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# Setting Up a Computerized Catalog and Distribution Database of Alternative Format Materials for Blind and Visually Impaired Persons in Nigeria

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## ABSTRACT

The purpose of the project discussed in this article was to set up a computerized catalog and distribution database of alternative materials for visually impaired people in Nigeria. The project was based on the need to open wider the gates of information resources, nationally and internationally, to this category of information users by identifying the location and availability of resources throughout Nigeria and creating a database for access and retrieval. Another purpose was to create a template for database entry, which could be replicated by other developing countries. A state-by-state survey of educational institutions, state libraries, and nongovernmental organizations serving the visually impaired in all of the thirty-six states of Nigeria and the Federal Capital Territory (FCT) was conducted. Three sets of data were gathered from a template for data entry of alternative materials and two questionnaires for institutions and the blind and visually impaired students. A database was designed and created using Microsoft Access. An American Disability Act (ADA) compliant Web site was designed, which has a "text-only" version for browsing by visually impaired persons (see [www.alvi-laris.org](http://www.alvi-laris.org)).

## INTRODUCTION

Blindness and visual impairments are common disabilities in all countries of the world. Nigeria is no exception to this phenomenon. The total population of Nigerians is estimated at 120 million people (Federal Office of Statistics, 1991), with blind and visually impaired persons numbering at least 1 million. It is also estimated that of this figure, more than 25,000 persons are of school age, and less than 10 percent of these actually attend

school, with the remaining 90 percent confined to houses or roaming the streets as beggars (Agbaje, 2000). For the small percentage of blind and visually impaired persons in schools from primary to tertiary levels, there is no adequate provision of reading and information materials. The need to produce enough reading and information materials in alternative formats for blind and visually impaired students at all educational institutions in Nigeria is steadily gaining momentum. This is a consequence of the federal government policy (Federal Ministry of Education, 1981) of equitable educational provision for all children, regardless of their physical, mental, or emotional disabilities. This policy encouraged an overwhelming increase in school enrollment for blind and visually impaired students.

In Nigeria today blind and visually impaired students are found at all educational institutions—in primary and secondary schools, polytechnics, universities, and vocational training centers. They, like their sighted counterparts, are in search of academic laurels. Unfortunately, the production and distribution of information resources in alternative formats to meet the needs of these blind and visually impaired students is haphazard and uncoordinated. The reason may be attributed to the fact that there is no national library service for blind and visually impaired persons in Nigeria.

### THE CHALLENGE

Although there is no national library service there is a myriad of organizations involved in attempting to meet the needs of the blind and visually impaired, as set out in Table 1. The author was successful in winning the Ulverscroft Foundation/International Federation of Library Associations (IFLA) Libraries for the Blind Section's Institutional Best Practice Award in 2003, in order to address the challenge of systematically auditing and recording the national provision of alternative format materials in Nigeria.

#### *Federal Government Involvement: Educational Provision and Library Services*

The federal government's involvement has tended more toward establishing educational institutions to train special teachers rather than providing information material or library services. The establishment of the Federal College of Education (Special) (1977) and the Department of Special Education in the Universities of Ibadan (1974), Jos (1977), Bayero, Calabar, and Uyo attest to this fact. Government involvement in providing library services is minimal.

#### *State Library Services*

State libraries are essentially public libraries. They come under the auspices of each State Ministry of Education. The state librarian is a civil servant, designated the director of library services. Out of the thirty-six state libraries in Nigeria, only three—Oyo, Imo, and Abia—offer library services to blind and visually impaired students. These state libraries do not

Table 1. Government Agencies, Institutions, NGOs and Associations Serving Visually Impaired Persons in Nigeria

