Mapping the Landscape of Educational Laws, Regulations, and Policies: A Bibliometric Review for New Research Insights

Ridwan Purnama, Universitas Pendidikan Indonesia, Indonesia
Memen Kustiawan, Universitas Pendidikan Indonesia, Indonesia
Dwi Iman Muthaqin, Universitas Pendidikan Indonesia, Indonesia
Restu Adi Nugraha, Universitas Pendidikan Indonesia, Indonesia

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Abstract
This research aims to evaluate the development of research on educational laws, regulations, and policies using bibliometric mapping methods through the VOSviewer application. The articles were obtained from the Google Scholar database by searching for keywords such as "education law, education regulation, education policy" using Harzing's Publish or Perish application with the aim of identifying research trends in the field of educational laws, regulations, and policies. The study analyzed the Google Scholar database for a period of 10 years (2013-2023) and resulted in 999 articles. The analysis showed that the research trend in this topic has been continuously declining over the past few years, from 2013 to 2019. However, there was an increase in the trend in 2019 with an increase in the number of studies on this topic, which continued until 2020. After 2020 until 2023, there was a decrease again. In addition to frequently occurring keywords such as "education law, education regulation, education policy", there were also several research topics that appeared quite often, such as "Teaching" with a total of 350 occurrences and 300 links, "Learning" with a total of 313 occurrences and 303 links, "Student" with a total of 160 occurrences and 262 links, "Act" with a total of 147 occurrences and 254 links, and "Higher Education" with a total of 125 occurrences and 234 links. Based on these findings, it can be concluded that this study has the potential to serve as a basis for developing other research topics related to educational laws, regulations, and policies.

Keywords: Education Law, Bibliometric, VOSviewer

Introduction

Education is a pivotal factor in the progress of any nation, serving as the cornerstone for both individual and societal advancement. Within this context, educational law plays an indispensable role by providing the necessary legal framework to regulate, protect, and address diverse issues that arise within the educational sector (Triningsih, 2017; Perna, et al., 2012; Indrasti & Jalil, 2019). These laws are intricately designed and periodically updated with the intention of enhancing the overall quality of education. However, despite these efforts, the implementation of educational laws often encounters significant challenges that can impede the development of an equitable and just education system. Such challenges include persistent educational disparities and injustices that prevent the achievement of a truly fair educational landscape (Wartoyo, 2016).

The study of educational laws is therefore not just about comprehending the existing legal frameworks but also about actively identifying and addressing the gaps and barriers that hinder their effective application. This involves a critical analysis of how laws interact with educational policies and practices on the ground, as well as examining their impact on various stakeholders including students, educators, and institutions. By doing so, this field of study aims to provide well-grounded solutions and informed recommendations that can significantly improve educational outcomes. These enhancements are crucial for overcoming the prevailing challenges and for fostering an environment where the rights to education are genuinely upheld and accessible to all. Through such rigorous scholarly examination, the study of educational law aspires to catalyze reforms that will not only rectify current shortcomings but also adaptively respond to the evolving educational demands of modern societies.

As a field of study, educational law encompasses regulations that govern the rights, obligations, and responsibilities of all parties within the educational system, with the primary goal of ensuring a fair, effective, and efficient operation of the system (Kaplin et al., 2019; Kaplin et al., 2020). These regulations serve as the backbone of the educational framework, striving to create a balanced and just environment that promotes optimal learning outcomes. One of the foremost challenges within this realm is the establishment and definition of clear standards that measure and regulate the quality of education (Blackmur, 2007). Such standards are crucial for maintaining educational integrity and ensuring that institutions deliver a high level of educational quality that meets national and international benchmarks.

Moreover, political policies significantly influence the development of the educational system, encompassing the state's proactive role in crafting and upholding a quality system (Nuraini et al., 2019). These policies are instrumental in setting the direction of educational strategies and reforms, which directly impact the operational aspects of education at various levels. Clear, structured regulations are thus indispensable for providing clarity and guidance to all stakeholders involved, ensuring that everyone, from school administrators to teachers and students, understands their rights and duties.

