TEACHING METHODS AND ACADEMIC PERFORMANCE OF VISUALLY IMPAIRED LEARNERS INAN INCLUSIVE SETTING NGONG DIVISION, KATIADO NORTH DISTRICT

BY

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DECLARATION

Samson Ngugi, admission number BED /SNE 21327/81/ DF do hereby declare that this research report on teaching methods and academic performance of visually impaired learners in Kajiado district –Kenya is entirely my own original work.

It is not a duplication of similarly published work or any work of any scholar for academic purpose or neither has it been submitted to any other institutions of higher learning for the award of certificate, diploma or degree in special needs education.

I also declare that all materials cited in this paper which are not my own, have been duly acknowledged.

Signature ..... Date ....12/4/2010.....

SAMSON .G. NGUGI

APPROVAL

He research report on teaching methods and academic performance of the visually impaired learners in an inclusive setting in Kajiado District, Kenya has been submitted to the Institute of Open and Distance Learning with my approval as university supervisor.

Sign .....

MUJUNI EVARIST

Date :...12/4/2010.....

ABSTRACT

This study was carried out in Ngong division, Kajiado north district of Kenya in three selected schools namely;

1. Ngong township primary school
2. Laiser hills academy
3. serare secondary school

the main purpose of the study was to find out the teaching methods and performance of children with visual impairment in the maintenance schools in the area.

The sample population was composed of respondents who included schools and learners in the selected schools.

The research instruments that were used to collect data were questionnaires and interviews.

The findings of the study generally showed that there are some negative attitudes towards visually impaired children in mainstream schools.

CHAPTER ONE

1.0 Introduction

The eye is an important organ because about 80% of the information from the environment is received through the sense of sight. Having a defect in the eye therefore means that other senses such as olfactory and auditory readjustment to compensate for and facilitate the acquisition of the 20% of the information that would otherwise be lost due to eye defect.

These other senses however cannot perform exactly as the eye and becomes its perfect replacement.

According to Rimani (2000) defect in basic of the eye is referred to as visual impairment. For many years since the education of learners with visual impairment began, their academic achievement as compared favourably with their sighted counterparts except in some subjects like biology, physics and maths where the performance has not been to the expected standards, therefore the research sought to find out how teaching can affect academic performance of the visually impaired learners in an inclusive setting in Ngong zone, Ngong Division, Kajiado North district in Kenya.

1.1 Background of the study.

For quite sometime education services for learners with special needs have been in segregated classes because of social stigmatization. Learners with special needs were considered to be outcasts and hence given derogatory names in the society. A few were able to go to schools received the services in special schools. Severely handicapped in homes or rooms made for them.

They were given humiliating and dehumanizing names for example in Kkuyu community they refer to physically handicapped as Kionje for one

who could not walk, for one who cannot see is referred to as "Mutumumu and a Swahili word which has been used "Wasiojiweza" which is not a descent term, it refers to someone who is helpless, "can't perform "or" an invalid" but this isn't the case, a number of them are gifted and talented in many areas of government sectors or office.

Provision of educational services to visually impaired people in segregated settings did not take into account the fact that they have a right to interact with their peers and need support from their natural settings.

The implementation of inclusive education in Kenya was guided by policies both international and national levels.

The principles which guided the conception of inclusive education included: The human rights declaration (1948) which states that education is a human right and ought to be free at elementary and primary level. UNESCO (1990) states that all children have a right to education.

SALAMANCA statement and framework for action on special needs education (1994) states that all schools should accommodate children regardless of their physical, intellectual, social, emotional and linguistic or any other type of impairment. Much paper work has been done in the direction of policy formulation and planning regarding special needs education.

iii) To determine the availability of resources and their effect on performance on various subjects by the visually impaired learners in an inclusive setting.

5 Research Questions

. What is the attitude of regular school teachers towards the visually impaired learners in an exclusive setting?

. What are the problems that learners face in the implementation of the methods used in teaching of visually impaired learners?

. Are there enough resources for learners with visual impairment in an inclusive setting?

Significance of the Study

The result of the study will help the teacher to identify, adapt and utilize appropriate resources and use suitable methods of handling the learners with visual impairments in various subjects.

The teacher will gain a better understanding and seek to eliminate causes of poor performance in various subjects. The use of suggested teaching methods by teachers and learners endear teachers to learners, promote rapport between them and makes work easier and enjoyable.

The new found working relationship will motivate the learners thereby identifying individual needs which when addressed will enhance improved performance in various subjects.

The teacher will be able to do appropriate classroom placement of pupils, identifying suitable visually impaired devices for them and train them on how to use the devices. These are likely to translate into increased knowledge and skills which would help learners with visual impairment to solve various subjects with reduced struggle.

The consequent improved performance would boost the learners' confidence, ignite their desire for more practice and enhance their self esteem. They would no longer be seen as handicapped and would become part and parcel of the peer groups rather than an object and pity and assumption that largely from their dismal performance. The positive attitude towards learning various subjects and the possible solutions.

The community may shift the blame from visually impaired children and seek to address the identified factors by trying out the suggested solutions. They would acknowledge the potentials of their children with visual impairment and hence support their education and cease to neglect them by isolating them at home while their sighted peers go to school.

The education officers and social workers would use research materials as a source documents whose contents would be used when sensitizing or advising other education stakeholders about the children with visual impairment. The final research findings would enable the ministry of education science and technology gain insight of what learners with visual impairment and their teachers under go while handling various subjects and the problems involved.

This would help the Ministry of Education in appropriate planning not only for adequate employment of the required human resources. The curriculum developers and the national examination council would review and appropriately adjust and cater for learners with visual impairment as suggested by the findings of research. The Kenya national examination council would help fully prepare favourable guidelines on the timing and invigilation of candidates with visual impairments.

to describe people with profound hearing loss such that they cannot benefit from amplification, while hard of hearing is used for those with mild to severe hearing loss but who can benefit from amplification.

(Government of Canada, 2007)

2.1 Kenya's education system

The strength of Kenya's education system can be categorized as thus:
According to Coldough (1980), "Primary schooling is beneficial to developing countries even when the school quality is low". Through Kenya's free primary education policy, a goal was set to achieve University primary education by the year 2010. This is a major milestone in the education section such commitment is also evidenced by the increasing expenditure in education programmes (Reloitte and Touche, 2001).

