

More Adaptive Educational Supervision: A Study of Principle Variance

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Abstract

This study aims to identify educational supervision principles that can be adopted by practitioners to address the specific needs and challenges of educational institutions and to enhance educational quality sustainably. The study employed a Systematic Literature Review (SLR) using the PRISMA approach. Eighteen articles met the inclusion criteria and were analyzed, while 306 were excluded. The review identified 15 key principles of educational supervision: collaborative, democratic, needs-based, adaptive, sustainable, participatory, scientific, continuous improvement-oriented, supportive, evaluative, humanistic, innovative, flexible, professional development-oriented, and accountable. Their application varies according to contextual challenges such as limited teacher competence, geographical constraints, inadequate facilities, and diverse socio-cultural backgrounds. In institutions with limited training access, needs-based and collaborative supervision effectively supports teacher development through mentoring and peer learning communities. In remote schools, adaptive and flexible supervision can be implemented through online platforms for observation and feedback. The findings indicate that effective supervision requires contextual sensitivity, flexibility, strategic use of digital technologies, and trust-based professional relationships. The study proposes three theoretical frameworks: (1) the context-sensitive supervisory innovation rule, emphasizing alignment between management practices and institutional readiness; (2) the digital relational supervision theory, integrating data-driven technologies with collaborative and humanistic relationships; and (3) the sustainable supervisory learning theory, conceptualizing supervision as a continuous cycle linking evaluation, reflection, and professional development to promote long-term improvement in teaching and learning across diverse contexts.

Keywords: educational system development, educational policies and standards, innovative learning, lifelong learning

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1. Introduction

Education is a primary issue that requires global cooperation, one of the main focuses of this issue is the importance of improving the quality of education (UNESCO, 2021). Improving the quality of education can be done by implementing good and correct

educational supervision. This is because educational supervision is an essential element in the educational process that aims to improve the quality of learning and the performance of educators (Bawaneh et al., 2024). Currently, education supervision is developing not only on improving teacher performance but more

broadly on the overall educational situation, including teachers, students, curriculum, environment, and classroom management (Al-Tameemi & Ahmed, 2022). Due to the wide scope of the impact of supervision activities, this aspect is important to study.

The implementation of educational supervision requires strong principles in order to have a positive impact on the teaching and learning process in educational institutions (Jahanian & Ebrahimi, 2013). These principles are the foundation in designing a supervision system that not only functions as an evaluation tool, but also as a means of improving the quality of education as a whole. The principle of supervision that is well studied and applied allows for synchronization between supervision practices and applicable educational policies and standards, so as to create consistency and harmony in achieving national education goals (Glanz & Hazi, 2019). Research conducted in Jordan touched the number of 4.20 which is included in the medium category in the level of teacher satisfaction with educational supervision carried out with the principles of supervision such as collaboration, flexibility, needs-based and so on (Bawaneh et al., 2024). With clear and structured principles, educational supervision not only focuses on assessing teacher performance, but also encourages professional development and continuous improvement of teaching quality.

An education supervisor must understand and apply the principles of supervision as a fundamental foundation in realizing the effectiveness and success of supervision. One of the crucial challenges in the implementation of supervision is the paradigm shift from an autocratic approach, which places absolute authority on supervisors and tends to be corrective, towards a more creative and constructive approach. The creative approach allows supervisors to offer innovative solutions to

the problems they face, while the constructive approach is oriented towards continuous development that promotes systemic improvement (Marey et al., 2020). Thus, the application of the principle of supervision based on individual capacity development can create a conducive, collaborative, and empowering environment, thereby contributing to improving the quality of educational supervision holistically. According to Sahertian (2008) stated that the principles of educational supervision include scientific principles, democratic principles, cooperation principles and constructive & creative principles. Meanwhile, according to Sergiovanni (1992) educational supervision must be based on moral values, justice, and commitment to the development of the educational community. Sergiovanni (1992) emphasizing that school leaders, including supervisors, have a responsibility to create an environment that supports the development of all individuals in the education system.

There are not many studies that focus on examining the principles of educational supervision. Research conducted by Clarke (2020) Examining the principle of educational supervision that can increase the effectiveness of learning in the world of midwifery, but this study does not make the principle of supervision the main study. This is the same as research Al-Tameemi & Ahmed (2022), which also examines the principle of educational supervision, but is not used as the main study because this study focuses on proving that the pattern of educational supervision is important to be applied in physical education. Similar research has been conducted by Holstun & Bohecker (2024) presented several important findings related to humanistic principles in providing culturally sensitive feedback in the supervision of counseling education. The humanistic principles discussed in the article are closely related to the world of education,

especially in the context of supervision and professional development.

Previous studies have indeed discussed educational supervision, but most of them have only placed the principles of supervision as a supporting element rather than the primary object of investigation. Clarke (2020), for example, examined the effectiveness of supervision in midwifery education without explicitly analyzing the underlying principles. Similarly, Al-Tameemi & Ahmed (2022) highlighted the pattern of supervision in physical education, while Holstun & Bohecker (2024) emphasized humanistic principles in counseling supervision, but neither study systematically mapped the core principles of supervision.

This indicates a research gap, as there is still a lack of comprehensive studies that specifically focus on identifying, synthesizing, and analyzing the principles of educational supervision in a systematic manner. The novelty of this research lies in its explicit attempt to identify 15 principles of supervision and to demonstrate how their application may vary across educational contexts and institutional challenges. By doing so, this study not only enriches the theoretical understanding of supervision but also provides practical insights for supervisors and policymakers in adapting supervision strategies to diverse institutional conditions.