The comprehensive understanding and enforcement of these laws are critical for safeguarding students' rights, which include access to quality education free from discrimination and protection against violence in schools (Salakhova et al., 2021; Jacob et al., 2022). Addressing these issues through well-defined legal structures helps in creating safer, more inclusive educational environments where students can thrive without fear of bias or harm. Therefore, educational law not only seeks to lay down the legal underpinnings for school operations and

educational practices but also aims to adapt and respond to the evolving educational needs and challenges of society, ensuring that all individuals can benefit from equitable educational opportunities.

Methods

The method employed in this study involved a bibliometric analysis to review research trends related to educational laws, regulations, and policies during the 2013 to 2023 period. Data collection was conducted using the Publish or Perish application, which gathered information from the Google Scholar database, ensuring the inclusion of citations and patents. The keywords used included "education law," "education policy," and "education regulation," filtered by publication type (journal) and year (2013-2023). A total of 999 articles were analyzed using VOSviewer to map trends, authorship patterns, and relationships within this field of research (Donthu et al., 2021; Ellegaard & Wallin, 2015). Metrics such as the h-index, g-index, and age-weighted citation rate were assessed to provide insights into the impact and interconnectivity of the publications.

Publication Data Search Results

In order to search for data related to the topic of educational laws, regulations, and policies, education regulation, and education policy," the researcher used the Harzing Publish or Perish application to access the Google Scholar database. As a result, 999 articles were found that met these criteria. The accessed data included information regarding the number of citations, authors, titles, abstracts, year, source, publication, article URL, citation URL, Google Scholar Ranking, access time, file type, DOI, and ISSN.

In this study, the researcher used Google Scholar Ranking as the main metric based on the number of citations received by scientific publications from an institution or individual. In addition, other metrics such as H-index, G-index, M-index, and CPP (Citation per Paper) were also used to obtain a more complete picture. The results of these metric analyses obtained through the Harzing Publish or Perish application from Google Scholar metadata showed a total of 295,345 citations, 29,534.50 citations per year, 295.64 citations per article, 2.47 authors per article, an h-index of 290, and a g-index of 454. Table 1 shows some example data taken from the top 10 articles based on Google Scholar Ranking.

Table 1: Educational Laws, Regulations, and Policies Publication Data

No.	Authors	Title	Year	Cites	Refs
1	P McGuinn	From no child left behind to the every student succeeds act: Federalism and the education legacy of the Obama administration	2016	265	(McGuinn, P., 2016)
2	J Arthur	Extremism and neo-liberal education policy: A contextual critique of the Trojan horse affair in Birmingham schools	2015	97	(Arthur, J., 2015)
3	D Hursh	Raising the stakes: High-stakes testing and the attack on public education in New York	2013	179	(Hursh, D., 2013)
4	CK Gilbert & DE Heller	Access, equity, and community colleges: The Truman Commission and federal higher education policy from 1947 to 2011	2013	238	(Gilbert, CK, & Heller, DE., 2013)
5	P Agarwal, G Kamalakar	Indian higher education: Envisioning the future	2013	441	(Agarwal, P, & Kamalakar, G., 2013)
6	I Hardy, S Woodcock	Inclusive education policies: Discourses of difference, diversity and deficit	2015	339	(Hardy, I, & Woodcock, S., 2015).
7	MM Burke	Improving parental involvement: Training special education advocates	2013	181	(Burke, MM., 2013)
8	F Caena	Teacher Competence Frameworks in Europe: policy□as□discourse and policy□as□practice	2014	207	(Caena, F., 2014)
9	J Nilsson, N Bunar	Educational responses to newly arrived students in Sweden: Understanding the structure and influence of post-migration ecology	2016	222	(Nilsson, J, & Bunar, N., 2016)
10	J Mehta	How paradigms create politics: The transformation of American educational policy, 1980–2001	2013	351	(Mehta, J., 2013)

Research Development in the Field of Educational Laws, Regulations, and Policies

Table 2 shows the development of research topics on educational laws, regulations, and policies based on Google Scholar metadata from 2013 to 2023. The table indicates a total of 999 articles, with 231 articles in 2013, 183 articles in 2014, 160 articles in 2015, 127 articles in 2016, 83 articles in 2018, 66 articles in 2019, 51 articles in 2020, 75 articles in 2021, 15 articles in 2022, and 3 articles in 2023. These data illustrate the progression of research topics in educational law over a 10-year period.