Government and Its Agencies	Educational Institutions	NGOs	Braille Production Facilities	Libraries for the Visually Impaired	Associations
Federal Ministry of Education	Federal College of Education (Special) (Oyo FCE Spec)	Nigerwives Braille Book Production Centre	Nigerwives Braille Book Production Centre	Nigeria Society for the Blind Inlaks Library	National Braille Council of Nigeria (NABRACON)
Federal Ministry of Sports & Social Development Braille House	Universities' Dept. of Special Education at Ibadan, Jos, Kano, Calabar, Uyo	Anglo Nigeria Welfare Association for the Blind (ANWAB), Lagos	Anglo Nigeria Welfare Association for the Blind (ANWAB)	Anglo Nigeria Welfare Association for the Blind (ANWAB)	Association of Libraries for the Visually Impaired (ALVI)
State Ministries of Education	Polytechnics	Nigeria Society for the Blind: Vocational Training Centre, Oshodi	Nigeria Society for the Blind: Vocational Training Centre, Oshodi	Abia State Library Board	Nigeria Association of the Blind (NAB)
State Library Board	Special Schools: Primary Secondary	Hope for the Blind, Wusasa, Zaria	Hope for the Blind, Wusasa, Zaria	Imo State Library Board	
Vocational Training Centre		Gindiri Material Centre for the Visually Impaired Project Chari Love	Gindiri Material Centre for the Visually Impaired Pacelli School for the Blind FCE (Spec.) Oyo	Oyo State Library Board	

produce books; they receive Braille books from donors and make them available in their libraries.

#### *Special Schools for the Blind*

There are a few schools in Nigeria that are exclusively for blind and visually impaired children. An example is the Pacelli School for the Blind in Lagos, which transcribes books into Braille for its own students. At the secondary school level, visually impaired students are integrated with sighted students. Thus, visually impaired students are in secondary schools all over the country. For most of them books in Braille are rare unless they make private arrangements to procure or produce these books for themselves. This is also true of most of the students in tertiary institutions. They depend mostly on their own effort to get their reading materials in alternative formats.

#### *Nongovernmental Organizations*

There are three major nongovernmental organizations (NGOs) in southwest Nigeria and two in the north; they dominate the scene of materials production for blind and visually impaired students. Nigerwives Braille Production Centre, Lagos, produces Braille textbooks for blind and visually impaired students in primary and secondary schools. They also set up reading corners in special primary schools to promote Braille literacy. Anglo Nigeria Welfare Association for the Blind (ANWAB), Lagos, produces Braille by computer and offers library services. Its collection of about 200 titles in Braille and 200 audio tapes are in subject areas for adults, children, and undergraduates from the University of Lagos. Nigeria Society for the Blind, Lagos, is a voluntary organization with a vocational training center, a well-equipped library, and a recording studio for blind and visually impaired persons. It produces Braille by computer and also receives donations of books from abroad. Gindiri Materials Centre for the Visually Handicapped (GMCVH), Jos, in the north, provides a wide range of services to visually impaired persons in the Gindiri, Jos area. Braille books are produced in English and Hausa languages and sold to blind and visually impaired students at subsidized rates. Hope for the Blind, Wusasa Zaria, situated in Zaria in the north, produces reading materials in Braille and audio tapes. It also operates a recording studio.

#### *The Need for a Systematic Audit*

The foregoing has shown that there is a range of organizations that serve blind and visually impaired students in this country. The locations of these collections and their sizes and subject content have never been assessed in terms of adequacy or relevance. There has hitherto been no investigation on the types of equipment and services rendered by these organizations. In addition, the reading and information needs of the blind and visually impaired students have been based not on empirical evidence but on personal and individual requests.

The research described in this article, therefore, was considered a first step in finding a solution to the problem of inadequate reading materials in alternative formats. This article reports the findings of a study to identify the locations of alternative materials in Nigeria, to analyze the subject content of the materials in the effort to determine adequacy to meet demand for the reading and information needs of blind and visually impaired students in Nigeria. It was a fact-finding study to provide baseline data on the status of alternative format materials production and distribution in Nigeria. The end result is a computerized catalog and distribution database that will hopefully become an access point to materials available in Nigeria. It is also expected to provide the gateway to the unlimited resources on the Internet to the Nigerian blind and visually impaired student.

### A FUNDAMENTAL PROBLEM

This study was necessary because of the urgent need to find a permanent solution to the perennial problem of inadequate provision of library and information materials to visually impaired persons in Nigeria. Due to increasing awareness and the constitutional provision for the education of the visually impaired, many more visually impaired children are enrolling in schools. Consequently, the demand for books in appropriate formats is increasing while the supply remains inadequate, and this is true at all educational levels from primary to tertiary levels. At the tertiary level in particular, visually impaired students fend for themselves in providing their own reading and information materials (Atinmo, 2000).

