



ADEQUACY OF SCHOOL INFRASTRUCTURE AND QUALITY OF EARLY CHILDHOOD EDUCATION – THE CASE OF NAKURU COUNTY, KENYA

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Abstract:

Early childhood development and education forms a strong foundation for children as they get ready to go through formal education. Many early childhood education centres in Kenya face challenges in regard to necessities that enhance quality education. The study sought to establish the situation that could have led to lack of quality education in ECDE centres in Naivasha. The purpose of the study was to determine the adequacy of infrastructure associated with quality Early Childhood Education in Naivasha central zone, Nakuru County. The study employed the descriptive survey design. The target population of this study was all the 40 public pre-primary schools in Naivasha central zone, the 40 head teachers/managers and all the 120 ECDE teachers. A sample of (20) 50% of the centres were selected using purposive and simple random sampling methods. The research tools used to elicit data were two questionnaires administered to head teachers and ECDE teachers. Observation schedule was used to elicit information on the adequacy of infrastructure and their conditions. Before the main study, a pilot study was carried out in two ECDE centres in order to test the validity and reliability of the instruments that were to be used. The data obtained was analyzed using frequencies and percentages and presented using tables. The researcher found out that financial challenges inhibited the acquisition of materials, equipment and development of standard and adequate facilities. This was accounted for by the fact that free primary education funding does not incorporate ECDE funding. Most parents with children in the ECDE Centers felt that free primary education funds should also cater for ECDE and were therefore reluctant to pay fees. The study, therefore, recommended that the National government through Ministry of Education should allocate or develop a kitty to support early childhood education centres in developing and maintain reliable infrastructural systems.

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1. Introduction

The physical environment of the entire school, as well as individual classroom can support successful pedagogy. According to ECDE service standard guidelines for Kenya (2006), the classrooms are to be of a standard size of 8 by 6 meters. This shows that classrooms should be spacious to allow free movement of children and avoid injuries. The focal point of the rooms should appear to be more play oriented- one that will promote creativity and divergent thinking (Earthman, 2004). The size of the classroom should accommodate a maximum of 25 children. The rooms must have proper windows and doors which are lockable, good floors and be appropriate for children with special needs. This is where there are rails, ramps and lower door handles.

The classroom environment therefore will support movement and independence where children are able to determine their own behavior and manage some of their materials (Buchong & Sheffer, 2009). The space is important as it makes children feel secure and able to interact more with peers. The classrooms furniture such as chairs, desks and tables should be of the right size, adequate, attractive and safe (Begi, 2009). In addition, they should be organized and appropriately arranged. This allows for creation of more space which helps children in making the rightful behavioral choices (Kaliska, 2002). When learning centres or corners are strategically placed, it drastically eliminates behavior problems.

The temperature, humidity, and ventilation are also key ingredients that affect learning and social behavior (Sanders, 2011). This is because excessive heat is said to cause hostility among children thus becoming adults who are bitter with life. Experts also suggest that class rooms should have warm tones of stronger color (Pile, 1997). Colors used in the interior of the classrooms of an ECDE Centre have a major psychological influence and they affect the way children act and feel. For example, bright colors attract children's attention. Enough colors should be used to create a cheerful atmosphere. Colors can be coordinated to create a harmonious décor which provides designs on furnishings to bring about the needed accents. Faded colors in classrooms walls and equipment's should be avoided as they discourage both children and teachers (Kaliska, 2002).

Lighting is another factor that may affect learning of children. Jago and Tanner (2000) recommend that, a basic classroom be built with a minimum of 72 square feet of windows to let in natural light. Minimally, there should be at least one window in each learning area (Peters, 2002). The rooms should be well lighted to avoid glare and dim light which can cause discomfort and hence interfere with concentration that impact negatively on learners' performance (Sitati, Mwangi, Bota and Rapongo, 2016).

The classrooms or schools should be in serene places where noise is controlled to the lowest level. Too much noise from external or internal sources becomes a hindrance

to learning and it affects children's achievement (Schneider, 2002). When there is too much noise, children become dissatisfied, stressed and achieve less. High levels of noise have been related to increased behavior problems (Schneider, 2002). The classrooms therefore should be built in the right manner in order to cater for the good health of young learners hence having high retention rates.