This study tries to focus on the study of the principles of educational supervision from the experience of many studies that have been conducted. This research also intends to show the application of different supervision principles according to the context and problems faced by each educational institution. The goal is to analyze the variance of the principles of educational supervision. It is hoped that the results of this study can be a guide for educational supervision practitioners to adapt to practical difficulties in the field through

knowledge of the variance of educational supervision principles.

2. Method

This study uses the SLR (*Systematic Literature Review*) research method with the PRISMA (*Preferred Reporting Items for Systematic Reviews and Meta Analyses*) approach. The SLR method is a systematic technique used to collect, critically test, integrate, collect and synthesize the results of various kinds of research studies on the topic being conducted. This research aims to focus on reviewing a problem through the process of identifying, evaluating and selecting certain problems according to predetermined criteria. The research begins by looking for articles that are related to the research topic to be researched (Tahiru, 2021).

a. Criteria for Literature Sources

The criteria for literature eligibility are articles that are original research that has been studied and written with Scopus indexed qualifications and articles from the last 5 years from 2019-2024. The identified article should have the purpose of investigating about the activities and principles of supervision in the context of education. The source of information used is literature that is searched in online databases using the *Publish or Perish* search engine.

b. Literature Source Selection Process

The search for scientific articles is carried out in a conical manner with the PRISMA approach. This approach makes it easier for researchers to identify, filter, test the feasibility and assign article sources in the context of a transparent and systematic review. The PRISMA approach is carried out through an elimination process based on predetermined article criteria (Page et al., 2021). The flow of selection and elimination of articles used in

the SLR method with the PRISMA approach can be seen through the following chart.

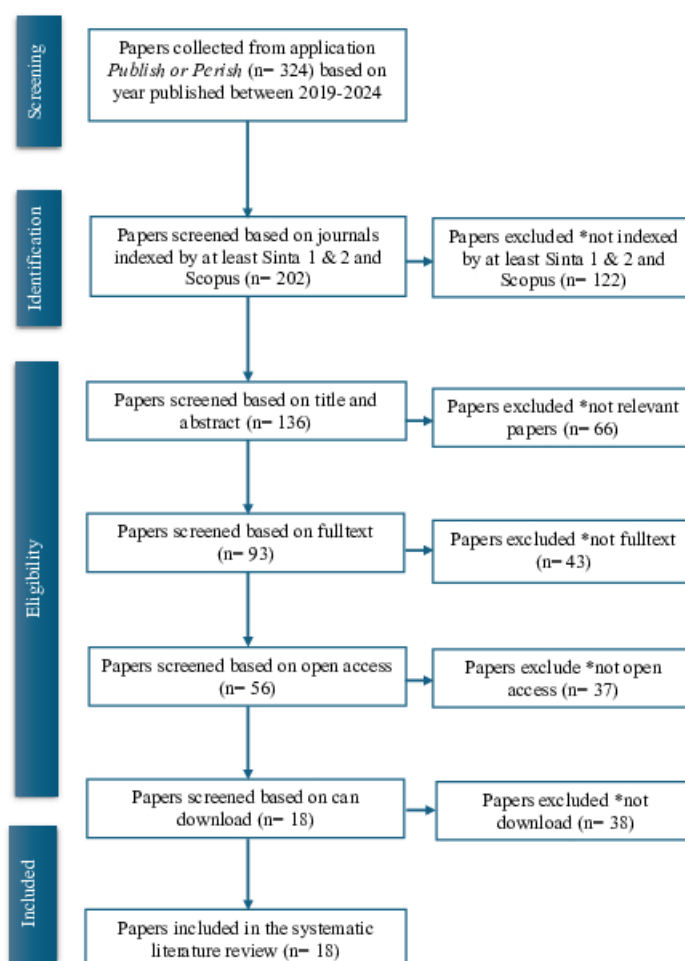


Figure 1. Flow of SLR Method with PRISMA Approach

The selection of literature begins by determining keywords, namely *supervision of education*, *educational supervision*, *principle of supervision education* and *academic supervision*. In addition to keywords, the selection of titles, abstracts and keywords in articles is also considered, after paying attention to the basis of titles, abstracts and keywords, it was found that 37 articles could not be accessed comprehensively and the search results that would be reprocessed were 18 articles and the results that were not reprocessed were 56 because they did not meet the criteria. After the reference is in accordance with the criteria that have been determined, then read in full or

partially to determine the feasibility of the article in the next study that is in accordance with the eligibility criteria. In this process, only 18 articles meet the criteria and will be reprocessed, while as many as 306 articles are eliminated because they do not meet the criteria.

The reference list of selected articles is reviewed and resynthesized to determine other related research studies. The articles that have been selected, namely 18 articles, are collected data and the identity of the article, namely in the form of article title, article link, author's name, year of publication, keywords, research place, research variables, research

problems, research methods, population and samples, research findings, recommendations. The selection of data items from articles that have met the criteria is related to the principles of educational supervision found in the article.

3. Result and Discussion

Of the 18 scientific articles on the principle of educational supervision, it is known that the majority of research uses a qualitative approach, reflecting a focus on in-depth exploration of the phenomenon of educational supervision in various contexts. Several other studies use a quantitative approach, demonstrating efforts to measure and generalize the principles of supervision through statistical data. In other studies, there is also a combination method that integrates qualitative and quantitative approaches, providing a more comprehensive and comprehensive picture of the application of supervision principles in educational institutions.

