Influence of Appropriate Instructional Resources on Retention of Pupils with Disabilities in Mainstreamed Primary Schools in Bomet County, Kenya

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DOI: 10.36348/JAEP.2019.v03i12.001 | Received: 20.11.2019 | Accepted: 27.11.2019 | Published: 10.12.2019

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Abstract

This research sought to find out the influence of appropriate instructional resources on retention of pupils with disabilities in mainstreamed Primary Schools in Bomet County, Kenya. The challenge that this study sought to address was low retention of Pupils with Disabilities (PWDs) in mainstreamed schools. This study was embedded in Systems Theory by Von Bertalanffy [1]. It adopted survey research design. The target population was 840 teachers. Yamane formula was applied to get a sample size of 278 teachers. Multi-stage sampling procedure was applied. The findings of the study revealed that appropriate instructional resources significantly influenced the retention of PWDs by = 42.1% (p<0.05). The study also reports a positive and statistically significant relationship between appropriate instructional and retention of pupils with disabilities (r = 0.842; p<0.05). The study concludes that appropriate instructional resources positively and significantly influence the retention of pupils with disabilities. Therefore, when appropriate instructional resources are provided, retention of pupils with disabilities increase and conversely, in the absence of these resources, retention of pupils with disabilities will be challenging. The study recommended that appropriate instructional resources such as textbooks, supplementary curriculum support materials, learning devices or aiders including braille kits, printouts, pointers, embossers friendly to pupils with disabilities be supplied to improve their retention in mainstreamed primary schools.

Keywords: Appropriate, Resources, Instructional, Retention, Disabilities.

INTRODUCTION

According to the World Health Organisation [2], approximately one billion people in the world have one disability or the other, with at least 1 in every 10 being a child and 80% living in developing countries. Bones and Lambe [3] put an emphasis on this fact that education managers need to create conducive environments that allow learners with disabilities to participate in mainstreamed learning centres. The findings of this study continue to reiterate that there is need to register learners with disabilities and sustain them to learn in general learning institutions regardless of their differences to learn, to play and to interact with others.

Retention of pupils with disabilities to learn in mainstreamed schools has remained a challenge in many societies. A study conducted in England showed that one in five pupils within a population of 1.7 million school-going age children is identified as having special educational need. A study by Office for Standards in Education (OFSTED) dealing with children services and skills [4] revealed that academic achievement for children with disabilities and those who have special educational needs was outstanding at 41% of the visited Provinces and 36% of the case studies.

Kenya has taken a stride to inculcate inclusiveness in the learning centres. Republic of Kenya [5] in a Policy Framework for Education in Kenya maintains that the Government places emphasis on inclusive education. This policy framework states that regular mainstreamed schools that have accommodated learners with special needs and disabilities have no amenities that take care of such learners Furthermore, despite strides to accommodate inclusive schools with appropriate facilities, a study conducted by Kogei [6] states that special needs education in Kenya is reported...
to suffer from inadequate resources relevant to PWDs to learn in their schools.

According to Bomet County survey for persons with disabilities in 2014, a total of 7,656 persons have various disabilities in the following categories: visual impairment, physical, hearing, mental, albinism, autism, epileptics, speech disorders. Survey research findings showed that physical disabilities affected more males (52.7%) than females (47.3%) while epileptic cases represent 6.1% and albinos were less than 1% [7]. Retention of pupils with disabilities still remains a challenge, as reported by the Bomet County Integrated Development Plan [8]. Following this background, the researcher envisaged to determine the influence of appropriate instructional resources on retention of pupils with disabilities in mainstreamed primary schools in Bomet County, Kenya.

The background of this study shows that there is a problem of retention for pupils with disabilities in regular mainstreamed schools. According to Kahonge [9], the education system in Kenya is still ill-equipped to support learners with disabilities and special needs. In support of this observation, Koge [6] states that special needs education in Kenya is reported to suffer from inadequate supplies for PWDs to learn in regular schools. Many children living with disabilities do not go to school at all. A few who are enrolled in regular schools are far more likely to drop out than their non-disabled peers in the same grades as observed by the National Coordinating Agency for Population and Development and Kenya National Bureau of Statistics [10].

