

Research Article

Effectiveness of Teacher Supervision Practices in the Implementation of the Early Years Education Program

Isabellah Lumiti Ameli^{ID}, Godfrey Ayaga^{ID}, James Bill Ouda*^{ID}

Department of Educational Psychology, School of Education, Masinde Muliro University of Science and Technology, Kakamega, Kenya
E-mail: jouda@mmust.ac.ke

Received: 24 November 2023; **Revised:** 22 May 2024; **Accepted:** 4 June 2024

Abstract: Early Years Education (EYE) is the crucial stage in the child's physical, social, emotional, and intellectual development. This study, therefore, sought to evaluate the effectiveness of teacher supervision practices in the implementation of the EYE program in the Khwisero Sub-county. The study which targeted key education stakeholders in EYE adopted a cross-sectional survey research design. Stratified random sampling and purposive sampling were used to select 10 schools, 10 head teachers, 10 teachers in charge, 1 program officer, 4 ward representatives and 50 assistant teachers. The questionnaire, interview guide and document analysis guide were used for data collection. Frequency of supervision is key to the effectiveness of teacher supervision practices because it affects the adequacy of teaching resources, the development of necessary learning skills, and effective time management. From the findings, it was noted that there are various areas of teacher supervision, which are not adequately addressed as indicated by some respondents, including teaching and learning resources, time management and teacher professional records. By implementing effective supervisory practices, schools can create an environment that supports high-quality education and fosters continuous improvement in learning outcomes. Preparedness ensures that teachers have the necessary skills, resources, and time management capabilities, hence directly influencing the adequacy of teaching resources, learning skills, and time management. Generally, respondents thought that supervisory practices in place were effective, though the degree or intensity of effectiveness varied. Therefore, the study recommended that Early Childhood Development and Education (ECDE) stakeholders support the supervision initiatives in place for effective curriculum implementation of the EYE program.

Keywords: effectiveness, teacher supervision, Early Year Education program

1. Introduction

1.1 Background statement

Early Years Education (EYE) is the education that develops the physical health, nutritional well-being, and intellectual capacity of the pre-school child. Additionally, it improves the child's social, emotional, and aesthetic growth outside of the home (Didinya, 2018). It is an essential first step in achieving education's goals and acts as the child's educational foundation. Kim (2020) claims that the phrase "early years education" refers to a wide range of programs all aimed at promoting young children's physical, intellectual, and social development before they enrol in primary school.

Early years education and care are programs that combine both physical and educational elements for young children who are not yet compelled to attend school. They provide a crucial service for working parents in addition to making a significant contribution to cognitive stimulation, socialization, child development, and early education.

EYE is a crucial period in a child's growth and development. In fact, many of the early education pioneers, including Heinrich Pestalozzi, Johann Frobel, and John Dewey among others, highlighted this (Nuugwedha, 2014). The child's physical, social, emotional, and intellectual growth must pass through this critical stage. A child's physical and mental development proceeds at an exceptional rate, and from birth to age six, learning abilities make up an incredibly high percentage of that increase. The youngster frequently needs both excellent personal attention and a learning opportunity at this time. Global Guidelines for Early Childhood Education in the 21st Century (Kim et al., 2019) show that early childhood development and education have recently received priority as a basis for later learning and growth.

Kenya respects education as a fundamental human right and sees it as a turning point for achieving self-fulfilment and national progress, according to the GOK, Child Act Cap 586, 2001, which was mentioned in a study by Kariuki et al. (2019). There have been ongoing initiatives to address the challenges of education access, equity, and relevance. Commissions of Education have frequently been established at the national level to review educational policies. To increase access, the government has implemented programs including Free Primary Education (FPE) and tuition exemptions for secondary institutions. The main concern of the study was to evaluate how Early Years Education (EYE) is being implemented and the effectiveness of teacher supervision practices in the implementation of the EYE program.

1.2 Statement of the problem

The Early Years Education (EYE) program is a crucial developmental phase for children, encompassing their physical, social, emotional, and intellectual growth. In Kenya, preschool programs are implemented under numerous challenges, despite efforts by both the national and local governments to make it successful. One of the main challenges in the sector, according to the World Bank report on the evaluation of EYE centres is teacher supervision, which is consistent with the report by the Kenya Institute of Education NACECE (2008) on the effects of FPE on EYE programs is supervision. According to the Ministry of Education, Science & Technology, (MoEST, 2006), inadequate supervision is one of the major issues affecting the implementation of EYE program. It is hypothesised that the sub-county program officer and the head teachers of schools, who are in charge of supervising pre-schools in Khwisero Sub-county, aren't performing their duties as intended. Some of the possible explanations for this include their being overburdened by the sheer volume of schools to monitor or even their lack of familiarity with the preschool curriculum, instruction, and method. Lack of frequent refresher courses to provide the heads of teachers with suitable skills and knowledge of monitoring of the curricular implementation in the school could also be a challenge. Therefore, despite the crucial role that EYE plays in a child's development, there is limited empirical evidence on the effectiveness of teacher supervision practices in ensuring the successful implementation of the EYE program in Khwisero Sub-county. This gap in knowledge raises concerns about whether current supervision methods are adequately supporting teachers and whether these practices are effective. Hence, this study aims to evaluate the effectiveness of teacher supervision practices to identify strengths and areas for improvement, ensuring that EYE programs are implemented effectively to benefit the children's development. By addressing these aspects, the research aimed to uncover the intricacies of teacher supervision practices in the context of EYE in Khwisero Sub-county, ultimately contributing to informed recommendations for enhancing the effectiveness of the program.

1.3 Objective of the study

The study objective was to evaluate the effectiveness of teacher supervision practices through the implementation of the EYE program in the Khwisero Sub-county, Kenya.

2. Theoretical framework

Strieker et al. (2016) contend that monitoring of educational experts is essential to carrying out numerous tasks, including making teaching easier. The theory of supervision offers a framework for comprehending the many types of

supervision and its effects on the growth and effectiveness of teachers in program implementation. This idea suggests that the supervision of program execution must carry out five key tasks. They include advising function, development function, coordination, morale-boosting, and facilitation. Robinson believes that the five existing functions support the need for professional oversight during program implementation (Morgan & Sprenkle, 2007). The theory provides a framework for understanding how supervisory practices can influence the effectiveness of teaching and learning processes in the implementation of EYE programs. The theory can be used to explain how the various Independent Variables (IVs) such as adequacy of teaching-learning resources, necessary learning skills, and time management, can affect the Dependent Variables (DVs) which include adherence to curriculum, child engagement, assessment of learner progress, class management, teacher-learner interaction, and professional development.

Supervision theory emphasizes the importance of providing adequate resources to support effective teaching and learning. Supervisors play a critical role in ensuring that teachers have the necessary materials and resources. Adequate teaching and learning resources ensure that EYE teachers can follow the curriculum guidelines effectively, providing the necessary materials for each topic, hence creating more engaging and interactive learning experiences for children (Heckman, 2013). Adequate resources, including assessment materials and tools, facilitate comprehensive and accurate evaluation of learner progress. Resources also support teachers in organizing and managing their classrooms more effectively, reducing disruptions and enhancing learning.

