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Role of Physical Environment in the Implementation of Special Needs Education Curriculum in Public Primary Schools in Kitui Kenya

Videma Kimanzi[1], Dr. Rose Mwanza[2], Dr. Francis Kihoro Muya[3]

[1]*kimanzividema[at]gmail.com*
[2]*rmwanza[at]seku.ac.ke*
[3]*fmuya[at]seku.ac.ke*

Abstract: ***The study was carried out in Special Needs Units (SNUs) in inclusive schools in Kitui - West sub county, Kenya. The study sought to establish the role of physical environment in the implementation of Special Needs Education (SNE) curriculum in public primary schools. The study was guided by Input - Output Process Theory developed by McDonwell and Oakes in 1987. The census sampling method was used to get participants who provided the required data in respect to objectives of the study whereby all the 30 special needs education teachers in the 12 special needs units were targeted. Three sets of instruments were used to collect data. These included the interview guide, checklist and observation schedule. Statistical Package for Social Sciences (SPSS) version 20 was used to analyze data. Descriptive statistics were used to analyze quantitative data through use of frequencies, percentages and means. Pie charts, tables and figures were used to present analyzed data while qualitative data was organized into themes based on the study objectives and presented in narrative form. Findings from the study revealed that most of the schools' physical environments lacked structures necessary for conducive SNE learning, with very little or no modifications made to make them barrier free and learner friendly. The study concluded that there is a significant relationship between factors of the school physical environment and leaner performance and achievement in school. The study recommended creation of school physical environments that are barrier free, stimulative, enjoyable and meaningful to learning, and a review and full implementation of all laws, policies and regulations on disability such as the Education Act with the aim of making least restrictive environments in all learning institutions.***

Keywords: Learner's diversity, integration, living with disability, special needs education, school physical environment, curriculum

1. Introduction

Special Needs Education (SNE) refers to the educational arrangements which are set in place to cater for children with disabilities, (Mutua and Sunal 2012). According to Lews and Norwich (2005), SNE is the kind of education offered to children who either have physical disabilities or learning difficulties that make it harder for them to learn than most children of the same age. According to a world report on disability and SNE by World Health Organization (2015), about 650 million children are estimated to be living with disability. According to the report, 500 million children are found in developing countries. A survey which was carried out by the National Needs Education Survey (2014) in Kenya established that one out of 10 Kenyans below the age of 21 is disabled. Overall higher rates of disabilities were found among children in rural areas at 60% as compared to 40% in urban areas. According to National Needs Education Survey, an estimation of 1.3 to 1.8 million Kenyan children are disabled, but only 35% of them have been enrolled in special schools, integrated programs and units, and a majority not able to access educational services due to challenges such as school physical environment according to (UNICEF 2009). School physical environment refers to school issues such as location, building materials, size of classrooms, furniture, lighting, temperature, ventilation, noise level, sanitation and the inclusion of auxiliary facilities. According to Ngugi (2000), a school's physical environment needs to be adapted for the safety of learners with SNE in order to facilitate their easy functioning and manipulation of the learning environment and equipment. Radiki (2002) indicates that there exists a correlation between the school physical environment and learner participation and that desirable educational outcomes are much realized in schools whose physical environments have been modified to suit learning needs of all learners as opposed to schools which are the same.

Special Needs Education in Kenya started taking root after independence in 1963 but educational opportunities for the learners with special needs pose a major challenge in the educational sector (Mutua and Sunal 2012). In mitigation, the government of Kenya has been establishing Education Commissions to look into the sustainability of the educational provisions for all children. Moreover, the Constitution of Kenya, (2010) provides a firm foundation for policy and legislation on disabilities in accordance with the universal standards for the promotion and protection of fundamental human rights and freedom for persons with disabilities. Article 53 of the Constitution of Kenya provides for free and compulsory basic education to all children. In addition, the Basic Education Act, 2013 provides for free and compulsory basic education for all, promotion of quality and relevant education.