To facilitate the implementation of free primary education, the government has created four grants; the school facilities grant is for classroom construction, the wage bill is for teachers, instructional materials grant is for buying instructional materials. The government with assistance of development partners has funded the free education in primary schools. Under the school facilities grant, adopted for the needs of children with disabilities. (G.O.K 2000)

Quality examination at each level of the education system demonstrates a highly competitive education system.

The provision of education services has been privatized and liberalized, reducing the government responsibility. (G.O.K 2000) The impacts on children with disabilities are both positive and negative. Positively, it broadens their opportunity for education through the numerous

Handicap: Is restriction of an activity which has come about as a result of social attitude towards a disability.

Intervention: Taking appropriate measures to control or stop a condition from getting worse.

Blind: Those people with no light perception.

Form Perception: Enables us to perceive shape, size and position of an object.

Olfactory: This is the sense of smell and its organ being the nose.

Visual Impairment: This refers to malfunction of the eye which may be as a result of visual disorder.

Visual Disorder: An abnormality caused to the eye as a result of factors such as heredity, diseases an anatomical effect.

Special Needs Education: The type of education which provides appropriate modification in curriculum, writing methods, teaching and learning resources to meet individual needs.

Perception: This is the awareness of ones environment through sensory stimulation.

2.1 problems faced by children with disabilities in accessing education.

2.1.1 Poverty.

Barton and Wamai (1994) argue that general access to education in Kenya is affected by high educational costs and household poverty. The cost of educating a child in a private institution that caters for special needs ranges from about 192 to 641 dollars per term - a considerable expense in a country where, according to the United Nations Human Development Report for 2003, about 23 percent of people live on less than a dollar a day. (UNHDP 2003)

The extreme poverty that affects many Kenyans means that most children will not attend school and more especially children with disabilities and so most of them will remain at home doing domestic work. (END/2004).

Even with the introduction of free primary education in the education sector, families with a low household income have difficulties affording the required uniforms, pens, books and scholastic materials. (UNICEF 2005).

2.1.2 Attitudes

Family perception of the disabled child greatly affects whether the child would be enrolled in school, the type of education they would receive, and the type of school they would attend (government or private).most of these children are seen as useless and a burden to the problem.(UNESCO 2001).

At school, and outside of school, the peers of children with disabilities participate in name calling and bullying. At extreme cases, the peers beat

Baker (1993) observes that the child learns various methods such as, observation, conditioning, imitating and identifying by observing what others do and the consequences that follows. The researcher agreed with Baker although the researcher puts much emphasis on sight which tends to show that visually impaired may wonder if they can also learn.

Otiato (2002) explains this when he says "....a child who is deprived of any sensory channel will mainly rely on the remaining senses to form concepts". This is true but the researcher felt that these remaining senses must be trained and developed so that they can adequately compensate the cost of impaired senses. The brain carries its integration role because it is adaptable that is it can change and therefore modifiable.

Ogonda (2002) furthermore states that the loss of sight or its reduced functional level should therefore not spill down to the learners can excel in various subject. This is in line with the Kenya education commission, Ominde report (1964) which called for all trained teachers to be given skills which would enable them effectively teach learners with special needs. The national education committee on educational objectives and policies (1976).

Gathache report supports the issue of appropriate devices to support the leaning of those with special needs. The report thus recommends that each child disability should be able to possess basic literacy equipment.

CHAPTER TWO

LITERATURE REVIEW

) Introduction

This chapter relates an overview of the published literate related to the objectives of the study. The literature will be discussed in the themes of the study objectives reflecting the major ideas raised on the problem.

. Historical Background of the Visually Impaired Learners in an Inclusive Setting.

In the olden days most societies in the world, regarded impaired children as bad omen and even used to neglect and threw them away. Later on in 18th Century, individuals and families who saw the potential in children with special needs at family level, for example in 685 AD Didymus was reported to have been the first person to device touch reading materials for the visually impaired children in Alexandria. This later led to the introduction of Braille, which is also read by touch. Then between 1579 – 1620 John Martin Publov Bonnet of Germany developed one hand manual alphabet.

By 1945 during the 2nd World War in Kenya some of the wounded army officers including the visually impaired were rehabilitated and the education was managed by churches like Salvation Army and Lutheran Church. In 1952 Sir Andrew Cohen as a governor introduced the idea of providing education to the visually impaired persons to cater for his relatives as well.

Our knowledge of people with visual impairments in western civilizations dates back to the days Homer in ancient Greece. Records from ancient Egypt confirm that people with visual impairment were accepted in the society.despite these indications of attention and acceptance in early societies of western civilization, there was no systematic attempt to

educate and integrate people who are blind in western society until the 18th century.

The first school for the blind, the institution for blind youth was founded in Paris in1974 by Valentine Hauy who also convinced a system or raised letters on the printed page unfortunately his developmental effort ended when the French revolution began in 1889.
In the early 1800s Louise Braille a French man who was blind developed a tactile system for reading and writing that uses an embossed dot code. This system is still used today.
The centre school for the blind at first in this country, the New England Asylum for the blind now called the Perkins school for the blind which was directed by Howe and opened 1829.

Around 1832 the New York Institute for the blind and the Pennsylvania institute for the instruction of the blind were begun. Following the norm of the time these schools were privately supported and only children from wealthy families could attend. The first day classes began in Scotland in 1872.
The Scottish education act called for blind were begun. Following the norm of the time these schools were privately supported and only children from wealthy families could attend. The first day classes began in Scotland in 1872.
The Scottish education act called for blind children to be integrated with their sighted classmates and to attend schools in their local communities. Note that our "mainstreaming movement" had its roots long time ago. Such schools were found in Chicago, Frankhall, superintendent for the Illinois school for the blind came to Chicago in several regions one local school in each region served students with severe visual impairments.

The students attended regular classes but also had special education teacher who taught them how to use Braille and encouraged them to fully participate in regular education programmes. Hall also developed a mechanical Braille and encouraged them to fully participate in regular education programmes. Hall also developed a mechanical Braille writer.

