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Provision of learning and teaching materials for pupils with visual impairment: Results from a National Survey in Zambia

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Abstract

The aim of this study was to determine the provision of learning and teaching materials for pupils with visual impairment in basic and high schools of Zambia. A survey approach utilizing a questionnaire, interviews and a review of the literature was adopted for the study. The findings demonstrated that most schools in Zambia did not provide adequate and suitable learning and teaching materials to pupils with visual impairment. Further, many schools did not have resource rooms for storage and use of learning and teaching materials for these pupils. Though most schools have a policy for procurement of learning and teaching materials, their budgetary allocations for such activities are usually too small or non-existent. Consequently, most children with visual impairment appear to perform poorly in their studies and are required to drop science and mathematics subjects due to lack of teaching and learning materials. The study recommends that a good infrastructure is required to ensure the development of quality learning and teaching materials, a workable procurement system, an effective and efficient distribution system of learning and teaching materials, and teacher training in the use of materials for the children.

Keywords

access, education, teaching materials, visual impairment, Zambia

Introduction

The Zambian Government attaches great importance to all forms of education through both a history of scholarship, and on account of the contribution that education is perceived to make to the long-term economic development of the nation. The country strives to provide education for all

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children. School libraries and resource centres play a key role in the provision of instructional materials for pupils. However, many Zambian school libraries/resource centres are typically under-resourced and struggle with limited budgets, facilities and resources to provide comprehensive information services to the school community. While maintaining 'mainstream' services within these constraints, school libraries/resource centres have been challenged by the need to extend these services to meet the needs of members of the community disadvantaged through some form of physical or sensory disability. According to Sightsavers (2010), fewer than ten percent of children who are blind or have low vision receive any kind of formal schooling. This fuels a cycle of illiteracy and poverty, leaving people who are blind as one of the most vulnerable and excluded groups in the world.

The research presented in this report evaluates the provision of learning and teaching materials for visually impaired pupils in Zambian schools. It looks at the level of service currently available and the challenges confronting school library services in a developing nation striving to meet the special needs of one section of the community.

Government policy in support of visually impaired learners

It is difficult to provide precise figures for the prevalence of visual impairment in Zambia. The 2002/2003 Living Condition Survey indicates that 2.4 percent of the Zambian population is disabled (Central Statistical Office, 2004). Of this group, 0.9 percent is listed as being either blind or partially sighted. More recently, the Ministry of Health National Eye Health Strategic Plan of 2007–2011, estimates that Zambia has 120,000 blind people. Childhood blindness is estimated at 5.5 percent of this total affecting around 6,689 children (under 15 years).

The education of children with disabilities (CWD) in Zambia is guaranteed through two policy frameworks. The 1996 Education Policy (Ministry of Education) that provides for 'Inclusive Education' and appropriate education for each child, and the Zambia Disabilities Act of 1996 that provides for Government penalties to any institution that refuses to enrol a disabled child based on disability. The Ministry of Education (2009) has indicated that CWD constitute 5.1 percent of its enrolment for grades 1–9, and 1.58 percent of its enrolment for grades 10–12. This clearly shows a very high dropout rate and very low progression rate for children with disabilities.

The key thrusts for the Zambia Education policy and implementation are 'access and participation', 'quality and relevance', 'efficiency', 'effectiveness' and 'equity'. Learners with visual impairment are categorized under equity alongside orphans and gender. The existing education policy in Zambia recognizes and supports all the three categories of learning: special schools for the blind, integrated schools represented by annexes in mainstream schools, and placement in mainstream schools. Furthermore, the Fifth National Development Plan (FNDP) 2006 to 2010, among other objectives, aims to attain the full participation, equality and empowerment of persons with disabilities. It seeks to provide enhanced support to disabled persons through increased government spending on disability; developing inclusive mainstream policies; review of existing pieces of legislation; and the establishment and/or strengthening of institutions and systems that cater to people with disabilities.

In line with the above policy and implementation framework the Zambian Government Ministry of Education seeks to ensure that all disabled children attend school, and offers choices for the visually impaired in fully inclusive, integrated, and specialist educational programs and facilities. It has also declared Braille an official written language in schools, and has developed an official format for Braille textbook publishing. Therefore, the policy framework for provision of teaching and learning materials for learners with visual impairment is considered to be in place.