According to Bernard & Goodyear (2009), supervision theory perspective, it is crucial for supervisors to ensure that teachers possess the necessary skills to deliver the curriculum effectively. This involves ongoing professional development and training. EYE teachers with the necessary skills are better equipped to deliver the curriculum as intended. Skilled teachers are more capable of engaging children through effective teaching strategies and techniques as well as effective assessment skills to better gauge and support learner progress. Continuous skill enhancement through professional development ensures that teachers remain effective and up-to-date with educational practices.

Effective supervision also includes monitoring and supporting teachers in managing their time efficiently, ensuring that instructional time is maximized and well-organized. Good time management allows teachers to cover the EYE curriculum comprehensively within the allocated time frame as well as help in planning engaging activities without rushing, maintaining learners' interest. Teachers who manage their time well can conduct regular assessments and provide timely feedback and are able to better organize their classrooms, reducing downtime and maintaining student focus. Teachers who manage their time effectively can balance their teaching responsibilities with opportunities for professional growth.

Supervision theory suggests that effective supervision practices encompass providing resources, developing necessary skills, and ensuring efficient time management. These practices collectively contribute to achieving positive outcomes in various areas of teaching and learning in EYE program. The effectiveness of teacher supervision practices is thus seen in their ability to support teachers in adhering to the curriculum, engaging children, assessing learner progress, managing classrooms, interacting with students, and pursuing professional development. This holistic approach ensures the successful implementation of the EYE program, benefiting both teachers and learners.

3. Conceptual framework

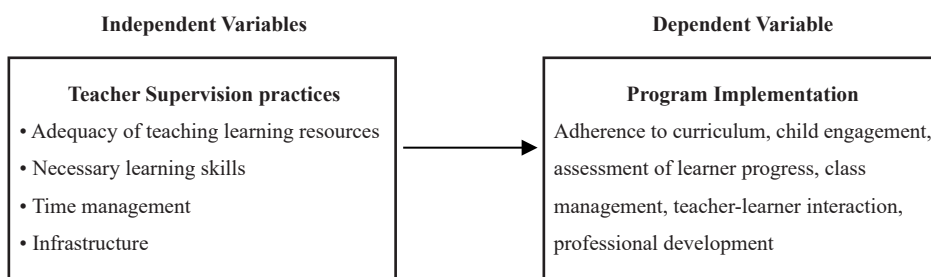


Figure 1. Conceptual Framework

Orodho (2008) defined a conceptual framework as a type of representation in which a researcher diagrammatically illustrates the relationship between study variables as seen in Figure 1. Program implementation was expected to positively interact with teacher supervision practices. This means that teacher supervision practices are expected to have an effect on EYE program implementation as demonstrated in the theoretical framework.

4. Empirical literature review

The directive method, collaborative approach, and non-directive approach are the most frequently used practices by instructors in their supervisory roles, according to experts (Glickman et al., 2017). Promoting high-quality early years education programs requires effective teacher supervision. Kaya and Dağ (2013) discovered that effective supervision favourably improves teacher performance, student engagement, and overall program quality in early childhood education settings. Stronge et al. (2007) found that good supervision techniques boost student achievement, particularly in early childhood education, in their study on the effects of teacher supervision on student outcomes. They stressed the importance of support and feedback in boosting teaching strategies and student learning.

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), a methodological framework was adopted to review literature. It is deliberately designed to improve the reporting of systematic reviews and meta-analyses and help ensure transparency and completeness in the literature review process, allowing researchers to provide a comprehensive and unbiased synthesis of relevant studies.

4.1 Approaches to teacher supervision practices

Supervisors who use a directing approach believe that the process of teaching is made up of standardized technical skills and known competences that instructors need to acquire in order to be successful in their teaching practices (Glickman et al., 2013). According to this approach, a supervisor's duties include assessing, exemplifying, and leading competencies. The directive approach's supervisors are aware of the information they require and how it will be gathered. These managers advise the educators on the best instructional strategies and the relevant action plans to be implemented. Directive supervisors develop improvement standards using baseline data from several sources, including classroom observation.

A supervisor who employs the directive model has an impact on the trainer by providing advice and recommendations that the supervisor believes the trainer needs (Kaya & Dağ, 2013). The directive supervisory model's main goal is to provide the teacher with practical guidance right away for dealing with challenges related to the teaching process. When there is a new teacher who needs more directive direction or when a teacher is having difficulty in the teaching process and needs careful advice/monitoring, a directive model of supervision is frequently used.

This works well for new teachers who need more direction and assistance. By adopting a directive style of supervision, the supervisor assumes direct responsibility for the problems and their remedies. The supervisor's job is extremely directive and aggressive. Usually, the supervisor makes contact first and establishes the agenda for all subsequent sessions. In this manner, the supervisor uses techniques including directing, standardizing, and reinforcing. The teacher will be able to apply the best teaching and learning techniques to boost student achievement since the supervisor gives advice to the teacher.

The directed approach of teacher supervision requires the supervisor to first identify the problems by gathering information, particularly through observation, and then speak with the teacher about the results (Glickman et al., 2013). According to research by Hishmanoglu (2010) among English language teachers in Northern Cyprus, Turkey, about how they felt about educational supervision, their supervisors were trying to catch problems while they were happening in the classroom. The survey also discovered that the supervisors were passing judgment on the teachers' performance.

The primary responsibility of a school is to deliver education, which includes a variety of activities and programs. The presence of appropriate infrastructure in the school is crucial for the smooth operation of various programs and activities. Infrastructure for schools comprises the buildings, grounds, furniture, and other furnishings as well as the tools needed to deliver education (Imazeki, 2004). The school building should be well thought out, spacious, practical, and have appealing architectural aspects in a perfect school infrastructure program. According to Wayne and Youngs (2003), the building's rooms should be roomy, well-ventilated, and equipped with fans and other amenities.

A library, various types of laboratories, workshops, art and craft rooms, staff rooms, principal's offices, school

offices, multimedia rooms, conference rooms, theatres, assembly areas, and gymnasiums are just a few of the facilities that should be included when building a school (McCarthy & Guiney, 2004). The core of any school's physical setup is the classroom. A school infrastructure program should include enough classrooms, each of which should be attractive. The rooms are tastefully adorned and the walls are painted in a few light hues. The walls should be painted and hung with new charts. A chalkboard should be mounted at the proper height on the front wall. Back walls should include built-in cabinets for storing books, tools, craft supplies, experimentation equipment, maps, and other instructional aids (Hawa, 2011).

In a classroom with mobile chairs and workstations, where various learning resources are easily accessible in storage cabinets. The chair can be adjusted simultaneously for a number of activities. The classroom should have sufficient lighting to allow students seated in various corners to see the instructor and the board. In the event of a power outage, the locations of the rooms would be open and Bright (Hishmanoglu, 2010).

