Influence of Adapted Physical Facilities on the Execution of Inclusive Education in Public Preschools in Belgut Sub-County, Kenya

Rebecca Chepngeno Kabwos1* & Dr. Esther C. Bitok1

1 Kisii University, P. O. Box 408-40200, Kisii, Kenya. 
* Author for Correspondence Email: rebeccakabwos@yahoo.com

ABSTRACT

Inclusive education is one of the key areas articulated in Sustainable Development Goal No.4 which global nations aspire to implement. Effective execution of Inclusive education requires institutions of learning to create disability-friendly environments whereby the physical facilities are structured to allow learners with special needs to participate on an equal basis in school activities with their typically growing peers. However, the execution of Inclusive education is yet to be accomplished globally. The objective of the study was to establish the influence of physical facilities on the execution of Inclusive education in the public preschools in Belgut Sub-County, Kenya. The study adopted the social model of disability theory. The study also utilised a descriptive survey research design. The target population of the study was 238 out of which a sample size of 168 participants comprising 113 preschool teachers and 65 primary school head teachers was selected. Sampling was done using stratified and simple random sampling techniques. Data for the study was collected using an observation checklist, pre-primary school teachers and the head teachers’ questionnaires. Data were analysed using descriptive statistics with the help of Statistical Package for Social Sciences (SPSS) Version 22 and presented in the form of frequencies and percentages displayed in distribution tables. The results showed that the majority of preschools had classrooms that were accessible to learners with disabilities. However, the results also revealed that the majority of them lacked rails on entrances to buildings, adapted toilets, ramps, swings, wide pavements, adapted desks/ furniture, and swings. The study concluded that adapted physical facilities influence the execution of Inclusive education in public preschools negatively. The study recommends that the County Government provides sufficient funds to preschools to aid in restructuring the existing physical facilities to attain disability friendly status.
INTRODUCTION

Every child has a right to Inclusive education as enshrined in international human rights treaties. Inclusive education is a process whereby the regular schools admit, welcome, and facilitate all children from the neighbourhood to learn and take part in school activities together (Inclusive Education Canada, 2020). Inclusive education recognises the fact that children have different abilities in terms of intellectual, physical, and social abilities, among others (UNESCO, 1994). It also seeks to provide quality education to all learners irrespective of the diverse abilities or special needs that some children might have (Inclusive Education Canada, 2020). In addition, it brings together children with and without special needs in the regular learning institutions thereby enabling them to develop friendship and social skills necessary for peace and working together in an inclusive society (Ministry of State for Planning and National Development, 2012). Further still, Inclusive education prepares learners with and without special needs to learn the social skills necessary for living and to work together in an inclusive society.

The origin of Inclusive education is the Salamanca World Conference on Special Needs Education, where the representatives of 92 governments and 25 international organisations congregated to deliberate on the best way of educating learners with special needs. The participants of the conference came up with the Salamanca Declaration and Framework for Action on Special Needs Education, which states that disadvantaged groups and special needs education learners ought to be educated jointly with the typically growing learners close to their homes (United Nations Educational, Science and Cultural Organization [UNESCO], 1994). The United Nations Convention on the Rights of Persons with Disabilities (CRPD) also recognises the right of learners with disabilities to inclusive education at all levels of learning beginning from pre-primary schools to post-secondary institutions. The convention also emphasises the physical accessibility of learners with disabilities to buildings in terms of getting to the school and moving around within the school buildings (UN, 2006). For accessibility to be achieved, schools need to have reasonable accommodations involving making adjustments to the physical environment to meet the needs of learners with disabilities.

According to United Nations (2015), it is imperative that countries globally work towards achieving Sustainable Development Goals (SDGs), of which goal No.4 is about access and quality education for children with special needs. However, Inclusive education has not been fully achieved globally except in Italy, where all special schools were closed in 1977 (Cologon, 2013). In the USA, young
learners living with disabilities do not receive quality inclusive early childhood education (United States Department of Education, 2015). Drabble (2013) also observes that Inclusive education is yet to be fully achieved in Europe. Similarly, many parents in Africa prefer to educate their children with special needs in special schools (Wanjohi, 2014). This could be a result of a lack of appropriate physical facilities and infrastructure.