Table 1. Availability of learning materials and equipment

Learning materials/equipment	Yes	No	No response
Embossed maps	6	1	3
Stylus	14	7	6
Brailled materials	9	4	5
Perkins brailler	10	2	4
Talking books	4	1	2
Abacus	9	6	3

Statement of the problem

In 2010 Zambia ratified the United Nations Convention on the Rights of Persons with Disabilities aligning this commitment to the Education Policy of 1996 to guarantee the right to education for persons with disabilities. However, conditions in special schools, integrated schools and inclusive schools are different. It has been observed that minority groups such as the blind have not been adequately catered for in terms of their learning needs (e.g. provision of Braille textbooks, charts, and embossed maps, trained staff, equipment like Perkins Braille machines, writing frames and styluses, ordinary typewriters, and thermoform). This lack of equipment and learning and teaching materials formed the backdrop to this study, which was the first study in Zambia to undertake a full survey of provision of teaching and learning materials for children with visual impairment.

Methodology

Qualitative and quantitative methods were used to collect primary data through questionnaires, interviews and observations. A total of 30 schools were surveyed, 23 basic schools and 7 high schools. Twenty-seven of the schools surveyed were government schools while three were private (mission) schools. Twenty-four schools were main stream schools while six were special schools for the visually impaired pupils. The highest numbers of visually impaired persons (VIP) were found in the schools for the visually impaired. Twenty-eight teachers were also surveyed (3 headmasters, 2 deputy headmasters, 5 heads of departments, 14 ordinary teachers, and 4 resource room managers). The Ministry of Education was notified of the study with introductory letters written to the District Education Boards and the Headmasters of the schools in order to gain informed consent of the schools involved in the study. Consent to interview the pupils and teachers was obtained from the Headmasters and the respondents themselves. The results of the survey have been made available to Ministry of Education and other co-operating partners in the prevention of blindness and education of children with visual impairment (e.g. Sightsavers International). Data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 16 and Microsoft Excel version 2003.

Results of the study

Availability of learning and teaching materials for VIPs in schools

Twelve schools out of 30 had resource rooms for the VIPs. Table 1 shows that 6 schools had embossed maps, 14 schools had styluses, 9 had materials available in Braille, 10 had Perkins Braille machines, 4 had talking books, and 9 had abacuses.

Sources of teaching and learning materials

Table 2 shows that most of the sources of learning/teaching materials and equipment for the VIPs were bought by the schools (45%) or donated by NGOs (35%) such as Sightsavers, Lions Club, and the British Council; while parents and the business community contributed 15 percent and 5 percent, respectively.

As shown in Table 3, most of these learning materials were kept in the storerooms (43.8%), resource rooms (31.1%), or classrooms (29%).

The findings indicate that learning materials were mostly not sufficient in the areas of mathematics, English, and Zambian Languages. Where available, these materials were often not suitable. There were no suitable materials for science subjects.

Table 4 and 5 show the respondents' information aggregated by sufficiency and suitability of materials. Schools surveyed reported having limited learning and teaching materials for children with visual impairment in in the commercial subjects.

Among the four schools with the highest number of learning/teaching materials for the children with visual impairment, three were inclusive schools while one was a special school.

Fifty-eight percent (58%) of the schools allowed pupils to borrow materials from the school for individual study while 42 percent rarely or never allowed them. On the other hand, 58 percent of the children with visual impairment reported that they borrowed materials from the school for individual study while 42 percent rarely or never borrowed materials from the school (Table 6).

Main challenges teachers face in teaching children with visual impairment

Table 7 shows the list of the major challenges schools faced in providing learning and teaching materials for the children with visual impairment. These include inadequate learning and teaching materials and equipment (31%), lack of funds (21.6%), lack of local suppliers (13.5%), and high

Table 2. Who provides learning materials

Sources of learning materials	Responses	
	N	Percent
Bought by the school	9	45.0
Bought by parents	3	15.0
Donated by business community	1	5.0
Donated by NGOs	7	35.0
Total	20	100.0

Table 3. Where are learning materials kept

	N	Percent
Classroom	7	21.9
Storeroom	14	43.8
Resource room	10	31.2
School library	1	3.1
Total	32	100.0