According to the County Government of Bomet records children with disabilities were not fully retained in public primary schools. It was further observed by the National Council for Population and Development [11] that out of every 10 pupils with disabilities enrolled in integrated schools in Bomet County, only 3 remained to the completion level of basic education. In addition, a report from the County government of Bomet reinforces this information by stating that only 38% of PWDs were retained in regular mainstreamed schools while 62% did not remain to pursue their studies.

When children with disabilities fail to acquire universal basic education to empower them socially as required by the sustainable Millennium Development Goals, their living conditions remain deplorable. Pupils with disabilities, who are not retained to further their studies, tend to display poor performance in all aspects related to life as observed by Baxter and Babbie [12]. This research study sought to find out the influence of appropriate resources on retention of pupils with disabilities. The study was basically conducted in mainstreamed primary schools in Bomet County, Kenya.

LITERATURE REVIEW

Appropriate Instructional Resources and Retention of Pupils with Disabilities

Every child deserves to receive quality education. Education is a cardinal human right and a social good. According to Disability Africa report of 2017, an overwhelming majority of children with disabilities in Africa are being deprived of access to quality education. Children with disabilities can be present in the classroom but still be bullied, be ignored and be excluded from learning. Furthermore, the Disability Africa report [13], explains that whilst a certain amount of excellent inclusive education practice occurs, a vast majority of children with disabilities who are lucky to attend school have a miserable time. They are not accessing anything close to the best possible educational experience. Some learners with disabilities have difficulty reading textbooks and other learning materials. A learner, for example, who is blind, is not able to read a book. A learner who is physically challenged may not be able to hold a book. The same study further reported that to succeed in school, these learners need access to specialised learning instructional materials. This is fully documented in the Federal Special Education Law, the Individuals with Disabilities Education Act and Individualised Education Program in the United States of America. These legal documents raised concern that the learners should be exposed to specialised assistive devices.

It is common in many learning centres that the materials that are available mainly are printed textbooks and printed curriculum supplementary support materials. According to Khan, Ahmad, Ali and Rehman [14], many materials used by learners in the classrooms are large print-based books and hand-outs, which learners with disabilities can use more easily. Some types of accessible instructional materials are braille, large print, audio and digital text. These are best for learners with disabilities who may understand information but cannot read. According to Odom and Brown [15], the only difference between accessible instructional materials and alternative materials is the way the information is presented. Alternative materials contain content that addresses the same topic but is modified in some manner so that it can be understood by the learner. Studies by Khan et al., [14]; Odom and Brown [15], did not determine the influence of appropriate instructional resources on retention of pupils with disabilities in mainstreamed primary schools which this study embarked on.

Providing education for children with disabilities in mainstreamed education systems has not been easy in Sub Saharan Africa. Goel [16] viewed the Africa Charter on the rights and welfare of children and critiqued that education systems in many poorest countries of the world are currently experiencing economic challenge which becomes a menace in financing mainstream education. The report further...
argues that the crisis can easily create a lost generation of children whose life chances will have been interrupted by failing to protect their right to education as deliberated in the goal of Education for All. Similarly, Goel [16] did not examine the influence of instructional resources on retention of pupils with disabilities in mainstreamed primary schools which this study embarked on.

Instructional resources in typical general education classrooms are limited in scope [17]. The scholar went on to state that commonly found supplies such as textbooks may be supplemented with student workbooks and worksheets. Specific multimedia such as number-line sets for teaching mathematics, a globe for social studies, videos, software, and internet resources are used to support learning in common centres for learning. Walters [18] argue that digital content can be presented in different ways to meet the learning needs of each student. This content can include adding hyperlinks and glossaries. It might also include graphs, animation, and videos linked within the body of resources to aid understanding and expand content experience to demonstrate a concept. Kargın [19] opines that instructional materials have positive impacts on student learning. If there are pupils with disabilities in a given classroom; therefore, instructional materials, for instance, appropriate teaching/learning tools such as textbooks, supplementary support equipment should be provided. Some of these goods are learning devices or aids, which include braille kits, braille printouts, hearing aids, pointers, embossers and many others. These equipment, in general, are essential in terms of supporting and facilitating appropriate learning. Similarly, Avcıoğlu [20] recommends that during the education of a pupil with special needs, teachers should consider the individual needs of pupils and provide acquisition of skills by experiencing a real-life situation.

