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Teaching and Learning Strategies Adopted to Support Students Who are Blind in Botswana

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Abstract. The study is based on the teaching and learning strategies Molefi Senior Secondary School in Botswana adopts to support students who are blind. The objectives of the study were to describe and explicate the teaching and learning strategies the school adopts to support students who are blind and project ways for improving the practices. The study made use of the school community and stakeholders as its respondents. The interviews, documents and observations were used to collect data. The data was broadly analysed using descriptions. The research study established that there are a variety of pedagogical practices used to support students in the teaching and learning processes to accommodate students who are blind. It is recommended that the school casts its net even wider to embrace more key stakeholders like parents. The school should further consider more participatory and exploratory teaching and learning styles. The use of access technology could cultivate self-confidence, self-esteem and promote more interactive and independent student learning. This could further make students even more proactive in the teaching and learning processes.

Keywords: Botswana; teaching and learning strategies; visual impairment

Introduction

Blindness is strictly defined as the state of being totally sightless in both eyes although the word is commonly used to signify visual impairment, or low vision, meaning that even with eyeglasses, contact lenses, medicine or surgery, a person does not see well(Dalh, 2016). Kirk, Gallagher, Coleman and Anastasiow (2015) define visual impairment as any form of visual loss which may include very moderate or complete loss of vision. It also means the absence of capacity to see after correction, which may result in reduced performance in most aspects of life. The impairment has a lot of implications that range from increased dependence, isolation from the social mainstream, reduced benefits and opportunities available and increased time of completion of assigned tasks (Thurston, 2010, Thurston, Thurston & McLeod, 2010).

In November 2008 the 48th session of the International Conference on Education, (UNESCO, 2008), entitled 'Inclusive Education: The way of the future,' took

place in Geneva. One hundred and fifteen (115) countries resolved to advance guidelines on the provision of educational support intended for students from diverse backgrounds, including those with blindness, to promote equal, fair and equitable educational opportunities for all in public schools. The Botswana Government considered it appropriate the ratification of some of the international conventions related to inclusion because it views Inclusive Education as a means of improving the quality of education for all children (Habulezi & Phasha, 2012). Quality education is not just the rote learning of subjects in an inflexible curriculum, good quality education is concerned with the education of the whole individual in terms of developing understanding, interests, self-knowledge, emotions, personality and making accommodations, to mention but a few. The process encompasses, among others, expanding the application of access to include access to the curriculum and to the wider educational processes.

In its quest for excellence in education, the Government of Botswana set seven pillars to be achieved. Botswana aims to be an educated, informed, compassionate, just, caring and prosperous nation (Government of Botswana, 1997, 2013). To achieve this, Abosi (2000) states that the Government of Botswana assigned stakeholders distinctive tasks to perform. To this effect, a desk has been set up under the Office of the President to preside over, among other issues related to disabilities, inclusive education matters. Further, the Ministry of Education and Skills Development (2006) guides that for special education teachers who also have a teaching subject, consideration should be made to reduce their teaching loads in order to allow them time to assist other subject teachers as well as to give support to students with special needs.

In Botswana, a student with blindness is equated to 4 students in a general education classroom. In light of this situation, there should be reduction of students in classes the students with blindness are placed. The teaching and learning processes should therefore be all embracing, employing all the instructional activities that can produce the best in a student with blindness. Mastropieri and Scruggs (2015) add that concrete materials or physical objects that learning support staff use to engage students in the hands on learning of various subjects are important because they assist students in learning numerous concepts easily. In order to effectively achieve the set goals in teaching students with blindness, contact during instruction, especially when manipulatives or concrete objects are involved, should sometimes be one-to-one, equal-status, and cooperative (Silverman, 2015).

Brawand and Johnson (2016) advise that stakeholders involved in the education of students who are blind need to collaborate in order for the students to fully benefit from all instructions in the classrooms. The foregoing practices are expected to yield the desired results and provide equal and equitable education opportunities for all. The study on teaching and learning strategies adopted at the school that caters for students with vision impairment aimed to explore the teaching and learning strategies the school employs to meet the needs of the nation and the students in particular.

