

Writing and Reading Skills of the Blind as an Aspect of Language Testing: An Overview

Olusanmi Babarinde (Ph.D)

olusanmi.babarinde@unn.edu.ng

and

Courtney Chiebonam Ani

Department of Linguistics and Nigerian Languages
University of Nigeria, Nsukka

Abstract

This paper examines language testing in the writing and reading skills of the blind. The objective of the study is to examine aspects of teaching teachers need to consider while assessing the blind students. The paper looks at the types of writing system and their limitations during learning. It equally discusses basic strategies teachers need to adopt when teaching the blind students for effective teaching and learning. The paper adopts a descriptive analysis to give an overview account of basic skills of writing and reading of the blind which is largely neglected in linguistic discourse. The paper discovers that test selection, test administration and test interpretation are to be considered while assessing writing and reading skills of the visually impaired. Besides, the teacher needs a large dose of patience to inculcate these basic skills in the blind students given the limitations that these category of students are not freely predisposed to getting and reading textbooks from the library coupled with other environmental challenges that inadequate facilities may impose on them. The study concludes that in order to teach the blind effectively, people around them will have to make some sacrifices to support them.

Keywords: *braille, language testing, reading, the blind, writing, visually impaired*

Introduction

Language assessment or language testing is an aspect of applied linguistics. Its main focus is the assessment of first, second or other language in the school context; assessment of language use in the workplace; and assessment of language in the immigration, citizenship and asylum contexts. The assessment may include listening, speaking, reading, writing and an integration of two or more of these skills or other constructs of language ability. Equal weight may be placed on knowledge (understanding how the language works theoretically) and proficiency (ability to use the language practically) or greater weight may be given to one aspect or the other.

In educational terms, a test can be defined as any procedure for measuring ability, knowledge and performance. A test is a method of measuring a person's ability or knowledge in a given area. In very practical terms, tests yield scores that mirror attributes or characteristics of individuals. A test, according to Talabi (2016), is a method consisting of a set of techniques, procedures and test items that constitute an instrument of some sort. It has the purpose of measuring someone's performance in precise mathematical terms, assigning a grade or expressing evaluative qualifiers such as 'excellent', 'good', 'fair', and 'poor' and so on.

It can be difficult to perform developmental, educational and psychological assessments on students who are blind or visually impaired using the conventional standard tools. This is because the test must be adapted to make it accessible which can sometimes take away the validity of the test. The appropriateness of a test given to a student who is blind or visually impaired is dependent not only on the ability to adapt the test, but on the

characteristics of the tests and if the questions are dependent on a student's ability to reference or call upon visual information. Evans (2014) notes that adapting a written test into a large-print, Braille or audio format or a computer CD-ROM does not in itself make a test accessible.

The test must first be in a format that the student uses. For example, if a student who is blind has not yet learned contracted Braille, a reading test for the student needs to be in uncontracted Braille. A student who has never taken a test using an audio format would be at a disadvantage if the test was provided only in an audio format. If a test is computer generated, as many contemporary tests are, a student needs to have some previous experience with the kind of software the test uses. If they use a screen reader or screen magnification software, care needs to be taken to ensure the software is compatible with the testing programme. In some tests, complex items may not be convertible to an accessible format. In such a case, a similar question needs to be developed that measures the same skill as the original item. If an item is complex and cannot be adapted, it should be omitted, and the scoring of the test will need to be modified.

The assessment of students with disabilities has taken on considerable importance since the passing of the Americans with Disabilities Act (ADA henceforth) of 1990, although most of the requirements for assessing students were previously justified legally based on Section 504 of the Rehabilitation Act of 1973. Generally, the best methods for assessing students with disabilities coincide with legally defensible methods for this activity. As Geisinger, (1994) reports, under ADA, a "disability is defined as follows:

- (a) a physical or mental impairment that substantially limits one or more life activities,
- (b) a record of such an impairment, or
- (c) being regarded as having an impairment despite whether or not the impairment substantially limits major life activities".

ADA requires that assessment of individuals with disabilities be performed with any reasonable accommodations being made. The word, 'reasonable' is ambiguous and differs depending upon the circumstances of the assessment.