**Availability of Adapted Physical Facilities for Executing Inclusive education**

Adapted physical facilities are critical for the effective execution of Inclusive education. According to the Republic of Kenya (2017), every learner is entitled to access a safe, friendly, and protected environment that caters for individual differences. Similarly, UNESCO (2008) stipulates physical facilities in regular schools should be designed to suit both learners with and without special needs. UNESCO also points out that learners with disabilities should be provided with educational resources both at the individual and institutional level to enable them to get access to the learning environment and to take part effectively in school activities with their peers without special needs. According to Khan (2016), physical facilities influence the quality of education; hence, the availability of adequate and well-maintained physical facilities is mandatory in schools.

According to Illinois Early Learning Project [IELP] (2015), some of the physical facilities necessary for executing inclusive education for special needs education learners include adapted desks, adapted toilets, ramps on doorways, wide pavements, spacious and accessible classrooms, and level playgrounds. Awoniyi and Ngwenya (2015) in a study done in Swaziland found that learning environments in developing countries are unfriendly to special needs education learners as they lack adapted physical facilities. A research study conducted by Sibanda (2018) established that there were inadequate physical resources for implementing inclusive education in Zimbabwe. In addition, Chaula (2014) found that some primary schools had buildings that did meet the requirements of learners living with disabilities in Tanzania. Further still, Mmbuji (2017) in a study conducted in Tanzania, Morogoro found that most schools had inappropriate equipment and facilities for SNE (special need education) learners. It further notes that pre-primary education has challenges which include inadequate and inappropriate infrastructure, and sanitation facilities, among others (RoK, 2017).

Mutembei (2014) in a study on Inclusive education in Tharaka Nithi County, Kenya, found that the majority (93.8%) of the teachers reported that their schools lacked ramps, adapted desks, adapted chairs, adapted toilets, wheelchairs, level playgrounds, and spacious classrooms. In addition, other research found that (80%) of the primary schools lacked textbooks for learners with visual impairments, (70.0%) also lacked spacious classrooms, and (80%) lacked desks that were adapted for learners with physical impairments in Bungoma County, Kenya (Buhere & Ochieng, 2013). The study further found that (83.3%) lacked ramps on buildings, and the majority (83.3%) of the schools’ buildings also had staircases that prohibited the movement of the physically challenged learners. Further still, the study found that the majority (76.7%) of the preschools had playgrounds that were unfriendly to physically challenged learners.

Warui (2014), in a study on Inclusive education in public pre-primary schools in Juja zone, Kiambu County, Kenya, found that most preschools lack adapted toilets, wheelchairs, swings, and levelled playgrounds. In addition, (58.3%) of preschools lacked ramps and (66.7%) of them did not have adapted desks. Moreover, toilets for learners with visual and physical impairments are not fitted with bars or rails to assist them in holding on to while toileting. However, research studies reveal that learning environments in developing countries are unfriendly to special needs learners. According to UNESCO (2008), the physical facilities and infrastructure in regular schools are not friendly to learners with disabilities and special needs.

Inclusive education promotes the development of friendship and social skills necessary for peace and working together in an inclusive society amongst learners with and without special needs. Hence, this study sought to establish the influence of selected adapted physical facilities on the execution of
Inclusive education in public preschools in Belgut Sub-County, Kenya.

**Statement of the Problem**

Despite the importance of Inclusive education in building a cohesive and inclusive society and the policy statements, design issues of buildings still exist in regular schools (RoK, 2017; UNICEF, 2013). This study was therefore conducted to establish the influence of selected adapted physical facilities on the execution of Inclusive education in public preschools in Belgut Sub-County, Kenya.

**Purpose of the Study**

The purpose of the research study was to establish the influence of the selected school factors on the execution of Inclusive education in public pre-primary schools in Belgut Sub-County, Kenya. The findings of the study will provide direction in ways of managing learners with special abilities in the regular pre-primary. The objective of this study was to establish the influence of selected adapted teaching and learning resources on the execution of Inclusive education in public preschools in Belgut Sub-County, Kenya.