2. Methodology

Research Design

The study used descriptive exploratory design method that according to Babbie (2010), fields studies in natural settings

and provides the least control over variables thus making the data collected either to contribute to the development of theory or explain phenomena from the perspective of the persons being studied. checklists were used and phenomena was observed as it presented itself in the school settings.

Target Population

Target population for this study was special needs education teachers in Kitui West Sub - County. Teachers are charged with the responsibility of teaching learners and are in constant contact with them for most of the learning time to ensure that the curriculum as provided by the ministry of education is adhered to therefore, they possess useful information regarding the question of educational factors that can address issues concerning curriculum implementation according to Johnson and Christensen (2010). There were 30 special needs teachers and 12 special needs units in Kitui West Sub - County according to the Directorate of Quality Assurance and Standards Office (2022) records in the sub county education office

Sampling Techniques and Sample Size

This study did not select participants but used the census technique since the teachers were few, only 30 in number. Mugenda and Mugenda (2003), defines the census sampling method as a method of statistical enumeration where all members of the population are studied. Since this research used the Census as the sampling technique, participants were not selected, all the 12 SNUs, and the 30 SNE teachers participated in the study.

Research Instruments

Research instruments used in this study included an interview guide, observation schedule and a checklist. The instruments were designed based on the objectives of the study.

3. Research Findings

Influence of the School Physical Environment on the Implementation of Special needs education curriculum

Table 4.4: Responses of teachers on availability and inadequacy, availability and adequacy and lack of availability of elements and adaptability of the school physical environment

Responses on elements of the physical environment	SNU classrooms	Doors & windows	Classroom Seating arrangement	playfields	Availability of rumps	Toilets
Available but not adequate	26	25	24	26	29	29
Available and adequate	4	5	6	4	1	1
Not available	_	_	_	_	_	_

A checklist was used alongside an observation schedule by the researcher to gather information about schools' physical environments. All the 30 participants who took part in the study responded and as they were filling in the checklists by putting a mark of an "X" in the appropriate box and also giving views on the availability and inadequacy, availability and adequacy and lack of availability of the said elements, the researcher was making notes on observations and narratives made. Results from the checklists were translated into percentages then figure 4.1 was drawn show percentages.