This variation of methods reflects a diversity of perspectives and strategies in understanding and analyzing the principles of supervision in various educational institutions. Data was obtained through analysis of 18 articles that had been selected. The results of the analysis are categorized into based on the principle of supervision identified from the findings in various studies which is divided into 2 groups, namely based on the identity of the author of the article and the identified supervision principles, as well as the identity of the author and the research method used in the article that is used as a data source. The presentation of data is arranged in this way to facilitate the process of classification and identification of the principles of educational supervision. The presentation of data is arranged in this way to facilitate the process of classification and identification of the principles of educational supervision. The findings are systematically summarized in Table 1 and Table 2 for further understanding and analysis.

Table 1. Findings Categorized Based on Findings Principles of Educational Supervision

No.	Principles of Supervision	Source
1	Collaborative	(Al-Kiyumi & Hammad, 2019; Al-Tameemi & Ahmed, 2022; Bawaneh et al., 2024; Kisthinos & Carlson, 2019; Marey et al., 2020; Rasdiana et al., 2024; Suherman et al., 2023; Wetchan et al., 2023)
2	Democratic	(Bawaneh et al., 2024)
3	Need Based	(Ahmady & Minouei, 2021; Al-Tameemi & Ahmed, 2022; Bawaneh et al., 2024; Clarke, 2020; Dorsey et al., 2019; Wetchan et al., 2023)
4	Flexible (Adaptive)	(Aldawood et al., 2019; Bawaneh et al., 2024)
5	Development Oriented	(Ahmady & Minouei, 2021; Aldawood et al., 2019; Al-Kiyumi & Hammad, 2019; Al-Tameemi & Ahmed, 2022; Bawaneh et al., 2024; Clarke, 2020; Dorsey et al., 2019; Kisthinos & Carlson, 2019; Mammino, 2022; Marey et al., 2020; Mokoele & Weyers, 2021; Rasdiana et al., 2024; Sarnat, 2019; Suherman et al., 2023; Tan et al., 2022; Wetchan et al., 2023)
6	Sustainable	(Bawaneh et al., 2024; Clarke, 2020; Dorsey et al., 2019; Heining et al., 2020)
7	Positive Relationships	(Ahmady & Minouei, 2021; Bawaneh et al., 2024; Clarke, 2020; Dorsey et al., 2019; Heining et al., 2020; Kisthinos & Carlson, 2019; Marey et al., 2020; Mokoele & Weyers, 2021; Rasdiana et al., 2024; Suherman et al., 2023; Tan et al., 2022; Wetchan et al., 2023)
8	Theory Based	(Mokoele & Weyers, 2021; Sarnat, 2019)

No.	Principles of Supervision	Source
9	Active Participation	(Aldawood et al., 2019; Al-Kiyumi & Hammad, 2019; Al-Tameemi & Ahmed, 2022; Heining et al., 2020; Mokoele & Weyers, 2021; Rasdiana et al., 2024)
10	Balance of Administrative and Clinical Supervision	(Atkinson & Posada, 2019; Mokoele & Weyers, 2021)
11	Considering the Social Context	(Atkinson & Posada, 2019)
12	Use of Technology	(Aldawood et al., 2019; Rasdiana et al., 2024)
13	Data Based	(Aldawood et al., 2019)
14	Constructivism	(Kisthinos & Carlson, 2019; Marey et al., 2020; Sarnat, 2019)
15	Quality Improvement Oriented	(Al-Kiyumi & Hammad, 2019; Al-Tameemi & Ahmed, 2022; Heining et al., 2020; Marey et al., 2020; Suherman et al., 2023; Wetchan et al., 2023)

From the table, it can be seen that the identified principles of educational supervision have various approaches from various conditions from each research result.

Table 2. Findings Categorized Based on the Identity of the Author and Article Research Methods

No.	Source	Research Methods
1.	(Bawaneh et al., 2024)	Quantitative
2.	(Mokoele & Weyers, 2021)	Quantitative
3.	(Atkinson & Posada, 2019)	Qualitative
4.	(Aldawood et al., 2019)	Qualitative
5.	(Tan et al., 2022)	Qualitative
6.	(Marey et al., 2020)	Qualitative
7.	(Al-Kiyumi & Hammad, 2019)	Mix Method
8.	(Rasdiana et al., 2024)	Quantitative
9.	(Heining et al., 2020)	Mix Method
10.	(Clarke, 2020)	Qualitative
11.	(Suherman et al., 2023)	Qualitative
12.	(Al-Tameemi & Ahmed, 2022)	Quantitative
13.	(Kisthinos & Carlson, 2019)	Qualitative
14.	(Wetchan et al., 2023)	Mix Method
15.	(Ahmady & Minouei, 2021)	Qualitative
16.	(Mammimo, 2022)	Qualitative
17.	(Dorsey et al., 2019)	Mix Method
18.	(Sarnat, 2019)	Qualitative

A summary of 18 studies on the principles of education supervision can be seen, including reference sources and research methods used. The majority of the research uses a qualitative approach, reflecting a focus on an in-depth exploration of the phenomenon of educational supervision in various

contexts. Several other studies use a quantitative approach, showing an attempt to measure and generalize the principles of supervision through statistical data. In addition, there is a combination of research that integrates qualitative and quantitative approaches, providing a more comprehensive

picture of the application of supervisory principles. This variety of methods reflects a diversity of perspectives and strategies in understanding and analyzing the principles of supervision in various educational institutions.