Buchong and Sheffer (2009) stated that a warm classroom environment can lead to increased academic achievement and a sense of pride and belonging in the school. A classroom that is warm and inviting may include such elements as natural lighting, comfortable temperature setting, pictures, warm paint colors on walls, and the organizational design of desks and resources. The environment of the classroom should include having all resources and areas of the room accessible to all of the students in the classroom. The students should feel that they are a part of the classroom.

A teacher can incorporate family pictures of the students and their families; they can install bookshelves and pillows to create a warm area conducive to learning and exploring. Teachers can also use colors and plants to fill the room with warmth and a homey feel. Students should be allowed to help create classroom rules and procedures at the beginning of the year. This will allow the students to feel that they have a voice in the classroom and that their thoughts and ideas matter. A student who feels secure and confident in his or her classroom environment will more readily express his or her ideas and thoughts during collaborative learning. Classrooms that encourage emotional well-being create an atmosphere for both learning and emotional development. Educational research supports creating an atmosphere of mutual respect where students feel relaxed in asking questions and expressing their thoughts and feelings (Buchong & Sheffer, 2009).

Evanshen and Faulk (2011) suggested that layout and organization of a classroom can also affect student's academic achievement. It is important to have the classroom set up and organized the first day of school. Welcoming students into a room that is clutter free, warm, and inviting can help students ease into the transition of a new school year and keep them excited about learning. It's important to make sure that the desks are placed in a way that a good safe flow of student traffic is possible and that chaos and confusion is kept to a minimum. If students are crowded together and have no space to call their own or space to work, motivation and effort may be negatively impacted. Another important factor to consider in laying out a classroom is organizing student resources. Class supplies and resources will need to be placed where students can access them quickly and easily. Evershen and Faulk recommended that classrooms be organized so resources are easily accessible to students to cut down on lost time and transition time.

In the Kenyan setup, most pre-primary centres drag behind due to the kind of rooms used for learning. Some are very small, poorly done while others are not permanently built yet children use them in the same state. This might impact negatively on their performance. In Kenya, there is emphasis on classrooms doors to be well built and fixed to ensure safety of children and protect them from bad weather conditions.

Most of the ECDE schools could have poorly constructed doors, windows and even poorly lit classrooms.

The outdoor space or the playground should be appealing to children. It should be well designed and organized. This means that the playground must be big enough to allow children to move freely, run and engage in all sort of play without hindrances. The playground should not have dangerous objects like sharp objects, holes, stagnated water or long grass. It should have short grass, neat, well leveled and fenced for security of the young learners (Begi, 2009).

This ensures that children are comfortable, have ease of movement and are able to use their senses to learn without limitations. Redan, Marlina, Betaubun (2014), asserts that play forms an integral part in children's learning domains. Children need space where they can move freely and be in a position to perform various activities without being disturbed or disturbing other children (Athey, 1991). More space is therefore considered beneficial for development, as they can learn through much play which is necessitated by having spacious fields for use by children (Sergiovanni, 2007).

2. Purpose of the Study

This study intended to determine the level and adequacy of infrastructure associated with quality Early Childhood Education in Naivasha central zone, Naivasha Sub-County, Nakuru County in order to suggest possible strategies that might be instrumental in improving the quality of education offered to children in ECDE centres.

3. Research Methodology

The researcher used descriptive survey design. The design was appropriate since it aimed at gathering facts, knowledge, opinions and judgments from head teachers and teachers of various selected ECDE centres. The study used a descriptive design also because it enabled the researcher to collect in-depth information about the population being studied. The target population of this study was all the 40 public pre-primary schools in Naivasha central zone, the 40 head teachers/managers and all the 120 ECDE teachers.

