

A SURVEY OF THE USE OF HEARING AID AND ASSISTIVE DEVICES AMONG THE HEARING IMPAIRED IN SELECTED SCHOOLS

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ABSTRACT

The study examined the use of Hearing Aids and Assistive devices among the Hearing Impaired pupils in selected schools. 320 pupils were purposefully selected from 16 schools stratified into three geographical zones of the Federation. The classes used were classes four and five, while 40 volunteered teachers and parents were also selected to respond to a carefully worded ten items questionnaire through a mail system and follow up exercises both on telephone and personal visits. The findings revealed that few pupils used hearing aids and other assistive devices in the school system, due to their ignorance on its importance as well as lack of adequate monitoring procedure on behalf of other pupils, teachers and parents alike. There are inadequate provisions of these devices in schools due to parent's poverty and lack of technical know-how. Most pupils used body-worn aids at the expense of the newly sophisticated technological usable ones. The study concluded that the effectiveness of hearing aids and other assistive devices for the pupils in the school system however depend on adequate monitoring techniques as well as adequate diagnosis by the audiologists

INTRODUCTION

The hearing impaired are made up of the totally deaf and the hard of hearing which implies that they cannot functionally use their hearing with or without amplification devices to benefit from daily communication system. Hence, they need a hearing aid and other assistive devices, to compensate for their hearing loss as well as to learn adequately in the classroom conversations and interactions. The majority of hearing impaired students have sufficient residual hearing so that they can benefit from wearing hearing aids and other assistive devices (Ling 1976, Patterson

1982). The improvement in hearing aid technology over the past 30 years has contributed to the acquisition of spoken language well beyond the levels that are traditionally expected for hearing impaired individuals (Quigley, Power and Steinkamp, 1977).

In essence more sophisticated hearing aids, superior ear molds, the use of mold and tubing adaptations, hearing aid filters and upcoming digital aids, have changed many expectations of the hearing impaired students in our classrooms. However, research has documented that wearing hearing aid is not a sufficient condition to guarantee that student will optimize their auditory capacity (Ross 1996). Beyond putting students with the most appropriate hearing aids, it is essential to equip the individual with enough audiological management and monitoring through daily auditory training activities. Learning to listen therefore required that the professionals and parents must provide and create appropriate communication strategies in the environment of the hearing impaired persons.

Hearing impairment is the inability of the individual to hear, since hearing is the ability to receive and understand sounds using the ear. Davis and Silverman (1985) had earlier seen the hearing impairment as a general term indicating a hearing disability that may range in severity from mild to profound, and that it include the set of deaf and hard of hearing and this definition was upheld by the American Ad Hoc committee of conference of Educational Administrators that are serving the deaf. Lassman, Levine and Greenfield (1989) identified three major types of hearing impairment via a hearing test to include conductive, sensorineural and mixed or combined. Conductive hearing problems are due to the disorder of the external or middle ear. Sensorineural hearing problems are secondary to the disturbance of the

Cochlea, eight nerve or central auditory channels, whereas perceptive deafness suggests a psychological dynamic. Mixed or combined hearing loss involves disturbances of both conductive and sensorineural mechanisms. Ademokoya (1993), Mba (1996), identified five basic types of hearing loss. They are conductive hearing loss, sensorineural hearing loss, mixed hearing loss, central auditory hearing loss and psychogenic or perspective hearing loss. Each of them relate to the part of the ear organ that is affected by the loss.

Campbell (1998) classification using ANSI International standard organisation measurement are that:

- 10 to 26db – Within normal limit
- 27 to 40db - Mild loss

- 41 to 55db - Moderate loss
- 56 to 70db - Moderately severe loss
- 71 to 90db - Severe loss
- 91 and above - Profound loss moji

According to Davis and Silverman (1985) for educational purposes, the classification should consist of those with residual hearing and the mixed hearing loss. The residual hearing group comprise two components. They are conductive loss and sensorineural hearing loss. They can both benefit from hearing aids usage and other assistive devices. However, their problem differs as it affect hearing ability and speech understanding hence Miller, Graher, Yorkston and Reces (1993) have the following Audiometric test interpretation for amplification purposes (hearing aid use)

Purtone Average (PTA)	Classification	Effected on speech understanding
O – 25dB HL (Hearing loss)	Normal	No significant difficulty
25 – 40dB HL	Mild	Difficulty with soft speech
40 – 55dB HL	Moderately	Difficulty with normal speech
56 – 70dB HL	Moderately severe	Difficulty with loud speech
71 – 90dB HL	Severe	Can understand only shouted or amphfied speech only

However Yesseldyke and Algozzine (1990), noted that a hearing impairment, whether permanent or fluctuating adversely affects a child’s educational performance and may not be included under the definition of deaf which is called hard-of-hearing.