Another issue related to the above is the lack of options for locating and choosing reading and information materials. This problem was imaginatively described by Wallis who opined that

Users of a print library have options opened to them in locating reading materials. They can seek the assistance of staff or use the library catalogue or just browse the shelves. By contrast, visually handicapped persons experience a great deal of intervention by staff, relatives and friends in the process of book selection. This may not only inhibit the borrower's choice, but introduces other factors such as a desire not to be a burden on the helper. Consequently the borrower may be less discriminating in book choices. In addition decisions reached by the helper in the choice of books sometimes results in inadvertent "censoring" of the choices offered. (1996, p. 12)

Wallis is referring to blind and visually impaired persons in Australia. In Nigeria this problem has a different connotation altogether. While the struggle to produce enough educational and/or recommended texts in all subjects is still ongoing, the provision of recreational reading materials is negligible. Therefore, it is not a question of options or intervention from helpers. Visually impaired persons desire to read a variety of

materials like fiction, poetry, and everything else, but these options are not available to them. It is hard enough to produce the required texts for educational purposes; there are hardly any funds left for the production of a variety of materials for recreational reading.

### OBJECTIVES OF THE RESEARCH

The major objective of this research was to construct an electronic database of alternative materials in Nigeria. Information to be fed into the database included the locations of the institutions where alternative materials are held, the bibliographic descriptions of the materials, and the services rendered to blind and visually impaired persons. Therefore, the specific objectives of this research were the following:

- To design a template with catalog information for data entry of alternative materials and thus enumerate the collections by author, title, subject, format, etc.
- To analyze the database by subject in order to determine the strengths and weaknesses of the alternative materials collection
- To determine the names and locations of libraries, institutions, and NGOs serving blind and visually impaired persons in Nigeria
- To give a profile of the visually impaired user of these services

### METHODOLOGY

A template was designed to collect documentary data on the alternative format materials in the institutions visited around the country. It contained the following fields:

Author: The individual or corporate body responsible for the intellectual content of the material

Title: The title of the material was copied from the Braille or large print material; for talking books, titles were taken from the labels of the cassette or the catalog of the hosting institution

Subject: This was determined from the call number and/or title of the material

User level: Primary, secondary, or tertiary as indicated by the host institution or investigator's judgement

Publisher: Publisher information was either given on the material or provided by the hosting institution where possible

Publication Year: Supplied if found on the publication

Edition: Supplied if found on the publication; for some volumes determined by counting the number of volumes per title

Number of volumes: Braille books usually run into several volumes

Languages: Refers to the language of the material

Format: The alternative format in Braille, large print or tapes

Status: This indicates the Braille grade of the material, whether 1, 1.5, or 2

Duration: This indicates length of time for tapes as shown on the cassette

Terms of availability: This indicates whether or not the host institution will allow the material to be borrowed or if it is strictly for reference or for sale

Price: Some materials are for purchase

Organization's Name: This refers to the name of the host institution and all other information necessary for communicating with the institution, such as postal address, Web site address, and e-mail address

A questionnaire was used to collect data on institutions serving blind and visually impaired students in the country. It requested information on the equipment available and services rendered to their clientele. A second questionnaire was used to collect detailed information on the blind and visually impaired students in the secondary and tertiary institutions visited. Data was collected on their educational background; Braille reading and writing proficiency; Braille grade preferred; library and Braille production center use; possession of Braille or recording equipment; possession of books and tapes; computer literacy and Internet accessibility; and their reading and information needs.

#### DATA ANALYSIS

Three sets of data were collected and separately analyzed. Microsoft Access was used to analyze the template and the institutions questionnaire. Microsoft Excel was used to analyze the questionnaire on the blind and visually impaired persons. Using Microsoft Access XP file format, a table for entry input into the database was created, with the fields earlier enumerated on the template. Data was systematically input into the database and editing was done simultaneously. An American Disabilities Act (ADA) compliant Web site was designed for the database. The ADA sets standards for design of interfaces, including Web interfaces, so that people with disabilities, including visually impaired persons, can interact with them. The site also has a "text only" version so that visually impaired persons can browse using nongraphical browsers. The Web address of the database is *www.alvi-laris.org*.

#### RESEARCH FINDINGS

The findings are presented in three parts: information about the holdings, the institutions, and the students.