The researcher purposively sampled Naivasha Sub-County central zone. Naivasha was purposively sampled because it had been associated with poor educational performance and randomly selected. Out of the population of 40 public ECDE centres in Naivasha Central Zone, 20 ECDE centres were sampled which was 50% of the population, 36 ECDE teachers made up 30% of the teacher population and 20 head teachers from the sampled schools which made up 50%. The researcher employed the use of questionnaires which were given to the head teachers and the pre-primary teachers to fill in the information required. Observation schedules were used by the researcher to record information on the facilities and materials available in every ECDE Centre.

4. Findings and Discussions

This study sought to establish the availability of school infrastructure associated with quality education.

4.1 Availability and Condition of the Classrooms

Regarding the availability of classrooms in schools that were studied in the zone, the researcher observed their nature and condition. Table 1 presents the findings on the availability and condition of classrooms used for teaching- learning purposes.

Table 1: Availability and Condition of the Classrooms

Availability and Condition	F	%
Available and Permanent	15	75
Available and Semi permanent	5	25
Available and Temporal	0	0
Total number of schools	20	100

As presented in the table 1, most of the classrooms used for teaching-learning activities were permanent in 75% of schools visited. A quarter (25%) of the schools studied had semi-permanent classrooms. This meant that most schools in the region had permanent buildings which were used for teaching-learning purposes. A significant number of schools (25%) however, had semi-permanent classrooms. This might have paused challenges to children enrolled in those schools, a situation that could compromise on quality of their education. It was established that in Naivasha sub-county, most schools (75%) had permanent buildings with a few (25%) of them having semi-permanent ones. This showed that some schools still require more upgrading to fit the standards required by the ministry of education.

Therefore the situation in some schools is below the required standards of infrastructure as provided by ECDE services standard guidelines of Kenya (2006). This implies that learning outcomes may have been affected by the prevailing circumstances leading to poor performance. This inference is consistent with that of Schindler (2006) who observed that learning may occur anywhere but positive learning outcomes are achieved happen in environments that enhance quality learning.

Branham (2004) also asserted that schools which had poor structural shape, used temporal structures rather than permanent structures were associated with higher dropout rates. The school's environment has been shown to influence children's attendance and dropout rates. Branham (2004) therefore concluded that the negative physical environment and lack of attention to school facilities brings about performance inadequacies.

4.2 Size of the Classroom in Comparison to the Number of Learners

Table 2 presents the findings on the size of the classrooms in all schools sampled in relation to the number of children.

Table 2: Size of the Classrooms

Size	F	%
Standard but congested	6	30
Standard	9	45
Below standard	5	25
Total number of schools	20	100

In table 2 above shows that only 45% of the classrooms were of standard size as compared to the number of learners. 30% were of standard size but congested. The remaining 25% were not of standard size. This shows that learning could have been affected as most children were not comfortable. Most schools in the region had classes that were below the expected standards. The situation could make the learners to perform poorly due to the kind of rooms used for learning where by some were very small, poorly done while others not permanently built, yet children used them in the same condition. This therefore implied that most schools did not keep up to the standards as described in the ECDE service guidelines of Kenya (2006).

The findings concur with ECDE service standard guidelines for Kenya (2006), the classroom of a standard size should be 8 by 6 meters to accommodate a maximum of 25 children. The focal point of the rooms should appear to be more play oriented one that will promote creativity and divergent thinking (Earthman, 1996). Regarding the size of the classrooms, the ECDE service standard guidelines for Kenya (2006) gives a standard size of 8 by 6 metres which can accommodate a maximum of 25 children. This ensures that classrooms are spacious to allow for free movement of children.

4.3 Conduciveness of the Classroom Environment

Figure 1 provides findings on the classroom environment in relation to early learning.