While the phrase "classroom management" is frequently used synonymously with "discipline," it is also distinguished from "classroom instruction" (Egeberg et al., 2016). However, research from the 1980s asserted that administration and instruction by teachers are not independent but rather intricately intertwined. While behaviour clearly plays a role in classroom management, the phrase can also be used to describe the planning, organizing, and supervision of students, the teaching and learning process, and the classroom environment in order to create and maintain a positive learning environment (Hishmanoglu, 2010).

Success as a teacher depends on having a strong grasp of student behaviour. Teachers can affect student behaviour by using classroom management to establish a supportive learning environment. The main objective is to increase acceptable conduct while reducing student misconduct. This is done by effective teachers by controlling contingencies, or the things that happen before and after a behaviour. By doing this, they eliminate obstacles to giving pupils the abilities for successful communication, interpersonal interactions, and academic accomplishment. Ineffective classroom management leads to pandemonium, which disrupts student learning and frequently irreparably harms teacher morale (Marzano et al., 2003).

Unsurprisingly, research shows that teachers and principals rank effective classroom management as one of the top five essential teaching abilities. Since more than 15 years ago, disruptive student behaviour has been among instructors' top concerns and is one of the main causes of teacher turnover (Smart & Igo, 2010). Over 30% of instructors cited poor classroom management as their main reason for quitting their jobs, according to Hishmanoglu's (2010) research. Effective teaching and good classroom management are mutually reliant; you cannot have one without the other. Teachers must use the best teaching techniques to reduce misbehaviour. Teachers must be skilled in research-based behaviour control techniques to maximize learning.

According to research, students who consistently perform poorly on academic assignments have a negative attitude toward school and are more likely to act out and be classified as problem students than academically competent students (Glickman et al., 2017). Students may occasionally misbehave in order to get away from education that is too difficult for them. Similar to this, brilliant children who are not challenged or receive poor instruction behave disruptively. Poor training merely makes bad behaviour worse in any scenario. Work that is neither too easy nor too difficult must be assigned by teachers. Lessons that are appropriately matched to students' skill levels and the difficulty of the assignment are necessary. Students become irritated, bored, distracted, and eventually disruptive when there are mismatches.

Supervisors convey teaching as a problem-solving issue in a collaborative manner. In this method, two or more people set a challenge and attempt to use the teaching techniques that are thought to be pertinent (Glickman et al., 2017). In this method, the supervisor facilitates problem-solving while maintaining instructors' attention on their common issues. The supervisors and teachers have reached a mutually binding agreement on the criteria, techniques, and structures for subsequent teacher improvement. The teacher and the supervisor agree on the course of action. The final action plan for teacher improvement takes into account the supervisor's and the teacher's perspectives. If any of the parties are unhappy with the action plan, they have the right to reject it and resume talks until they reach an agreement. However, parties to a collaborative method must be willing to modify their original ideas and not always take firm positions (Glickman et al., 2017).

According to Glickman et al. (2017), collaborative models support treating the supervisor on par with the teacher when it comes to presentation, interaction, and contracting on modifications that have been mutually discussed. In this method, the supervisor's job is to facilitate problem-solving while continuing to engage in the conversation. Teachers

get the chance to express their thoughts and suggest plausible options for future action thanks to the collaborative approach used by teacher supervision. Ibrahim (2013) found that 83.3% of student teachers in the United Arab Emirates supported the use of a collaborative approach in their research.

Interactive teacher monitoring is a collaborative strategy. The process is collaboratively planned by the parties. As a result, both the supervisor and the teacher feel a sense of responsibility over the entire process. Although it is non-evaluative, it aims to improve the rapport between the supervisee and the supervisor. Glickman et al. (2017) assert that feedback obtained through interactive analysis benefits both the supervisor and the instructor in terms of knowledge provided, since including the supervised teacher's comments helps strengthen that teacher's confidence, which in turn improves the learning process. Since it is a supportive activity, the supervisor offers different techniques using a variety of skills as required, which improves the pedagogical abilities of the monitored teachers. As a result, the teacher would be more confident in her ability to use effective teaching techniques to improve the academic achievements of her students.

In the literature reviewed, studies included were those focusing on methods of assessing learning outcomes in education and the impact of supervision practices on these assessments and excluded studies without a focus on assessment outcomes. Some of the databases for literature included ERIC, www.base-search.net and Google Scholar. The search terms used included "assessment of learning outcomes," "early childhood education," "supervision practices," "learning skills," "time management" among others. The findings of the reviewed studies were also synthesized to determine how supervision practices influence learning outcomes, using both qualitative and quantitative methods.

4.2 Assessment of learning outcomes

Learning progress has elevated to the top of the priority scale for educational advancement. According to several research findings (Argina et al., 2017), student learning outcomes are still not at their best. Students' learning outcomes do not demonstrate comprehensive results when viewed from particular angles. Some personality traits are only highlighted in the area of knowledge and not in the area of attitudes, abilities, or other traits. Learning, which is thought to be of lower quality, is one of the major factors affecting student learning outcomes.

The findings of the Canales and Maldonado (2018) study demonstrated that student achievement is influenced by teacher quality. The educational background and professional experience of teachers have an impact on what kids learn. The findings of Motegi and Oikawa's (2019) study further support the notion that student achievement is influenced by the calibre of the instruction. The learning component and other learning components interact with one another. The quality of teacher learning affects how well learning time is used. When learning time is combined with excellent teacher learning, it has a significant impact on student accomplishment.

Learning is a system in which certain elements interact and have an impact on one another. These elements-educational objectives, learning strategies, learning models, learning methods, learning materials, and learning assessments-determine the learning results for students. Based on these elements, the method and the results of student learning are primarily influenced by the calibre of the instructor and the quality of the teacher's learning.

On the other hand, according to the findings of a study conducted by Kang and Im (2013), based on a number of learning components, teacher communication factors, teacher support, guidance, and facilitation of learning factors, and the presence of an instructor are factors that significantly influence learning achievement and learning satisfaction perceived by students in an online learning environment.

Wiyono et al. (2017) discovered that only 8 out of the 25 approaches for teacher monitoring evaluated had a discernible effect on instructors in their study. These methods consist of action research in the classroom, classroom visits, teaching demonstrations, training activities, teacher group meetings, training, seminars, and clinical supervision. The efficiency of the instructional supervision process, including the strategy and supervision techniques employed, unquestionably has an impact on this. The supervisor's behavioural approach when performing supervision is known as the supervision approach. The three types of supervision approaches-directive, non-directive, and collaborative-can be broadly categorized as follows (Glickman et al., 2017).

The inclusion criteria for the literature reviewed included those focusing on methods of assessing learning outcomes and more so in early childhood education and the impact of supervision practices on these assessments. Studies not specifically focused on assessment outcomes were excluded. The information sources were ERIC, <https://>

link.springer.com and Google Scholar among others and the selection of studies to be reviewed involved initial screening of titles and abstracts followed by a detailed review of full-text articles and documentation using PRISMA flowchart.