##### *The Holdings*

From the template questionnaire, a total of 1,860 entries were made of alternative format materials, which were either produced within the country or received from domestic or foreign donors. There were more titles from Lagos than from any other state, and several states (Bauchi, Benue, Cross River, Enugu, Kano, Ogun, Osun, and Rivers) held less than twenty Braille titles each. There are collections of tapes in three institutions: at

St Joseph’s Calabar; at the Vocational Training Centre in Oshodi, Lagos; and at the Federal College of Education (Special) Oyo. ANWAB also has a tape collection, but the size was not indicated. Only the Oyo State Library Board has titles in large print. Some states have visually impaired students but no materials. These were Adamawa, Akwa Ibom, Delta, Ebonyi, Jigawa, Katsina, Kebbi, Nassarawa, and Taraba. Some of the institutions in these states had only one or two visually impaired students. Therefore, they might be reluctant to spend any money or effort to get Braille books for just a handful of students. Some states had neither a school for blind and visually impaired persons nor alternative materials. These are Bayelsa, Delta, Gombe, Yobe, and Zamfara. Every state is supposed to establish a state school for children with disabilities.

The nature of the holdings is illustrated in Table 2. The subject data is not complete and only covers 1,449 of the 1,860 items held, but it does illustrate the paucity of holdings in major areas of study. Not surprisingly, there are more books on religion than any other category of nonfiction.

*Institutions and Services*

Seventy-one institutions were visited by research assistants (see Table 3).

Table 2. Distribution of Alternative Materials by Subject

Subject	Number of Materials
Fiction	507
Religion	246
Literature	173
Science Fiction	77
English Language	63
Special Education	41
Economics	40
Biography	39
History	34
Social Studies	29
Mathematics	25
Life and Living	24
Integrated Science	23
Agricultural Science	19
Biology	19
Music	18
Government	17
Health Education	15
Detective Stories	14
Motherhood	13
Business Studies	11
Career Guides	10
Science	10
Computer Science	6
Cookbooks	6

Table 3. Distribution of Institutions by Category

Type of Institution	Number	%
Secondary Schools	33	46.8
Special Education Centers/ Special Schools	10	14.1
State Library Boards	9	12.6
Tertiary Institutions (universities, polytechnics, and colleges of education)	7	9.9
Ministries of Education/Vocational Training Centers	6	8.5
NGOs	6	8.5
Total	71	100

Table 3 shows that more secondary schools were visited than any other category because blind and visually impaired students are integrated with the sighted at this level, so they are more widespread. In fact, there may be fewer than ten in any one school. These students are also integrated with their sighted peers at the tertiary level, but their number is greatly reduced at this level. The reason for this may not be unconnected with the dearth of information materials for them. These institutions provided information on the equipment available to them and the services provided for blind and visually impaired students.

*Equipment* These institutions have equipment that would be expected in places serving blind and visually impaired persons. Perkins Braille machines were held by 43 institutions. The functionality of the machines was not determined, but many respondents complained about the state of disrepair of their Perkins Braille machines—for example, only one out of ten machines functioned properly. The typewriter (27), slate and stylus (17), tape recorder (11), abacus (7), Thermoform (7), computer systems (7), Braille embosser (6), writing frames (4), hand frame (3), recording studio (3), radio set (2), and Smart view CCTV (2) were found in various institutions. It was surprising that many respondents did not possess the slate and stylus. Only 5 institutions are Braille machines by computer, which means that Braille is normally produced manually.

*Services Provided* These institutions offer a range of services including the following:

- **Braille Services:** This involves Braille educational material such as handouts, examination papers, and even text books manually or with the Braille embosser. The method of Braille differs as some institutions use Perkins Braille machines while others use embossing machines. This naturally affects their productivity.
- **Computer Services:** This has two connotations. It may mean the transcription of a textbook with the Braille machine or computer training

- at cost for some individuals. It may also mean the use of assistive technology as two institutions have screen readers.
- **Counselling Services:** Counselling is provided for educational advancement and vocational training in particular. However, many other topics necessary for a comfortable life and living for the visually impaired are usually discussed.
  - **Library Services:** The library services may be variously defined because the institutions offer these services in various ways. There are some institutions that have a place designated as “The Library,” which contains alternative format books relevant to the needs of the blind and visually impaired persons. There are other institutions with no place designated as “The Library,” yet they meet the requests of their clientele through customized services. They produce Braille books on request at the price of the print edition.
  - **Rehabilitation Services:** Rehabilitation services are offered to people who became blind in adulthood and may not be able to learn Braille. These services are also provided for adult blind illiterates who want to be gainfully employed. These services are customized according to individual needs to enable the person to adjust psychologically, educationally, and vocationally to a new way of life. They also include mobility training.
  - **Supportive Services:** This service was considered worthy of mention because the particular service was initially set up for hearing impaired undergraduates at the University of Ilorin, Kwara State. The unit helps visually impaired undergraduates to locate appropriate reading materials.