**RESEARCH METHODOLOGY**

**Research Design and Study Area**

The study used a descriptive survey research design. A descriptive survey research design is concerned with describing, recording, analysing, and interpreting conditions that exist or exist (Kothari, 2008). A descriptive survey research design was preferred for the current study because it enabled the researcher to collect both qualitative and quantitative data to investigate the influence of physical facilities on the execution of Inclusive education. The study was done in Belgut Sub-County, Kericho County, Kenya. Belgut Sub-County comprises four education zones, namely: Chaik, Chemamul, Waldai and Kabianga.

**Target Population and the Sample Size**

The target population for the study was 238, of which 160 were preschool teachers and 78 were primary school head teachers. Stratified sampling technique Krejcie and Morgan’s (1970) sample size determination table was used to determine the sample size for the study. The sample size of 178, which consisted of 113 preschool teachers and 65 primary school head teachers was arrived at.

**Table 1: Sample Size for the Study**

<table>
<thead>
<tr>
<th>Education Zones</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool Teachers</td>
<td>Target Population</td>
<td>22</td>
<td>31</td>
<td>72</td>
<td>35</td>
<td>160</td>
</tr>
<tr>
<td>Sample Size</td>
<td>16</td>
<td>22</td>
<td>49</td>
<td>26</td>
<td>113</td>
<td>70.4</td>
</tr>
<tr>
<td>Headteachers</td>
<td>Target Population</td>
<td>11</td>
<td>15</td>
<td>34</td>
<td>17</td>
<td>78</td>
</tr>
<tr>
<td>Sample Size</td>
<td>10</td>
<td>13</td>
<td>28</td>
<td>14</td>
<td>65</td>
<td>71.8</td>
</tr>
</tbody>
</table>

**Instrumentation**

Data for the study was collected using a self-designed preschool teachers’ questionnaire, the head teachers’ questionnaire, and the observation checklist.

**Data Analysis**

Data analysis for the current study was done using descriptive statistics with the help of Statistical Package for Social Sciences version 22. Similarly, qualitative data analysis from the open-ended question in the head teachers’ questionnaire was organised, sorted, coded and analysed according to themes.

**RESULTS AND DISCUSSION**

The purpose of the study was to establish the influence of selected adapted teaching and learning resources on the execution of Inclusive education in public preschools schools in Belgut Sub-County, Kenya. The study findings displayed in this section were informed by the questionnaires’ return rate of 102 (90.3%) from preschool teachers and 49 (70.85%) from the head teachers. Observations
were made on 49 (70.85%) pre-primary schools. The response rate was considered satisfactory since Fincham (2008) considered a response rate of 60% in research as acceptable.

### Availability of Adapted Physical Facilities in Preschools in Belgut Sub-County.

The researcher wanted to establish from preschool teachers and the head teachers if adapted physical

**Table 2: Respondents’ and Observation Scores on the Availability of Adapted Physical Facilities**

<table>
<thead>
<tr>
<th>Preschool Teachers</th>
<th>Head Teachers</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Rails on stair</td>
<td>8</td>
<td>7.8</td>
</tr>
<tr>
<td>Wide pavements</td>
<td>17</td>
<td>16.7</td>
</tr>
<tr>
<td>Adapted toilets</td>
<td>43</td>
<td>42.2</td>
</tr>
<tr>
<td>Adapted desks</td>
<td>32</td>
<td>31.4</td>
</tr>
<tr>
<td>Playground</td>
<td>43</td>
<td>42.2</td>
</tr>
<tr>
<td>Ramps</td>
<td>21</td>
<td>20.6</td>
</tr>
<tr>
<td>Swings</td>
<td>19</td>
<td>18.6</td>
</tr>
<tr>
<td>Accessible classrooms</td>
<td>57</td>
<td>55.9</td>
</tr>
</tbody>
</table>