Methodology

Since the purpose of the study is to describe and examine the teaching and learning strategies the school adopts to support students with vision impairment, a qualitative design was adopted. The design was used because of its responsivity to native sites, environments, and participants' needs. The design also helps in the identification of circumstantial and setting factors as they relate to the phenomenon under study. In addition, the design engages a variety of approaches mainly to prevent inconsistencies (Yin, 2009, Mouton, 2005). The setting for the design is, among others, an actual classroom or school ideal for the study (McMillan & Schumacher, 2014). The target population in the study was the school community and its stakeholders. The table below shows the participants in the study.

Table 1. Study participants

Category of participants	total participated	females	males
Special education teachers	5	5	0
students with vision impairment	8	3	5
General education teachers	3	2	1
Parents	3	2	1
Management team	2	1	1
CRC member	1	1	0
Public library member	1	0	1
Braillist	1	1	0
Development trust staff	2	1	1
Learning support worker	1	1	0
Past students	4	2	2

Participants were selected for different reasons. These include length of service in the special education profession, interest in participating in the research and positions held at the institution.

Mundane selection of participants in a research in which participants are scanty or not knowledgeable about the subject is difficult (Bailey, 2007). When the study was conducted, Molefi Senior Secondary School had 7 special education teachers specialised in teaching students who are blind. The 42 stream school had 1637 students, 29 of whom were students who were blind. The circumstances and characteristics of the target population demanded that judgemental, chain-referral and self-selected sampling methods be used to select a sample.

Judgemental sampling was used on participants who were deemed information rich. These included specialist teachers, general education teachers, Central

Resource Centre staff, Rehabilitation and Development Trust staff and staff from the library for people with visual impairment. On the other hand chain-referral sampling was used on past students because those best able to access members of hidden populations are their own peers (Keltner, 2016). Data was collected on a member who in turn provided information on where to find another one. In contrast, self-selected sampling, in which a participant offers to take part in the study because of their interest and familiarity with the subject, was used on the learning support worker and the members of the senior management team. Triangulation was employed in the collection of data through the use of documents, interviews and observation. This was done to ensure rigour, relevance and to corroborate the data.

Observations were done at the school for one academic term from the beginning to the end of the school term. I observed, as a participant observer, how the school prepares for the students, receives the students at the beginning of the term until the school closed. There were 16 observations lasting between 1 to 2 teaching periods (40 to 80 minutes) in all that were done observing how the school teaching and learning take place in a real setting.

Some traits of concern were not openly witnessed during observations, for example, participants' views, attitudes and understanding of instructional strategies for students who are blind. In view of that, interviews enabled the gathering of such form of data. Unobtrusive, favourable and appropriate places for the meetings were identified. Open-ended interviews which lasted 20 minutes each on average were either audio or videotaped with participants' permission. Documented sources offer rich secondary information (De Vos et al, 2011). The significance of these sources for present-day studies should not be undervalued. Significantly, the document study was utilised for being cheap, non-reactivity and unreachable participants in the case of past students who were difficult to find. Therefore, policy documents, non-personal and mass media were utilised in this study.

Data was qualitatively analysed with the help of Rubin and Rubin's (2005) approach which states that "Data analysis begins while the interview is still under way. This preliminary analysis tells you how to redesign your questions to focus in on central themes as you continue interviewing…." Careful steps were taken to abide by ethical issues. Permission was obtained from the school, relevant bodies, learners and parents.