4.3 Non-directive approach

This approach is based on the notion that instructors are capable of identifying and resolving their own issues (Glickman et al., 2017). The proponents of the non-directive approach argue that when a particular teacher recognizes the need for a change and takes ownership of it, teacher improvement is more likely to be meaningful. The supervisor is only considered in this situation as a conduit for the plan's development. Although the teacher is given unlimited authority, the supervisor's actions should not be viewed as passive (Glickman et al., 2013). In this method, the supervisor enables the instructor to achieve self-discovery and self-actualization.

The non-directive model approach employs attractive words to elicit thoughts while encouraging the trainer to provide suggestions (Wiyono et al., 2017). According to Wiyono et al. (2017), the non-directive approach focuses more on expressing the opinions of the teachers and offering information as needed. This tactic aims to inspire teachers to take charge of formulating and evaluating their own judgments. In contrast to the directive approach, the non-directive approach is predicated on the idea that teachers can engage in self-evaluation and self-reflection to spot issues and make suggestions for change.

Studies examining non-directive supervisory approaches in educational settings, particularly focusing on early childhood education. Studies without a focus on non-directive supervision were excluded from the review. The sources of information included Scopus and ERIC among others with the search terms being “non-directive supervision,” “early childhood education,” “teaching resources” OR “learning skills.” The data collection process involved extracting data on non-directive supervision practices and their impact on teacher-learner interaction and professional development.

5. Research methodology

The research was carried out in the Khwisero Sub-county of Kakamega County. The research methodology for the study involves a detailed and systematic approach to collecting and analysing data. The study employed a cross-sectional survey research design for its appropriateness for obtaining a snapshot of the current state of teacher supervision practices and their effectiveness in the implementation of the EYE program. It allows the researchers to collect data at a single point in time from a diverse population (Mackey & Bryfonski, 2018). It also allows for both quantitative and qualitative data to be gathered in the same study. The target population included 61 schools in Khwisero Sub-county, Kakamega County, 61 head teachers, 61 teachers in charge of the early years of the education section, 4 ward representatives, 1 program officer, 67 assistant teachers, and 61 parent representatives. This diverse group encompasses key stakeholders involved in the EYE program, ensuring comprehensive insights into supervision practices.

The study used stratified random sampling and purposive sampling to select the sample. The assistant teachers were divided into different strata based on their gender and from each stratum, a random sample was selected to ensure that each subgroup was adequately represented (Orodho, 2008). This technique ensured that the sample was representative of the population, reducing sampling bias and increasing the reliability of the results. Purposive sampling was used to select participants who were particularly knowledgeable or experienced in the EYE program. Specifically, key informants like the head teacher, teacher in charge, program officer and ward representatives were selected because of their unique insights and roles in the implementation and supervision of the program. This approach also ensures that the data collected is rich and relevant to the study objective.

The instruments used to collect data in this study included questionnaires, interview schedules, and a document analysis guide. Questionnaires were used to collect quantitative data due to their efficiency (Kothari, 2013). The tool was structured with closed-ended questions to facilitate statistical analysis and some open-ended questions for additional qualitative insights. The target respondents included head teachers, teachers in charge, assistant teachers, and parent representatives (see Table 1). Interview schedules were used to collect in-depth qualitative data and capture nuanced insights from key informants. The instrument included semi-structured with open-ended questions, allowing flexibility to explore responses in detail. The target respondents were the program officers and ward representatives. A document

analysis guide was used to review and analyse relevant documents related to the EYE program and supervision practices. A structured guide outlined the specific documents to review (e.g., supervision reports, curriculum guidelines, teacher performance records) and key aspects to examine. The source included school records, official reports from the education department, and documentation from the program office.

Table 1. Sample size

Details	Sample Size (%)	Sampling technique
Head teacher	10	Purposive
Teacher in charge	10	Purposive
Ward representative	4	Purposive
Assistant Teachers	50	Stratified Random sampling
Program officer	1	Purposive
Parents representatives	10	Purposive
Total	85	

Source: Research data (2021)

The questionnaires, interview schedules, and document analysis guide were developed and pilot-tested to ensure clarity and reliability. Research assistants were trained on data collection procedures and ethical considerations: informed consent, confidentiality and anonymity, beneficence, maleficence as well as respect for all participants. Questionnaires were distributed to selected head teachers, teachers, assistant teachers, and parent representatives. Interviews were conducted either face-to-face or virtually with the program officer and ward representatives. Relevant documents were collected and reviewed using the document analysis guide.

Analysis of data was done by checking the gathered raw data for completeness, usefulness, and accuracy. Collected data was analysed both qualitatively and quantitatively. Quantitative data was analysed with the help of a statistical package for social scientists generating both inferential and descriptive statistics. The effect of supervisory practices was analysed descriptively using frequency counts, means, and standard deviation. Quantitative findings were presented using tables. Qualitative data was transcribed and thematically analysed to extract key themes and insights from the interviews and document reviews, providing a deeper understanding of the effectiveness of supervision practices.

6. Findings

The head teachers were asked to indicate how often they visit early years education centres. The findings are summarized in Table 2.

From the results in Table 2 60 percent of the head teachers informed that they carry out visits once a week while the remaining 40 percent said they visited the early years education centre as the need arises. The majority of the respondents visited the centre once a week for assessment. This implies that a significant number of head teachers are more concerned with the implementation of the Early Years Education program.

The interview schedule carried out on one of the representatives portrayed the following scenario;

“My view about a visit to early years education centres for assessment is ideal. Only that at times there is a long time and I like the fact that this helps us master what is expected of us for positive results” Parents

Representative 001.

In addition, one of the ward representatives noted,

“Though there were few visits to the early childhood education centres, it usually has very significant impacts on supervision and learners outcome” Ward Representative 003.

The frequency of supervision plays a key role in the effectiveness of teacher supervision practices. According to Altun and Sarkaya (2020), it directly affects the adequacy of teaching resources, the development of necessary learning skills, and effective time management. These, in turn, affect key educational outcomes including adherence to the curriculum, child engagement, and assessment of learner progress, class management, teacher-learner interaction, and professional development of the teachers. Regular supervision ensures continuous support and feedback, enabling teachers to maintain high standards of teaching including addressing emerging challenges promptly (Bereiter & Scardamalia, 2018). This systematic approach leads to a more robust and effective plan for the implementation of the EYE program, which ultimately benefits both teachers and learners. Therefore, the study emphasizes the need for frequent and consistent supervisory practices to enhance the overall quality of early childhood education.

Table 2. Monitoring and supervision visits by head teachers to the early years education centre

Visits at EYE	Frequency	Percent
Once in a week	6	60
As need arises	4	40
Total	10	100.0

Source: Field Data, 2022

6.1 Specific areas to look at during monitoring and supervision

The respondents were asked to indicate the specific areas to look at during supervision and monitoring. The results are shown in Table 3 below.