According to the National Institute on Deafness and other Communication Disorders as stated in Okoronkwo (2010), language is the expression of human communication through which knowledge, belief and behaviour can be experienced, explained and shared. This sharing is based on systematic conventionally used signs, sounds, gestures or marks that convey understood meanings within a group or community. They are of the view that humans express thoughts, feelings and ideas orally to one another through a series of complex movements that alter and mold the basic tone created by voice into specific decodable sounds.

Imperative Issues to Consider when Assessing Students with Disabilities

The considerations involved in assessing students with disabilities are presented below under three related activities: test selection, test administration and test interpretation. Additional considerations are noted at the conclusion.

Test Selection

When counselors assess either an individual with a disability or a group of individuals including those with disabilities, we must consider test selection. We must ask questions

regarding prospective instruments that address the assessment's suitability for use with students with disabilities. Most importantly, we should consider whether individuals with similar disabilities were included in the normative and validation samples. Whether or not there are specialized administrative procedures and forms, such as large-type test forms for individuals with visual disabilities or untimed administrations for individuals with learning disabilities is also important.

In some cases, where no measures of a given attribute are available with adapted administrations, a counselor might consider how easily he or she can adjust an instrument for use with test takers who have a disability. When published instruments are adapted, according to Ejiogu (2016), the interpretations of their results should be tentative. One may be disposed to ask some pertinent questions like, for instance, should there be planned test administrations or specialized administrative procedures for those with common disabilities? In other words, we need to determine whether the testing instrument has norms available for those with various common disabilities or in specialized cases, for the specific disability with which the counselor is concerned.

If positive answers to the above questions are not found, a counselor should consider whether the use of an unvalidated instrument is justified. When counselors adapt a measure themselves (e.g., reading an assessment to the students when normal administration calls for it), they are essentially using an unvalidated instrument. As such, we must ask whether this instrument is likely to yield useful information over and above that which is already available from non-test sources. The answer to this question is likely to differ based on the nature of the decision for which the assessment is being used.

Test Administration

The most important question for a counselor regarding test administration to a student with a disability is whether the student can be appropriately and meaningfully assessed using the conditions under which the instrument was standardized. We should consider students' backgrounds, skills, abilities and other characteristics if we are unsure. If such an evaluation does not answer the question adequately, one should seek advice from colleagues or the test publisher. Professionals who work frequently with students with disabilities, such as special educators, may be especially helpful, even if they are not experts in assessment. One may ask such individuals (counselor) about the kinds of tasks students with the kinds of disabilities, backgrounds, skills, abilities, and other characteristics are able to perform, then evaluate the test materials against these tasks. It may be especially helpful to talk with professionals who know a particular student. When talking with professionals who do not know the individual, provide an assessment of the degree of severity of the disability.

According to Usman (2015), some assessments offer specialized administrations for individuals with common types of disabilities. These assessments tend to be either those oriented specifically for use with students with disabilities or those in widespread use, such as frequently used college admissions measures. Some accommodations permit continued administration in group settings; others require individual administration. For example, assessments may be available in improved type, large-type, Braille and audio-cassette versions for those with visual disabilities. According to (Geisinger, 1994:124), "Time limits can be enforced, extended, or waived altogether. Test takers may be given extra rest pauses, a reader, an amanuensis (a recorder), a sign language interpreter, a tape recorder to

register answers, convenient test taking locations and assessment times, and other accommodations as needed to meet their particular requirements".

Under rare circumstances, it may be necessary for a counselor to adapt a professionally developed assessment device for administration to a specific student. Such procedures should be performed only when no valid measure exists for the given assessment. Daramola (2012) states that if a counselor makes an adaptation, he or she must be aware that the scoring, norms, and interpretation are compromised and cannot be used validly. To the extent that the adaptation is extremely minor, it may fall within normal variation of test administrations. However, any serious adaptation does jeopardize the value of using a published measure.

Test Interpretation

When interpreting the results of an assessment of a student with a disability who nevertheless took the assessment under standardized conditions, we can employ the normal judgment process, although we also should follow any advice provided in the test manual. It is particularly advisable to check whether any validation studies using populations including students with the disability in question have been performed. Similar caveats apply when employing a standardized adaptation, such as an untimed administration or the use of a Braille version.