Edward Allen began the first American class in Cleveland for partially sighted students. These programmes were modeled after classes in England where school work was exclusively oral. Reading and writing test were kept to a minimum, but students attending these classes participated in regular education as much as possible. Classes that followed this model and limited students use of their vision were generally called "sight saving classes". This method was popular for almost fifty years. From about 1915 – 1965 until Natile Baraga's research on visual efficiency in 1964 changed the field, she proved that people do not have on so much sight which can be used up rather vision can become more limited when it is not used.

Many advances the general population used and enjoy have provided great benefits for people with visual impairments. For example the telephone developed by Alexandria Graham Bell in 1876 and the phonograph invented by Thomas Edison in 1877 have proven to be important technologies for those who visually impaired. This equipment developed in parts to assist people with disabilities it is so available and expensive because of its popular appeal. The first radio show was broadcasted in 1906 in the United States and marked access to a form of entertainment and ready access to information for those with visual impairment.

Although reading and writing present difficult task to many individuals who are visually impaired, another major area of difficulty is movement.

Between 1918- and 1925 dog guides were trained to help German and French veterans of World War I but still it is not a popular method of assisting mobility according to Hill 1986, less than 2% use eye dogs. Long canes were developed around 1860 by Hoover; he is credited with developing a mobility and orientation system 1944. Before this time there was no systematic method of teaching to move freely in their environment.

During 1950s medical advances that helped to save the life of infants born prematurely ironically caused the disease retinopally of prematurely born children (ROP) Retinal Fibroplasias in saving infants, ROP results in visual impairments that range from mild visual impairment to blindness.

During 1960s the Rubella (German Measles) epidemic left many children with visual impairment. The dramatic increase in children with visual impairments strained the capacity of residential schools, which before World War II served 85% of all school age children with visual impairments (Sacks, Rosen, and Gaylord – Ross 1990) at the same time parents began to call or mainstreaming.

Defining Visual Impairment

Visual impairments has both legal and educational definitions. The legal definitions of blindness relies heavily on measurements of visual acuity, which is the ability to clearly distinguish forms of discriminate details at a specified distance. Frequently visual acuity is measured by reading letters, numbers or other symbols from a chart 20 feet away. The familiar phrase "20/20" vision does not apply as some people think, mean perfect vision. It simply indicates that at a distance of 20 feet the eye can see what a normally seeing eye should be able to see at that distance. As the bottom number increases, visual acuity decreases.

Teaching Methods and Academic Performance in Various Subjects

Mathematics as one of the science subjects where adoption of the syllabus is done for the visually impaired by replacing complex psychomotor or activities with manageable ones, Waihenga (2002) Brunk (1995) quoting Piaget emphases that it is to give children task to perform that require cognitive development.

In support of this the researcher adds that it is futile to give the blind children task to perform that requires sight.

For instance, when teaching the blind children the topics involving three dimensional object works should be done in such a way that materials or concrete objects are provided also concepts involving colour, pre number activities in class one mathematics should be replaced with other concept like texture. Other topics like geometrical construction which may not be possible should be adopted in such a way that the constructions can be done and the learner can interpret tactile diagrams.

The adoption construct knowledge about the world, objects and events through interactions with physical and social environment, structure and organize their physical logical mathematical knowledge accordingly.

Piaget and Koler 1969 Brunk 1975 seem to support this and further reveals the limitations of the visually impaired when he asserts that concepts are learnt through experiences. At some points in this life a child sees his first picture and then another so on. He begins to notice certain similar characteristics of pictures used to distinguish them from all other objects so that he comes to recognize what we might call a picture, interaction with the physical and logics of mathematics knowledge – Swallow 1976 this condition may also affect some low vision learners depending on their categories, Ogonda 2002 further asserts that learning is depending on proper sensory integration by the brain.

Availability of the Resources and their Impact

Cutsdorth 1951 stated that blind children tend to engage in verbalism or speaking about situation or object as they had directly experienced or see them. Javley 1973 found that Verbalism were more prevalent in areas such as food, farm, cloth and nature than in areas like clothing, community and home.

This means that where children are directly experienced and tie this experience o the linguistic segment of lives. According to Stephens et al (1977), blind children display limited experimentation and active explorations of objects and events.

From perception development through manipulation of objects by the blind is very important if the concept of the areas and perimeter just to mention a few are to be understood. The researcher feels that this can impact very negatively on the academic performance of subject like mathematics where self initiative, active exploration of properties of tactic learning, resources with equipment resourced from societies such as, the Kenya society for the blind, non governmental organizations e.g sight savers international, Christophel Blinden Mission Danish Agency for the International Development (DANIDA) and even the Kenyan government, the ministry of cultural and social services can provide equipment for handicapped children. The above mentioned stakeholders provides equipment especially made for use by visually impaired learners include:

Braille Machine or brailler, is a machine used by a blind person to write. It has six keys depending on which combination of keys pressed produces raised dots.

Slate and Stylus; these are two simple substitutes for the Braille used to teach blind children in lower primary. The slate could be a piece of wood or a mental plate with holes on the right and left edges. Along with it there is a clamp which opens and closes to hold the Braille paper right as the pupil writes. To produce Braille dots, the slate is used with a hinged

belt on which 36 Braille cells are cut. The belt is about 24 cm long and 4cm wide. It slots into the holes at the edges of the slate and it moved each time a line of Braille has been written. To write Braille, the learner inserts the stylus through the top of the hinged part of the belt and write from right to left. To read what has been written one has to reverse the left and right side of the paper by turning it over. The raised dots can then be read from left to right.

c) Optical Low Vision Devices you must have realized that visually handicapped children with ability to see normally read with the book close to their eyes optical low vision aids are spectacles, hand held magnifiers, telescopes and the stand magnifier, you can get these resources from the low vision project whose head office is based at PCEA Kikuyu Hospital sponsored by CBM in Kenya.

d) Non Optical Low Vision Aids, these aids also help the visually handicapped learner with residual vision to improve their ability to read. They include ;

- Large print – some books are printed in larger print than normal ones for the class level.
- Reading/ writing stand – this helps the child to adjust the position of the book for comfort.

e) White Cane, This is a cane which helps the blind learners in mobility. It also draws attention of the other members of the public that the person holding the cane is visually impaired even in the school compound including classroom.