The results of data analysis using VOSviewer reinforce these findings by showing

that keywords related to flexibility, participation, and adaptability tend to be clustered in research clusters from countries with inclusive and decentralized education systems. This shows that there is a correlation between a dynamic institutional context and the selection of more relevant supervisory principle.

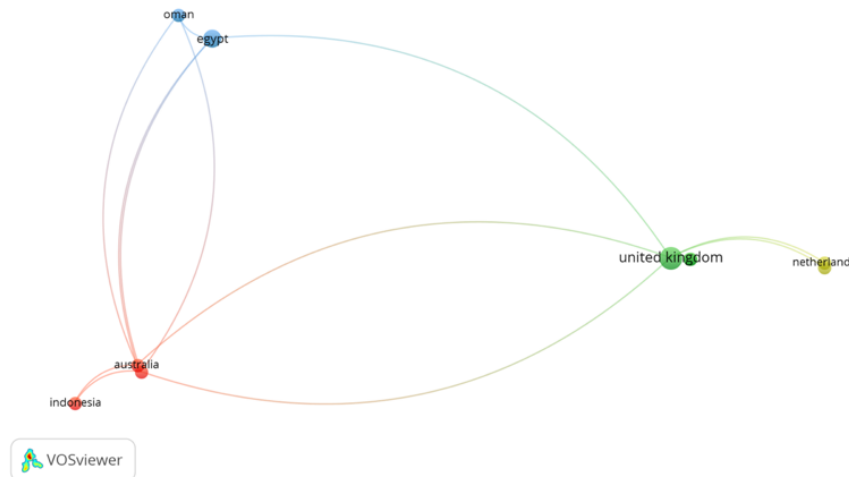


Figure 2. Results of Analysis of Principles of Education Supervision by Country Using VOSviewer

Based on the analysis using VOSviewer, it can be observed that research on the principles of educational supervision can be grouped based on the country of origin of the research. This country-based analysis aims to identify the contributions of each country to the development of academic discourse related to education supervision and to examine the research focus trends in each region. These countries have shown an active role in researching and reviewing the principles of supervision in the context of education.

Further, the analysis of the data is visualized through pie charts that show the proportions or percentages of each of the supervisory principles discussed in various articles. These results provide more detailed information on which supervisory principles are the focus of the study most often. These findings suggest a tendency among researchers to focus on specific aspects of educational supervision practice.

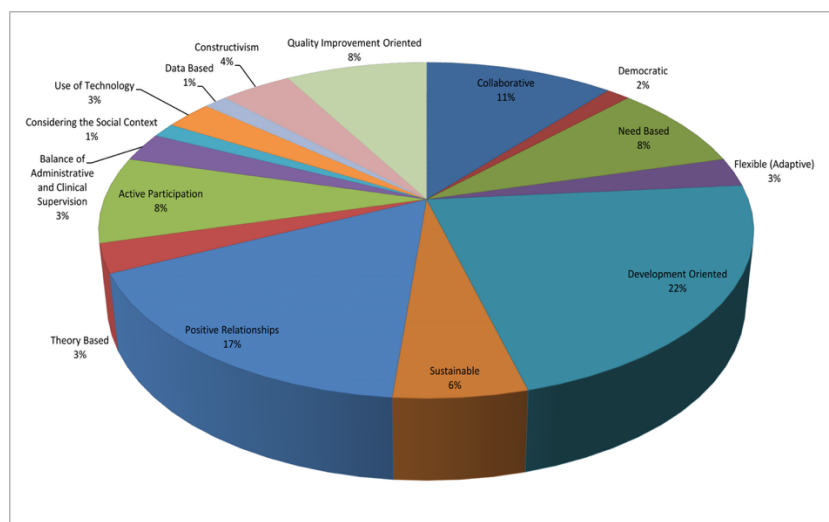


Figure 3. Results of Analysis of Principles of Educational Supervision Based on the Number of Authors Using Diagrams

In addition to being presented in the form of tables and VOSviewer analysis, the results of the analysis are also visualized using pie charts, which also show the percentage of authors who discuss the principles of supervision that are the focus of the study. This visualization provides a proportionate picture of the most dominant supervisory principles discussed in the literature, as well as helps identify the trends in the topics that researchers are primarily focused on. Thus, pie diagrams complement the country based analysis by highlighting the content or substance aspects of educational supervision research.

The identified principles of supervision include diverse approaches. These principles reflect adaptation to the needs of different educational institutions, by tailoring supervision approaches based on specific contexts. For example, a theory-based approach (Mokoele & Weyers, 2021; Sarnat, 2019) and constructivism (Kisthinos & Carlson, 2019; Marey et al., 2020; Sarnat, 2019) Relevant for institutions that encourage innovation and participatory learning. Rather, principles that emphasize flexibility and democracy, such as in research Bawaneh et al. (2024), targeting institutions with dynamic and diverse needs.

The implications of supervision on the quality of education based on the application of these supervision principles show that the success of education supervision is highly dependent on its relevance to the needs of education personnel and institutions.