Hooper (1946) investigates the relationship between the development of children's reading vocabularies and the difficulties involved in learning different Braille codes. He asserts that majority of the signs common to Standard English Braille are used in the vocabularies of children in the first grade and by the sixth grade, all but five signs have been introduced. Thus, early introduction of Braille signs seems to directly influence the usefulness of the sign to the child's literacy.

Lowenfeld and Abel (1967), represents the compilation of survey data concerning the teaching practices of 289 local school teachers and 78 residential school teachers. According to those surveyed, Braille preceding activities were initiated during kindergarten and followed up with more intensive Braille teaching during the first grade. They found that one-third of schools began reading instructions by teaching the Braille alphabet, while two-third chose to begin instruction by teaching whole words and meaningful sentences.

For Tenopyr et al. (1993) the goal of any interpretation of a modified assessment should be an expected result on the comparable standardized assessment. The research was conducted to know how the person taking an adapted form of a test would perform if he or she takes the test under standardized conditions, assuming that the disabilities did not exist. Phillips (1994) advises that when a counselor has performed an adaptation of an assessment or used a locally derived adaptation, extreme caution should rule, as far as test interpretation is concerned. The modified assessment is simply not the same measure as the original version for which norms and validation results exist. In general, results from such a measure are best interpreted by developing hypothesis as opposed to making decisions.

A Brief History of the Writing System of the Blind

There have been many other tactile reading media for people with blindness in the past 200 years. Originally, most reading instruction was done with books made with raised or

embossed letters created by wetting paper and printing with an ink printing letterpress. People also learned letters and reading by using carved wooden letters arranged into words, and letters made with bent and twisted wire. It was long thought by educators of blind people that having a tactile code different from letters that sighted people read would separate blind people from the mainstream of society and limit the amount of reading material to which they had access. The first recorded instance of writing system apparatus was from 1662, crafted by a British inventor, Sir Samuel Marland. However, the method of his writing was unknown. Much earlier before the recording as noted, in 1784, Valentine Haüy created a method for teaching reading and writing to his students. For reading he created embossed alphabets that could be felt with the fingers and for writing, he invented a simple apparatus which was a wooden frame with a number of cards stretched across its face, which guided the writer's pen across the page. This method produced letters that could be read by a sighted recipient.

Braille, the reading and writing code currently used in the U.S. and other English speaking countries by readers with blindness and visual impairments, was invented by Louis Braille. Braille was a Frenchman who lost his sight from an eye infection caused by an accident with his father's leather working tools in childhood. Louis Braille developed his ideas for a tactile code system adapted from French soldiers who wanted to be able to read notes in the dark. Louis Braille modified this 12-dot system into 6 dots and had written in Braille and taught others by 1832. Braille was introduced in the U.S. about 1860 and was taught at the St. Louis School for the Blind and other schools.

As early as the 1600s, European educators and philosophers called for developing methods of education for people who were blind. However, no formal system existed at that time, and literacy was enjoyed only by those whose families could provide inventive and individualized tutelage. One of the earliest descriptions of such customized writing instruction dates from the 1680s. Mademoiselle Walker, an erudite young woman from Schaffhausen, Switzerland, had been taught letters by use of an alphabet cut into a piece of wood. She became familiar with the formation of each letter by tracing over it with a stylus, and was able to write by reproducing the motions with pencil and paper. A similar approach, with letters carved into wood had been tried both in Spain and in Italy in the 1600s. The students attempted to discern the shapes by feeling with their fingertips. This method was considered unsuccessful and was eventually discarded.

During most of the 1700s, systems for reading and writing continued to be available only to people of good fortune or those with the intelligence and perseverance to create their own methods. In 1762, Mademoiselle de Salignac could read and write letters formed by pinpricks on paper. Entire books were printed for her using this method. The first recorded instance of a writing apparatus is from 1692, crafted by British Inventor Sir Samuel Morland, who became blind at the age of 67. Unfortunately, the nature of the appliance that permitted him to correspond with his friends is unknown.