Braille Books; These are classroom texts, magazines, and story books which have been written in Braille especially for blind learners. The Kenya Institute for the blind is charged with responsibility of transcribing

school text books into Braille for use by the blind learners. They do this in conjunction with sight savers international.

g) Visual Aids

- Closed circuit television (CCTV) can be used to enlarge the print writings. By using small television camera with zoom lens and a sliding reading stand up which the printed materials are placed, a person can view printed material greatly enlarged on a television monitor. Such equipment provides immediate access to all types of printed materials. However the CCTV is expensive, cumbersome and not mobile and can only be used by learners with low vision but not the totally blind learners.
- Overhead projectors can also enlarge printed materials but is only useful in class and are not useful to all individuals with visual impairment.
- Micro computers using special programmes can produce large print display that allow persons with low vision to adjust the size of print match their own visual efficiencies. Persons programme also allow the user to select different sizes of print for hard copy printout or visual display on the monitor. This allows individuals who can only read enlarged print to modify materials to various sizes. It also allows teachers who prepare handouts on a microcomputer to prepare different size print for their students with visual impairment and their non handicapped students while still covering the same material.

ı) Audio Aids; Audio access devices allow persons with visual impairments to hear what others can read. Talking books have been available through the library of congress since 1934 and specially designed record players and tape cassette machines that allow for compressed speech (eliminating natural pauses and accelerating speech) have been developed by the America printing house for the blind. A substantial amount of material is available in these forms but usually it must be

ordered from either a regional resource or materials center or from a national center. Audio tape version of many classics and current best sellers are not available in most book stores. Although developed for sale for general public, this allows greater access to current books for people visual impairments. The USA department of education has produced a set of audio cassettes that provides information about federal students aid programmes. First available in 1989 these federal grants, loans and work/study programmes and the list of scholarships only available to persons who are visually impaired NASADE 1989.

The Introduction of another audio system also gives people who cannot read print immediate access to information. News line for the blind available in Mexico and other states allows people who are blind to listen to text from their local newspapers over the telephone line each morning (Sorber 1990).

The new improved system of the Kuzweli reader that allows printed material to be synthesized into speech are not becoming rather expensive. One of these systems uses a small sensor attached to a micro-computer. When a person moves this sensor, along line of typed information is passed to the computer, which in turn translates the print to speech. The person listening can select the rate of speech (how fast it is delivered) the pitch and gender of sound/voice the computer generates.

This system had many advantages to individual who could not read print. Students can use the same books and materials at a regional center, individuals using this system do not have to order special materials or wait for their delivery. Even those who are able to read find benefits in this system.

Those who need to use enlarged type do not have to wait for special versions to be prepared, there is concern that those who cannot read print will prefer this audio system and will not develop proficient reading skills for those who can read print. Educators should still emphasize on proficiency with reading skills for those who can read print. Educators and will not develop proficient reading skills for those who can read and print. Educators should still emphasize on proficiency with reading.

Other technologies are being developed that benefits people with visual impairments. For example Norman Coombs who was blind needed a way to work with the student who was deaf. He developed a system whereby he types his message so that they can be read and txxxxxxxxxx his responses which a speech synthesizer turns into sound, coombs won an award for his innovation. (Turner 1989) another development wills soon be available to more people with visual impairment. Many of these people listen to a considerable amount of television but cannot see what is happening. By using the added sound track available in stereo, televisions, descriptive videos tell the listener non verbal messages and others see on the screen.

i) Tactile Aids: some persons who are blind use Braille as their proffered reading method. The Perkins brailler is compact and portable machines that uses keys that when compressed down emboss special paper with the Braille code. It is expensive but not as efficient as newer electronic versions which use microprocessors that store and retrieve information.

Also microcomputer systems even those designed for sighted users can support various types of Braille and can even be net worked and so many people can use the Braille adaptation simultaneously.
As with audio cassettes and with talking books, a wealth of materials is available in Braille, remember that enlarged print, audiocassettes, and

Braille version of printed materials are not always available for every text or supplementary material used in the regular class.

This was and still is a severe limitation for those who cannot read print. Other tactile advances have made life a bit easier. For example a Braille version of a telephone (New York Times August 1989) personal computers with special printers transform print to Braille (New York Times 9th May 1990) by attaching a specially designed Braille allowing a teacher who does not know how to use Braille copies of handounts, tests, maps, charts, and other class materials. This newly available printer costs less than $6000.

2.5 Learning Environment

After availing the above mentioned resources to the visually impaired learners the learners should be placed in a conducive learning environment, that will enable them to achieve better performance in their academic work.

For this to be enhanced, teachers dealing with visually impaired learners should have the following points in the consideration.

- Place the child's desk close to the teacher's desk, and classroom door.
- To reduce disrupting glare, arrange the child's desk away from a light source but in a well lighted area.
- For special demonstrations or detailed notes written on chalkboard, allow the child to move closer to the presentation to enhance opportunities to see and hear.
- Free the classroom from dangerous obstacles, remove clutter and litter on the floor.
- Open or close doors fully, half opened doors can be a dangerous obstacle.

- Eliminate unnecessary noise from the learning environment as possible
- Do not speak too loudly for this tends to increase the volume level in a classroom including the background noise.
- Consider the individuals who are handicapped by possibly extending a due date or reducing homework assignments but do not let the handicap be an excuse floor or an unacceptable performance.
- Always put materials in the same place so that students know where particular items are located.
- Do not leave the room without telling the students.
- Seek assistance from a specialist in case the eyes of visually impaired learner tend to create problem.

Teaching Tactics of the Visually Impaired Learners

In addition to the above mentioned teaching tips if followed, high expectations can be put on learners, the teacher should also follow the tactics listed below in his/her teaching methods to better the performance of the visually impaired learners.

- Inform the students about advance organizer, by announcing it, state its benefits. Let the students take notes on the advance organizer.
- Identify topics or tasks, this is done by identifying major topics or activities and sub topics or components.
- Provide an organization framework by presenting an outline, list or narrative of the lessons content.
- Clarify action to be taken, state learners activities and student's activities.
- Provide background information by relating topic to the course of previous lesson and also relate topic to the new information.
- State the concepts to be learnt with examples or non examples and caution students of possible misunderstandings

- Motivate students to learn by pointing out relevance to students and also be specific, short term, personalize and believable.
- Introduce the vocabulary, identify new terms, define and repeat difficult terms.
- State the general outcome desired, state the objective of instruction/learning and relate outcomes to test performance.