From the findings in Table 3 out of 66 respondents, 11(16.7%) indicated that they use register or lesson plans as one of the specific areas to look at during supervision. Therefore, this indicates that register was not often looked at. Ten of them, 10(15.2%) indicated that they used a record of work covered while 9(13.6%) said they used schemes of work as areas of specific areas to look at during supervision and monitoring. There is a significant number of head teachers' conscious for teachers to maintain accurate records of attendance (register), schemes of work, and the record of work covered. This attention to detail by the head teachers leads to better organization, accountability, and evidence of progress for both the teachers and supervisors. The findings also show that 8(12.1%) looked at infrastructure, 7 (10.6%) looked at professional records, and 5(7.6%) looked at timetables as specific areas to look at during supervision and monitoring. This therefore implies that head teachers are concerned about infrastructure facilities, availability of resources, aspects that impact the teaching and learning experience. According to the findings the specific areas under the study, none had a response of over (50%). This therefore implies that at least the teachers considered looking at all the specific areas captured in the study. From the findings, it can be noted that there are various areas of teacher supervision, which are not adequately addressed as indicated by few respondents. This means that teacher supervision is not fully effective.

Several possible reasons may explain why various areas of teacher supervision are not adequately addressed. These may include resource constrain, lack of trained supervisors, high teacher-supervisor ratio. Inconsistent supervision practices, lack of follow-up and feedback mechanisms as well as time constraint (Canales & Maldonado, 2018). To

address these issues, it is important to develop strategies that include adequate funding for supervision activities, training for supervisors, standardized supervision practices, ongoing professional development opportunities, robust follow-up mechanisms, and a supportive cultural environment (Buntins et al., 2021). According to Clark et al. (2020), by addressing these underlying factors, the supervision process can become more comprehensive and effective, leading to better support for teachers and improved educational outcomes.

Table 3. Specific Areas of Supervision

Specific Areas	Frequency	Percent
Register	11	16.7
Schemes of work	9	13.6
Lesson plans	11	16.7
Record of work covered	10	15.2
Timetable	5	7.6
Capture teaching learning resources	5	7.6
Professional records	7	10.6
Infrastructure	8	12.1
Total	66	100.0

Source: Field Data, 2022

6.2 Supervisory practices

The respondents were asked to give responses on the effect of supervisory practices in implementation of EYE program. The response was put on a Likert scale where; Strongly Disagree (SD), Disagree (D), Agree (A), Strongly Agree (SA).

The findings in Table 4 show that the most effective supervisory practices are identifying of training needs of teachers ($M = 2.9$, $StD = 0.67$) agreed by a significant number of teachers 25(37.9%). ($M = 2.9$, $StD = 0.67$), indicates that, on average, the teachers “Agree” with the effectiveness of supervisors in identifying the training needs of learners. A lower standard deviation of 0.67 suggests that the responses were relatively consistent, implying that many respondents shared a similar view on effectiveness of this practice. Ensuring that learners acquire cognitive skills had a mean and standard deviation of ($M = 3.0$, $StD = 0.46$) with a majority of the respondents 32(48.5%) strongly agreeing. This practice received a higher level of agreement from the respondents. The low standard deviation of 0.46 suggests that there was a higher level of agreement among the respondents regarding the positive effect of supervisors in ensuring learners’ cognitive skill development.

A significant number of teachers 26(39.4%) strongly agreed that ensuring learners acquire language development skills ($M = 3.1$, $StD = 0.34$) is an effective supervisory practice. This indicates a higher level of agreement among respondents and the low standard deviation of 0.34 suggests a high level of consent regarding the effectiveness of supervisors in promoting language development skills.

Adequacy of Teaching and Learning Resources had the highest mean rating of 3.2, thus strong agreement among the teachers. This was from 31(47%) teachers who strongly agreed. This implies adequacy of teaching and learning resources is indicated as effective supervisory practice. It was also noted that less effective supervisory skills were ensuring that learners acquire social skills ($M = 2.3$, $StD = 0.57$) indicated by 22(33.3%). Thus, this concludes that

teachers on average, “Agree” but to a lesser extent compared to the most effective practices. The moderate standard deviation of 0.57 suggests that there was more variability in the responses, with some teachers feeling more strongly about its effectiveness than others. Other non-effective supervisory practices were effective time management and the condition of the infrastructure in the classroom and school is good, with a majority of the teachers 28(42.4%), and 31(47%) respectively strongly disagreeing with their effectiveness.

Table 4. Effectiveness of Supervisory Practices

Statements	SD	D	A	SA	M	StD
Identify training needs of learners	9(13.6)	10(15.2)	25(37.9)	22(33.3)	2.9	0.67
Ensures learners acquire cognitive skills	11(16.7)	13(19.7)	10(15.2)	32(48.5)	3.0	0.46
Ensures learners acquire psychomotor skills	21(31.8)	33(50.0)	10(15.2)	2(3.0)	1.9	0.41
Ensures learners acquire social skills	17(25.8)	22(33.3)	16(24.2)	11(16.7)	2.3	0.57
Ensures learners acquire language development skills	5(7.6)	9(13.6)	26(39.4)	26(39.4)	3.1	0.34
Adequacy of teaching and learning resources	3(4.5)	11(16.7)	21(31.8)	31(47)	3.2	0.25
Condition of the infrastructure in the classroom and school is good	31(47)	16(24.2)	10(15.2)	9(13.6)	2.0	0.78
Effective time management	28(42.4)	21(31.8)	9(13.6)	8(12.1)	2.0	0.67
Overall mean and Standard deviation					2.5	0.18

Key: Strongly Disagree (SD), Disagree (D), Agree (A), Strongly Agree (SA)
 Source: Field Data, 2022

Ensuring the acquisition of psychomotor skills was perceived as noneffective supervisory practices were. This was according to 33(50%) who disagreed (M = 1.9, StD = 0.41). The low mean 1.9, and a very low standard deviation of 0.41 suggest a strong disagreement among the respondents that this supervisory practice was effective in ensuring learners’ psychomotor skill development. The findings therefore demonstrate that teacher supervision practices are effective in some areas while others lack behind, which could be described as effective to a small extent.

The effectiveness of supervisory practices in this study is pivotal in ensuring the successful implementation of the EYE program. Effective supervision practices encompass various strategies and actions that promote high standards of teaching, efficient resource utilization, and continuous professional development.

Professional development and training for teachers including organizing workshops, seminars, and training sessions for teachers is important as it encourages continuous learning and skill enhancement. According to Ehren et al. (2017), professional development equips teachers with new teaching methodologies and classroom management techniques. Their enhanced skills lead to better teaching practices, which increase learners’ engagement and overall learning outcomes. Resource provision and management, including distribution and maintenance, ensures that schools have adequate teaching and learning materials. Effective resource management ensures that teachers have the necessary materials to support their instruction. Adequate resources facilitate the effective delivery of the curriculum and create engaging learning environments (Egeberg et al., 2016).

Fenanlampir et al. (2019) inform that administrative support for teachers reduces non-teaching workload and ensures a supportive school environment. It also improves time management by the teacher since it allows them to focus more on instructional activities and less on administrative tasks. With more time for teaching, they can better manage their classrooms and interact more effectively with learners.