Table 2: Development of Educational Laws, Regulations, and Policies Research

Year of Publication	Number of Publication
2013	231
2014	183
2015	160
2016	127
2017	83
2018	66
2019	51
2020	75
2021	15
2022	5
Total	**999**

Fig. 1. illustrates that the development of research on educational law from 2013 to 2023 shows a decline. The graph indicates that this topic has consistently experienced a decline in the number of research publications in recent years, from 2013 to 2019. However, in 2019, there was an increasing trend with the rising number of research studies on this topic, and the trend continued until 2020. Nevertheless, there was a decline again from 2020 to 2023.

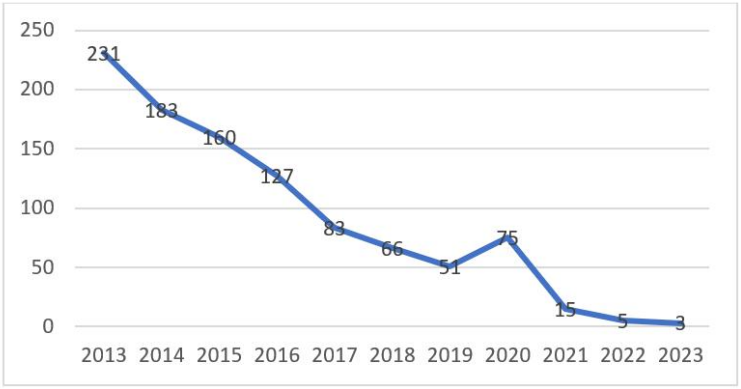

Figure 1: Level of Development in Educational Laws, Regulations, and Policies Research

Visualization Educational Laws, Regulations, and Policies Topic Area Using VOSviewer

Clusters have a significant role in bibliometric analysis as they represent specific fields or sub-fields within a discipline. They are groups of related objects in a network that have similar characteristics, such as topic or theme, and are used to identify related groups of publications, authors, or journals. These techniques have been primarily developed in network science, computer science, and statistics (Van Eck & Waltman, 2017). VOSviewer uses color to differentiate between clusters and automatically assigns distinct colors to each cluster for easy identification. Moreover, the size of circles represents the number of publications or authors within a cluster (Gillani et al., 2022). In this research, nine clusters have been identified based on the titles and abstracts of scientific publications used in the bibliometric analysis.

(i) Cluster 1 contains 54 items, cluster 1 is marked in red. The 54 items are 21st century, action, area, care, casual, effect, change, country, education, education system, educational attainment, educational outcome, educational reform, educational system, effect, effectiveness, evidence, extent, family, financial, education, foundation, game, health, higher level, implementation, knowledge, learning experience, life, meta-analysis, ministry, nurse, outcome, paper, policy, program, provision, range, reform, regulation, role, rule, schooling, skill, society, stress, study, systematic literature review, task, teaching method, teaching practice, term, training, variety, woman, year.

(ii) Cluster 2 contains 46 items, cluster 2 is marked in green. The 46 items are academic success, addition, american, attitude, autism spectrum disorder, barrier, college student, concern, culture, determinant, disabilities education act, disability, education act, effective teaching, efficacy, engineering, entrepreneurial intention, entrepreneurship, entrepreneurship education, fact, field, idea, identity, inclusive education, individual, institution, law, level, mathematics, mathematics education, need, participation, place, plan, process, project, prospect, science, sense, service, special education, stem, stem education, theory, time, young person.

(iii) Cluster 3 contains 38 items, cluster 3 is marked in blue. The 38 items are access, active learning, age, analytic, best practice, bilingual education, challenge, commitment, communication, community, competency, consequence, content, data, education level, educational institution, environment, gender, hand, human capital, influence, innovation, language, legislation, organization, participant, patient, person, power, problem, regulatory body, review, situation, system, teacher, thing, way, world.