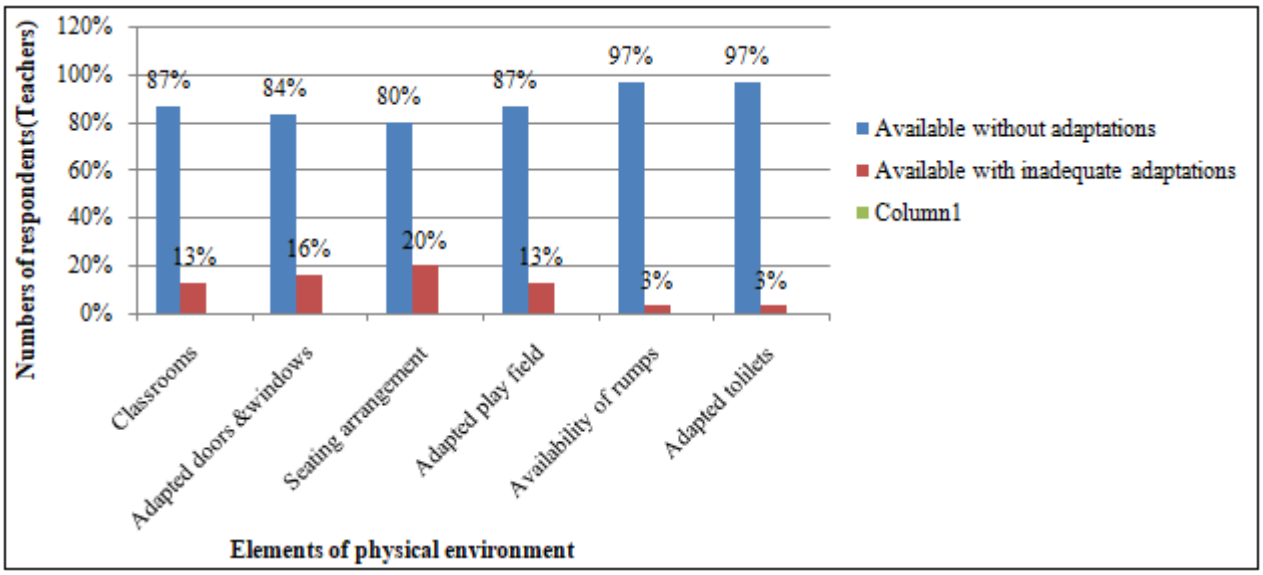

Figure 4.1: Bar graph representing percentages of adapted elements of the school physical environment

From findings on adaptations made on important elements of the school physical environment, figure 4.1 above which is a bar graph was drawn to record the observations made. The researcher also listened to respondent's different oral narratives pertaining adaptation state of their schools and made notes on the narratives to help analyze the actual phenomena on the ground.

4. Discussion

The researcher issued checklists to respondents to fill in on availability and, inadequacy, availability and adequacy and lack of availability of enlisted elements of the school physical environment. The elements included SNU classrooms, classroom doors and windows, conducive SNE

classroom seating arrangements, play fields rumps and toilets arrangements, and the information was recorded as in table 4.4. In addition to the checklists, the researcher used observation schedules and listened to respondents' views on kinds and levels of adaptations made to the same elements recorded in the table. To record the information on adaptation, a bar graph, finger 4.1 was drawn with the X axis representing elements of the school physical environment that is; classrooms, doors and windows, classroom seating arrangements, playfields and toilets and their corresponding percentages on adaptations and the Y axis represented the number of responses in each particular attribute or element of the school physical environment. The information helped to establish the extent of adaptability done in compliance with inclusion practices of SNE in schools having special needs units according to Rechel et al. (2012), who made an observation that, for inclusive education to be effective and meaningful, learning environments should provide standard benchmarks and measures for the realization of access, relevance, quality and equity.

According to findings of this study, all the 30 respondents gave their views on the availability and level of adequacy of the said attribute as recorded in table 4.4 with implications that; 26 out of 30 respondents translating to 87% reported that classrooms specifically for learners with SNE were not available while 4 out of 30 responses, a percentage of 13% indicated that their schools had separate, independent SNU classrooms. This response indicated that only a few schools had established classrooms to cater for learners with special needs while most of the schools were using the integration method where learners with SNE were put in classrooms to learn alongside those without with no considerations on disability issues. Over the years, classrooms have been found to play fundamental roles in the learning process because they provide components that encourage educational space like group discussions, critical thinking that allow learners to build ideas and thoughts that can help them to build one another.

On availability of classroom doors and windows and their adaptability to suit special needs, 25 out of the 30 responses meaning 84% of the schools lacked necessary installation of these elements while 5 out of 30, 16% cited availability of lockable doors and windows in their schools. These results meant that in most of the schools movement of learners using mobility assistive devices to and from classrooms and other essential areas such as dining halls faced mobility restrictions caused by lack of proper doors for either entering and or exiting the specified areas and most of them had windows that could not allow proper ventilation while others were either too lowly positioned permitting easy distractions to learners by eternal stimuli during lessons. These results implied that only a small proportion of schools were disability friendly. The right kind of classroom doors and windows will not only provide safety to learners and teachers in the process of learning but will also help in securing classroom learning/ teaching resources.

On classroom seating arrangements and space 24 participants out of 30 culminating to 80%, said that seating space was not adequate and did not factor in disability issues of the learners while 6 out of 30 responses, a 20% of the representatives felt that their classrooms had seating arrangements and spacing that were conducive, available and adequate hence the conclusion that most of the SNUs seating arrangements were poorly, and inappropriately done for learners like those with low vision, hard of hearing or learners with mobility difficulties. As a matter of fact, the way and the place where learners are seated in class can either have a positive or negative impact in a learner's classroom behavior, participation, concentration and performance. Learners seem to perform better while settled in seats that teachers have allocated to them as opposed to situations where they are allowed to choose seats for themselves in the classroom.