A young Viennese woman inspired the first formal system of teaching for people who were blind. In the late 1700s, European society was enthralled with Maria Theresa von Paradis, an accomplished pianist and organist who had become blind at the age of three. She had learned the alphabet by studying letters cut out of pasteboard, and read by feeling letters pricked upon cards with pins. Among her appliances was a little press which printed letters in ink. She also used a large cushion upon which she formed letters with pins.

Types of Writing System for the Blind

New York Point

William Bell Wait, working in New York in the middle 1800's, developed a point code for readers who were blind that used characters which were two dots high and one, two, three and four dots wide. Working at New York Institute for the Blind, Wait began teaching this system to students and invented a point writing machine called the Kleidograph which allowed for easy production of text without the use of slate and stylus. New York Point was widely used by schools for the blind in the United States in the late 1800's.

Boston Line Type

Boston Line Type was developed by Samuel Gridley Howe, the founder of the New England School for the Blind (later Perkins School for the Blind) in Massachusetts. Since at the time there was no reading medium for people with blindness, Howe developed an embossed simplified angular roman alphabet without capitals which he called Boston line type. He published the first book in Boston Line Type in 1834, and this type continued to be the primary tactile reading code used in the United States for the next 50 years.

Even though the official reading system at Perkins was Boston Line Type, many of the school's students found it difficult to read, as it was impossible to use as a writing system. The raised dot Braille alphabet was more compact and gave users the freedom to both read and write using simple and inexpensive tools, Perkins' students embraced the Braille system for letter writing and note taking, but Boston Line Type remained the official printing system at Perkins until 1908.

American Modified Braille

Joel Smith, a piano-tuning teacher at Perkins School for the Blind in Massachusetts, developed the American Modified Braille Code in the 1870's. When developing his system, Smith designed characters he believed would be fast to read and an efficient use of paper. This code was used in 19 schools for the blind in the United States, including Perkins. American Modified Braille assigned the fewest dots to the characters that occur most often in the English language.

Writers

Before the development of Braille writing machines, people writing Braille used a slate and stylus. The slate held the Braille paper and provided a template for the dot locations, and the stylus was used to punch holes into the paper. Since the dots are raised, the person had to learn to write in reverse from the back of the paper. Frank Hall, superintendent of the Illinois School for the Blind, developed a personal Braille writing machine in the late 1880's. In the next decades, other inventors developed writers for Braille and New York Point. Since most machines were not mass produced, their reliability and consistency of writing varied widely. In the 1930's, the American Foundation for the Blind commissioned a Braille writer from a typewriter manufacturer. It was heavy and not durable enough for practical use. Later, David Abraham of the industrial arts department of the Perkins School for the Blind worked to develop a Braille writer at the urging of Gabriel Farrell, director of Perkins. He had a model working by the early 1940's but the war years limited

manufacturing. After World War II, Abraham's Braille writer went into production and was on the market in 1951 as the Perkins Brailler.

Moon

William Moon of Great Britain lost much of his sight in childhood from scarlet fever. After finishing school in the mid 1800's, Dr. William Moon experimented with a variety of raised alphabets for teaching, reading and writing to blind students. He eventually settled on Moon type, a raised line code based on print letters. Still used in Britain for people with learning or fine motor difficulties, and those who have lost their sight later in life, Moon type is believed by its supporters to be easier to learn and more tactually simple to discriminate than Braille. Although almost unknown in the U.S., books in Moon are available from the Royal National Institute for the Blind and are available in Canada and Australia as well as Great Britain.

Moon can be generated with computer software today. Duxbury, readily available in the U.S. has an English Moon translator available in their 'translation tables' menu. Files can be embossed in a 'dotty Moon' style with an enabling technologies embosser with a Moon setting. Some Moon fonts can be found on the Internet for use with a computer.

Fishburne

The Fishburne system of tactile writing was developed in 1972 by S. B. Fishburne. Mr. Fishburne became acquainted with some blind adults and found that many of them were not able to read Braille. He developed a tactile alphabet, which is larger than Braille, to be used primarily for labeling items used by people in daily activities. Fishburne is typically used for labeling objects, containers and appliance controls, not for literary purposes.