From the findings in Table 2, it is observed that the majority of the pre-primary school teachers and the head teachers indicated that the most available physical facilities were the accessible classrooms, as reported by the majority (57, 55.9%) of preschool teachers and the majority of the head teachers and 11 (22.4%) respectively. It is also seen from the table that the majority (94, 92.2%) of pre-primary school teachers and the majority (47, 95.9%) of the head teachers acknowledged that rails on staircases were not available. Similarly, the observation findings indicated that the majority (47, 95.9%) lacked rails on the school compounds. They indicated that rails on staircases were not available in most pre-primary schools. The lack of rails on staircases makes the school facilities not to be disability friendly as this hinders the access of learners with visual and mobility challenges to the school facilities unattainable.

The current study findings are consistent with those of Buhere and Ochieng (2013) in the study on Inclusive education in Kenyan schools that most school buildings had staircases that prohibited the movement of the physically challenged learners. They are also consistent with that of Chaula (2014) who found that some primary schools in Tanzania had stairs that prohibited learners with a physical and visual impairment from moving around. According to RoK (2018), preschools should be made disability-friendly by putting rails on stairways to enhance the safe movement of the physically and visually challenged learners in and out of buildings with stairs. Effective inclusion of learners with physical and visual disabilities requires preschools to have rails on stairways. The lack of rails on stairways is a hindrance to the provision of Inclusive education in preschools as it makes the movement in and out of buildings unsafe for the physically and visually challenged learners. This means that preschool environments are disability unfriendly, hence, discouraging enrolment of learners with visual and physical impairments.

In regard to the wide pavements, the majority of the teachers (17, 16.3%) and 38 (77.6%) of the head teachers acknowledged that wide pavements were available in their schools. However, the majority of the teachers (85, 83.3%) and 11 (22.4%) of the head teachers acknowledged that wide pavements were not available in their schools. Further still, it was observed that 2 (4.1%) of head teachers had rails while the majority (47, 95.9%) did not. Preschool
teachers and the observation scores are in agreement that most preschools lack wide pavements. This implies that most preschools lack adapted toilets for children with special physical and visual impairments. The lack of appropriate rails on stairs in most preschools could be due to limited government funding for preschools. In addition, some of the buildings were put up several years ago before Inclusive education was prioritised by the government.

It is also seen in the table from the observation scores that there were wide pavements in 11 (22.4%) of preschools but unavailable in 37 (77.6%). This implies that most preschools lack wide pavements. Lack of pavement could also be attributed to the government’s low budget allocation to preschools which inhibits putting up modern school facilities that are friendly to children with special abilities (RoK, 2017).

The findings resonate with the RoK (2017) that most pre-primary schools lack adequate physical facilities for special needs education learners. They are also in line with the findings of Buhere and Ochieng (2013) and Mukuti (2016) that most schools lack wide pavements. However, the findings contradict Illinois Early Learning Project (2015) that wide pavements should be constructed in regular schools to enhance the effective provision of Inclusive education. According to the Republic of Kenya [RoK] (2012), the learning environment should be accessible to children with special abilities. Hence, the lack of wide pavements on buildings is unsafe for learners with physical impairments on wheelchairs and those with visual impairments as they prevent them from moving around within the compounds. Therefore, the county governments and head teachers of pre-primary schools should work towards the provision of wide pavements so as to enhance inclusivity in schools.

In addition, the results indicated that the majority of preschool teachers (59, 57.8%) and less than half (17, 34.7%) of the head teachers stated that the adapted toilets were not available in the respective pre-primary schools. Further still, the results reveal that 43 (42.2%) of preschool teachers and the majority (32, 65.3%) of the headteachers indicated that adapted toilets were available. The researcher’s observation findings as indicated in the observation scores, show that majority (65, 65.3%) of pre-primary schools lacked adapted toilets with rails, while only 2 (4.1%) had them. This implies that most preschools lack adapted toilets with rails. The findings are consistent with RoK (2017) that most pre-primary schools lack adequate physical facilities for children with disabilities. They are also consistent with the findings of Kirui (2014), Marias (2014), Mukuti (2016), Nyaigoti (2013), Wachira (2012 and Warui (2014), who found that most schools lacked adapted toilets. Toilets without rails are unsafe for learners with physical and visual disabilities. According to the Ministry of State for Planning, National Development and Vision (2012), the learning environment should be safe for children with disabilities. Learners on wheelchairs require toilets with rails so they can support themselves because, without them, it is impossible for them to use the toilets. They are therefore a necessity in the inclusion of the physically challenged learners. Hence, inadequate adapted toilets with rails hinder the full execution of Inclusive education in public preschools.