Onaolapo (1995) asserted that the person who is unable to use his ear to understand speech is hearing impaired and that it is closely associated with speech impairment, while irrespective of the degree of the hearing loss it generally affects the individual behaviour. Therefore, it requires amplification system and management by experts, teachers and parents, since it interferes with normal environmental contact. It affects the overall communication ability of the individual. However, the school age children hearing disabilities interferes with their educational development, but the degree of hearing loss is directly related to the severity of the communication problems. Danaher, Osberger and Packett (1973) postulated that if a deaf child has a

normal central nervous system, they hypothesized that he can be trained to compensate for the hearing loss by using the portion of the acoustic energy that is transmitted through the residuum of hearing to the brain.

Essentially too, communication skills are means of imparting ideas, knowledge, thoughts, teaching and opinion of others, hence the hearing impaired should not miss all these. Nolan and Tucker (1981) concluded that people with mild hearing loss (a lot of residual hearing) can have their hearing threshold raised if given proper amplification (hearing aids).

Usefulness of Hearing Aids and Assitive Devices

Meyen (1990) WHO (1982) Pickett (1980) studies have shown that the existing services for the disabled are quite inadequate, based on the fact that two percent of these groups are catered for. More so, O’Toole (1991) reported that in a Nigerian village, only 25 percent of the population of children that are

handicapped are without adequate services, hence the need to provide assistive devices and hearing aids for our hearing impaired learners in the school system as early as possible.

The importance of amplification devices cannot but be emphasized for the hearing impaired individuals in schools, since they have hearing problems which hinders their communication abilities and academic achievement. Vandeheden and vandeheden (1992) reinforced the needs to amplify sounds in our regular schools for the handicapped and hearing impaired lots; while Ademokoya (2003) further emphasized the need to utilized amplification devices for the hearing impaired, since it boost their comprehension of spoken speech.

Hearing aids are the most common devices needed by the deaf and hard of hearing lots. Hearing aids play a major role in the advancement of increased independence and functioning for individual with hearing impairments. The benefits of assistive technology are well documented in the literature by Johnson et'al (1997), Justesin and Memove, (1994), Phillips and Zhao (1993) and Reed (1997). However it is the individual who decides to use or abandon a device or another.

Similarly researchers have documented the characteristics associated with increased used of assistive technology including hearing aids. These characteristics includes effectiveness, operability, durability (yaeda and Rubin, 1992), reliability – (Brienza, Angelo and Henry, 1995) efficiency, simplicity, comfort (Brooks and Health, 1988), acsthetics (Phillips, 1993), performance (Scherer and Galvin, 1996) and safety (Mallik and Elder, 1993). However hearing aids are the most common devices needed by the deaf and hard of hearing students/infant. People who are hearing impaired often pay-out-of pocket for aids and equipment that are needed for their adequate education, socialization and total integration overseas, but the reverse is the case in Nigerian schools. Many of them have financial difficulties to meet the need of using such aids which assist them to listen.

This necessitates that people with hearing loss, their families and those professionals who work with them, should consult organizations and agencies to secure appropriate aids for these students, through financial assistance, since a host of organisation are willing to assist if they are consulted.

Types of Hearing Aids and Assistive Pevices and their Usefulness.

Assistive devices (AD) for persons with hearing problems can help by either increasing sounds for a person who is hard of hearing or using another means to communicate sounds to person who is deaf. Other means include printed words, vibrations or flashing lights (signaling) hence we have many telephone devices such as Handset amplifiers for telephones, which allows a person with a hearing loss to increase the volume of the sound coming over the telephone handset. Teletype writers (TTY), telecommunication devices for the deaf (TDD) refer to a device that has a typewriter keyboard and a visual display. They are all called text telephones or information technology (IT) which are genrally used to type telephone conversations and used by person who does not have enough functional hearing, to understand speech. Even with amplification users of these system communicate through typed text.

Amplification Devices:- There are a wide variety of devices to assist persons to hear. Some are small devices, such as In-the-ear hearing aids and others are larger such as assistive listening systems. Amplification systems for radio or TV can help people who cannot hear regular systems or must turn them up to the maximum sound level to hear them, some systems can connect a headset directly to a radio or TV; some can work through an existing loud speaker systems and transmit sounds to a headset. Other systems are personal systems which use a microphone worn by one individual and an individual receiver worn by the person who is hard of hearing.

Amplification devices can be added to telephones that allow people who are hard of hearing

to benefit from enhanced volume, and it can be provided through the hand set, headset, in-line amplifier, portable amplifier or a control by telephone base. Cellular telephones can also be used with amplification devices. They can also use a relay service especially with Tele Type (TTY), Telecommunication device for the deaf (TDD), Text Telephone (TT). The person with a hearing impairment types her part of the conversation into a TTY and the message is read by a relay operator who also has a TTY. The relay operator reads the message to the other hearing party. As the other party responds orally, the relay operator types what is spoken into the TTY unit which is read by the person who is hearing impaired.

