

Full Length Research Paper

Challenges and strategies of working with learners with low vision: Implications for teacher training

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Learners with low vision can be trained to increase their visual functioning through a planned programme of visual experiences. Such a low vision training programme was introduced in Kenya in 1994. However, despite its implementation over the last 15 years, challenges still persist among teachers who work with such learners. The purpose of this study was to document challenges that learners with low vision have on teachers' performance when teaching learners with low vision in special primary schools for the visually impaired in Kenya. The study was carried out in 6 schools for the visually impaired respondents in the study including 78 teachers survey through questionnaire and observation. The study established challenges faced by teachers as lack of appropriate devices for learners, lack of adequate training of teachers and lack of regular teacher auditing. Strategies suggested to address the challenges were supply of low vision devices, low vision teams based at each school reconstituted to provide co-ordinated learning support and regular case conferencing be mounted to provide teacher support.

Key words: Low vision, training, challenges and strategies, learners.

INTRODUCTION

A low vision individual is one who is visually impaired after optical correction, but who may increase visual functioning by use of optical devices, non-optical devices, environmental modification and or techniques (Corn and Koenig, 1996). It is of critical necessity to have learners with low vision to train in low vision techniques from the earliest time possible so that they can be able to develop good visual efficiency (Corn, 1989). Barraga (1992) posited that low vision training improves visual efficiency. Corn (1985) suggested that early intervention in visual stimulation and subsequent training of learners with low vision should be instituted to intervene for the learners to use vision efficiently.

Low vision training prepared children to become active

learners, who can access information from variety of sources. Youths and adults who have never used their low vision for functional purposes or who have had vision restored by medical procedures are visually underdeveloped both optically and perceptually. Development of the visual system in a person with low vision is seldom, if ever, automatic and spontaneous. A process of visual stimulation and learning to look in a variety of environments is paramount to meaningful use of low vision (Barraga, 1992; Corn, 1996). Learners with low vision in Kenya have to cover the same curriculum content in a period of 8 years like the sighted learners. Teachers who work with such learners may experience challenges in curriculum dissemination and environmental and materials adaptation (Jose, 1985). Since the introduction of low vision training in 1994, there has been no examination of the learning situation to identify possible challenges and strategies for effective

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Table 1. Challenges experienced by teachers when working with learners with low vision (n=78).

Challenges	No. of responses	%
Difficulties of writing on straight lines	64	82.05
Tire quickly due to close working distance	50	64.10
Crowded diagrams in course books	49	62.82
Cannot cover curriculum content in time allotted	49	62.82
Lack of writing and reading stands	36	46.15
Scanning with low vision devices	36	46.15
Lack of controlled lighting from classrooms	34	43.58
Poorly built classrooms	32	41.02

pedagogy for learners with low vision.

Purpose and objectives of the study

The purpose of the study was to establish challenges and strategies for teachers when teaching learners with low vision to use low vision devices. Specific objectives of the study were:

- i) Establish challenges faced by teachers when teaching learners to use low vision devices.
- ii) Determine strategies necessary for effective training of learners to use low vision devices.

METHODOLOGY

Design

The study was a cross-sectional survey. A cross-sectional survey collects information from a sample that has been drawn from a predetermined population (Frankel and Wallen, 2000). The predetermined population was teachers who teach in grades 7 and 8 from 6 special schools for the visually impaired in Kenya. Survey design was used in the study because it enabled the researchers to carry out the study across a large geographic area covering the whole country of Kenya (Cohen and Manion, 1989). A questionnaire was used to collect data. Information from questionnaires was triangulated with data gathered from the observation schedule.

Area of study

The study was carried out in 6 primary schools for the visually impaired in Kenya. The schools were distributed throughout the country as follows:

- a) Kilimani, Integrated programme - Nairobi province.
- b) Kibos School for the Visually Impaired - Nyanza province.
- c) St. Oda School for the Visually Impaired - Nyanza province.
- d) St. Francis School - Rift valley province.
- e) Thika School - Central province.
- f) Likoni School - Coast province.

Study population and sample

The study population was teachers in schools for the visually impaired in Kenya. Teachers of grades 7 and 8 were selected to

take part in the research because teachers had the experience of training learners with low vision beyond the habilitation phase, and their classes were using low vision devices at the level of application of the learned skills in low vision. In each school, the study focused on teachers of English (2), Mathematics (2), Geography (2), History (2), Christian Religious Education (2) and Kiswahili (1). Therefore, a total of 13 teachers were selected from each school, giving a total of 78 from the 6 schools (that is, 13 multiplied by 6).

Data analysis

Data from the questionnaire and observation schedule were tallied and converted to percentages. Descriptive statistics were used to infer challenges and strategies for teachers when working with learners with low vision.