In addition, Table 2 reveals that 32 (31.4%) of preschool teachers acknowledged that adapted desks were available, while the majority (70, 68.6%) acknowledged that they were not available. Similarly, it is revealed in the same table that 25 (51.0%) of the head teachers agreed that adapted desks were available while 24 (49.0%) also believed that adapted desks were not available. The observation findings also indicate that slightly less than half (2, 49.0%) of preschools had adapted desks while slightly more than half (25, 51.0%) did not. Thus, the results also revealed low availability of adapted desks and tables, as shown by the observation score of 49.0%. The responses of 31.4% of preschool teachers and 49.0% of the head teachers also attest to the low availability of adapted desks/tables in the respective preschools. This implies that most preschools lack adapted desks and tables that enable learners with physical impairments as they prevent them from moving around within the compounds. Therefore, the lack of wide pavements on buildings is unsafe for learners with physical impairments on wheelchairs and those with visual impairments as they prevent them from moving around within the compounds. Therefore, the county governments and head teachers of pre-primary schools should work towards the provision of wide pavements so as to enhance inclusivity in schools.
impairments to sit comfortably and participate in class activities as required.

The findings of the current study that most preschools lacked adapted desks for learners with physical disabilities are consistent with those of Nyaigoti (2013), Mukuti (2016) and Warui (2014), who also found that most schools lacked adapted desks. Adapted desks enable learners with physical impairments to develop to their full potential through taking part in classroom activities alongside their peers without disabilities. The unavailability of adapted desks and tables in most pre-primary schools hinders the execution of Inclusive education in public preschools.

According to the Republic of Kenya (2012), schools should be responsive to the education of children with special abilities. Hence, inadequate adapted desks for learners with physical impairments hamper the execution of Inclusive education in public preschools. The findings are consistent with RoK (2017) that most pre-primary schools lack assistive devices for children with special abilities. The findings are also consistent with those of Buhere and Ochieng (2013), Marias (2014), Mutembei (2014), Kirui (2014), and Warui (2014) that majority of the sampled schools lacked adequate adapted desks and chairs for learners with physical impairments.

In respect of adapted playgrounds, Table 2 above indicates that 43 (42.2%) of preschool teachers reported they were available and slightly more than half (59, 57.8%) reported that they were not available. The table also shows that 28 (57.1%) of the head teachers affirmed that adapted playgrounds were available, while 21 (42.9%) reported that they were unavailable. It is also indicated in the observation scores that adapted playgrounds were available in 21(42.9%) and not available in 28(57.1%) of preschools that were visited. This suggests that most preschools lacked adapted playgrounds.

The findings of the current study contradict Illinois Early Learning Project (2017) and RoK (2017) which stipulate that pre-primary schools should have playgrounds and play materials that are adapted to suit learners with special. They also contradict the findings of Buhere and Ochieng (2013) in their study on the usage of selected resources for Inclusive education in mainstream primary schools, which found that most schools in Bungoma had adapted playgrounds that were friendly to the physically challenged learners. They are also consistent with those of Mutembei (2014), in a study on Inclusive education in Tharaka Nithi County, Kenya, who found that the majority (83.3%) of the schools lacked level playgrounds.

Children in preschool learn mostly through play. Similarly, play enhances children’s development. Inclusive education offers opportunities for learners to participate maximally. This means that without an adapted/levelled playground with adapted play materials, children with special abilities in regular schools will not be able to take part in play like their counterparts without special abilities. Hence, the lack of adequate adapted playgrounds in several schools hinders the effective inclusion of children with special abilities. Therefore, the county governments and other authorities should ensure that preschools have adequate playgrounds for the children.