A TTY, Tele Type', or TDD – Telecommunication device for the deaf or TT, Text Telephone, all refers to one pieces of equipment with a small keyboard and visual display. The person using the equipment only types what they would like to say and the text is shown on the display. TTY'S use a coupler or modem to convert electric impulses into acoustic signals, which are then transmitted to a telephone receiver. The signals are sent to the receiver's TTY, and are converted into a text messages. However, whether TTY or TDD, they must have video or film information which can also be used and assessed by those who cannot hear the audio in such ways as:

- a) Captioning.
- b) Sign language interpreter or
- c) Scripting or transcribing.

Although close captioning requires the use of a decoder to view the captioning, while open captioning only display the text automatically during every viewing. No special equipment is needed to view open captioning, except a television sets, video cassettes and video players, however the video that is captioned must be available. If a captioned version of a video tape is not available, a sign language interpreter can translate verbal information from the video for a student who knows sign language.

Scripting transcription can be provided as a last resort. Always ask the video tape publishers, for a

transcript of the tape if you are deaf or if you are their teachers. Students should read the transcripts before the video tape is shown, because she cannot read the script and access visual content at the same time.

Captioning:- Simply implies that video images are worded with written meaning along with it.

Assistive listening devices (ALDS) consist of microphone transmitter, which are position close to the speaker's voice through the air or by cable to receiver worn by the student. It should be provided in every class that housed the hearing impaired since it can provide a clear sound over long distances, it eliminate echoes and reduced the distraction of surrounding noises while it allows the student to easily attend to the instruction.

The type of hearing aid amplification devices ranged from the portable desk type of hearing aid, which can be used by a single hearing impaired who spends his/her time in one place. It may deliver more power with better quality than the wearable aid. It always draw its power from a wall socket as a radio does. It can be placed on a desk or table. It has two over the ear's receivers while others have multiple outlets for two or three children to use at a time. Group hearing aid consists of one or more microphones; an amplifier, and as many as ten pairs of over-the-ear or insert receivers. Frequently, a turntable (tape recorder) is included for playing recorded speech, music or sound effects. Inductance loop around a room, is another type which enable individual weaning aids to pick sound. It allows freedom of movement for the user, since the child is not wired to teacher microphone directly. It produces sound more accurately than most wearable aids. Loop systems are some times used with auditory trainers, where the room is wired in a loop arrangement, the speakers talks with a microphone and it allows the listener to adjust personal hearing aids with telecoil to the 'T' positions, or at times use a special receiver.

Loop systems enhances the signal to noise and provide good quality signal. It can be used for lectures, sound movies and social gatherings of the hearing impaired. It may however limits mobility and the signal

may spill over into adjacent classrooms. Although group hearing aids are normally used in schools for the deaf and hard of hearing, in churches, meeting halls and theatres. Binaural features (hearing aids on both ears) are now being incorporated in these instrument in order to give a clear picture. However the heart of any instrument is the amplifier which assists in boosting the incoming information.

Campbell (1993), emphasized that auditory trainers are personal/group amplification system, which are used frequently in the classroom settings in order to enhance the signal to-noise-ratio (S/N) for persons with hearing loss. It employs hard wire system in which the child is linked to the teacher (teacher microphone wired to the child's receiver). It however limits mobility but improves signal-to-noise ratio. Modern auditory trainers operate via 'FM' transmission system. Most auditory trainer can be set to receive FM only or the microphone input simultaneously or alternately. Auditory trainer are mostly used with profound hearing impaired children but others can benefit from it. Campbell (1998) further emphasized that auditory trainer is good to enhance intelligibility and should be employed on the hearing impaired children.

Other hearing aids are the spectacle type, body worn aids, in-the-ear aids and behind the ear aids. All are used to amplified sound for the hearing impaired and all allows the free movement of the hearing impaired within the classroom and out side the classroom and students benefit much from it especially if it is custom-fit to the child's needs and degree of hearing impairment.

Cochlear implant is another devices since most conventional aid could not provide enough amplification especially for the profound hearing impaired person as well as for some sensorineural categories. This is the latest technology for the hearing impaired and it required medical operation overseas and very costly to implant in the cochlea. According to Pauka (1987) it mimics the functions of the auditory system and transmits sound information to the auditory nerve. In cochlea implants; the acoustic energy is in the form of electrical stimuli which are sent to the brain from the auditory nerve for

interpretation. The child only wear the relay outside the body like body worn aids. Essentially candidates for cochlea implants must have bilateral, profound, sensori-neural hearing loss and children must be at least two years old before wearing it, while adults should have become deaf after they had developed some speech and language. However, less optimal results occurs in pre-lingually deafened adults. Hearing at the age of six years period provide a better cochlea implant for the post ligually deafened adults. There must always be surviving auditory neurons for it to work, while on set of deafness matters for any cochlea implants users.