*The Blind and Visually Impaired Persons: A Profile*

There were 452 respondents to the questionnaire on the reading and information needs of blind and visually impaired persons in Nigeria, but only 433 (95.1 percent) of the questionnaires were usable for analysis. There were 277 males (64.4 percent) and 153 females (35.6 percent) respondents. They were from every level of the educational cadre, from primary school to postgraduate level. This indicates that the blind and visually impaired Nigerians are achievers, their disabilities notwithstanding. They are quite articulate in their requests for adequate reading materials, and rather than complain several of them have resorted to Braille their materials themselves or appealing to foreign donors for book requests. The questionnaire returns provided insights into issues relating to Braille reading for the blind and visually impaired Nigerian.

Most of the respondents—180, or 41.8 percent—possessed the primary school leaving certificate (PSLC). They were already in secondary schools. These were followed by respondents who had the secondary school certificate (SSCE) or the West African Examination Certificate (WAEC). There were also respondents who had a Master degree (5, or 1.2 percent) and

a first degree (18, or 4.2 percent). This indicates that blind and visually impaired persons could earn higher degrees if given the chance. Right now Nigeria has blind and visually impaired persons in executive positions in different walks of life. A few examples will suffice. Barrister Danlami Basharu is the director of the Anglo Nigeria Welfare Association for the Blind (ANWAB). Mr. Sam Akinyemi, the president of the National Braille Council of Nigeria (NABRACON), is a technocrat in the Ogun State Ministry of Science and Technology. The University of Ibadan recently awarded a first class honors degree in law to a blind student, Femi Fayemi, who graduated at the top of his sighted classmates. However, there is a sharp decline in numbers between secondary- and tertiary-level students. There were 70 (16.3 percent) candidates at the tertiary level compared to 340 (79.3 percent) at the primary and secondary school levels. It would be a point of research interest to investigate the reasons for this, in particular to measure the aspirations of blind and visually impaired persons for higher education compared with the challenges they face in obtaining a conducive environment for their studies.

Figure 1 shows that 374 (86.9 percent) of the respondents could read and 371 (86.3 percent) could write Braille proficiently. Braille reading and writing are essential skills for blind and visually impaired persons. Not surprisingly, 85 percent prefer Braille to reading large print or audiobooks, and 85 percent of respondents preferred to use grade 2 Braille. However, 75 percent had no personal Braille or recording equipment, and only 12 percent owned a slate and stylus. Consequently, it would be expected that respondents would use libraries or Braille production centers; however, only 50 percent have done so. This means that in all probability libraries and Braille production centers are not located within reach of the respondents or they are ignorant of their existence. The highest number of users of libraries (167, or 38.8 percent) and Braille production facilities (73, or 17.1 percent) are in the southwest where such facilities exist. We may therefore say that if the facilities were available, the respondents would use them, as indeed some respondents from the north central zone asserted that they would use libraries if they were available. Many others write to foreign donors for books of their choice. Some tertiary-level students confirmed that they buy print books and then record on tape, but only 20 percent of respondents had personal collections. Their efforts are commendable, but the materials produced are limited to individual use. As long as these self-efforts persist without deliberate intervention from government and other stake holders, the information deficit and paucity of alternative materials for the blind persons will continue.