RESULTS

Challenges experienced by teachers when working with learners with low vision

Teachers were asked to indicate what problems learners experienced when performing curriculum tasks. Their responses are shown in Table 1.

Writing on a straight line was ranked as the most common challenge (82.05%) that learners with low vision experienced. Jose (1990) pointed out those learners with low vision scan visual tasks with their heads instead of eyes. Tracking the pen, or pencil when writing was difficult. It may also be possible that page lines were too faint to be seen by learners with low vision; and that is why they tended to write in zigzag lines that were accentuated by poor eye-hand coordination and erratic scanning with the head. Lack of large print books was another common challenge to learners with low vision. Without prefer size of print for learners with low vision, resulted in poor clarity of vision and visual fatigue. Corn (1996) noted that learners with low vision must be given appropriate size of print in order to improve on their retinal spread.

Corn (1996) strongly recommended the use of low vision devices that she even equated them to prosthetic

Table 2. Strategies necessary for teachers to work effectively with learners with low vision (n=78).

Skill	Frequency	%
Understanding anatomy and physiology of the eye	11	14.2
Ability to know causes of low vision	13	16.9
Identification of refractive errors, and their correction	18	23.07
Understanding categories of low vision	10	12.82
Placement of learners with low vision within classrooms	14	18.2
Low vision training	18	23.07
Functional visual assessment	17	21.79
Optics and optical low vision devices	18	23.07
Environmental adaptations	12	15.6
Clinical/optical low vision assessment	47	67.0

devices used by individuals with physical impairments. When such equipment are lacking from the classroom environments, teachers face challenges of teaching curriculum content to the learners with low vision. Lack of equipment forced teachers to work at frustration levels thus leading to lack of confidence in giving the best instructions to learners with low vision. 50 respondents (64.10%) observed that learners with low vision get tired quickly due to very close working distance. This observation is consistent with what Jose (1985) observed the stronger the low vision device, the shorter the working distance. Barraga (2006) and Corn (1996) both observed learners with low vision have problems of reading crowded diagrams from course books. The researcher observed that learners with low vision required diagrams to be adapted. This adaptation of curriculum to suit learners with low vision seemed not to be carried out because most teachers had not been trained in the area of low vision use. Teachers in schools for the visually impaired were routinely trained as teachers for sighted learners and then purportedly trained to work with the visually impaired. It so happens that learners with low vision share same special schools with the totally blind learners (Republic of Kenya, 1988) and methods used to teach are touch oriented.

Writing stands are non optical devices that move visual tasks closer to the eyes so that the tasks can be at the correct visual sphere and/or distance for the task to be seen appropriately (Corn, 1996). From the observation that the researcher carried out in classrooms, learners nor teachers did not know what they were used for. Corn (1996), Barraga (1992) observed that learners with low vision have to bend so close to the visual tasks leading to both visual and muscle tone fatigue. Generally, environmental adaptation, and modification, human and resource provision seemed to preclude learners with low vision from functioning optimally. Teachers seemed to face challenges of working with learners due to unavailability of both human and materials resources and more so teacher skills to work with such learners.

Strategies necessary for teachers to work effectively with learners with low vision

Teachers were asked to indicate skills necessary for working with learners with low vision. Table 2 has summarized teacher perceptions of skills necessary for working with learners with low vision.

Majority of respondents (67.0%) indicated that they had not learnt about clinical/optical low vision assessment. A significant number of respondents (15.6%) had not learnt about environmental adaptation for learners with low vision. 18 respondents (23.07%) said that they had no skills in optics and optical low vision devices. 17 (22.79%) of the respondents did not have skills in functional vision assessment. 18 (23.07%) did not know how to train learners with low vision. 18 (23.07%) did not have ideas and skills of identifying refractive errors and did not know how they are corrected. 13 (16.9%) did not know about causes of low vision and 11 (14.2) had no ideas about anatomy and physiology of the eye. From the foregoing results, it can be observed that low vision is poorly understood by teachers in the schools visited by the researcher.

Bachofer (2007) observes that low vision is personal, emotional and unpredictable. Low vision is poorly understood by the general public including schools systems; and frequently a family feels left on its own to figure out how to raise a child whose vision is somewhere between blindness and normal sight. Teachers need low vision skills in order to offer effective and learner centered low vision services. Bachofer (2007) noted that low vision services entail problem solving that is best accomplished with a team approach. The number of teachers in schools for the visually handicapped that work with learners with low vision is inadequately equipped to deliver meaningful services to the learners. The above observation is supported by Bachofer (2007) that members of a low vision team must understand the subtle and direct influences of various professional's perspectives on the success of the students. Without

understanding categories of low vision, the teachers may plan for inappropriate and/or non-task specific curriculum content that can frustrate both the learners and the teachers. Learners may be frustrated because of not making meaningful progress, while teachers may face frustration and challenge as a result of failing to instill attitudes and skills from the curriculum.