.7 Factors Affecting the Academic Performance of the Visually Impaired Learners

The researcher would like to look and discuss factors that may affect the academic performance of the visually impaired learners in an inclusive setting.

Most of our schools may not be able to effectively accommodate learners with various diversities of learning needs in both partially and totally blind learners with special needs.

Below are some of the possible factors possible that affect the academic performance of the visually impaired learners in inclusive setting.

3 Curriculum and Learning Materials

The existing curriculum does not recognize in many cases the characteristics inherent to other cultures, social groups and gender as well as individual differences to learning.

To overcome this problem, the curriculum should be varied to suit learners needs.

The schools should be equipped with educational aids or equipment for the blind like thermoforming machines and tracing wheels for drawing diagrams. For mathematics lesson taught successfully, teaching aids like abacus, cubes, Braille rulers, protractors and sets containing modified instruments should be availed.

The curriculum should be modified as much as possible to cater for the visual impairment.

Some subjects like geography need modernization and adaptation especially map work and diagrams.

Mathematics and other science subjects should be looked into for the case of mathematics topics like construction of diagrams should be omitted likewise in science topics involving heating should not be left for blind learners alone so they need to be omitted.

Examination body should also be informed by the curriculum developers to adapt as much as possible for example technical topics in mathematics like constructions and any other topics involving measurement that need sight.

Time allocation during exams should be increased though 30 minutes given is very minimal because the visually impaired learners use equipment like Braille machines,, abacus, stylus and Braille papers which are very bulky and time wasting.

Other ways of measuring the learners competence should be used such as assessment, project work, and direct observation.

Rigid and Inflexible Educational Approaches

The teaching and learning methods are still too traditional generating or leading to poor academic performance by the visually impaired learners. This traditionalism of the teaching methods demoralizes learners and this discourages full participation during teaching times, it should be waved and liberalized.

Teachers not ready to meet the needs of diversity of learners because they have not been trained in homogenous approach (They have not been trained on how to handle children with special needs) so most teachers should be trained on how to handle children with various disabilities.

.10 Education and Promotion Criteria

Some of the evaluations and promotion criteria used are based on standards that do not account for their differences presented by students.

The national systems based on learning achievements also generate poor academic performance by the visually impaired learners and in the end they are left in the air. Promotion criteria should be done while baring in mind that visually impaired learners experience various problems.

11 Insufficient Resources

Financial constraints, human and material resources as well as its inequitable distributions to meet the diverse educational needs of the learners especially those with disabilities are seen as a great barrier to the academic performance of visually impaired learners in inclusive settings.

Unless learners with special needs are provided with the appropriate resources, recommendable academic performance by the visually impaired learners will not be possible.

Most of the regular schools have inadequate trained teachers especially for the visually impaired ones and other support stuffs like Braille transcribers who have no special or specific areas or colleges for training for training such personnel.

Just to mention a few, apart from specially trained teachers, transcribers, other support stuff like counselors, low vision assistants should be availed to better to better performance in visually impaired schools.

For learners with visual impairments to perform better academically, expensive equipment to cater for their conditions like Braille machines or

Braille photocopier furthermore even the learning environment and school compound should be improved for example pavements to ease mobility but this is difficult due to lack of funds. So the stakeholders catering for the visually impaired learners education should try allocate more money for the above.

2 Teachers Attitudes

Teacher's attitudes towards the visually impaired learners are rather negative because most teachers regard visually impaired learners as incapable of doing well academically. This is crowned with the less knowledge on Braille writing and reading which is the media of communication for the blind in learning environment.

Most teachers fight for mean score and this slows down the attention of blind children; even their admission is strictly checked because such children are slow and takes time to compete with their sighted counterparts.

To go further the involved head teachers believe that stationary that caters for the blind children are expensive, some cannot be purchased locally and this leads to poor academic performance in regular schools.

Sighted Learners Attitude

The sighted learners feel uncomfortable with the visually impaired learners because some believe that it is too odd to mix them as far their taboos are concerned, hence they take them as sick children that even the others can be contaminated. This greatly affects even group discussion and even guiding them on class. This leads to academic performance because the blind lack someone who sees to discuss with.

4 Parents Attitudes towards Visually Impaired Learners

Most parents of the visually impaired learners give the last priority in terms of educating them. They think that a blind child can do nothing whether learned or not, so most of them give the first priorities to their sighted children. Some hide them in inner rooms and a few who let them go to school just send them empty handed even without requirements that can boost their academic performance in class.

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The researcher pre-tested them in own schools with fellow teaching colleagues and pupils to establish its relevance. The researcher was also a respondent in her own school. The researcher then sent letters of permission to head teachers in the schools sampled in order to inform them of intended survey.

The researcher visited the targeted schools and delivered the questionnaires personally. The researcher then went back to collect the questionnaires from the respondents in their schools and then organized data according to the questionnaires and presented them.

The researcher finally analyzed the data that was collected and came up with conclusions.

3.7 Data Analysis

The data analysis used in the study to analyze and interpret the raw data are tables. The response of the respondents are tabulated and indicated by numbers that totals up to 100%. The researcher briefly interprets the findings of each item as indicated.

APPENDIX B: QUESTIONNAIRE FOR PUPILS

Dear respondent,

I am a student of Kampala International University carrying out an academic research on the topic "challenges facing learners with hearing impairment in an inclusive setting in central zone, embu district, kenya." You have been randomly selected to participate in the study and are therefore kindly requested to provide an appropriate answer by either ticking the best option or give explanation where applicable. The answers provided will only be used for academic purposes and will be treated with utmost confidentiality.

NB: do not write your name anywhere on this paper.