## OUTCOMES AND CONCLUSIONS

The primary aim of this project was to produce a computer-based catalog via the Internet of alternative format materials for blind and visually

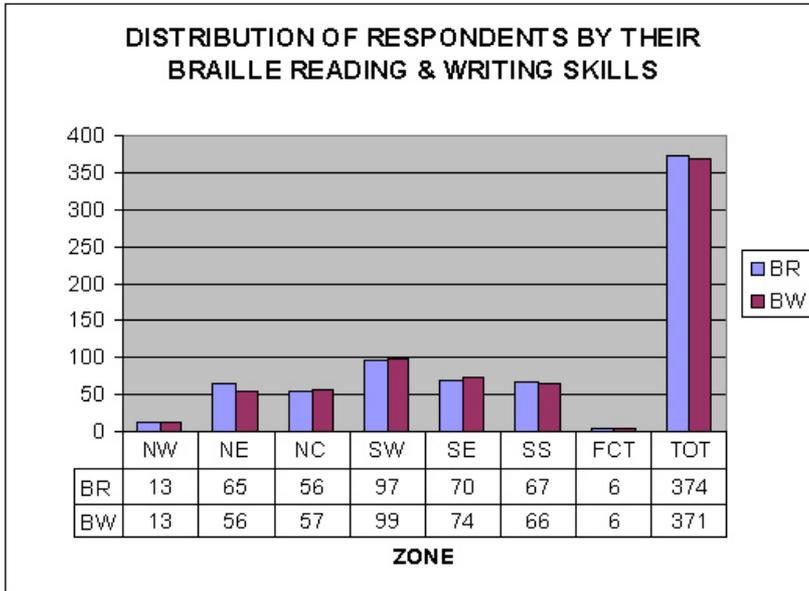


Figure 1.

impaired persons in Nigeria. It is not a full-text database, but it gives cataloging information about each item and the addresses of organizations serving the blind and visually impaired people in this country. An opportunity is created, therefore, whereby these organizations may identify themselves as fellow laborers and decide to cooperate in a practical way to promote access to collections beyond their immediate environment. This database will hopefully be updated on a regular basis, and libraries may want to contribute their records of alternative materials as their stocks increase. This database could become the foundation of a network of Braille-producing organizations and institutions. Correspondence needs to be established among the Braille producers to share catalog information on Braille books in order to avoid duplication of effort and waste of money. This sharing of catalog information is working well in Russia.

In Nigeria several Braille producing centers have agreed in principle and have already worked out modalities for the operation of networking or resource sharing. For example, Nigerwives, ANWAB, Gindiri (the vocational training center), Oshodi, the Department of Special Education, the University of Jos, and the Federal College of Education (Special) Oyo all have identical Braille translation equipment (Obi, 2003). This indicates that they could share master copies and exchange lists of Brailled materials and other formats. However, the Russian example of a computerized

database is a good precedent. To make sharing of catalog information work among Braille producers in Nigeria, several authors have suggested different approaches. Adimorah (2000) called for a national library and information center to serve as a national coordinating body that will not only efficiently produce and distribute Brailled materials but also will serve as a link with international libraries and organizations. Obinyan and Ijatuyi (2003) supported Adimorah's national coordinating body, while Iweha (2003) suggested several networks operating at different levels from the grassroots to the states, regions, and zones. He also suggested networks of materials-producing organizations of educational institutions and so on.

Such considerations are important because the database contains only 1,860 titles in total, of which 1,449 were books in Braille, 231 audiotapes, and 80 in large print. These were found in only 23 of the 36 states in Nigeria. Are the blind and visually impaired persons in the states without materials not receiving reading materials? When the size of the total collection in the whole country is considered, it becomes obvious that there is a book famine as far as alternative materials are concerned. In a different context, but with the same meaning, this corroborates Jim Sanders's (2005) comment that books made for the blind and visually impaired persons are too few: "Despite the wonderful efforts of some libraries and publishers, less than 5% of printed materials are available in accessible formats such as Braille or audio CD. While many libraries offer talking book collections, or even access technology, their efforts pale in comparison to the same service print-reading tax payers receive" (Sanders, 2005). This scarcity of reading materials may be explained by the scarcity of Braille production and audio-recording facilities. Braille producers are only six in number, and they are all located at urban centers. Although they use computerized systems to transcribe, they still are not meeting the demand for books and reading materials. This situation is in accordance with the explanation of the World Blind Union (WBU) on the scarcity of Braille and talking book facilities in developing countries. The WBU opined that the facilities for the production of Braille and talking books in developing countries are scarce and generally restricted to urban areas. Teachers, librarians, and other professional staff rarely receive the necessary training and are often poorly paid. The scarcity of personnel associated with producing Braille materials may also account for the scarcity of reading materials. All the painstaking work of editing and preparing a text for Braille may be too discouraging to many prospective Brailleists.