DISCUSSION

Bachofer (2007) observes that low vision is personal, emotional and unpredictable. Low vision is poorly understood by majority of teachers including those who have low vision learners in their classrooms and frequently a family feels left on its own to figure out how to raise a child with low vision. Bachofer (2007) further notes that low vision services entail problem solving that is best accomplished with a team approach. As observed in the data above it would seem that part of the critical segment of a team that work with school age low vision learners is inadequately prepared to work with such learners. The number of teachers in school for the visually handicapped who work with learners with low vision is inadequately prepared to deliver meaningful service to learners with low vision. This state of affairs pose challenges to the teachers because they do not adapt the curriculum or the environment therefore, they usually work at frustration level. This remark is supported by the observation made by Bachofer (2007) that the members of a low vision team must understand the subtle and direct influences of various professionals' perspectives on the success of low vision students. She further notes that parents or guardians know the child best, while the doctor understands the effects of a condition on visual functioning and educators can describe the impact of visual impairment on learning. If teachers cannot understand how visual impairments affect visual behaviour then it can be said that curriculum and environmental adaptations may not be carried out. Not because the teacher is lazy to adapt both learning environments and the curriculum content; but because he may be facing challenges in understanding how to work with learners with visual impairment.

The teachers must be in a position to help learners to incorporate the use of low vision devices into everyday learning and leisure activities by selecting low vision devices that are portable and therefore readily available when learners need them (Corn, 1996). However, teachers constantly face the challenges of not understanding properties of lenses and how the lenses affect visual functioning. It is also important for the teachers to work with learners to overcome psychological obstacles to using low vision devices. It is also critical for the teachers to encourage learners to use their low vision devices throughout the day to perform various tasks in various settings so that the learners can get used to low

vision devices as aids to near normal visual functioning. Encouraging learners to use devices can be realized if teachers get trained to understand subtle challenges that learners experienced when performing visual tasks using low vision devices. It therefore, implies that teachers get frustrated whenever they fail to properly guide learners to use low vision devices. Any teacher facing such challenges will always fail to communicate curriculum content adequately and therefore, fail to lead learners under their care to learn new skills required for academic and social advancement. Teachers faced challenges of training learners to use low vision devices because learners break or lose the devices frequently. This fact pose major challenges to both teachers and learners because lack of low vision devices lead to low expectations from learners. Learners have been noted to come up with flimsy excuses of not having the devices. It behoves any teacher working with learners with low vision to come up with strategies of keeping low vision devices safely. For example, having low vision devices to be stringed so that they can be kept hanged around learners' necks. It calls for teachers initiated in the area of low vision to be able to understand the complexity or simplicity of visual tasks presented to learners with low vision. For each task presented the teacher should understand the extent and size of the object to be discriminated and the distinctive features for differentiation. 23.4% of respondents had indicated that they regularly interact with learners with low vision during instruction. It was construed to be a major challenge for teachers to work with learners that they do not know how to work with. By inference it can be said that teachers who do not understand the nature of low vision should not be charged with the responsibilities of working with learners with low vision. This is so because such teachers cannot adapt the environment to meet learning needs of such learners and such teachers have difficulties to identify the right quality of illumination within environments of learning. In this study, it was observed that such teachers may not seat learners with low vision to have tasks placed within their visual sphere so that they (learners) can be able to function visually and also be able to control their visual environment with minimum support. Learners who experienced photophobia tended to shun bright light. The teachers uninitiated in the teaching of learners with low vision may have difficulties of advising learners to avoid areas within the classroom that have higher amounts of illumination like sitting next to the window or open door. Such caliber of teachers' uninitiated in the teaching of learners with low vision may not have skills of reading non-verbal cues from learners when they experienced disability glare from their environments of learning. Jose (1985) posited that training the learner with visual impairment to use prescribed devices for near tasks involve unique set of factors that include the nature of visual impairment, the personality and motivation of the learner, the students

best mode of learning and the advantages and limitations of devices in use. Teachers who may be untrained cannot have the above observations within their repertoire of skills and therefore experiencing challenges of working with learners with low vision. Functional vision assessment is crucial because such vision assessment help teachers to predict and plan for appropriate intervention for learners with low vision. Teachers who do not have the skills of functional vision assessment may have major challenges of planning for age-appropriate curriculum content and will also be unable to predict the future visual behaviour of learners with low vision. Functional vision assessment should be skill areas that are possessed by all teachers, but it was not the case. The fact that most teachers were found to be inadequate in the area of low vision assessment posed a major challenge for teachers working with learners with low vision because they cannot plan and intervene appropriately. The same challenge could preclude learners with low vision from completing curriculum tasks.