Tack-tiles

Since standard Braille is always the same size, each character 1/8 inch wide by 1/4 inch high, it can be difficult for people with motor impairments or problems with tactile sensitivity to read. Even Jumbo Braille is very small. To address the issue of literacy for individuals with significant disabilities, Kevin Murphy developed Tack-tiles. Tack-tiles are small Lego-sized blocks with Braille dots on each. They are used primarily in educational settings to teach Braille to very young children and those with additional disabilities. Tack-tiles can be used to create a computer keyboard labeled with Braille using the Intellikeys keyboard. Tack-tiles are available with all Braille symbols, including punctuation marks and contractions. Specials sets are available for math and Braille music. For many students with visual impairments and additional disabilities, Tack-tiles and a computer are the best or only means to literacy.

Tactile Symbols

While not traditionally considered literacy medium, the use of tactile or tangible symbols has become widely used with students with deaf blindness or visual impairments with additional disabilities. Educators seeking to expand the opportunities for such students to communicate and participate in supported literacy experiences in the classroom are using tactile symbols in a variety of learning activities. These symbols are used in communication boards, labels in the classroom, and children's literature books and language experience stories. While there is no standard vocabulary of tactile symbols as there is the widely used

Meyer-Johnson picture symbol system, some recommended standards do exist. The Texas School for the Blind and Visually Impaired maintains an illustrated dictionary of picture symbols on our website. American Printing House for the Blind now has a kit called Tactile Connections with instructions for making and using tactile symbols.

Limitations of Visually Impaired Students

All students have to manage their work load as effectively as they can, but for visually impaired students this can be much more time consuming and requires good organisational skills. The learning processes of students with visual impairment may be affected in their reading abilities: Many blind students prefer material in an electronic format and use a screen reader such as JAWS. Some students may want material reformatted into alternative formats. Extra time is needed for this, and the student must wait for the material to be produced for them. Skim reading may be very difficult or impossible and reading may need to be carefully paced to avoid fatigue or eye strain.

For Nigerian students, these materials might seem almost impossible to acquire. They mostly depend on other students to read for them while they record what is read to them. Their readers are either classmates or fellow students who also have loads of work to do. This tends to cripple them and makes them totally dependent on assistance from others.

Furthermore, finding books in the library may be impossible without assistance and many will be unable to read examination questions and handouts in standard print or read their own handwriting when answering examination questions. There may be delays in writing because of the extra time needed for reading. It may take longer to proof-read written work and to put a bibliography together. Presentation requirements may not be met unless the student has support in doing this. Also, some students require an extra assistance from colleagues who are able to read and write to answer exam questions for them while they supply answers to questions asked. Therefore, teachers of such students are to bear this in mind and support them all the way.

Teaching Strategies for Visually Impaired Students

There are a number of strategies which can be used by teachers which will help enormously, and there is an important role in educating other student members of seminar groups, so that the simple tactics outlined below are used by everyone.

Reading

It is important for core reading to be identified well before the start of the school session so that arrangements can be made for impaired students to access it. Students may have to obtain it from the Royal National Institute of Blind People (RNIB) library or have this accessibly formatted as a recording, Braille or large print. Indicate compulsory texts in your reading list; it is helpful if key chapters can be identified if the whole book is not needed. Where the reading list is lengthy, it helps if this can be streamlined. The library service may be able to obtain electronic versions of the text either as e-books or by liaising with the publisher. Preparation in Braille, large print or audiotape takes time, so planning well-ahead is essential if the student is to have texts available at the commencement of the semester. Specifying the order of reading within a text is helpful as it can take many weeks to have a book reproduced into audio or Braille. In Nigeria

where it is difficult to assess RNIB library and Braille, teachers and lecturers are to list needed materials for the students during holidays so as to involve and engage friends and families to assist them before the resumption of a new academic term or session. This will lessen their stress and make them less dependent.

Lecture Delivery

A number of basic classroom etiquettes are required of the teacher during lecture delivery. Some of these are outlined below.

Speech

The teacher should always face the students when teaching especially while explaining or speaking. While adhering to this, the teacher should speak clearly in a normal voice and ask the students at a regular interval if the pace is right. Since many teachers attend to the students on different subjects or courses, it is ideal for teachers to identify themselves by name each time they enter the classroom in case the student does not recognise their individual voices. Besides, teachers should indicate verbally when they enter or leave the classroom.