Results

Molefi Senior Secondary School employs varied and valuable instructional strategies in teaching students who are blind under the circumstances and prevailing conditions. A summary of the instructional strategies used are presented further down as obtained through the data gathering tools used. In interviews with management committee members and the senior teacher special education, it emerged that the school makes sure students with vision impairment are assessed to know how best to support each one of them. The senior teacher was recorded saying:

> *First and foremost, we make sure we have student profiles and then carry out routine informal functional vision assessment that includes assessment on learning media, access technology, Orientation and Mobility. This is followed by medical assessment at Deborah Retief Memorial Hospital or eye clinic in Gaborone then we take these reports to the Central Resource Centre for Special Education for specialised educational assessment to help prepare an individualised education program for each student.*

Correspondence among the documents analysed showed that the school is well networked with stakeholders like the Department of Evaluation and Curriculum Development. In the process of curricular development, the Department of Evaluation and Curriculum Development works with specialist special education teachers to accommodate issues related to students with special educational needs. The proposed syllabi are further sent to schools for more consultation. Special education specialist teachers consult subject specialist teachers and make suggestions that are sent back to the Department of Evaluation and Curriculum Development for consideration and possible integration.

At implementation stage, four out of the five special education teachers interviewed revealed that specialist teachers make further modifications to suit individual students' needs. These modifications are based on the teachers' informal assessments and the formal assessment recommendations from the Central Resource Centre for Special Education. Three general education teachers interviewed all indicated that modifications are done but expressed concern on the modifications on the teaching and learning materials for students with vision impairment as shown in the excerpt below:

> *The changes that these special education teachers make or suggest water down the standards and make us, you know, change our objectives in a way. Someone can just say, "modify this question, our students cannot draw or it is too congested, … this is not necessary to answer the question, remove it,"…. Besides, special education department delays everything, …. "we cannot write this paper this afternoon because the paper is not yet brailled for students from special education"… They do some good work for students at our expense.*

One interviewee lamented that he was always bothered to come and describe the pictures in the sources for History because the special education personnel insisted that the subject teacher was better placed to do that and knows the appropriate terminology for each source. He complained that sometimes he felt the descriptions were advantaging the special education students. Adaptations were also observed in which learning media was adapted to braille, large print or recorded.

The Department of Special Support Services through the special education wing organises workshops for special education teachers to share knowledge on how to modify and adapt teaching and learning materials for students who have vision impairments. Further, the special education personnel informed the researcher that the special education department in the school inducts new

teachers on the teaching and learning methodology for students who have vision impairment. To augment the efforts above, a schedule on the notice board carried names of specialist special education teachers and the departments they were attached to for the purposes of consultations and advice.

To be in concordance with the final examination standards, the senior teacher for special education informed the researcher that the school works hand in hand with Botswana Examinations Council to make sure the modifications at the school and those done at Botswana Examinations Council are of the same quality and standards more so that final Form 5 examinations are brailled in the United Kingdom.

When students with vision impairment are admitted to the school, they are strategically allocated classes basing on their junior secondary school performance and the student's subject preference as one interviewee stated:

> *We guide students in choosing classes with the help of their results from junior secondary school leaving examinations. We particularly consider how they performed in Mathematics and Science. After the stream is decided, we, in a way, consider the student's subject preference in the optional subjects.*

Classes students who have special education needs are allocated to have the number of students reduced. While in classrooms, students sit in positions they are comfortable with depending on their impairments or preferences.

In practical subjects like Art, learning support workers work with subject teachers in helping the students grasp the subject matter. Art was the only subject though where a learning support worker was observed working with the teacher. Where the students with vision impairment are lagging behind, the subject teachers were seldom observed conducting remedial lessons either before or after the lesson. This was common practice though for expatriate special education teachers. On individual bases, expatriate special education teachers and learning support workers were observed tactile orientating students with vision impairments even in subjects they do not teach. The diagrams used were from previous examinations. Two of the management committee members interviewed stated that:

> *You know we are at pains sometimes to explain to authorities why over time is paid to special education members of staff. In the afternoon, they request that their students read from the special education department for ease access. But they still want to work with students after hours say in Orientation and Mobility because it is too hot to work during normal working hours and that students would be doing the other academic work*.