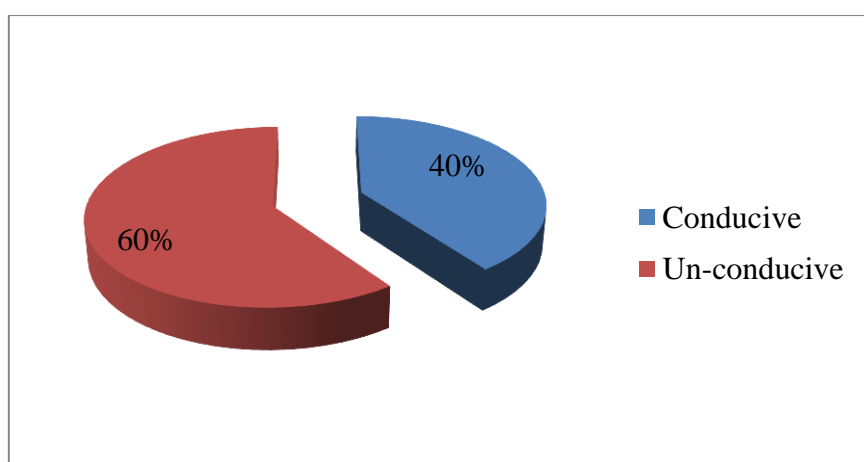


Figure 1: Conduciveness of the Classroom Environment

In Figure 1 illustrate that most 12(60%) of the classroom environment was not conducive for quality learning. The remaining 8(40%) of the classrooms' environment were conducive. This meant that majority of children learned in uncomfortable classrooms which could impact on them negatively. Such classrooms might not

guarantee positive outcomes in children’s performance. The findings contradict what other studies have shown regarding quality learning environment. Schindler (2006) assert that the environment children learn in affects their moods, ability to form relationships, effectiveness in work or play and even their health. Hence children’s experiences are limited by their surroundings and the environment they live in. Environment has a great impact on the way their brains develop (Santrock, 2011). This means that when there is no conducive atmosphere that enhances quality learning, children might have less experience hence may never reach their potential in life. The poor environment could have made them fail in accessing quality learning.

The learning environment should be set in order to develop children holistically. It should consist of physical, psychosocial and service delivery elements. According to Tina Bruce (2010), the school environment, both outdoor and indoor should complement each other to enhance quality education. Colors used in the interior of the classrooms of an ECDE Centre have a major psychological influence and they affect the way children act and feel. For example, bright colors attract children’s attention. Proper lighting, big windows and organized rooms could also enhance quality learning. The classroom environment therefore would support movement and independence where children are able to determine their own behavior and manage some of their materials (Cook, Tessier, Klein, 1996).

4.4 Condition of the Classroom Furniture

Table 3 shows the condition or nature of the classrooms in terms of availability and appropriateness of furniture in schools studied.

Table 3: Condition of the Classroom Furniture

Condition	F	%
Adequate	4	20
Inadequate	16	80
Collect size	4	20
Incorrect size	16	80
Appropriate	4	20
Inappropriate	16	80

Data in table 3 shows that most of the classroom furniture (80%) was not adequate. Similar percentages also indicate that most furniture was neither of the right size nor appropriate. Only 20% of the schools had adequate, collect size and appropriate furniture. This implies that the furniture being used was likely to compromise comfort, learning and safety of young pupils/children. The finding therefore implied that the condition of the furniture in almost all schools could impact negatively on learners’ performance. This was because the schools did not have the furniture that could be suitable for quality learning of children.

The current study agrees with that of Begi (2009) who argues that the classroom furniture such as chairs, desks and tables should be of the right size, furnished, attractive and safe. In addition, they should be organized and appropriately arranged.

This could create space for children to move freely as they interact with peers as well as avoid injuries.

4.6 Adequacy of Indoor Space

The available decisions in a school or classroom forms the basis on which introduction of a variety activities and products is made. Information contained in Figure 2 presents findings on indoor space in all schools sampled.