Table 4. Availability, sufficiency and suitability of learning materials in various subjects

Subjects	Frequency of responses			
	Sufficient	Not sufficient	Suitable	Not suitable
Mathematics	4	14	6	11
English	4	13	6	10
Zambian languages	2	12	4	11
History	1	4	2	3
Geography	2	4	4	3
Social studies	3	9	4	7
Science	2	2	0	3
Environmental studies	4	9	4	5
Religious studies	4	9	7	5
Book keeping	1			

Table 5. Number of learning/teaching materials in selected subjects in the surveyed schools

School	Status	VIPs	Math	Eng	ZL	Hist	Geo	SSt	Sci	Com	Env	RE	BK	Acc	Civ	total
School 1	Special	114	5	5	5	5	5	5	5	5	5	5	0	0	0	50
School 2	Special	3	0	3	0	0	0	0	0	0	0	0	0	0	0	3
School 3	Inclusive	4	7	7	7	0	0	7	0	0	7	7	0	0	0	42
School 4	Inclusive	4	20	14	16	13	14	15	0	21	0	0	0	0	0	113
School 5	Inclusive	8	7	7	6	0	9	12	0	0	8	10	0	0	0	59
School 6	Inclusive	6	60	60	60	60	60	60	0	0	15	17	0	0	0	392
School 7	Inclusive	13	7	10	7	0	0	15	0	0	10	11	0	0	0	60
School 8	Inclusive	18	15	6	0	20	18	0	0	25	17	0	0	0	0	101
School 9	Inclusive	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
School 10	Inclusive	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
School 11	Inclusive	1	1	2	0	0	0	0	0	0	0	0	0	0	0	3
School 12	Inclusive	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
School 13	Inclusive	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
School 14	Inclusive	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
School 15	Inclusive	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
School 16	Inclusive	12	10	0	0	0	0	0	0	0	0	0	0	0	0	10
School 17	Inclusive	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
School 18	Inclusive	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
School 19	Special	120	10	139	5	2	2	20	10	0	3	2	0	0	0	193
School 20	Inclusive	16	1	0	0	0	0	0	0	0	1	0	0	0	0	2
School 21	Inclusive	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
School 22	Inclusive	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
School 23	Inclusive	9	4	3	3	0	0	7	0	0	0	0	0	0	0	17
School 24	Inclusive	17	4	3	3	0	0	7	0	0	0	0	0	0	0	17
School 25	Inclusive	6	5	20	20	0	0	10	0	0	0	0	0	0	0	55
School 26	Special	54	0	0	2	2	4	10	4	1	2	5	0	0	0	30
Total		473	156	279	134	102	113	168	19	52	68	57	0	0	0	1148

VIPs=Visually impaired persons; Math=Mathematics; Eng=English language; ZL=Zambian language; Hist=History; Geo=Geography; SSt=Social studies; Sci=Science; Com=Commerce; Env=Environmental science; RE=Religious studies; BK=Book keeping; Acc=Accountancy; Civ=Civics

Table 6. How often respondents borrow materials from their schools

	Frequency	Percent	Valid Percent*
Valid			
very often	13	15.9	17.6
often	30	36.6	40.5
rarely	15	18.3	20.3
never	16	19.5	21.6
Total	74	90.2	100.0
Missing			
no response	8	9.8	
Total	82	100.0	

*NB: Valid percent is calculated out of the total number that responded (i.e. 74)

Table 7. Challenges teachers face in providing education to VIPs

	Rank	Percent
Inadequate learning and teaching materials	1	31.1
Lack of funds	2	21.6
Lack of local suppliers of learning materials and equipment	3	13.5
Learning materials and equipment are expensive	4	8.1
Lack of resource rooms	5	4.1
Lack of trained teachers to handle VIPs	5	4.1
Negative attitudes of parents and teachers towards the education of VIPs	6	4.1
Lack of classroom space	7	2.7
Cumbersome procurement procedures	8	1.4
Dilapidated resource rooms	8	1.4
Lack of equipment	8	1.4
Lack of forum to discuss problems of VIP education	8	1.4
Lack of policy on matters of the VIPs	8	1.4
Lack of vehicle	8	1.4
Poor condition of learning materials and equipment	8	1.4
Preparing work/materials is time and energy consuming	8	1.4
Total number of respondents to the questions	74	100.0

cost (8.1%). Issues such as cumbersome procurement, policy matters, transport, condition of available materials, and time did not seem to be major challenges in providing education to the children with visual disabilities.