Research that prioritizes active participation (Aldawood et al., 2019; Al-Kiyumi & Hammad, 2019; Al-Tameemi & Ahmed, 2022; Heining et al., 2020; Mokoele & Weyers, 2021; Rasdiana et al., 2024), emphasizing the importance of collaboration between supervisors and staff to improve the quality of education. In addition, the principle of development oriented (Ahmady & Minouei, 2021; Aldawood et al., 2019; Al-Kiyumi & Hammad, 2019; Al-Tameemi & Ahmed, 2022; Bawaneh et al., 2024; Clarke, 2020; Dorsey et al., 2019; Kisthinos & Carlson, 2019; Mammino, 2022; Marey et al., 2020; Mokoele & Weyers, 2021; Rasdiana et al., 2024; Sarnat, 2019; Suherman et al., 2023; Tan et al., 2022; Wetchan et al., 2023) and sustainability (Bawaneh et al., 2024; Clarke, 2020; Dorsey et al., 2019; Heining et al., 2020) describes the need for supervision that not only corrects shortcomings, but also builds a long-term quality management system. This underscores the importance of an

evidence-based supervision approach that is responsive to evolving institutional challenges. The application of the principle of supervision also varies depending on the problems faced by educational institutions, such as a lack of teacher competence, low quality of the learning process, inconsistency between the curriculum and practices in the field, or management challenges in human resource management.

It is also mentioned in several other studies that geographical conditions, the level of available facilities, and the diversity of student backgrounds and educators also affect the quality of education (Elvira et al., 2023; Kaenong et al., 2023; Suparman et al., 2021). Which is also related to the supervision approach applied. Institutions that face limited access to professional training, the principles of need-based supervision and collaboration tend to be more effective in supporting teacher competency development (Muhajirah et al., 2023). In contrast, in an educational environment that is adopting new technologies, the principle of supervision oriented towards adaptation and innovation is becoming more relevant (Rahman & Rizal Akbar, 2021). The principles of educational supervision identified in various studies reflect the diversity of approaches that can be applied according to the unique needs and challenges of educational institutions.

The collaborative principle in educational supervision focuses on cooperation between supervisors and teachers to achieve the goals of supervision together, by prioritizing openness, mutual respect, and sharing of responsibilities (Al-Kiyumi & Hammad, 2019. Al-Tameemi & Ahmed (2022) Explain that this principle is applied through activities such as directed discussions, joint planning, collaborative reflection on learning practices, and the development of mutually agreed strategies. This principle is

particularly relevant in institutions that face the challenge of lack of communication or teacher involvement in decision-making. The success of its implementation is highly dependent on effective communication, positive professional relationships, and support from a conducive work environment (Marey et al., 2020). This principle is very effective in educational institutions that encourage innovation, knowledge sharing, and improving the quality of learning. Good collaboration is able to create a more harmonious relationship between supervisors and educators, thereby increasing the effectiveness of supervision and motivation of teachers in carrying out their duties (Jónsdóttir et al., 2015).

The democratic principle in educational supervision emphasizes the equal participation of all parties, such as supervisors and teachers, in the supervision process through open dialogue, respect for opinions, and joint decision making (Howson et al., 2022). Its implementation is carried out by building transparent communication, regular discussions, and collective evaluation, where each party is involved in determining the goals and methods of supervision (Bawaneh et al., 2024). The democratic principle in educational supervision focuses on providing space for all parties to contribute equally to the supervision process. This principle is especially important in environments with strong hierarchical cultures, as democracy in supervision can help create a more inclusive work environment (Howson et al., 2022). The success of this principle depends on a collaborative work culture, positive relationships between supervisors and educators, and an environment that supports the active involvement of teachers (Bawaneh et al., 2024). When teachers feel their voices are heard and valued, they tend to be more enthusiastic about implementing supervision recommendations, so that the results can be

more effective and sustainable (Vergílio et al., 2018).

The needs-based principle in educational supervision emphasizes the importance of designing supervision programs that are tailored to the specific needs of institutions (Ahmady & Minouei, 2021). Its application is carried out through the identification of basic needs, such as developing teacher competencies, improving the learning process, or improving supporting facilities. In research Clarke (2020) Supervisors work closely with teachers to analyze problems, determine priorities, and develop relevant action plans. A needs-based approach is essential in the context of educational supervision, especially to adapt the supervision method to the unique situation of each institution. In other studies, it was mentioned, for example, that in schools with limited resources or differences in teacher competence, supervision designed based on specific needs can have a more significant impact (Mokoele & Weyers, 2021). The successful implementation of this principle can be seen in a situation where the needs of the institution have been thoroughly understood, supported by accurate data, and there is a commitment from all parties to achieve the goals that have been set. This is especially effective in institutions that face resource limitations, competency disparities, or specific quality improvement needs (Abdullah & A.K, 2021).

Adaptive principles in educational supervision refer to the ability of supervisors to adapt supervision approaches and methods according to changing needs, challenges, or unique situations in each institution (Aldawood et al., 2019). Its application involves continuous evaluation of institutional needs and rapid response to dynamics on the ground, such as policy changes, technological advancements, or emergency conditions such as pandemics. Supervisors must have the

skills to combine various approaches, such as formal and informal methods, and adapt supervision strategies according to the context (Reinhartz et al., 1983). According to Milne & Oliver (2000) In situations such as the pandemic, an adaptive supervision approach allows supervisors to adjust supervision methods and strategies to stay relevant to the challenges at hand. This shows that flexibility is not only important for dealing with emergency situations but also for seizing innovation opportunities in supervision (Morris & Bilich-Eric, 2017). The success of the implementation of this principle can be seen in situations where supervision is able to provide relevant and practical solutions, reflect the real needs of the institution, and create positive results even in uncertain or challenging conditions (Bawaneh et al., 2024).