(iv) Cluster 4 contains 37 items, cluster 4 is marked in yellow. The 37 items are achievement, activity, author, collaborative learning, college, concept, conceptual framework, context, course, educational leadership, educational practice, educational technology, engagement, external regulation, faculty, goal, involvement, learning, learning environment, lens, model, motivation, online learning, parent, parental involvement, physical education, present study, relationship, research, school, self, self-regulation, strategy, student engagement, survey, systematic review.

(v) Cluster 5 contains 34 items, cluster 5 is marked in purple. The 34 items are adolescent, application, article, blended learning, case, competence, development, educational research, emphasis, evolution, example, guideline, higher education institution, history, ict, information, integration, interprofessional education, lifelong learning, literature, literature review, medical education, pedagogy, point, principle, regulatory framework, secondary education, social medium, teacher education, teaching, technology, tool, trend, use.

(vi) Cluster 6 contains 34 items, cluster 6 is marked in light blue. The 34 items are accountability, act, analysis, approach, assessment, australia, belief, contribution, critical review, diversity, education policy, educational setting, equity, evaluation, form, future, inclusion, inequality, issue, leadership, lesson, no child, performance, public education, pupil, rationale, student achievement, student learning, sustainability, sustainable development, type, university, usa, work.

(vii) Cluster 7 contains 33 items, cluster 7 is marked in light orange. The 33 items are benefit, case study, child, china, control, curriculum, degree, difference, discourse, early childhood education, educational experience, employment, experience, higher education, implication, india, interest, opportunity, order, perspective, play, possibility, qualitative study, quality, researcher, resource, staff, student, support, united states, view, vocational education, youth.

(viii) Cluster 8 contains 24 items, cluster 8 is marked in light brown. The 24 items are covid, distance, distance learning, e-learning, england, factor, focus, government, home, impact, importance, indonesia, lack, learner, learning process, matter, online, online education, online teaching, pandemic, part, perception, primary school, science education.
(ix) Cluster 9 contains 18 items, cluster 9 is marked in light pink. The 18 items are ability, consumer, creation, educational policy, esea, framework, nature, number, practice, race, reflection, relation, response, secondary education act, state, transformation, value, classroom.

Among the identified clusters, there are several research topics that have the potential to be developed into new studies, which can increase the trend of research in the field of educational law. In the visualization of related articles using VOS viewer, 318 items, 9 clusters, 11,920 links, and a total link strength of 24,521 were found. The mapping is divided into 9 clusters that represent the classification of total items. Cluster 1 has 54 items, indicating that this cluster has the most complex and numerous relationships with other studies, while cluster 9 has the smallest number of items with 18 items. According to Nandiyanto, A. B., D., et al. (2021), each term is assigned a colored circle label, with the size of the circle varying based on the frequency of the term's occurrence. The size of the label circle indicates a positive correlation with the term's appearance in titles and abstracts (Chun, 2009). The more frequently a term is found, the larger its label size. (Al Husaeni & Nandiyanto, 2022). Educational laws, regulations, and policies are related to various fields of study and other research areas. The results of the analysis using VOS viewer software show three types of visualization mapping: network visualization (see Fig. 2), density visualization (see Fig. 3), and overlapping visualization (see Fig. 4).

Fig. 2 shows a network visualization that illustrates the relationships between various terms, such as augmented reality and education, and other study topics. Each cluster is represented by a different color. VOS Viewer is a software that enables us to create bibliometric maps that are easy to understand. It can analyze various types of bibliometric analyses and supports major bibliographic databases. However, it is limited to analyzing small to medium-sized data and intended for text processing functions. The visualization techniques used include layout and cluster techniques, as well as overlay and density visualization features. (Nandiyanto & Al Husaeni, 2021; Al Husaeni & Nandiyanto, 2022). Furthermore, Fig. 2 displays different terms that are frequently used in research and related to educational laws, regulations, and policies. If a term does not have any connecting lines to other terms, it means that the topic has not been studied further by researchers or is a new novelty in research.