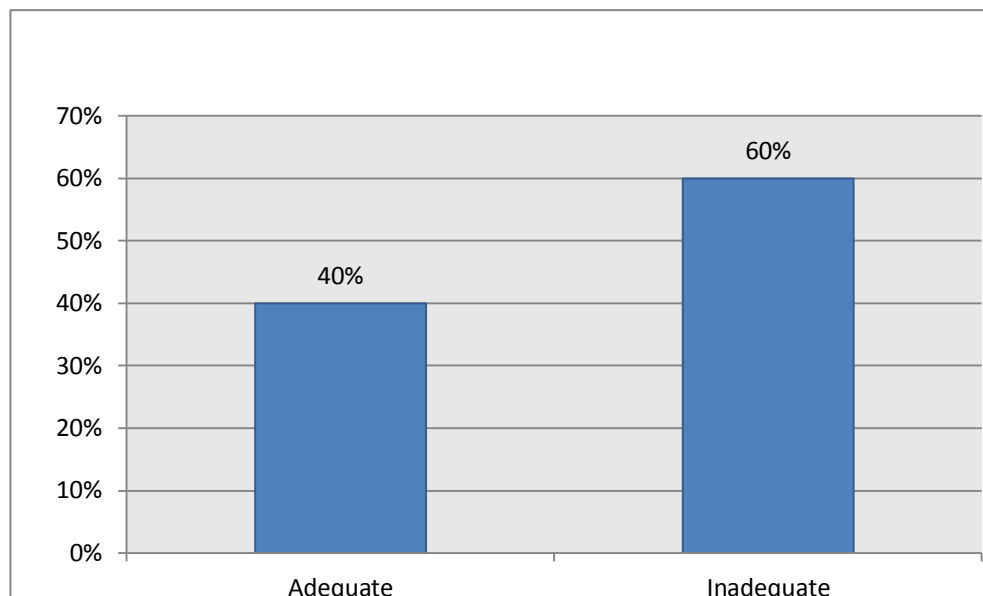


Figure 2: Adequacy of Indoor Space

In Figure 2, less than half 8 (40%) of the indoor space was adequate but in most schools 12 (60%) had inadequate indoor space. This demonstrated that the schools may have failed to provide the adequate indoor space so that children learn comfortably. This contradicted what other studies have shown.

The findings is supported by that of Cook, Tessier & Klein (1996), who states that adequate space supports movement and independence where children are able to determine their own behavior and manage themselves when doing some activities. The space is important as it makes children feel secure and able to interact more with peers. Also, Sitati and Mwangi (2016); Mwende (2014), argue that through having more space children can have better learning conditions and environment for them to play, relax and learn in a variety of ways. This shows that children could not do a lot of activities in classrooms as space was a great challenge hence could impact negatively on their academic performance.

Having space that can accommodate all the learners in school is considered beneficial for development (Sergiovanni, 2007). According to ECDE service standard guidelines for Kenya (2006), children should learn in a class that is spacious enough. The standard measurement ought to be 8 by 6 metres which can accommodate twenty five children. In such space children would learn and engage in many activities which

may impact positively on their performance. The spacious rooms also help children to move freely as they engage in learning activities hence making it so easy to gain new concepts.

5. Conclusion

Based on the findings of the study presented, the researcher made the following conclusions:

To begin with, most of the schools had infrastructure that was good for the purpose of learning. However, not all were of the required standard. This implied that learning of the children could be negatively affected leading to poor performance.

Secondly, the schools' environment was not conducive as regards most aspects in schools that were sampled. The variables which included; the condition of classroom furniture, indoor space, standards of the rooms in comparison with the number of children, lighting of the rooms and also ventilations. This meant that learning might have been compromised due to conditions that prevailed in classrooms where learning took place. This means that learning could be negatively affected as most children were not comfortable in such environment. Hence the study established inadequacy of school environment associated with quality education.

Lastly, most of the playgrounds were found to be adequate for the learners in the schools. Majority of the schools had adequate outdoor but inadequate indoor space associated with quality education. This meant that children might have lacked opportunity to engage in some learning activities that could have impacted positively in their learning.

5.1 Recommendations

The national government through the ministry of education (MOEST) should direct funds to schools while considering the ECDE centres to enable the teachers and learners to access adequate facilities, equipment and materials. Funds will ensure that the schools build standard classrooms, fix play equipment on play grounds, purchase quality and durable equipment and materials for learning.

Similarly, the County government of Nakuru in collaboration with the stakeholders should ensure improved learning environment in schools so that children can have access to quality learning experiences in the ECDE centres in the zone. This means that the classrooms should be of the right size and also accommodate the right number of learners to avoid congestion in the rooms hence making them comfortable as they study.

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