With regard to ramps on entrances of buildings, Table 2 shows that 21 (20.6%) of preschool teachers acknowledged that they were available, while the majority of preschool teachers (81, 79.4%) said they were not available. Similarly, the majority (36, 69.4%) of the head teachers stated that ramps on entrances were available while 15 (30.6%) of them reported that ramps were not available. Further still, it is shown in Table 2 in the observation findings that the majority 469.4% of the preschool had ramps while 15 (30.6%) did not have them. This means that majority of the sampled schools lack ramps that children in wheelchairs use to access buildings such as classrooms.

According to Illinois Early Learning Project (2017), ramps should be constructed on doorways. Similarly, RoK (2012) stipulates that schools should be responsive to the education of children with special abilities. However, the findings are in line with those of Buhere and Ochieng (2013), Kirui (2014), Manduku (2018), Marias (2014), Mutembei (2014), Wangari (2015), and Warui (2014) that the majority of schools lack ramps. Ramps on doors and pathways enable learners with physical impairments to enter and exit school buildings. They aid learners on wheelchairs to access the classrooms and other

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buildings on the school compound. Without them, such learners will not operate efficiently in the school compound. An environment without ramps is disability friendly and a barrier to enrollment of learners with physical impairments. The unavailability of ramps in schools hampers the provision of Inclusive education for the physically challenged children.

In relation to swings, Table 2 above reveals that 19 (18.6%) of preschool teachers agreed that swings were available, whereas the majority (83, 81.4%) stated that they were not available. Likewise, it can be seen from Table 2 that 49 (91.8%) of the head teachers were of the view that swings in preschools were unavailable, whereas 4 (8.2%) had a contrary opinion. Further still, the observation scores in Table 2 reveal that swings were unavailable in 4 (8.2%) but not available in the majority (81.4%) of preschools. This implies that the majority of preschools lack swings that enable children with disabilities to participate in outdoor play. This could also be attributed to inadequate funding for preschool programmes.

The findings of this study correspond to those of Mukuti (2016), who found that swings were inadequate in most ECDE centres in Matungulu Sub-County, Kenya. The findings also correspond to those of Wachira (2012) and Warui (2014) who found that most preschools lacked swings. According to RoK (2018), preschools should be made disability-friendly by providing children with disabilities with safe play resources, swings included. Play is necessary for children as it enhances their development of children. Hence, the lack of swings in most preschools hampers the Ministry of Education’s Vision 2030 of providing inclusive quality education for all children.

The observation scores in Table 2 also show that accessible classrooms were available in 36 (77.6%) of preschools visited but were not available in 11 (22.1%). It is evident from the findings that all the listed adapted physical facilities except the accessible classroom were not available in most preschools, as reported by the majority of preschool teachers and the majority of the head teachers. This means that most preschool schools’ classrooms are accessible to learners with visual and physical impairments. The findings are in line with the provision of RoK (2012) that classrooms should have wide doors that provide children with physical impairments on wheelchairs and those with visual challenges to access classrooms easily. Hence, inaccessible preschool classrooms inhibit the provision of Inclusive education.

The study results correspond to those of a study conducted by the Ministry of Education (RoK, 2009), which established that Inclusive education in Kenya had not been implemented due to inadequacy of facilities. Similarly, the findings correspond with those of Adoyo and Odeny (2015) who found that adapted physical facilities had not been renovated to become disability friendly. The availability of adapted physical facilities enhances the stay of children with special abilities in mainstream preschools. Hence, their unavailability has a negative influence on the execution of Inclusive education in public preschools. Hence, the unavailability of adapted physical facilities hampers the execution of Inclusive education.

CONCLUSIONS

The objective of the study was to establish the influence of adapted physical facilities on the execution of Inclusive education. The study concludes that physical facilities influence the execution of inclusive education in preschools in Belgut Sub-County negatively.

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