times.

Literature on the application of principal competencies in educational resource management shows positive developments in the implementation of principal competencies in developed countries, but a critical analysis of existing research reveals that there are still gaps that need to be addressed, especially in the context of developing countries such as Indonesia. Many studies focus on applying advanced technology and data-driven policies, but few explore adapting these strategies in educational environments with limited infrastructure. In comparison, practices in developed countries such as the United States and the United Kingdom emphasize the importance of integrating digital technology and data-driven leadership in optimizing school management, while in Indonesia, this implementation needs to be adjusted by considering unequal access to technology and human resource readiness. The visualization of keywords in this analysis provides important implications for the design of principal managerial strategies, namely the need to prioritize evidence-based innovation while still considering local factors such as school culture, the psychological needs of students, and the sustainability of educational programs. Therefore, principals in Indonesia need to develop managerial strategies that are not only oriented toward technology and data but also adaptive to local

challenges to create an inclusive, sustainable, and competitive educational environment at the global level.

CONCLUSION

Based on the analysis conducted, implementing principal competency in managing educational resources is crucial in improving school management's effectiveness. Research trends in this field show a significant increase, especially since the era of digital transformation, which encourages the use of technology in educational management strategies. Principals can optimize educators, facilities, and curricula with a data-based approach to create a more adaptive and innovative learning environment. In addition, the study also highlights the importance of Balanced Scorecard-based performance evaluation and the application of technologies such as big data and artificial intelligence in supporting strategic decision-making in schools. The contributions of various countries in this study, especially the United States, England, and Canada, show that the management of educational resources has become a global concern. The bibliometric results also reveal various relevant main keywords, such as education, teaching, and school management, which emphasize the importance of principal leadership in ensuring the sustainability of quality education. By understanding research trends and best practices from various countries, principals in Indonesia can adopt more effective strategies for managing school resources. This is expected to increase the competitiveness of schools at the national and international levels and create a more innovative, sustainable education system that is based on student needs and developments in the era.

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