The effectiveness of supervisory practices during monitoring and supervision is crucial for the successful

implementation of the EYE program. These practices ensure that teaching resources are adequate, learning skills are continuously developed, and time is efficiently managed. In turn, this ensures that the curriculum is adhered to, learners are engaged and their progress is accurately assessed, classrooms are well-managed, teacher-learner interactions are positive and teachers' professional development is ongoing. By implementing effective supervisory practices, schools can create an environment that supports high-quality education and fosters continuous improvement in teaching and learning outcomes.

6.3 Teacher preparedness for program implementation

Respondents were asked to indicate their preparedness in terms of program Implementation and materials availability and use. On the scale, less prepared meant the teacher was almost not prepared, moderately prepared meant they were in a position to use what they had while adequately prepared meant they had full materials available for use.

The findings were summarized in Table 5.

Table 5. Program Implementation and material availability and Use Preparedness

Statements	SD	D	A	SA	M	StD
I have my schemes of work at the beginning of the term	8(12.1)	11(16.7)	25(37.9)	22(33.3)	2.9	0.43
I have a lesson plan before I teach the lesson	5(7.6)	27(40.9)	27(40.9)	7(10.6)	2.5	0.16
I use the lesson plan during the lesson	13(19.7)	11(16.7)	30(45.5)	12(18.2)	2.6	0.37
My record of work is up to date	15(22.7)	9(13.6)	18(27.3)	24(36.4)	2.8	0.56
All my lessons are timetabled	10(15.2)	11(16.7)	11(16.7)	34(51.5)	3.0	0.24
I have a timetable	2(3.0)	4(6.1)	36(54.5)	24(36.4)	3.2	0.19
I mark the register daily	7(10.6)	8(12.1)	34(51.5)	17(25.8)	2.9	0.24
I use teaching aids during the lesson	16(24.2)	28(42.4)	16(24.2)	6(9.1)	2.2	0.67
Charts are displayed in the classroom	3(4.5)	7(10.6)	21(31.8)	35(53.0)	3.3	0.18

The findings show that charts are displayed in the classrooms as indicated by a high rating ($M = 3.3$, $StD = 0.18$). The high mean rating of 3.3 majority of teachers 35(53%) strongly agree that charts are displayed in their classrooms. Therefore this implies that teachers are making use of visual aid materials to improve the learning environment and support early learners' understanding. The majority, 36(54.5%) of teachers have timetables ($M = 3.2$, $StD = 0.19$). The high mean rating of 3.2 indicates the majority of teachers 36(54.5%) have timetables for their classes which is an essential organizational tool that helps teachers plan and their time. 34(51.5%) strongly agreed, that their lessons are timetabled ($M = 3.0$, $SD = 0.24$). This indicates most teachers have a planned schedule for conducting their classes. The findings also show a high rating on up-to-date records ($M = 2.8$, $SD = 0.56$), 24(36.4%) of teachers acknowledge that their records of work are up-to-date. The standard deviation of .56 indicates some teachers may have more organized and updated records, while others might not. A majority of teachers 34(51.5%) agree ($M = 2.9$, $SD = 0.24$) that they mark the register daily. This is an essential practice for maintaining attendance records and tracking students' presence and engagement in class.

A considerable number of teachers 25(37.9%) agree ($M = 2.9$, $SD = 0.43$) that they have their schemes of work at the beginning of the term. This shows that teachers are well-prepared at the start of the term. 27(40.9%) of teachers

agree $M = 2.6$, $SD = 0.37$) that they have lesson plans before they teach the lessons. The standard deviation of 0.37 suggests some variability in responses, indicating that not all teachers have lesson plans prepared before teaching. There was a low rating on the issue of teaching aids during the lessons ($M = 2.2$, $SD = 0.67$). The higher standard deviation of 0.67 suggests that there is more variation in the use of teaching aids among the teachers. The findings from Table 5. suggest that program implementation and material availability and use preparedness are being observed to a considerable extent. Teachers are generally making efforts to display charts, maintain timetables, mark the register, and keep up-to-date records. Still there are areas that need attention, and these include ensuring that all teachers consistently have their schemes of work at the beginning of the term and that lesson plans and teaching aids are more used during lessons.

Teacher preparedness is a crucial factor in the successful implementation of the EYE program. Effective preparedness encompasses having the necessary knowledge, skills, resources, and strategies to deliver the program effectively. Knowledge of the curriculum is a key component of teacher preparedness. Teachers must be well-versed in the curriculum content and objectives to ensure effective delivery. They need to understand the scope and sequence of the curriculum and how to align lesson plans with curriculum goals (Kim et al., 2019). Knowledgeable teachers are better equipped with the necessary skills to deliver the curriculum effectively as well as have a deep understanding of the curriculum and are more likely to adhere to it including accurately assessing learner progress. Teacher preparedness involves knowing how to effectively use available teaching and learning resources by integrating them into the lesson plans to enhance the learning process. Preparation in resource utilization can promote effective utilization of the available materials to support curriculum delivery and keep learners engaged (Heckman, 2013).

The teachers need to have a repertoire of instructional skills and strategies (methods) to engage learners and cater for their diverse learning needs, hence the ability to implement various teaching strategies effectively. Well-prepared teachers have a range of instructional skills to draw upon, including effective instructional strategies, enhance student engagement and foster positive teacher-learner interactions (Altun & Sarkaya, 2020).

The effectiveness of teacher preparedness for program implementation is vital in achieving the desired educational outcomes. It ensures that teachers have the necessary skills, resources, and time management capabilities, hence directly influencing the adequacy of teaching resources, learning skills, and time management. Teachers who are prepared can deliver the curriculum effectively, engage learners, manage their classrooms efficiently, and assess their progress accurately. During monitoring and supervision, assessing and enhancing teacher preparedness can lead to significant improvements, thereby ensuring the successful implementation of the EYE program in Khwisero Sub-County.

6.4 Teacher perception of monitoring and supervision activities

Table 6. Perception of the monitoring and supervision activities

	Frequency	Percentage
SD	34	51.50%
D	15	22.70%
N	10	15.20%
A	6	9.10%
SA	1	1.50%
Total	66	100.00%

Key: SD- Strongly Disagree, D- Disagree, N- Neutral, A- Agree, and SA- Strongly Agree
Source: Field Data, 2022

The teachers were asked to indicate their perception of the monitoring and supervision activities. This was rated on a Likert scale where: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, and SA = Strongly Agree. The findings were presented in Table 6.

From the findings, 34(51.1%) of the teachers strongly disagreed with the monitoring and supervision activities, 15(22.7%) disagreed while 10(15.2%) were neutral about the monitoring and supervision activities. 6(9.1%) agreed, and the remaining 1(1.5%) of the teachers strongly agreed with the monitoring and supervision activities. Most of the teachers show disagreement with the current monitoring and supervision activities given that the instructional material for learning activities is not adequate for them to carry out the exercise as required. The remaining few agreed despite the challenges.