Inclusive education accommodates all children with or without disabilities. Kesson [21] emphasise that children with special needs should be received in a regular school and to be exposed to friendly facilities. Stainback and Stainback [22] stressed that change in the learning areas and nature corners in the classrooms bring joy and make children to be immersed in a highly participatory learning process. Studies by Kesson [21] and Stainback and Stainback [22] did not study the influence of appropriate instructional resources on retention of pupils with disabilities in mainstreamed primary schools which was the main focus of this study.

A conducive learning environment is a haven for peace that addresses issues of physical, mental and emotional development in a holistic manner. To that extent, Gay [23] observes that inclusive, and friendly schools are free from abuse, guarantee safety and respect diversity for girls and boys who have disabilities. Despite the efforts put across, many countries of the world have engaged their financial resource to promote mainstreamed learning in their learning centres. According to Anderson, Ryan and Shapiro [24], mainstream education has been catered for in the curricular of various countries in Africa. Challenges including curriculum content, aviation, driving lessons, overloaded content and time allocation may be inadequate and discouraging. They added that the level of special need or severity of disability determine how much the learner can achieve.

Gullford and Upton [25] and Frith [26] concur that general schools should respond to diverse needs of all children and accommodate their learning styles and that schooling is one experience that people worldwide embrace in common as a leading means by which societies prepare their young generations for a prosperous future. The report presented by Gullford [25] and Frith [26] did not focus on the influence of appropriate resources on retention of pupils with disabilities in mainstreamed primary schools which this study undertook.

The status of persons with disabilities has accorded reasonable concern by various bodies in the world. According to the National Council for Special Education [27] and the Salamanca Statement and Framework for Action showed that lack of health services provided amongst learners with disabilities hamper their participation in mainstreamed learning centres. Additionally, limited access to conducive educational facilities and psychological assessments by children with special educational needs is a challenge that hampers retention. This is so because they are unable to access professional education services. It is also a matter of concern that many assessments simply state a child’s disability rather than informing and guiding a child’s development during teaching and learning.

Learners with disabilities deserve better attention so as to enhance their retention in education programs in their learning centres. According to Navigate [28] and Bhat and Bilal [29], learners with special needs still suffer from inadequate funding and lack of clear policy framework. They also have to deal with low progress in assessment, placement, inadequate qualified teachers, and lack of teaching and learning resources, among others. Studies by Navigate [28] and Bhat [29] did not scrutinise the influence of appropriate instructional resources on retention of pupils with disabilities in mainstreamed primary schools which this study intensively addressed.

In other countries, educators are being challenged to modify teaching methods and environments so that the maximum number of pupils is served in typical educational environments. Nevertheless, researchers who are captured above to have conducted a study on instructional resources did
not mention any fact on the influence of provision of appropriate resources on retention of PWDs in Bomet County. This study fully participated in attempting to raise guiding solutions to promote retention of learners with disabilities in the regular community institutions.

**METHODOLOGY**

This study utilised a survey research design. This design includes surveys and fact-finding inquiries of different kinds. The survey was carried out in Bomet County, Kenya. The target population for this study was teachers of mainstreamed primary schools in Bomet County. There were 76 mainstreamed primary schools in Bomet County during the period of this study. The targeted schools were composed of 76 headteachers and 840 teachers. This study utilised purposive sampling technique to select schools where various disabilities were mainstreamed. Lastly, simple random sampling was used to sample the respondents such that only three or four teachers were picked from each school according to the staffing establishment. To obtain the sample size of teachers, Yamane [30] formula was applied. Therefore, the sample size for the study was 271 teachers. This study employed a questionnaire tool to collect primary data. The questionnaire items were examined for face and content validity by supervisors of Kabarak University. They scrutinised the items for purposes of clarity and verified whether they were addressing the topic of the study. On the other hand, reliability was measured using test-retest method using Pearson Product Moment Correlation Coefficient (PPMCC). The threshold was set at 0.7 coefficient. The results of Pearson correlation for the variable were within the threshold of 0.7, indicating that the items of the instrument were reliable.