Fig. 2 illustrates the relationship between educational laws, regulations, and policies and other study topics through a network visualization. Each cluster is represented by a different color. VOS Viewer software can create large bibliometric maps that are easy to interpret. It can analyze various types of bibliometric analyses, support major bibliographic databases, and disregard the time dimension. However, it is intended for text processing functions and limited to analyzing small to medium-sized data. The visualization techniques used include layout and cluster techniques, as well as overlay and density visualization features (Nandiyanto & Al Husaeni, 2021; Al Husaeni & Nandiyanto, 2022). Furthermore, Fig. 2 displays various terms that are frequently used in research and related to educational laws, regulations, and policies. If a term does not have any connecting lines to other terms in the visualization, it indicates that the corresponding topic has not been extensively researched or is a new novelty in the field. Additionally, a larger size of a term indicates that it has been

discussed in more research topics. Furthermore, if the position of the term is farther away, it means that the relation with the current research topic is more distant.

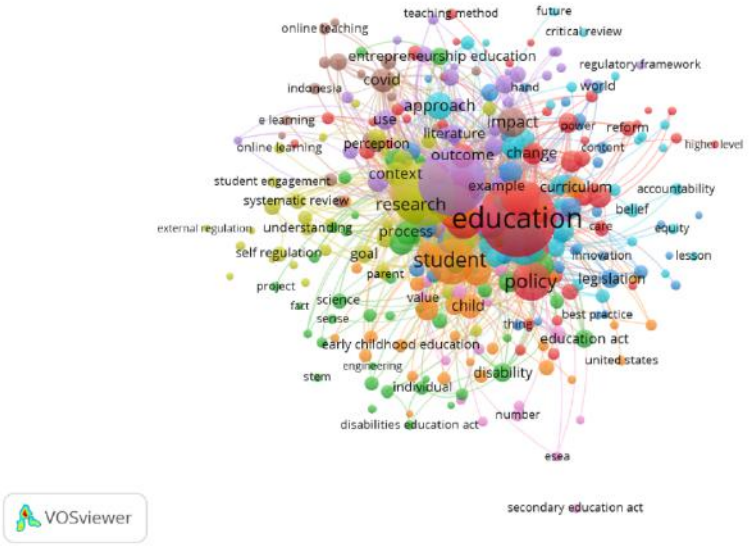

Figure 2: Network Visualization of Educational Laws, Regulations, and Policies Keyword

There is an overlay visualization in Figure 3 that displays the distribution of research topics based on the year of publication (Rahayu et al., 2022; Ekaputera, 2022), particularly related to education laws, regulations, and policies. It can be seen from the figure that dark blue color represents research topics published in 2015-2016, green color represents research topics published in 2016-2017, and yellow color represents research topics published in 2017-2023. This visualization provides an overview of the development of research topics over a certain period of time, which can provide insights for researchers and academics in understanding research trends and identifying research gaps that need to be further explored.

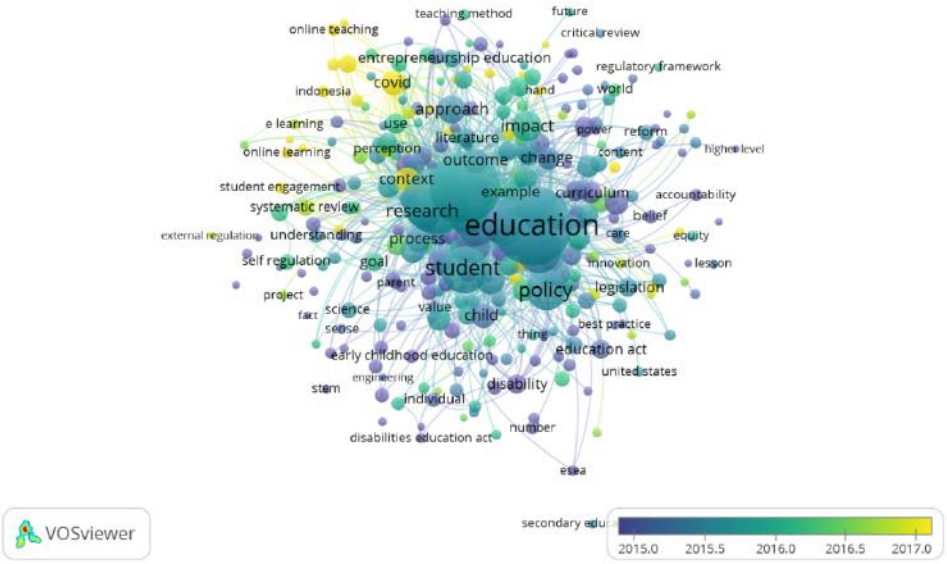

Figure 3: Overlay Visualization of Educational Laws, Regulations, and Policies Keyword