The respondents also suggested solutions to the above challenges (Table 8). The most common suggestions were that the Government should increase funding to purchase learning and teaching materials and equipment (52.5%), establish modern resource rooms (12.5%), encourage local production of learning and teaching materials and equipment (7.5%), increase sensitization of education of the VIPs (7.5%), and transcribe all learning materials into Braille and other usable formats in all subjects (7.5%).

Table 8. Teachers' suggestions to improve education for VIPs

Suggestions	Frequency	Percent
Increase funding to purchase learning materials and equipment	21	52.5
Establish resource rooms	5	12.5
Encourage local production of learning materials and equipment	3	7.5
Increase sensitization of the education for VIPs	3	7.5
Transcribe all learning materials into Braille in all subjects	3	7.5
Establish policy regulating the provision of learning material	2	5
Monitor usage of funds allocated for the procurement of VIP materials	1	2.5
Subsidize the cost of learning materials and equipment	1	2.5
Supply learning and teaching materials through PEOs	1	2.5
Total	40	100

Discussion

This study sought to assess the provision of learning and teaching materials for pupils with visual impairment in basic and high schools in Zambia. The findings suggest that at present basic and high schools in Zambia do not provide adequate and suitable learning materials for these children. Most schools reported not having resource rooms and where they existed they were described as being poorly stocked with the equipment that was not always functioning. There is only one special library, the Zambia National Library and Cultural Centre for the Blind, situation in Chilenje South, Lusaka. Only pupils who live in Lusaka however made use of this library.

The findings from the pupils themselves indicate that they largely depended on materials bought by the schools or donated by NGOs. Lack of suitable learning/teaching materials makes it difficult for the children to acquire and apply knowledge, to learn at their own pace and to assess their own progress in their studies.

The survey has established that while there is a Government policy to support the provision of inclusive education, there appears to be a serious disparity between policy and current practice. The majority of the respondents stated that most schools lacked trained special education teachers, appropriate learning and teaching materials, appropriate technologies, and resource rooms. Further, most of the schools did not have a budget for procuring these resources. Even where schools reported that they had a budget for procurement of learning/teaching materials and equipment for the children such budgets were often considered to be inadequate to cater for their needs. The recent decision by the MOE to decentralize the procurement of teaching and learning materials should be monitored for procurement of textbooks in alternative formats (e.g. CD-ROMS, Braille, and audiovisuals).

Due to these challenges most children with visual impairment are considered to be severely disadvantaged in their studies and consequently may perform poorly. Furthermore, lack of learning and teaching materials for these children may deny them opportunities to study a wide range of subjects such as science subjects and mathematics despite their mental ability. Consequently, their career choices may be severely limited.

Recommendations

It is recommended that an effective infrastructure is developed to ensure:

- development of quality learning and teaching materials;
- a good distribution system;
- a workable procurement system;
- teacher training in the use of materials.

Furthermore, efforts should be made to encourage the use of available assistive technologies in the teaching and learning of children with visual impairment. It would be helpful for example, to establish resource rooms in the schools with a pool of specialist equipment and a priority study area with computers supporting assistive technologies. Learning and teaching materials need to be provided in an appropriate format, depending upon the student's preferred method of communication (i.e. Braille, large print, audio, etc.). Converting images into a tactile format requires specialist knowledge and expertise; therefore, specialist training is required for teachers who support children with visual impairment. A more detailed series of recommendations can be found in the main report which is available on request from the corresponding author.

Conclusion

This survey sought to assess the provision of learning/teaching materials and equipment for the pupils with visually impairment in Zambian basic and high schools. The findings suggest that there are insufficient educational resources and personnel to facilitate the educational and instructive process. In addition to this, the lack of technical support leads to inadequate and ineffective learning. All stakeholders should work together in order to ensure suitable and sufficient educational materials as well as educational and technical support are available for use by all pupils with visual impairment in Zambia.

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