The development-oriented principle in education supervision emphasizes efforts to continuously improve the capacity and competence of educators to achieve better quality education (Ahmady & Minouei, 2021). In research Kisthinios & Carlson (2019) Its implementation is carried out through continuous coaching, such as professional training, mentoring, and evaluation, which provides constructive feedback. Educational institutions that want to improve the quality of their educators can use this principle to build a supervision program that not only improves weaknesses but also develops the potential of teachers (Kozachuk & Conley, 2021). This principle is especially relevant for institutions that seek to keep up with and implement new, more innovative learning methods (Ambarita et al., 2014; Liu & Ma, 2020; Wetchan et al., 2023). This principle is successfully implemented when institutions are able to create a learning culture that supports innovation and quality improvement, for example, through development programs that meet the needs of teachers, the implementation of performance

evaluations that encourage improvement, and the awarding of awards for significant achievements in learning. Situations such as curriculum changes or the adoption of new technologies are often ideal moments for the application of these principles.

The principle of sustainability in education supervision emphasizes consistent and continuous coaching to advance the quality of education gradually (Dorsey et al., 2019). This involves regular evaluation and follow-up of educational programs to ensure continuous improvement (Lokhtina et al., 2022). With this approach, supervision not only aims to achieve short-term results but also to build a strong foundation for continuous improvement in the learning and teaching process. Its implementation involves planning a structured supervision program with repeated cycles of evaluation, reflection, and capacity building (Eriksson & Mäkitalo, 2015). According to Achmad & Miolo (2021) The supervisor needs to ensure that each act of supervision generates data and insights that are used for future decision-making. The successful implementation of this principle can be seen when institutions are able to create systems that support lifelong learning for teachers, such as the provision of regular training, discussion forums, and periodic evaluations (Dorsey et al., 2019). Circumstances that allow for the success of this principle include an environment that supports collaboration, strong policy support, and a commitment from all parties to continue to evolve and innovate (Hall, 2018).

The principle of positive relationships in educational supervision emphasizes the importance of building respectful, trusting, and open communication between supervisors and educators (Ahmady & Minouei, 2021). The application is carried out by creating an atmosphere that supports two-way dialogue, listening to teachers' needs and aspirations,

and providing feedback constructively and without pressure (Rasdiana et al., 2024; Mokoelé & Weyers, 2021). Supervisors also need to show empathy and appreciate each individual's contribution. The success of this principle in the field can be seen when teachers feel comfortable to discuss, open to criticism, and motivated to improve their performance. The positive relationship between supervisors and teachers is one of the foundations for the success of education supervision (Dorsey et al., 2019). Research shows that a good relationship can increase trust and communication between the two parties. This is especially important in institutions that face internal conflict or low trust between individuals (Peled-Avram, 2017). By creating a harmonious relationship, supervision can run more smoothly, and teachers will be more open to suggestions and constructive criticism from supervisors. Situations that support the application of this principle include a harmonious work environment, a commitment from supervisors to be fair, and policies that support strengthening professional relationships within the education team.

Theory-based principles in educational supervision are approaches that base the practice of supervision on academically tested concepts, models, or theories (Mokoelé & Weyers, 2021). Its application is carried out by integrating the theory of supervision and education into the planning, implementation, and evaluation of supervision. Supervisors can use learning, management, or communication theories as a guide to face various challenges in the field (Sarnat, 2019). The principle of supervision is based on theory that provides a strong conceptual foundation for supervisors to design and implement supervision programs. In institutions facing complex challenges, such as human resource management or the integration of technology in learning, a theory-based approach helps

supervisors make directed, evidence-based decisions (Yuswanto et al., 2018). The successful implementation of this principle can be seen when the supervision approach becomes more systematic, consistent, and provides measurable results. In research, Yuswanto et al. (2018) Conditions that support this principle include training for supervisors on relevant theories, institutional support in providing literature resources, and the openness of educators to implement theory-based changes in their practice. This principle also allows institutions to ensure that their supervision is consistent with the academic framework or educational standards that have been set.

The principle of active participation in educational supervision prioritizes the direct and active involvement of teachers in every stage of the supervision process, from planning to evaluation (Aldawood et al., 2019). Its application involves teachers in discussions, decision-making, and program planning that have an impact on their professional development. The successful implementation of this principle is manifested in a collaborative atmosphere where teachers feel they have authority and responsibility to improve the quality of learning. The principle of active participation encourages teachers to be directly involved in every stage of supervision, from planning to evaluation (Austin et al., 2023). As with research Austin et al. (2023) which explains that this approach is particularly relevant in institutions facing resistance to change, as direct involvement can increase teachers' sense of ownership and accountability for supervision outcomes. Conditions that support this principle are the support of supervisors to encourage active teacher participation, as well as an organizational culture that supports open communication and mutual trust between supervisors and educators (Heining et al., 2020). Through active participation, teachers can also

provide relevant input based on their first-hand experience in the field.

The principle of balance of administrative and clinical supervision in educational supervision combines managerial and pedagogical aspects in the supervision process to achieve educational goals holistically (Atkinson & Posada, 2019). Its implementation involves not only focusing on institutional management, such as curriculum and policy management, but also improving the quality of teaching through direct interaction between supervisors and teachers. In research Dill & Bogo (2009) The balance between administrative and clinical supervision shows the importance of integrating managerial and pedagogical aspects in educational supervision. This approach helps educational institutions ensure that technical aspects, such as time and resource management, do not compromise the quality of teaching (Tromski-Klingshirn & Davis, 2007). (Ahmady & Minouei, 2021; Dill & Bogo, 2009; Esteves et al., 2019; Milne & Oliver, 2000; Piquette et al., 2015; Tomlinson, 2015; Tromski-Klingshirn & Davis, 2007; Wong et al., 2024; Yuswanto et al., 2018) Explaining that clinical supervision focuses on improving the quality of teaching through direct interaction between supervisors and teachers, such as classroom observation and discussion to improve the learning process. Meanwhile, administrative supervision emphasizes more on aspects of educational institution management, such as the management of curriculum, policies, and facilities to ensure operational efficiency (Shakuna et al., 2016). They complement each other, where administrative supervision provides the framework and resources, while clinical supervision ensures effective implementation at the teaching level. This is especially important in institutions that face pressure to achieve operational efficiency without sacrificing the quality of learning (Tromski-Klingshirn &