Visibility

If the student is partially sighted, it is important that the teacher stands where glare is minimized; the teacher should not, for instance, stand with his back to the window. Whatever is written on the board or shown on overheads, particularly charts and diagrams, should be conveyed orally also.

Position

The visually impaired person should be assisted to sit conveniently. Such position should be near the front, or slightly to one side of the projector or board display. Adebisi (2014) notes that seemingly minor issues such as finding a place in a busy lecture theatre can be a source of great embarrassment for the visually impaired. Other students do not always offer assistance, mainly through lack of confidence on how they should react. If the lecturer can deal with these situations confidently and sensitively, it will be of a great help to the visually impaired student.

Equipment

Using ReCap to record lectures and tutorials can be very helpful for those who need to re-listen to what has been said in order to make accurate notes and to discuss the content with others at a later date.

Presentation

Lecture delivery could as well be in form of presentation. Though the written information should be expressed verbally especially when viewing overheads or writing on the board, pace and contribution should also be considered to allow the visually impaired participate and benefit maximally.

Pace

To ensure active participation and equal attention given to each student, extra time should be given to the visually impaired students to read through slides, assimilate information and respond before going on to the next stage. Providing reading material and slides in advance could help to prevent exclusion and reduce delay that may slow down the covering of the syllabus.

Contributions

It is expedient to allow only one person speak at a time while teaching a visually impaired person in a group so that he/she can follow very easily the thread of the conversation. Students who may want to ask questions and make contributions in the classroom should identify themselves verbally as the visually impaired student may not recognise the voice.

Use of Visual Aids

Some other teaching strategies that are crucial to the effective teaching of the visually impaired are related to the appropriate use of visual aids.

Vital Information

Teachers should ensure that students receive important information or organisational changes such as assignment details and changes in class times since it is difficult to find lecture rooms if there is a sudden change. More importantly, the visually impaired students may not be aware of messages left on notice boards, written on whiteboards or changes in lecture venues pinned to lecture theatre doors. So, provision should be made for oral announcements of such notices. The visually impaired should be asked if assistance is required at any given time. The teacher should not presume that help is needed or that it will be readily requested.

New Vocabulary

Teachers should always think about how to communicate information to students who cannot see what they are doing, for instance, new terms which may come up during lecture should be said and explained orally even if they are written on the board.

Boards and Flipcharts

Flipcharts are often used in calculations. In such situations, according to Evans (2014), the teacher should endeavour to talk through every step of the calculations as it is made and procedures as they are carried out. As earlier stressed, teachers should always read out what is written while using a whiteboard. Printed information should be read and any charts or graphs, diagrams, illustrations, acronyms or videos that are used be described and fully explained.

Videos and Tapes

Students should be informed ahead of time if there is any plan to use a film, videos, slides or overheads, during lecture delivery and alternative ways of presenting the necessary information discussed. Besides, the visually impaired should be notified to allow him/her the option to request to see it beforehand. This will enable him/her to sit very close to the screen or have someone explain the film or video. It would be helpful to 'pause' on

important points when the student is viewing the resource in class with others. If videos are to be used on a regular basis, the student may need an assistant to view the video with them at an alternative time.

Seminar

Students who have visual difficulties that affect their ability to access text may be excluded when there is some reading to do in the tutorial or be paired in a group where he/she can make contributions orally. They may also experience difficulties with face to face communication since they are unable to read facial expressions or body language. It can take time for students to get used to the voices of other students in their seminar and it may be helpful for speakers to say their name prior to speaking. It is helpful to provide any textual material, in an accessible format, in advance of the tutorial, even if this is not the tutor's usual practice. Teachers should be aware that students will need assistance in using references and the library. As such, teachers are expected to be flexible with assignment deadlines and allow extra reading time. Smith (2015) observes that concerns are sometimes expressed about how other students might react to visual impairment. Usually over time this is not a problem. If difficulties occur, it might be useful to discuss with the student how they would like situations to be handled.