A) Personal Information

1. GENDER

Male [ ]

Female [ ]

2. AGE

10 yrs and below [ ]

11- 14 yrs [ ]

15 and above [ ]

Evaluate the following statements using the following;

Not sure	Disagree	Agree
3	**2**	**1**

ii) How do you feel about the inclusion of visually impaired learners in your school?

a) Good b) Bad c) Not sure

Table 3

Response	**Frequency**	**Percentage**
Good	8	80
Bad	2	20
Total	**10**	**100**

As seen above most teachers especially head teachers do not allow the enrolment of the visually impaired learners in their schools. According to them, they complain of many things like stationeries for the visually impaired like Braille machines, Braille papers and other human resources.

This tells clearly that the learning of the visually impaired learners is not cared for.

iii) What is your attitude as a teacher towards the teaching of science subjects to visually impaired learners?

a) Positive b) Negative

Table 4

Response	**Frequency**	**Percentage**
Positive	9	90
Negative	1	10
Total	**10**	**100**

From the above, most teachers are positive to the teaching of science subjects to the visually impaired learners.Unfortunately the visually impaired learners don't do well in various science subjects. This is because there is necessity of adopting some topics or adopting the

curriculum to suit the visually impaired learners and adopt some teaching methods for them to be successful.

iv) What are the findings of education officers towards the inclusion of the visually impaired learners

a) Positive b) Negative

Table 5

Response	**Frequency**	**Percentage**
Positive	9	90
Negative	1	10
Total	**10**	**100**

As can be seen from above, it is clear that most education officers have positive feelings that the visually impaired learners should be included inclusive settings. This is possible because teachers say that the officers are obeying directives from higher authorities and donors from overseas without putting into consideration of visually impairer's future. This is true because the officers have not posted specially trained teachers to handle the visually impaired learners and even other support staff like transcribers to ease the learning of the blind children.

For the officers to be genuinely positive towards the inclusion of visually impaired learners in inclusive settings, they should provide facilities and offer trainings for special teachers to handle the visually impaired learners.

2 (i) What are the problems that teachers face in the implementations of methods used in teaching visually impaired learners?

a) Many problems b) No problems

Table 6

Response	Frequency	Percentage
Many problems	10	100
No problems	0	0
Total	**10**	**100**

From above it is clearly seen that teachers face more problem in implementation of the methods used in teaching the visually impaired learners to better their academic performance. These problems as seen by the researcher, the teacher should be trained in that line and necessary facilities should be provided.

ii) suggest at least three methods you would apply in the teaching of science to visually impaired learners?

a) Teacher centred b) Pupil centred

Table 7

Response	Frequency	Percentage
Teacher centred	8	80
Learner centred	2	20
Total	**10**	**100**

From the table above, teaching of science should be teacher centered since most learners are blind and does not have immediate environmental experience which mainly involve seeing. In addition to that various methods of teaching should be adopted e.g explanation.

iii) What challenges do you face in teaching visually impaired learners in an inclusive setting?

a) Many challenges b) No challenges

Table 8

Response	Frequency	Percentage
Many challenges	8	80
No challenges	2	20
Total	**10**	**100**

As can be observed teachers observe very many challenges experienced by learners, the former experience negative attitude of the teachers like discrimination, high speed of teaching, and lack of special reading materials. Teachers also compete for mean score leaving the slow visually handicapped learners to slug behind.

v) What problems do learners face during teaching lesson?

a) Many problems b) No problems

Table 9

Response	Frequency	Percentage
Many Problems	7	70
No problems	3	30
Total	**10**	**100**

It is indicated clearly on the table that most visually impaired learners experience a lot of problems during teaching lessons. This can be discussed or explained further as negligence by some teachers such teachers don't put visually impaired learners into consideration. Mostly they use black board so much and even they engage the blind children in their lessons so much. Also most teachers are not specially trained so they don't know how to handle the visually impaired.

i) Are there enough resources for learners with visual impairments in an exclusive setting?

a) Yes b) No

Table 10:

Response	**Frequency**	**Percentage**
Yes	0	0
No	10	100
Total	**10**	**100**

The school lack resources including manpower with technical know how. This can only be rescued if the stakeholders allocate finance for purchasing stationeries and training human resource so that the academic performance can improve.

ii) Are there enough trained teachers to handle learners with visual impairment?

a) Yes b) No

Table 11:

Response	**Frequency**	**Percentage**
Yes	6	60
No	4	40
Total	**10**	**100**

Even though the data tells that there are some specially trained teachers available, this is only valid in special schools but not in the schools outside the zone. The researcher therefore emphasizes that more teachers should be trained in that field.

iii) What do you think can be done to the curriculum to improve the performance in science subjects by the visually impaired learners?

a) Adopt the curriculum b) Assume the curriculum c) Non

Table 12:

Response	**Frequency**	**Percentage**
Adapt the curriculum	8	80
Assume the curriculum	2	20
Non	0	0
Total	**10**	**100**

From the table above, teacher difficulty in the following the current curriculum to handle the visually impaired learners. So most of the teachers believe that in order for teaching subjects to be successful, some adoptions should be done to suit the visually impaired learners.

iv) Are there enough trained personnel to support the learning of the visually impaired learners?

a) Yes b) No

Table 13:

Response	**Frequency**	**Percentage**
Yes	7	70
No	3	30
Total	**10**	**100**

The table tells us that trained support stuff like transcribers, low vision assistants and other personnel are lacking in schools. In order to ease the teaching of science subjects to succeed, Braille transcribers should be availed in schools to adopt diagrams and help teacher to adopt some questions as well and even Braille text books.

Low vision assistants give proper placements in terms of distance, environmental cues, and good size print medium, e.g large print, provision of optical devices to make the learner be comfortable.

2 Questionnaires for Learners and Their Analysis

1. i) What is the attitude of the visually impaired learners toward their inclusion in regular schools?

   a) Positive b) Negative

Table 14:

Response	**Frequency**	**Percentage**
Negative	6	60
Positive	4	40
Total	**10**	**100**

From the table above, it is clearly seen that the visually impaired learners have negative attitudes towards their inclusion with their sighted peers in inclusive setting.

For academic performance to equal, the sighted learners should be encouraged to associated with the impaired ones positively. Because due to negative welcome from the sighted. The handicapped also develop negative association that even prevents them from following the teaching methods implemented by the teachers that eventually leads to poor performance in various subjects.

ii) What is the attitude of the sighted learners towards the inclusion of the visually impaired learners in their regular schools?

a) Negative b) Positive

Table 15:

Response	**Frequency**	**Percentage**
Negative	8	80
Positive	2	20
Total	**10**	**100**

It is supported in the above table that in most Kenyan societies, in most cases blind people are regarded as bad omen. This extends to school levels where the visual ones avoid them; hence their academic performance is affected negatively.