Davis, 2007). The successful implementation of this principle occurs in a situation where there is a harmony between managerial needs and improved teaching quality, as well as support from all team members to work together in creating an effective learning environment (Milne & Oliver, 2000; Wong et al., 2024). Integrasi ini memastikan that all operational and pedagogical aspects support each other, resulting in a continuous improvement in the quality of education (Mokoele & Weyers, 2021).

The principle of considering the social context in educational supervision involves understanding and respecting the cultural, social, and economic background in the school community (Atkinson & Posada, 2019). Its application involves supervisors who adapt to the values, norms, and expectations of the local community, as well as consider the social and cultural needs of students in planning and implementing supervision activities. Research Austin et al. (2023) putting forward the principle of considering the social context is important for institutions operating in environments with specific social and cultural dynamics. Supervision that takes into account the local context can help create solutions that are more relevant and acceptable to educators that are relevant to the times (Aldawood et al., 2019). Successful implementation of these principles occurs in situations where supervisors have sensitivity to social diversity in schools, have the ability to build positive relationships with students, teachers, and parents, and are able to integrate social contexts in learning and teaching strategies (Atkinson & Posada, 2019). These principles help create an inclusive school climate and support students' academic success and social development. Jasper & Field (2016) Noting that with a harmonious relationship between supervisors and principals, principals and teachers, and teachers and students in

communities with strong cultural values, supervision that is in harmony with local norms tends to be more effective than approaches that are too general or universal.

The principle of using technology in educational supervision refers to the use of technology tools and applications to facilitate and improve the supervision process (Aldawood et al., 2019). Its application involves the use of education management software, online observation tools, digital-based learning systems, and remote communication tools to monitor and evaluate learning and teaching activities. The use of technology in education supervision has become an urgent need in the digital era (Bawaneh et al., 2024; Bernhard & Camins, 2020; Duan et al., 2019; Hamid, 2024; Inman et al., 2019; Liu & Ma, 2020; Schmittel et al., 2023). This principle allows supervisors to utilize digital tools to monitor, record, and evaluate the learning process more efficiently. This principle originated from the Covid-19 pandemic, which limited direct interaction and contact between humans, so that supervision innovations were created through online communication media platforms called telesupervision (Schmittel et al., 2023). The successful implementation of this principle occurs in situations where schools have adequate technological infrastructure, teachers and staff have skills in using technology, and there is support from school management to integrate technology in the supervision process (Bernardino & Curado, 2020). According to Hamid (2024) Technology allows easier and more flexible access to data, increases efficiency, and enriches collaboration between supervisors and educators. Institutions that have access to technology can integrate this approach to improve the effectiveness of supervision, especially in situations that require remote communication or accurate data collection (Duan et al., 2019; Inman et al., 2019).

Data-driven principles in educational supervision refer to the use of quantitative and qualitative data to design, implement, and evaluate supervision programs. Its application involves collecting and analyzing data on student performance, teacher learning outcomes, and the learning process in the classroom (Aldawood et al., 2019). Data-based supervision is a very useful approach to improve decision-making in educational institutions (Dabisch, 2023). The successful implementation of this principle occurs in situations where schools have good data systems, easy access to information, and the ability of practitioners to interpret and integrate data in supervisory decisions. This principle is very effective in an educational environment that emphasizes accountability and continuous improvement of the quality of learning. By using data as the basis for supervision, supervisors can more accurately identify problems and design specific solutions (Abdullah & A.K., 2021). This approach is particularly relevant in institutions that have challenges in measuring the performance or impact of supervision programs.

The principle of social context constructivism in educational supervision refers to an approach that emphasizes the importance of understanding how students and teachers build knowledge through social experiences and interactions in a given context (Kisthinos & Carlson, 2019). Its implementation involves a supervisor who facilitates an interactive learning process, providing opportunities for students and teachers to share ideas, respond to each other, and reflect on their experiences. The principle of constructivism, which encourages reflection and innovation, is perfect for institutions that want to develop creative and interactive learning methods (Liu & Ma, 2020; Zuber-Skerritt & Roche, 2004). Successful implementation of these principles occurs in situations where there is open

communication between supervisors, teachers, and students, and when schools create an environment that encourages collaboration, creativity, and joint problem-solving (Marey et al., 2020). According to Liu & Ma (2020) An institution that encourages project-based or experiment-based learning, this principle provides space for teachers to continue to learn and develop.