The interview schedule carried out on one of the ward representatives portrayed the following scenario;

“My view about monitoring and supervision is that it is okay. However, the challenges that schools and particularly teachers face make the whole exercise difficult. It is my prayer that more funds are channelled to pre-primary schools for instructional materials and equipment so that the exercise becomes better”. Ward Representative 004.

The program officer of the held the following observation;

“Monitoring and supervision is okay. It reminds teachers what is expected of them in the process of teaching and learning. We also need to get more funds towards instructional materials and equipment in schools so that teachers are well equipped to carry out their duties”.

Teachers' perception of monitoring and supervision activities affects their effectiveness and the overall success of the EYE program and especially their motivation, engagement, and readiness to implement the program. Understanding these perceptions helps in identifying strengths and areas for improvement in the supervision process. On one hand, teachers who perceive monitoring and supervision as supportive and collaborative are more likely to feel encouraged and motivated. When supervision includes constructive feedback, teachers view it as an opportunity for professional growth and appreciate supervision activities that provide opportunities for ongoing professional development and skill enhancement (Meloy et al., 2019). On the other hand Mwamwenda (2014) highlights that teachers may feel that excessive supervision is intrusive and undermines their professional autonomy. If feedback is perceived as overly critical or judgmental, it can lead to defensiveness and resistance, and teachers may feel frustrated if monitoring highlights deficiencies in resources without providing solutions.

Teachers who view supervision as a means to enhance resource availability are more likely to utilize resources effectively, hence supporting curriculum delivery, impacting adherence to the curriculum and student engagement (Motegi & Oikawa, 2019). Those who perceive supervision as a source of professional development are more inclined to improve their instructional skills leading to better teaching practices, improved teacher-learner interactions and overall classroom management (Marshall, 2013). Teachers who receive constructive feedback on time management strategies can optimize their classroom time, which will significantly contribute to smoother class operations, better student engagement, and adherence to the curriculum.

Teachers' perceptions of monitoring and supervision activities play a critical role in their effectiveness and the overall success of the EYE program. Positive perceptions foster a supportive environment, encourage professional growth, and enhance teacher preparedness. This, in turn, positively affects the adequacy of teaching-learning resources, necessary learning skills, time management as well as adherence to curriculum, child engagement, assessment of learner progress, class management, teacher-learner interaction, professional development.

Further analysis was also carried out using the Pearson, Chi-Square test of association to establish whether there was an association between the effectiveness of teacher supervision practices and program implementation. The findings are presented as shown in the Table below.

The findings indicate that there is a significant association between the effectiveness of teacher supervision practices and program implementation as shown by the Pearson Chi-Square test of association, $\chi^2_{16,0.05} = 45.073$, at 0.05. This implies that program implementation is associated with the effectiveness of teachers' supervision practices.

Table 7. Association between Teacher Supervision and Program Implementation

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	45.073 ^a	16	0.000
Likelihood Ratio	47.765	16	0.000
Linear-by-Linear Association	0.009	1	0.926
N of Valid Cases	66		

a. 21 cells (84.0%) have expected count less than 5. The minimum expected count is 0.12

Additionally, Kang and Im (2013) have demonstrated that, based on a variety of learning components, teacher communication variables, teacher support, guidance, and facilitation of learning, as well as the instructor’s presence, are variables that significantly influence learning achievement and learning satisfaction perceived by students in an online learning environment. It is evident from the results that teacher monitoring is ineffective in the studied schools. Poor teacher supervision in schools was found in previous research by Ngode (2014), which could have an adverse impact on the execution of early-year education programs (Didinya et al., 2018). The findings also agree with those of Burant (2009), who established that teacher supervision is less practised among schools, especially for early-year education. It can thus be concluded that there is poor teacher supervision among schools in Khwisero Sub-county.

7. Conclusion and recommendation

The findings revealed that teacher supervision practices play a pivotal role in shaping the success of the EYE program. The diversity of approaches employed in supervising EYE teachers highlighted the need for tailored strategies that cater to the unique requirements of early childhood education. Moreover, the frequency of supervisor visits conducted was low, which compromised its meaningful and positive contribution to the overall program effectiveness since it is a critical factor. Areas of supervision, such as curriculum adherence and classroom management, were identified as key determinants of successful program implementation. The nature of supervision practices was found to influence teacher preparedness, emphasizing the importance of aligning these practices with the best standards in early childhood education. However, the study also revealed that while supervision is effective in many areas, there are variations in its impact. This suggests the need for targeted improvements in certain aspects of supervisory practices to achieve uniformly high effectiveness across all domains.

In light of these findings, it is recommended that education authorities in Khwisero Sub-County consider refining and optimizing teacher supervision practices in the EYE program. This could involve targeted professional development for supervisors, the establishment of clear guidelines for effective supervision, and ongoing support for EYE teachers. By implementing these recommendations, EYE stakeholders can support and strengthen the supervisory initiatives in place, leading to more effective curriculum implementation and ultimately improving the quality of EYE in Khwisero Sub-County.

Conflict of interest

The authors declare no competing financial interest.