Fig 4. Density visualization shows the relationship between specific terms, particularly related to educational laws, regulations, and policies, as well as other research topics. The density visualization explains the trends in research that are frequently and infrequently studied, where the brighter the color, the more frequently the research topic is discussed, and conversely, the darker the color, the less the research topic is studied (Nandiyanto et al., 2021), Fig. 4 shows the research topics that are often discussed in relation to the specified keywords, and also lists other topics that have not been widely studied, which can be seen in the clustering section above.

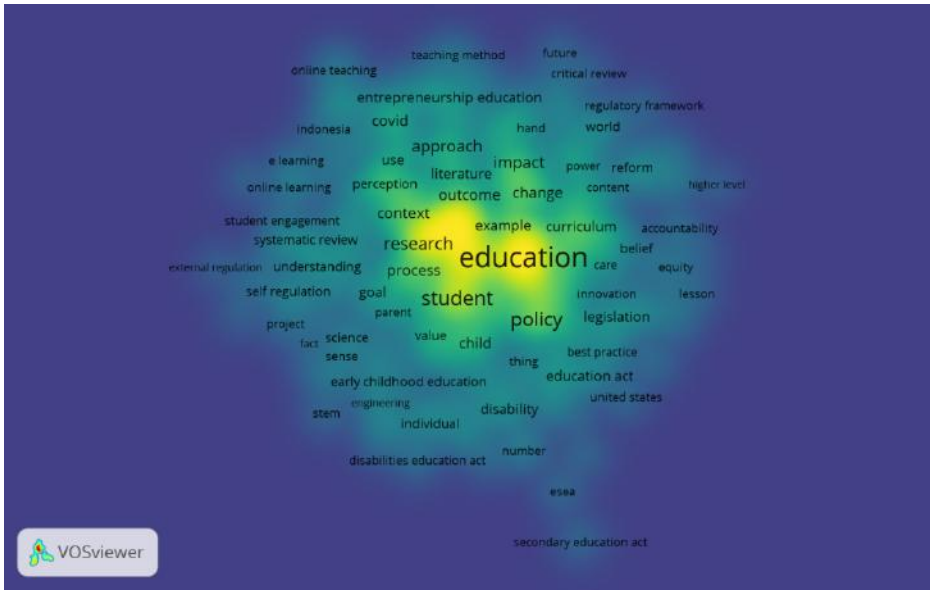

Figure 4: Density Visualization of Educational Laws, Regulations, and Policies Keyword

There are various topics that can be discussed related to educational law, but this research focuses on developing topics that are closely related to the keywords, such as "Teaching" with a total of 350 occurrences and 300 links, "Learning" with a total of 313 occurrences and 303 links, "Student" with a total of 160 occurrences and 262 links, "Act" with a total of 147 occurrences and 254 links, and "Higher Education" with a total of 125 occurrences and 234 links. In addition, the clustering also reveals new research topics that can be explored in future studies.

Conclusion

The comprehensive literature review in this study highlights the emergence of numerous new research topics in the field of educational law, regulation, and policy. Despite a decline in the number of studies from 2013 to 2023, there remains a vast array of underexplored areas that present opportunities for significant scholarly contributions and potential impact on policy-making and educational practices.

These findings underscore the dynamic nature of educational law and its continuing relevance, suggesting that this field is ripe for further research. Exploring these topics is essential not only for advancing academic knowledge but also for enhancing the efficacy of educational systems worldwide. The potential for growth and increased research interest in educational law, regulation, and policy is promising, indicating a robust future for studies in this area.

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Contact email: ridwanpurnama@upi.edu