**RESULTS**

**Provision of appropriate instructional Resources**

<table>
<thead>
<tr>
<th>Statement</th>
<th>SD (%)</th>
<th>D (%)</th>
<th>N (%)</th>
<th>A (%)</th>
<th>SA (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are overhead projectors for lesson presentation.</td>
<td>68.6</td>
<td>6.1</td>
<td>3.8</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>There are appropriate embossers in all classes for PWDs.</td>
<td>70.1</td>
<td>19.5</td>
<td>0.4</td>
<td>6.5</td>
<td>3.4</td>
</tr>
<tr>
<td>There are sufficient therapeutic toys for PWDs.</td>
<td>72.4</td>
<td>21.8</td>
<td>2.3</td>
<td>1.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Appropriate ‘talking braille’ are sufficiently provided for visually impaired learners in our school</td>
<td>75.1</td>
<td>16.5</td>
<td>3.1</td>
<td>4.2</td>
<td>1.1</td>
</tr>
<tr>
<td>Appropriate braille print papers are adequately provided for visually impaired learners in our school</td>
<td>60.5</td>
<td>21.5</td>
<td>5.7</td>
<td>7.7</td>
<td>4.6</td>
</tr>
<tr>
<td>There are appropriate digital texts and hand-outs for PWDs</td>
<td>56.3</td>
<td>24.5</td>
<td>6.1</td>
<td>6.1</td>
<td>6.9</td>
</tr>
<tr>
<td>Appropriate reference materials specifically made for PWDs are in the Library</td>
<td>35.2</td>
<td>28.7</td>
<td>5.7</td>
<td>5.0</td>
<td>25.3</td>
</tr>
<tr>
<td>Appropriate teaching and learning aids, e.g. walls full of charts (talking walls) are provided adequately in our classrooms</td>
<td>70.1</td>
<td>20.7</td>
<td>4.2</td>
<td>1.9</td>
<td>3.1</td>
</tr>
<tr>
<td>There are appropriate textbooks for PWDs in our school</td>
<td>60.2</td>
<td>21.8</td>
<td>5.7</td>
<td>7.7</td>
<td>4.6</td>
</tr>
<tr>
<td>Computers appropriate for visually impaired learners are provided in our school</td>
<td>52.9</td>
<td>23.8</td>
<td>6.5</td>
<td>8.4</td>
<td>8.4</td>
</tr>
<tr>
<td>There are adequate, appropriate stationery supplies for PWDs in our school</td>
<td>37.5</td>
<td>26.4</td>
<td>6.1</td>
<td>4.6</td>
<td>25.3</td>
</tr>
</tbody>
</table>

Every child deserves to receive quality education. Education is a key human right and a social good. It was observed that up to 90.8% of respondents in this study disagreed that appropriate teaching and learning aids, for example, walls full of charts (talking walls) were provided adequately in their classrooms. This indicates that when teaching and learning aids meant for PWDs were lacking, retention would be affected. This finding concurs with that of Okongo, Ngao, Rop and Nyongesa [31] who observe that there were inadequate teaching and learning resources for the implementation of inclusive education at pre-school centres in Nyamira North Sub-County.

Similarly, 91.6 % of respondents in this study disagreed that appropriate ‘talking braille’ and computers (76.7%) were sufficiently provided for visually impaired learners in their schools. Fraser and Maguvhe [32] reported that visually impaired learners had limited access to computers, encyclopaedia, and sources of references due to impairment. It was realised that 63.9% of respondents disagreed that there were adequate stationery supplies for PWDs in their school and specifically braille print papers (82%). This implies that inadequacy of stationery tailored for PWDs will make their learning difficult. This could be the reason for their lack of retention of PWDs in regular public community schools. This finding was supported by research findings that were investigated in Uganda by Ndyabawe [33] that challenges that hinder children with disabilities enjoying learning in a regular mainstreamed school are lack of teaching and learning materials which may frustrate the progress of such children in advancing their education.

Appropriate reference materials provided to pupils with disabilities in mainstreamed Primary Schools is fundamental to any meaningful learning. It
was observed by 82%, and 63.9% of respondents disagreed that there were appropriate textbooks and reference materials specifically made for PWDs in the Libraries in schools. This view was upheld by 80.8% of respondents who disagreed that there were appropriate digital texts and handouts for PWDs in schools. This implies that in the absence of appropriate reference materials, PWDs find learning ineffective, thus leading to dropping out of learning centres.