Upon interview, the teacher in-charge of Orientation and Mobility explained:

> *Yes, we have Orientation and Mobility sessions both during afternoon study and after hours when it is cool because it is very hot to practice between 1300 hours and 1630 hours. Besides, certain techniques have to be demonstrated in areas*

which are quiet and have few people distracting the clients. We also have to be flexible because the subject is a life skill and it is not examinable. So students shun it and give priority to examinable subjects. When they suggest weekend or evening it is fine.

During examinations or end of month tests, students with vision impairment were observed having their assessment activities in four different rooms when a core subject was being written. A member in the examinations committee explained:

Room 1 is used by braille users, the students' study room is used by low vision students using large print and these students do not use braille. On the other side we have a student in each room with a scribe or amanuensis. The students in those rooms do not know braille, for the student in the office, the examination is recorded while for another student in the guidance and counselling room an amanuensis reads the questions for the student, writes down the responses and the second person records the proceedings with a digital voice recorder at the same time.

When students with vision impairments were writing assessment items, they were given extra time depending on the prescription the low vision assessment officer at the Central Resource Centre for Special Education made. Generally, the records showed that the majority of the students had 25% extra time of the paper's time. Other students had 30% extra time of the time for the paper. One student was observed taking rest breaks due to fatigue and perpetual head arch. Time taken to rest was being recorded and adjustments made accordingly.

The special education senior teacher revealed that although the school has a shortage of learning support staff like braillists, an arrangement is put in place to make sure students' work is brailled in advance and transcription is done within the set time frame. There was, however, notable shortage of brailled and recorded books as well as production materials like zytex paper. To compensate for the shortage of text books, one student reported that:

We sometimes go to the library for people living with vision impairment where we borrow recorded and brailled books. When we have no transport, the library personnel bring the books for us.

Data gathered indicated that government is very committed to the education of students who are blind. This was evidenced from the amount of money the government is spending on acquiring access technology the staff and students use. On stakeholder participation, interview results, observations and records showed that there was neither serious involvement of the surrounding community nor the parents of students with vision impairment.

Discussion

The purpose of this study was to investigate teaching and learning strategies the only senior secondary school in Botswana that caters for students who are blind adopts in the process of teaching and learning. The results showed a holistic and concerted effort from the school and relevant government wings.

The school collaborates with health facilities, Botswana Examinations Council, Department of Evaluation and Curriculum Development, the Central Resource Centre for Special Education and the Library for people living with vision impairment among others. This is a necessary approach because in the teaching and learning processes involving students with special educational needs, a multifaceted approach is recommended (Government of Botswana, 1994, UNESCO, 2008, Hamilton-Jones & Vail, 2014, McBride, 2009**)**. The needs of the students are numerous, and since a school cannot offer all the necessary services, it is health and prudent that facilities that are specialising in the areas have an input.

Further collaboration was observed among school personnel. Some general education classroom teachers strategise for their lessons with special education teachers to accommodate aspects on how to be inclusive in their classroom activities. In addition, special education teachers and learning support workers support students and teachers in classrooms and at the special education workroom. This practice is synonymous with the recommendations of UNESCO (2009) and Government of Botswana's (2007) guidance that collaboration and the participation of all stakeholders is key to meeting the full potential of all students. More encouraging is the fact that special education teachers are linked to various subject departments for more individualized support. Despite this positive observation, there were mainstream teachers who felt bothered when asked to offer their expertise to help modify or adapt teaching and learning materials for students with visual impairment.

The school, though, can still improve its operations through the involvement of the surrounding community and the parents of the students with vision impairment more. Students do not live in isolation and some of the things learnt are not taught but observed and learnt in various spheres of life including in the communities. Besides, community members have different professions and talents that can be of help in the education of the students. Parents especially, know a lot about their children and their input is invaluable. If continuity of some of the teaching and learning programs is expected at home, parents must be brought on board (Malekpour, Aghababaei, Hadi, 2014, Hebel, 2014).