Concerning play fields, 26 out of 30 participants representing 87% of the responses showed that adapted fields were none existed while 4 out of 30 participants which were 13% of the total number of respondents felt that their schools had adapted fields that could accommodate special games, sports and play activities sufficiently. These responses were a clear indication that most of schools had not modified their play fields to cater for play activities for learners with various disabilities. Play fields for learners with various disabilities should be modified by levelling and removing obstacles and provision of special equipment installations with the gist of making them barrier free and accessible to the learners. These modifications help reduce injuries through falls and other accidents.

About installation of rumps and adapted toilets, out of the 30 participants, 29 meaning 97% of the responses respectfully indicated that only one school in both cases had a rump available and another one with an adapted toilet. All the other schools lacked these essential elements. The elements are quite important to schools with units. Rumps for instance are quite essential in the movement of persons with physical disabilities which inhibit their movement. They facilitate easy movement of people freely around by either getting in or out of places with minimal gradient restrictions while adapted toilets make toileting easy and comfortable by the virtue that their heights are raised to accommodate different deformed postures of the learners.

From the findings about school physical environments, not a single respondent cited complete unavailability of some kind of modification done in their school's physical environment however minimally done but the adaptations were too far below standard and therefore found to be wanting.

On oral narratives, two of the respondents recounted 'how classroom doors in their schools lacked rumps and also too narrow to allow learners with mobility devices like wheelchairs, crutches and white canes to either enter in or leave the classrooms unaided' while five respondents cited unlevelled playgrounds with obstacles ranging from tree stumps, big holes and big rocks standing in the middle of the fields posing challenges to games and sports. There was another respondent who gave a report that 'most of the SNE learners with physical impairments in their school were using bushes around the school compound for toileting purposes due to lack of adapted toilets in the school'. Findings from this study indicated that schools with special needs units in Kitui West Sub County were still far much

under way in implementation matters of structural adjustments to environments to make them disability friendly.

The findings on school physical environments in Kitui West Sub - County were found to be similar to those of Duran (2008), in a study that investigated on elements of catchment and retention of learners with SNE in South Africa versus school environments, in a bid to help develop inclusive out of mainstream schools. Findings of Duran (2008), revealed that learners with SNE were being denied access to schools by poorly managed school physical environments and lack of necessary adaptations. Duran (2008), recommended taking modifications of the school ground as integral parts of educational innovations for inclusion that enhances reduction of segregation towards learners with disability. Duran (2008), also suggested that the adaptations should be taken as educational practices in order to help in learner retention and facilitate completion of schooling.

5. Conclusion

This research has found a strong, positive and significant relationship between factors of the school physical environment to mention just but a few like classrooms, classroom seating arrangements, the school playfield, and installation of rumps and availability of toilets and leaner performance and achievement in school. The factors have been proven to be very crucial variables that affected learners' morale and learning. Learners in an adapted school environment move more and are more active and participatory in learning activities. Safe school environments that are orderly, calm, flexible and efficient making instruction and learning more effective as opposed to disorderly schools that have poorly arranged structures deemed as unsafe, dangerous and hazardous because they discourage child development of attitudes towards educational practices. This research has established that the physical structure in most of the schools with SNUs in Kitui - West Sub County were devoid of the critical factors of an institutional system. Majority of the school environments contributed to ineffective educational programming hence, not conducive enough to benefit all learners, those with disabilities and those without.

6. Recommendations

The study recommended for creation of school physical environments that are barrier free, stimulative, enjoyable and meaningful to learning, and more so to learners with SNE, a review and full implementation of all laws, policies and regulations on disability such as the Education Act, and Persons with Disability Act should be enforced with the aim of making least restrictive environments in all learning institutions.

7. Suggestions for Further Study

1) A similar study can be replicated in other counties with the view of finding out if the same factors investigated in this study influence special needs education learning in their schools.
2) A study should be conducted to establish those factors that can contribute to a greater positive academic achievement among learners with special needs

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