This can be controlled by stakeholders by discouraging segregation and encouraging equal treatment.

iii) You as a visually impaired learner, do you think science subjects are of help to you in the future?

a) Yes b) No

Table 16:

Response	**Frequency**	**Percentage**
Yes	10	100
No	0	0
Total	**10**	**100**

The visually impaired children are curious of discovering things which are naturally and artificial despite of detecting their colours. This is explained further when most of them are interested in learning biology where some end up becoming biology teachers in higher learning institutions

iv) As a visually impaired learner how do your teachers cater for your lessons?

a) Organized b) Not organized

Table 16:

Response	**Frequency**	**Percentage**
Organized	6	60
Not organized	4	40
Total	**10**	**100**

We can say that teachers try their level best to cater for the visually impaired learners although some treat them as social misfit. Apart from that expensive stationeries for handling the visually impaired learners are always out of stock. To help this situation the stockholders should try to encourage teachers by training them on how to handle blind learners, and purchasing enough learning aids.

2. i) Do you agree with the methods used in teaching your lessons?

a) I agree b) I disagree c) Sometimes

Table18:

Response	**Frequency**	**Percentage**
I agree	6	60
I disagree	0	0
Sometimes	4	40
Total	**10**	**100**

Visually impaired learners are being handled positively by teachers through the methods used but the general performance in science subjects is still low. This is so because teachers find it difficult due to insufficient/lack of equipment for handling blind children.

ii) Do you like methods of teaching used by your teachers in teaching science?

a) Yes I do b) No I don't c) Both of them

Table 19

Response	**Frequency**	**Percentage**
Yes I do	4	40
No I don't	2	20
Both of them	4	40
Total	**10**	**100**

From the above it is almost a balancing question because almost half of the learners don't like while almost the remaining half like. For this reason teachers should implement various teaching methods that suit all learners. In addition to that learning aids for the visually impaired should be availed to them for better performance.

iii) What problems do you get in learning science?

a) very many b) Very few c) Non

Table 20:

Response	**Frequency**	**Percentage**
Very many	6	60
Very few	4	40
Non	0	0
Total	**10**	**100**

For the visually impaired learners to learn science with ease, it requires a lot like, protective clothes, first aid kit since accidents may occur frequently due to lack of sight. That is why they say that they are experiencing many problems in learning science. To rectify this curriculum developers should modify some topics, and provide safety equipment for the visually impaired in inclusive settings.

iv) Is there need for the teaching methods to be changed to suit your learning lessons?

a) Yes b) No

Table 21:

Response	**Frequency**	**Percentage**
Yes	10	100
No	0	0
Total	**10**	**100**

The table explains that the visually impaired learners need teaching methods to be modified or changed. The current teaching methods of the sighted are mean scores oriented that needs hurry and cramming in expense of the visually impaired learners for the former to benefit, teaching methods should be moderately slow to consider them in addition to that extra time should be given for doing the assignments.

3. I) Are there enough resources for learners with visual impairments in an inclusive setting

a) yes b) No

Table 22:

Response	**Frequency**	**Percentage**
Yes	6	60
No	4	40
Total	**10**	**100**

Due to extra expenses, resources become generally expensive. It is also expensive to train special teachers in handling the visually impaired learners. Materials like braillons, Braille machines, thermoforming machines and Braille papers are mainly manufactured overseas. School stakeholders should therefore tighten their belts to allocate enough funds to meet the above needs.

ii) Are there enough specially trained teachers to handle visually impaired learners.

a) Yes b) No

Table 23:

Response	**Frequency**	**Percentage**
Yes	8	80
No	2	20
Total	**10**	**100**

From the above table there are enough specially trained teachers to handle visually learners but this is only applicable in special schools. Even though there are specially trained teachers, still they cannot perform their duties to their perfection due to insufficient teaching aids for the visually impaired learners hence enough stationary should be provided by the stake holders for good performance of the visually impaired learners.

iii) Is there any way that can be used to improve the teaching of science

a) Yes b) No

Table 24:

Response	**Frequency**	**Percentage**
Yes	10	100
No	0	0
Total	**10**	**100**

The table encourages teachers to use other ways of teaching science for its performance to improve. The argument explains that normal way of teaching science without modification cannot fit the visually impaired learners. To implement these ways there should be proper attentions to the stakeholders to cater for the equipment required to boost performance of the visually impaired learners.

iv) Are there enough trained personnel other than teachers to support your learning

a) yes b) No

Table 25:

Response	**Frequency**	**Percentage**
Yes	0	0
No	10	100
Total	**10**	**100**

In Kenya there are no specified colleges for training transcribers, so most of the lack job description in other words they are not given high reputation. Hence this clearly shows that they are rare and few and that they lack technical know how to handle Braille work thoroughly. To improve on this special training should be given to such personnel to improve performance in science in an inclusive setting.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The study was designed in four chapters. In chapter one, the researcher analyzed the background of the study. The study was based on teaching methods and academic performance of the visually impaired learners in an inclusive setting in the district. She went further to explain the purpose of the study.

In chapter two she went into the literature review where the researcher did comment on the attitude of teacher and learners in teaching and learning various subjects. She also commented on how teaching methods and academic performance of the visually impaired learners can be improved.

The researcher further on the availability of resources and their impact where she mentioned the stake holders apart from the government and their origin countries. She also touched on education and promotion criteria, rigid and inflexible education approaches, and insufficient resources and summed it up with teacher's attitude.

In chapter three the researcher talked about the teaching methodology, the researcher went further by quoting instrument / research tools and crowned it up with the procedure of the study.

In chapter four the researcher started with presentation and data analysis. After introduction the researcher went on commenting on tables of questionnaires for teachers then for the learners.

CONCLUSION

After through discussion of the findings from the various respondents view concerning the factors that can be implemented to improve the teaching methods and academic performance of the visually impaired learners in various subjects in an inclusive setting.