References

- Argina, A. W., Mitra, D., Ijabah, N., & Setiawan, R. (2017). Indonesian PISA result: What factors and what should be fixed? *Proceedings Education and Language International Conference*, 1(1), 6979. <http://jurnal.unissula.ac.id/index.php/ELIC/article/view/1212>
- Altun, B., & Sarkaya, P. Y. (2020). The actors of teacher supervision. *Journal of Human Sciences*, 17(1), 284-303.
- Bereiter, C., & Scardamalia, M. (2018). Intentional learning as a goal of instruction. In *Knowing, learning, and instruction* (pp. 361-392). Routledge.
- Bernard, J. M., & Goodyear, R. K. (2009). *Fundamentals of clinical supervision* (4th ed.). Needham Heights, MA: Allyn & Bacon.
- Buntins, K., Kerres, M., & Heinemann, A. (2021). A scoping review of research instruments for measuring student engagement: In need for convergence. *International Journal of Educational Research Open*, 2, 100099.
- Canales, A., & Maldonado, L. (2018). Teacher quality and student achievement in Chile: Linking teachers contribution and observable characteristics. *International Journal of Education Development*, 60, 3350. <https://doi.org/10.1016/j.ijedudev.2017.09.009>
- Clark, H., Coll-Seck, A. M., Banerjee, A., Peterson, S., Dalglish, S. L., Ameratunga, S., Balabanova, D., Bhan, M. K., Bhutta, Z. A., Borrazzo, J., Claeson, M., Doherty, T., El-Jardali, F., George, A. S., Gichaga, A., Gram, L., Hipgrave, D. B., Kwamie, A., Meng, Q., ... Costello, A. (2020). A future for the world's children? A WHO-UNICEF-Lancet Commission. *The Lancet*, 395(10224), 605-658. [https://doi.org/10.1016/S0140-6736\(19\)32540-1](https://doi.org/10.1016/S0140-6736(19)32540-1)
- Didinya, E., Ouda, B., & Ndanu, C. (2018). Effect of performance appraisal of teachers on academic performance of students in public secondary schools in Hamisi Sub-County, Vihiga County, Kenya. *Journal of Popular Education in Africa*, 2(3), 127-143.
- Egeberg, H. M., McConney, A., & Price, A. (2016). Classroom management and national professional standards for teachers: A review of the literature on theory and practice. *Australian Journal of Teacher Education*, 41(7), 118.
- Ehren, M. C., Eddy-Spicer, D., Bangpan, M., & Reid, A. (2017). School inspections in low-and middle-income countries: Explaining impact and mechanisms of impact. *Compare: A Journal of Comparative and International Education*, 47(4), 468-482.
- Fenanlampir, A., Batlolona, J. R., & Imelda, I. (2019). The struggle of Indonesian students in the context of TIMSS and PISA has not ended. *International Journal of Civil Engineering and Technology (IJCIET)*, 10(2), 393406. <http://www.iaeme.com/ijciyet/issues.asp>
- Glickman, D., Gordon, S. P., & Gordon, J. M. R. (2017). *Supervision and teacher leadership, a developmental approach* (7th ed.). Boston: Pearson Allyn & Bacon.
- Glickman, D., Gordon, S. P., & Gordon, M. R. (2013). *The basic guide to supervision and instructional leadership*. New York: Pearson Education.
- Hawa, O. (2011). *School based factors influencing performance in Kenya Certificate of Primary Education in public primary schools, in Tarbaj Division, Wajir East, Kenya*. University of Nairobi, Kenya. <http://erepository.uonbi.ac.ke:8080/handle/123456789/4410>
- Heckman, J. (2013). Skill formation & the economics of investing in disadvantages. *Journal of Human Resources*, 312(5782), 1900-1902.
- Hishmanoglu, M. H. (2010). English language teachers' perceptions of educational supervision in relation to their professional development: A case study of northern Cyprus. *Research on Youth and Language*, 3(7), 16-34.
- Ibrahim, A. S. (2013). Approaches to supervision of student teachers in one UAE teacher education program. *Teaching and Teacher Education*, 34(3), 38-45. <https://doi.org/10.1016/j.tate.2013.04.002>
- Imazeki, J. (2004). Teacher salaries and teacher attribution. *Economics of Education Review*, 24, 431-449.
- Kang, M., & Im, T. (2013). Factors of learnerinstructor interaction which predict perceived learning outcomes in online learning environment. *Journal of Computer Assisted Learning*, 29(3), 292301. <https://doi.org/10.1111/jcal.12005>
- Kariuki, R. W., Njoka, J. N., & Ndegwa, L. W. (2019). Challenges facing juvenile delinquents rehabilitation centres in Kenya: A case study of Othaya Rehabilitation Centre, Nyeri, Kenya. *African Journal of Education, Science and Technology*, 5(2), 164-172.
- Kaya, S., & Dağ, F. (2013). Turkish Adaptation of Technological Pedagogical Content Knowledge Survey for Elementary Teachers. *Educational Sciences: Theory & Practice*, 13(1), 302-306.
- Kim, S., Kim, Y. J., Peck, K. R., & Jung, E. (2020). School opening delay effect on transmission dynamics of coronavirus disease 2019 in Korea: based on mathematical modeling and simulation study. *Journal of Korean Medical Science*, 35(13), e143. <https://doi.org/10.3346/jkms.2020.35.e143>
- Kim, S., Raza, M., & Seidman, E. (2019). Improving 21st-century teaching skills: The key to effective 21st-century

- learners. *Research in Comparative and International Education*, 14(1), 99-117.
- Kothari, C. R. (2013). *Research methodology: Methods and techniques* (3rd ed.). New Delhi: New Age International limited.
- Mackey, A., & Bryfonski, L. (2018). Mixed methodology. *The Palgrave handbook of applied linguistics research methodology* (pp. 103-121). Palgrave Macmillan, London.
- Marshall, K. (2013). *Rethinking teacher supervision and evaluation: How to work smart, build collaboration, and close the achievement gap*. John Wiley & Sons.
- Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2003). *Classroom instruction that works: Research-based strategies for increasing student achievement*. Alexandria, VA: Association for Supervision and Program Development (ASCD).
- McCarthy, M., & Guiney, E. (2004). *Building a professional teaching corps in Boston: Baseline study of new teachers in Boston's public schools*. Boston: Boston Plan for Excellence.
- Meloy, B., Gardner, M., & Darling-Hammond, L. (2019). *Untangling the Evidence on Preschool Effectiveness*. Learning Policy Institute, Palo Alto.
- MoEST. (2006). *Strategic Plan, Zero Draft*. Nairobi: Government Printer.
- Morgan, M., & Sprenkle, D. (2007). Toward a common factors approach to supervision. *Journal of Marital and Family Therapy*, 33(1), 1-17.
- Motegi, H., & Oikawa, M. (2019). *The effect of teacher quality on student achievement: Evidence from Japan*. *Japan and the World Economy*, 52, 100961. <https://doi.org/10.1016/j.japwor.2019.100961>
- Mwamwenda, T. (2014). Early childhood education in Africa. *Mediterranean Journal of Social Sciences*, 5(20), 1403. <https://www.mcser.org/journal/index.php/mjss/article/view/3875/3792>
- NACECE. (2008). *Report of 2008 Activities*. Nairobi: KIE.
- Ngode, L. A. (2014). *Impact of supervision on the implementation of early childhood education curriculum in selected public pre-schools in Lang'ata District, Nairobi County, Kenya*. Doctoral dissertation, University of Nairobi.
- Nuugwedha, L. P. K. (2014). *An education law perspective on Early Childhood Development provision in rural Namibia*. Doctoral dissertation, University of Namibia. <http://hdl.handle.net/11070/1524>
- Orodho, A. J. (2008). *Elements of Education and Social Science Research Methods*. Kanazja, Nairobi.
- Smart, J. B., & Igo, L. B. (2010). A grounded theory of behavior management strategy selection, implementation, and perceived effectiveness reported by first-year elementary teachers. *Elementary School Journal*, 110(4), 567-584.
- Strieker, T., Adams, M., Cone, N., Hubbard, D., & Lim, W. (2016). Supervision matters: Collegial, developmental and re-ective approaches to supervision of teacher candidates. *Cogent Education*, 3, 1251075.
- Stronge J. H., Ward T. J., Tucker P. D., Hindman J. L. (2007). What is the relationship between teacher quality and student achievement? An exploratory study. *Journal of Personnel Evaluation in Education*, 20(3-4), 165-184. <https://doi.org/10.1007/s11092-008-9053-z>
- Wayne, A. J., & Youngs, P. (2003). Teacher characteristics and student achievement gains: A review. *Review of Educational Research Spring*, 73(1), 89-122.
- Wiyono, B. B., Kusmintardjo, & Sucipto, S. (2017). The effective supervision techniques that influence teachers performance. *Man in India*, 97(24), 25-33. https://serialsjournals.com/abstract/33975_3.pdf