The curriculum the institution presents is flexible and comprehensive. At curriculum design level, stakeholders are consulted to take care of the interests of students with blindness. In the school, students with vision impairment share subjects with all other students in the school. Although not all stakeholders agree with the practice, the school makes the curriculum accessible through adaptation and modification of different syllabi contents. This is in agreement with UNESCO's (2009) and Government of Botswana's (2006 & 2013) recommendations on changing the systems obtained to suit the students. The practice also agrees with Farrell (2002) and Fraser (2015) who assert that all students should have access to the same level as the others by adapting the resources, assessment methods, classroom organisation and teaching methods so that they can take part as fully as possible. The school needs to intensify public

awareness to bring on board some stakeholders who are of the view that modifications made to make the curricula accessible by all water down the standards.

In the initial stages the school scrutinises the students who are blind when they arrive in the school, guides them in choosing subjects and classes. It further conducts informal and formal educational assessments including the medical one. This is a necessary procedure, because the appropriateness of the learning support is heavily dependent on the educational recommendations in the assessment report (Bell, Ewell & Mino, 2013). The assessment, in fact, is of paramount importance because it benefits the students.

During lessons, in classes with reduced number, students with blindness sit in preferred positions to enable them utilise their residual sight or listen with less distraction nearer to teachers. This also assists students who are either myopic or hyperopic. To accommodate the extra time awarded to students with special educational needs and to reduce on disturbances, the students with blindness write assessment items in separate rooms, braille users, large print users and those who are amanuensed; all in different rooms.

The practice observed agrees with the views of Piljl and Van den Bos (2001) and Eloff and Kgwete (2005) who classify the characteristics of the exercise as additional features of the practice that are most important in eliminating the obstacles to the participation and learning of children with vision impairment. It is also important to take cognisance of the staff professional development the school and the wing spearheading special education organise for special education teachers. These help in advancing teachers' knowledge and instructional strategies for students with special educational needs. Such a gesture would also be helpful to the larger community who are also important stakeholders.

In subjects that have manipulatives or objects for tactile observation, both general classroom and special education teachers remediate students who are blind either before or after the lessons. Teachers tactile orientate the students to clearly see the embossed tactile graphics. This helps to augment on the areas students may miss during lessons. In line with the foregoing, Jaquiss (2010) states that this is essential because the tactilist should interact with braille readers to ensure that the tactile graphics can be understood especially that blind readers vary in their abilities to evaluate, understand and employ tactile materials. It should be noted here that tactile observations were done in some subjects by personnel not qualified in the subjects, if specialists can do the tasks students may benefit more. Additionally, the past examination diagrams that are mostly used in the exercise may not be tailored to the material being delivered, it may be more helpful to emboss diagrams tailored to the content being delivered.

To promote independent movement among students, the school has an Orientation and Mobility programme carried out at convenient times because of the flexibility exercised all for the students to move independently, efficiently

and safely. This is made possible by paying the teachers incentives for the extra mile they take to equip the students with the noble and all important life skills among others. Instead of leaving it to the teacher in-charge of Orientation and Mobility to decide on when to conduct the sessions for life skills, it may be more helpful to time table the subject like any other.

Conclusion and recommendations

With the support of various government wings and other stakeholders, the school employs numerous pedagogical practices in an effort to meet the diverse needs of all students. Collaborations, modifications, accommodations, use of various learning media (braille, audio, large and normal prints) all augment in the delivery of service to all students with a view to providing access to equal educational opportunities to all. There is always need to evaluate practices for accountability and performance improvement. It is, therefore, recommended that the school explores on more technology orientated student support and learning activities that could improve the image and participation of the students. More parental involvement could add impetus to practices as parents have a wealth of knowledge about their children. The shortages of human and material resources are better addressed to further improve service provision. There is always new knowledge being generated and the continuous workshops would be helpful and possibly touch even those not very clear on the reason and need for modifications.

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