The principle of quality improvement orientation in educational supervision refers to an intensive focus on improving the quality of learning and teaching (Al-Kiyumi & Hammad, 2019). Its implementation involves supervisors working closely with teachers to evaluate and improve the learning process, design more effective learning strategies, and support continuous professional development. The principle of being oriented towards quality improvement reflects the commitment of educational institutions to continuous improvement (Altınok, 2024; Nasution et al., 2022; Ntimuk et al., 2023; Ratna Sari et al., 2022; Saihu, 2020; Suparliadi, 2021; Turmidzi, 2021). This approach is relevant in all types of institutions, but it becomes especially important for schools that want to achieve specific accreditation or educational standards (Ntimuk et al., 2023; Saihu, 2020). The successful implementation of this principle occurs in a condition where there is a commitment from all parties to continue learning, sharing best practices, and adapting to curriculum changes and student needs. In this situation, the existence of management support, an environment that encourages innovation, and strong collaboration between supervisors and teachers are essential to achieve significant quality improvement (Marey et al., 2020). With a focus on quality improvement, supervision can be an effective tool to ensure that every aspect of education runs according to the goals that have been set, whether

principals, teachers, education staff or students (Altınok, 2024; Nasution et al., 2022).

Data based principles and technology can be combined to create a more modern and efficient supervision approach (Liu & Ma, 2020). Institutions facing time or human resource constraints can leverage technology to collect and analyze data automatically, making it easier to make evidence-based decisions (Marey et al., 2020). Overall, the application of the principles of educational supervision must be tailored to the specific needs and challenges of each institution. There is no single approach that can be applied in all situations, so it is important for supervisors to integrate those principles flexibly. By adjusting supervision based on the context, needs, and goals of the institution, the effectiveness of supervision can be improved, and the quality of education can continue to be improved.

The results of the research on the principles of educational supervision show that the success of supervision is highly dependent on the relevance of the approach used to the specific needs of institutions and educational personnel. For example, collaborative and democratic principles, which emphasize active participation and equal involvement between supervisors and teachers, have proven effective in improving the quality of education in institutions that face communication challenges or teacher involvement in decision-making. Research by Al-Kiyumi & Hammad (2019), and Bawaneh et al. (2024) shows that this approach creates a more inclusive and harmonious work environment, thereby increasing teacher motivation and supervision effectiveness. The practical implication is that educational institutions need to create mechanisms that encourage open dialogue, regular discussions, and joint decision-making between supervisors and teachers. This can be done through activities

such as collaborative planning, joint reflection, and collective evaluation, which not only correct deficiencies but also build a long-term quality management system.

In addition, adaptive and needs-based principles, which emphasize flexibility and responsiveness to institutional challenges, have significant practical implications in the context of changing educational dynamics. Research by Aldawood et al. (2019), and Mokoale & Weyers (2021) It shows that supervision designed based on the specific needs of teachers and institutions, as well as being able to adapt to changes such as technology adoption or emergency situations, can have a greater impact. The practical implication is that supervisors need to have the skills to identify basic needs, analyze problems, and design relevant supervision programs. Institutions should also support the capacity building of supervisors through training and the provision of adequate resources. Thus, supervision is not only a tool to correct shortcomings, but also a driver of innovation and continuous improvement in the quality of education.

Although various principles of educational supervision have been identified, the interrelation among these principles has not been explicitly explained. In fact, these principles are not isolated but rather mutually reinforcing within the supervisory process. For instance, the democratic and collaborative principles provide a foundation for active participation, while the needs-based and adaptive principles ensure that supervision remains relevant to contextual challenges. Similarly, development-oriented and sustainability principles complement one another by linking short-term improvements with long-term capacity building. The integration of theory-based and data-driven principles further strengthens supervision by grounding decision-making in evidence, which is then

operationalized through flexible and participatory approaches. In this way, the interaction among principles creates a coherent framework in which supervision can simultaneously promote inclusivity, responsiveness, innovation, and quality assurance. A more explicit articulation of these relationships is therefore necessary to highlight how the synergy among principles can maximize the effectiveness of educational supervision across diverse institutional contexts.

4. Conclusion

The principles of educational supervision, such as collaboration, flexibility, needs-based, and development-oriented, must be tailored to the unique context of each institution to improve the quality of education. A theory-based approach and constructivism are suitable for institutions that encourage innovation, while the principles of flexibility and democracy are more relevant for institutions with dynamic needs. The application of these principles, such as collaborative and evidence-based approaches, can improve teacher competence, improve shortcomings, and build sustainable management systems. Technology-based supervision also offers modern solutions for the efficiency of education management. The success of supervision depends on the supervisor's ability to contextually integrate these principles to create a sustained positive impact.

Based on the results of the study, it is recommended that practitioners of education supervision adopt a flexible approach that adapts the supervision method to the specific context and needs of each institution, including utilizing technology to facilitate teaching evaluation. A focus on continuous development is also very important, as the principles of supervision oriented towards quality improvement and continuous learning can

help overcome challenges such as low-quality learning or curriculum inconsistencies.

In addition, creating a positive relationship between supervisors and educators is necessary to improve communication and trust, which in turn can help in dealing with practical difficulties in the field, such as internal conflicts or low trust between individuals. By integrating the variance of these supervision principles, practitioners can respond more effectively to various problems in the field and support the ongoing improvement of educational quality.

This research can be used as a guideline for practitioners in applying various principles of educational supervision to improve the quality of education. Future research is recommended to focus more specifically on examining how certain principles such as needs-based, adaptive, and collaborative supervision can be optimized in different institutional contexts, for example, in rural schools with limited resources or in inclusive education settings. Researchers are also encouraged to investigate the integration of data-driven and technology-assisted supervision in order to strengthen evidence-based decision-making. In addition, further studies may explore how democratic and sustainable principles can be institutionalized through policy frameworks and training programs for supervisors and teachers. The implementation of these principles will be more effective if supported by strong professional development initiatives and the establishment of positive, collaborative relationships within the educational environment.

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