Each learner can become efficient at visual functioning if provided with appropriate optical and non-optical low vision devices that are task specific. Teachers need to understand learners' idiosyncratic visual needs at hand (Corn, 1996). For example, teachers must have skills of selecting devices for near and distance tasks so that learners can be trained on how to make use of them. But from this study, it was noted that teachers may not have had any orientation course in the use of low vision devices. This observation of inadequacy on the part of class teachers may have made learners to lack encouragement to use any low vision devices that may be availed within the learning environment. Teachers must have a good knowledge base about learners' learning characteristics so that they can be able to know and understand how to minimize disability glare for photophobic learners or even maximize on colour contrast so that visual tasks can stand out distinctly, but teachers had major challenges of understanding learner characteristics thus, treated their classes as if they were made up of learners with homogeneous learning needs. If teachers had appropriate skills of working with learners with low vision, they could be flexible when working with such learners; and make clear misconceptions that learners may have had and at the same time reduce visual fatigue among their learners.

Barraga (2006) observed that areas surrounding learners with low vision need to have diffused illumination, however higher amounts of illumination are usually preferred by learners who have visual conditions such as optic atrophy and retinitis pigmentosa. The teacher should at the same time have the skills of understanding that learners with albinism and aniridia require reduced amount of illumination. The foregoing is used to state that illumination for learners with low vision is highly individualized and therefore, teachers without such knowledge and understanding may face challenges

of not being able to give learning support to learners with low vision. All said and done, the learning needs of learners with low vision are so much individualized that teachers should be trained in relevant skills to be able to guide and support learners with low vision.

Conclusion

If teachers cannot understand how visual impairment affect visual behaviour and functioning, then it can be said that they will not be able to adapt the curriculum content and learning environments from which learning takes place (Bachofer, 2007). Teachers must be in a position to help learners to incorporate the use of low vision devices into every day learning and leisure time activities by been able to select low vision devices that are portable and therefore, readily available when needed by learners (Corn, 1996; Bachofer, 2007). However, teachers constantly faced the challenges of not understanding properties of lenses and how lenses influence visual functioning. It is critical that teachers encourage learners to use their low vision devices throughout the day when performing various tasks and in various settings so that the learners can get to using low vision devices as visual aids to near-normal functioning. However if teachers do not have background knowledge about low vision devices, they will be faced with the challenge of not encouraging and teaching the learner with low vision to constantly make good use of low vision devices. Encouraging learners to use devices can be realized if teachers get trained to understand subtle challenges that learners experience when performing visual tasks with their devices (Bachofer, 2007). It therefore implies that teachers do get frustrated whenever they fail to properly guide learners to make use of low vision devices. Teachers facing such challenges will fail to communicate curriculum content to the learners adequately.

Jose (1985) posited that training learners with visual impairment to use prescribed devices for near tasks involved unique set of factors that include the nature of visual impairment, the motivation and personality of the learners, students best made of learning and the advantages and limitations of devices in use. Untrained teachers cannot have the above skills within their repertoire and therefore, pose challenges to teachers who work with learners with low vision. Functional vision assessment is a skilled area that teachers must know and partake in, because assessment results can make teachers predict and plan for appropriate intervention. Teachers who have not acquired skills in functional vision assessment may have major challenges of planning for age-appropriate skills and will also be unable to predict the prognosis of learners under their care. The fact that most teachers were found to be inadequately prepared in the area of low vision assessment, posed a major

challenge for teachers who work with learners with low vision. Each learner can be capable of becoming efficient at visual functioning if provided with appropriate optical and non-optical low vision devices that are task specific. Jose (1985) pointed out that teachers need to understand learners' idiosyncratic visual needs in order to tailor low vision devices to visual tasks at hand. Teachers must have a good working knowledge base about learners' learning characteristics so that they can be able to know and understand how to minimize disability glare for photophobic learners or even maximize on colour contrast so that visual tasks stand out distinctly. Teachers had major challenges of understanding learner characteristics and thus, worked with learners as though they had same learner characteristics.

RECOMMENDATIONS

Low vision devices that are task specific should be provided for low vision learners by schools so that they can be able to use the aids across environments. When devices are used in both school and home environments there will be continuity of skills learned at school to the home environment. Teachers should receive proper training in the area of low vision functioning so that they can minimize on the challenges of curriculum and environmental adaptations. Teachers should be trained in the area of functional vision assessment in order to be able to assess, interpret, plan and predict the learners' visual behaviours. Teachers must be trained in identifying categories of low vision so that they can know and understand how each category functions within the learning environment. Regular teachers in service courses should be carried out at school level to empower teachers to successfully work with learners with low vision.

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