Learners with disabilities have varied needs during instruction and learning sessions. It was noted that 94.2% of respondents disagreed that there were sufficient therapeutic toys for PWDs. A percentage of 89.6 respondents in the study, as well, disagreed that there were appropriate embossers in all classes for PWDs. It was also realised that 85.1% of respondents observed that there are no overhead projectors for lesson presentation (85.1%). This suggested that learners with disabilities (PWDs) were faced with enormous challenges during learning which could be the reason for their lack of retention in their schools up to the clearance level of their academic works. Furthermore, these study findings were supported by Cooper and McEvoy [34] who concur that learning equipment that supports learners with disabilities and can enhance their retention in the learning areas are adaptive classroom seating, strollers, wheelchairs, standers, large prints, braille machines, hearing aide, sign language interpreters, friendly chairs and lockers, tables, trays and therapeutic toys.

**Correlation Test between Appropriate Instructional Resources and Retention of Pupils with Disabilities**

Pearson product movement correlation coefficient test was used to investigate whether there existed a significant influence between appropriate instructional resources and retention of pupils with disabilities. The analysis was tested at 0.05 level of significance. Findings are presented in Table-2.

<table>
<thead>
<tr>
<th>Retention of pupils with disabilities</th>
<th>Pearson Correlation</th>
<th>N</th>
<th><strong>. Correlation is significant at the 0.01 level (2-tailed).</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Retention of pupils with disabilities</td>
<td>1</td>
<td></td>
<td>0.842</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>261</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The findings showed that there exists a positive and statistically significant influence of appropriate instructional resources and retention of pupils with disabilities ($r = 0.842^{**}$; $p < 0.05$). This indicates that when appropriate instructional resources are provided, retention of pupils with disabilities increase in numbers and conversely, in the absence of these resources, retention of pupils with disabilities is faced with enormous challenges. Materials, especially for learners with physical impairments, might not be enough or be availed in the majority of mainstreamed schools. Physical facilities influenced the implementation of inclusive education for learners with physical impairments, although a majority of schools lacked some of these facilities. There was a positive relation between teaching methods and the implementation of inclusive education.

**Regression Analysis**

Influence of appropriate physical resources on retention of pupils with disabilities in was analysed using regression and presented in Table-3.

<table>
<thead>
<tr>
<th>Table-3: Regression Coefficients $a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
<tr>
<td>Appropriate instructional resources</td>
</tr>
</tbody>
</table>

It was found that appropriate instructional resources significantly influence retention of pupils with disabilities by 42.1%.

**Hypothesis Testing**

$H_{01}$: There is no statistically significant influence of appropriate instructional resources on retention of pupils with disabilities in mainstreamed primary schools in Bomet County, Kenya.

According to Table-3, appropriate instructional resources variable has a p-value of 0.000. Since it is less than 0.05 alpha, the null hypothesis was rejected, and a conclusion made that appropriate instructional resources significantly influence retention of pupils with disabilities in mainstreamed primary schools in Bomet County, Kenya. It was realised that the availability of instructional resources has a positive influence on retention of PWDs because the learning environment is conducive for learning. However, the absence of instructional resources tailored towards
PWDS could hamper the retention in mainstreamed schools. Hence, these findings concur that of Gichohi [35] who found out that the influence of teaching and learning resources for PWDS and their retention indicated that schools have teaching/learning resources at a ratio of 1:4 which proved the inadequacy of proper learning and, therefore, negatively affect PWDS’ retention in mainstreamed schools. The ratio of learning materials to pupils is poor, and this influences the retention of pupils in the school. Pupils leave school because they are not able to get the necessary learning resources in their community mainstreamed schools.

CONCLUSION
The findings displayed the fact that there existed a positive and statistically significant relationship between appropriate instructional resources and the retention of pupils with disabilities ($r = 0.84^2$; $p< 0.05$). This indicates that when appropriate instructional resources are provided, retention of pupils with disabilities increase and conversely, in the absence of these resources, retention of pupils with disabilities will be challenging. Kargun [19] opines that instructional materials have a positive impact on student learning. If there is a learner with special needs in a common classroom, instructional materials become more important in terms of facilitating and supporting learning. Finally, it was found that appropriate instructional resources positively and significantly influence the retention of pupils with disabilities by 42.1%.

RECOMMENDATION
The study recommends that appropriate instructional resources such as textbooks, supplementary curriculum support materials, learning devices or aiders including braille kits, printouts, pointers, embossers friendly to pupils with disabilities be supplied to improve their retention in mainstreamed primary schools.

REFERENCES