It is now evident that there are many barriers that lead to poor teaching methods and academic performance in various subjects by the visually impaired learners. Some of them include, lack of skills and knowledge by the teachers handling the visually impaired learners in inclusive settings. While others say that the curriculum is too rigid and the teaching methods are mean score oriented.

Another view is that there is lack of additional resources that include manpower, as well as in regular classes. Others say that lack of individual attention to the visually impaired learners. This therefore implies that for the teaching methods and academic performance in various subjects to improve in an inclusive setting, there is need for alternative approach in teaching methods to boost academic performance. This can be seen through by increasing the number of facilities to aid the learning of the visually impaired. Specially trained teachers and transcribers should also be availed.

The researcher therefore recommends special education where most of the requirements can be found.

On how to improve teaching methods and academic performance of the visually impaired learners, the respondents recommend that the curriculum should be modified to suit the visually impaired learners needs. Teachers too should be trained on special needs education. Other

views were that there is need for collaboration in teaching among all teachers, and the disabled learners need more time in inclusive settings. Also while structuring timetable, other subjects like science subjects should be given more time and other topics should be restructured.

The researcher therefore sums up by saying that there is need for quick restructuring of the reforms mentioned for the visually impaired learners to improve academically.

RECOMMENDATIONS

From the study, it is clear that knowledge and information about learners with special needs like the visually impaired learners are very important in their academic performance as well, because regular teachers and any other person or staff working and the academic performance of the visually impaired learners in inclusive settings to succeed.

The researcher therefore recommends the following;

Pre- service and in-service training in special needs education for all teachers to get to know and have better experience with the disabled particularly the visually impaired ones. The other thing to stress is workshops enlightening on the teaching methods that should be adapted to raise the academic performance.

Emphasis should be laid on group discussions in and out the classrooms and also watching writing films that show the visually impaired learners that have succeeded and the ones that are still struggling, for this for further encouragement and should be organized by the stakeholders.

Regular teachers handling the visually impaired learners should be advised by the specialists like doctors since most learners are medically unfit. Pieces of advice should go further to special education officers for the visually impaired, specifically trained teachers and the support staff working with the in the same line.

In terms of resources, special facilities for the visually impaired learners for instance Braille machines, duplicating Braille materials, abacus, special rulers and mathematical sets should be availed, together with that embossed Braille diagrams, Braille text books in latest syllabus should not be forgotten.

In terms of human resources, specially trained teachers and specialists like Braille transcribers should be availed by the school stakeholders.

The adequate services rendered by the regular teachers are specifically trained, the ratio of teachers to learners should not be too wide as this would hinder the individual attention that would be given to learners, special education administrators for the (V.I) should carry day to day inspection, offer opportunity for creating awareness to regular teachers handling inclusive programmes.

The current curriculum should be modified to suit the educational needs of the visually impaired learners, same to that there should be implementation of various teaching methods to improve their performance.

The examination council should be advised to set special papers or mode of testing of the visually impaired learners should be scrutinized as per subject to boost their academic performance.

Time allocation during examinations should be looked into through 30 minutes that had been awarded before which is not enough.

Other ways of evaluating the visually impaired learners should be used like project work, continuous assessment, and direct observation as the learner does the work.

There should be automatic promotion of the visually impaired learners to the next stage of learning.

The community should be fully involved in the educational of their children because most communities have a negative attitude towards education of the visually impaired children.

The government should stress on maintaining roads, so that even the possible roads in the area should be taken into consideration to ease the movement of the visually impaired.

Research should be carried out by stakeholders on the effect of training teachers on special needs education, involved support staff and the provision of the materials for the visually impaired learners.

Another research and should be carried out on investing the factors affecting the implementation of teaching methods and academic performance of the visually impaired learners in inclusive setting with other learners in regular classes and how to overcome the barriers.

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QUESTIONNAIRE FOR TEACHERS

1. . (i) What is the attitude of regular school teacher towards the visually impaired learners in an exclusive setting?

(a) Negative ( )
(b) Positive ( )
(c) Non of the above ( ) (Tick one)

(ii) How do you feel about the inclusion of the visually impaired learners in your school?

(a) Good ( )
(b) Bad ( )
(c) Not Sure ( ) (Tick one)

(iii) What is your attitude as a teacher towards the teaching of science subjects to visually impaired learners?

(a) Positive ( )
(b) Negative ( ) (Tick one)

(iv) What are the feelings of education officers towards the inclusion of visually impaired learners in an inclusive setting?

(a) Positive ( )
(b) Negative ( ) (Tick one)

2. (i) What are the problems that teachers face in the implementation of the methods used in teaching the visually impaired learners?

.....

.....

.....

LEARNERS' QUESTIONNAIRE

1. (i) What is the attitude of visually impaired learners towards their inclusion in regular school?

(a) Negative ( )

(b) Positive ( ) (Tick one)

(ii) What is the attitude of the sighted learners towards the inclusion of the visually impaired learners in regular school?

(a) Positive ( )

(b) Negative ( ) (Tick one)

(iii) You as a visual impaired learner do you think science is of help to you in the future?

(a) positive ( )

(b) Negative ( ) (Tick one)

(iv) As a visual impaired learner how do your teachers cater for you in your lessons?

(a) very well ( )

(b) Bad ( ) (Tick one)

2. (i) Do you agree with the methods in teaching your lessons?

(a) I agree ( )

(b) I disagree ( )

(c) Sometimes ( ) (Tick one)

(ii) Do you like the teaching methods your teachers use in teaching science?

(a) Yes I do ( )

(b) No I don't ( ) (Tick one)

(iii) What problems do you get in learning science?

(a) very many ( )

(b) Very few ( )

(c) Non ( ) (Tick one)

(iv) Is there need for teaching methods to be changed in order to suit you in your learning lessons?

(a) yes ( )

(b) No ( ) (Tick one)

3) (i) Are there enough resources for learners in your school?

(a) Yes ( )

(b) No ( ) (Tick one)

(ii) Are there specially trained teachers to handle learners with visual impairment?

(a) Yes ( )

(b) No ( ) (Tick one)

iii) Say one way that can be used improve in the teaching of science?

.....

.....

iv) Are there enough trained personnel e.g transcribers to support your learning as visually impaired?

(a) Yes ( )

(b) No ( ) (Tick one)