Chairing

Since seminar may involve group discussion, the visually impaired student should also be allowed to take his or her share in chairing the discussion. This will further motivate and encourage him/her to be identified with the class. When someone else is chairing however, the teacher should make sure that this person controls the discussion. Speakers should introduce themselves by name in group discussions. Verbal expression of feelings is recommended as the student may not be able to see the gestures. Strategies should be used to verbalize some of the visual cues by being more explicit in the choice of language. A simple example would be replacing comments like 'over there' with 'directly behind you', or ensuring that when referring to written material i.e. 'we've got to make sure we follow the instructions in paragraph two' such instructions are also read aloud. We should not single out students with visual impairments or discuss their requirements in front of a group.

Practical, Lab and Studio Work

A variety of different situations can arise in practical sessions, although there are some courses that might not be easy for blind students to study in Nigeria. Practical courses are mostly rare in this case and blind students are advised not to venture into them so they will not get frustrated. However, for schools that have access to such laboratory equipments, teachers are to observe the following procedures:

- Provide an individual orientation to laboratory equipment or computers in order to minimize the anxiety likely in an unfamiliar environment.
- Consider health and safety issues such as clear walkways and mobility around the laboratory.
- Some equipment or activities may need to be adapted or modified to allow students with visual impairments to participate in practical classes. Examples include: auditory displays of visual information (such as talking thermometers), tactile displays of visual information (such as beakers with raised markings), clamps and other devices for holding items of equipment, and hand held, illuminated

- magnifiers. Microscopes can be an issue and electronic versions which can be linked to a computer screen are very helpful.
- Students with visual difficulties working in laboratories can also experience problems with textual materials as well as equipment. In these circumstances, alternative formats, verbalising text or interfacing laboratory equipment with computer with large print or speech output can all be useful adjustments.
 - Consider supplementing laboratory practicals, experiments or field trips, for example, by audio taping commentaries.

Examinations and Assessment

Students who are blind or visually impaired usually require alternative examination arrangements, these arrangements could be getting another student with good eye sight to read and write for the impaired student while the students supply answers to the questions asked or the student could use typewriter to type answers. The usual assessment format may need to be modified to achieve the assessment objectives. Clarity about the latter will be very helpful in determining acceptable modifications, which will be different for different types of assessment, or for different parts of the assessment, e.g. a student may be considerably disadvantaged by part of an exam paper with a heavy concentration of text, such as multiple choice questions, but have no additional difficulty in reading and understanding brief essay titles.

Conclusion

Several special issues related to the assessment of students with disabilities deserve very much attention. First, some information on the extent and severity of a student's disability should be acquired before an assessment either is selected or administered. Such information may help guide the counselor/teachers in making these decisions. Teachers in schools (not special schools) are expected to at least have a one to one relationship with these (blind) students. This will help teachers outline and schedule a different method of teaching such students in the midst of normal other students

It also may be appropriate to choose and administer measures that assess compensatory skills used by persons with disabilities. It makes little sense, for example, to administer an assessment of graph-reading ability to a student with a severe visual disability. It would be more useful to determine how such students consider graphical information (e.g., via textual analysis with material written in Braille) and provide a direct assessment thereof.

Those purchasing assessment instruments should carefully evaluate all measures to determine the degree to which they have been used with and adapted for students with disabilities. If one is disappointed with the robustness of a measure when it is used with students with disabilities, let the publisher know. With enough input, they may become more interested in making needed changes. Similarly, when one discovers measures, administrative modifications or interpretive strategies that are well-suited for use with students with disabilities, the results should be shared. Such findings are too important to keep secret.

However, in Nigeria, special schools for the blind are limited and even not fully equipped. They are often expensive and blind student who are from poor homes have no choice but to go to general/normal schools. They live a dependent life all the way. They

need support and encouragement from teachers, family members, colleagues and friends to reach their dreams even when it seems impossible.

In a nutshell, government, teachers and families of the visually impaired students make efforts to make life worth living for the visually impaired students. Schools for the visually impaired should be subsidized to encourage the visually impaired persons. This will further reduce the scourge of alms begging on the streets. In order to give room for objective evaluation of knowledge, enabling environment in terms of adequate facilities should be provided for the visually impaired students during examination to enable them compete adequately with their peers in examinations.

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