It is a matter of necessity rather than a luxury for one to acquire the ability to read and write (Basharu, 2002). It is even more desirable for the blind to learn to read and write Braille. This is why Braille literacy is an imperative for the blind—it is the means of communication, leading to in-

teractive activities with the sighted world. Unfortunately, Braille literacy in Nigeria is plagued with several problems. There is a shortage of personnel to teach or produce Braille. In a workshop paper, Abilu (2004) asserted that many teachers lack expertise in mathematical code and science notation, thus making the teaching and learning process problematic for blind and visually impaired students. There is also a lack of facilities to teach Braille. Slates and stylus, the writing frames, and Perkins Braillers are all in heavy demand but in short supply in the country. The burden of Braille literacy has devolved again onto the NGOs, and Nigerwives in particular tackles this by organizing workshops for teachers of primary school blind children, as well as Braille reading competitions to encourage the children to learn to read and write Braille.

Another issue related to Braille literacy in Nigeria is that Nigeria has given the Unified English Braille Code (UEBC) formal recognition and adoption. According to Obi (2003), two immediate gains are expected from this change. New code books will be produced and will be locally available to Braille students, teachers, and users. Materials will be provided for teachers, producers, and users to update themselves, and this will automatically mean an improved level of competence all around. With this adoption of UEBC in Nigeria, it becomes necessary to test and adopt a grade II code for each of the major Nigerian languages (Akinyemi, 2004). There are three major Nigerian languages—Hausa, Igbo, and Yoruba. The proposed grade II Yoruba code has been undergoing testing in homes and institutions for the blind in the southwest and north central zones. The onus is on Braille transcribers to work out Braille codes for each of the 250 languages and dialects spoken in Nigeria.

The database has been constructed and placed on a Web site to enable all stakeholders—producers, users, libraries, NGOs, the government, and the international community—to know the locations of our alternative materials and be able to access them. This should increase the choices of books and tapes available to all concerned and even provide a gateway to disability resources on the Internet. If we are to achieve substantial progress, however, all concerned need to address the following issues:

- A national strategy should be developed, aimed at improving, publicizing, and promoting the reading and information needs of blind and visually impaired persons. Such a strategy should involve all the organizations serving the blind and visually impaired working together to determine areas of collaboration and cooperation to avoid duplication of effort.
- Such a strategy could also involve all these organizations performing certain functions exclusively. For example, rather than producing a book based on individual requests, the libraries for the visually impaired

should periodically select standard textbooks for transcription into alternative formats, while producing centers will busy themselves with transcribing to these formats and distributing to the users through the libraries. Recreational reading materials should be produced in this way. This will ensure that good books are produced and that everyone will have access to books, especially at the tertiary level.

- The government needs to be persuaded to infuse large sums of money into the administration of special education, not only to provide equipment and facilities but also to provide current reading and information materials for all categories of blind and visually impaired persons. In this regard, the library at Johnson Street, Surulere Lagos, should be revived to produce books for distribution to visually impaired persons at all educational levels.
- Individual organizations should be selected as nodal points for production and distribution of certain kinds of materials. For example, the Federal College of Education (Special) Oyo should be mandated to produce and distribute tertiary-level books for the students at that level. The Departments of Special Education in the universities should also be book producers. The state libraries that are already serving the blind and visually impaired persons should expand their services, while those who have no services at all should initiate such services for the blind and visually impaired. The NGOs should continue to produce books for primary- and secondary-level students and ensure that these books are available to all who need them.
- The National Library of Nigeria should be made the coordinating center for all activities related to the production and distribution of reading and information materials to blind and visually impaired persons. Each alternative material produced should be legally deposited at the National Library so that there is a current bibliography of alternative materials.
- The National Library should ensure that every state library has a collection of materials for blind and visually impaired persons. Each state library should also maintain a register of blind and visually impaired persons in the state, with a profile of their reading needs and an update on their educational and employment status.
- Blind and visually impaired persons need to learn to use the computer and be able to exploit the resources on the Internet. The database just created cannot be used unless one is computer literate.
- There must be ongoing investment to sustain this effort. For example, the newly created database needs to be used, updated, and maintained regularly. It should incorporate information on every alternative material received or produced from each institution in the future.

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