This study therefore wished to document the use of hearing aids and other assistive devices among the hearing impaired pupils selected from Nigerian deaf schools in order to identify whether they have assess to it as well as recognized its usefulness. The fact remains that hearing loss deber adequate communication and academic learning, the only remedy is to used these amplification devices to effect a meaningful learning and communication strategies for these atypical learners. Much remains to be done in our Nigeria school system to utilize these latest technologies in the world all around us. Although hearing problems can start at any point in the life of man, but what matters is early remediation with amplification devices in other to ensure success in life, based on the fact that a typical hearing problem jeopardizes the individual personality, social development, classroom learning and total integration of the individual concerned into the society

METHODOLOGY

The research was based on a simple descriptive survey using 16 selected schools. The following research questions were postulated for the study.

1. Will there be any difference in the number of pupils that are enrolled in a class and their use of hearing aids?
2. What are the possible causes of pupil failure to use hearing aids in selected schools?
3. What are the awareness levels of the pupils on the usefulness of hearing aids?

4. What efforts do the parents and teachers made to ensure adequate utilization of hearing aids and assistive devices among their pupils and wards alike?

SAMPLE:- Sample for this study consisted of a stratified zonal states of the federation as well as parents and 20 teachers who willingly volunteer to respond to the questionnaire. However equal number of males and females teachers were ensured, while the parents were sparsely different in sex representations. As regards the pupils intact class groups were used consisting of those that like in primary four and five in the selected schools.

INSTRUMENTS

A ten item questionnaire each consisting of 'Yes' and 'No' responses with some open ended portion were sent to each school research assistants, one for pupils, teachers and parents volunteers in each of the stratified schools in the federation. The questionnaire was tagged usefulness of hearing aid and assistive devices (UHAD). Each of the questionnaires were divided into sections A and B. section A contained the biodata information of the respondents such as age, on set of deafness, class and type of hearing loss for pupils; with other 7 items seek to find out the use of hearing aid by pupils, how they got it why they refuse to use any hearing aid, the type they wear, benefits of hearing aids and their problems of using hearing aids. For parents the biodata contained, age, number of wards in the family, number that are deaf or hearing impaired, their religion and occupation, while the section B seeks their opinion on usefulness of hearing aids, whether they provide any for their wards, how they got the aids their children, performances in the school, whether they pay school visits and monitored the use of their words hearing aids at home.

To ensure the validity and reliability of the questionnaire, pilot study was done in a neutral school and test-re-test method was performed on the questionnaires which yielded 0.75 using crumbach formular. Ambiguity was also avoided in the wording of the questionnaire through experts corrections.

PROCEDURE

The schools headmasters were written for permission and approval to carry out a research in their schools as well as to nominate two teachers for written contacts. Those nominated were written to seek their consent and request to assist in the distribution of the mailed questionnaire, as well as to enclose their address and phone number for easy contact. Those who responded to this request were chosen as the research assistants in the selected schools. Mailed questionnaires for parents, teacher and pupils were sent to individual research assistant with a well stamped envelope enclosed for the return, follow up visits were made to nearby schools. Research assistants were written in selected schools to seek their concent to distribute collect and mail back the mailed questionnaires in an enclosed stamped envelope, involving both their pupils, themselves and volunteered parents. Some were returned to time while others were not. Those that were returned were collated and analysed both qualitatively and quantitatively depending on the questionnaire responses. The research assistant were informed of the intention of the researchers and instructed to distribute the questionnaires to primary 4 and 5 pupils as well as volunteered parents, while they themselves as teachers, are to complete the questionnaire meant for the teachers. Regular phone calls were made to ensure adequate responses from the research assist -ants. The questionnaires were returned back after two months periods of sending it to the research assistants.

DATA ANALYSIS

The data collected were collated, the questionnaires were sorted out, the usable ones were collated using frequency count and percentages. The data collated were analysed with both qualitative judgment and quantitative measures of simple percentages after the returns of the completed questionnaires.

Following results were obtained

Comparison of users and non users of Hearing Aids and Assistive devices

ITEM 5

Schools Sample	N	Users	Percentage	Non users	%
Ibadan school for the Deaf, Ijokodo	20	5	1.6	15	4.7
Christian Mission School for Deaf, Ibadan	20	8	2.5	12	3.8
New Adeoyo Hospital School For the Handicapped, Ibadan	20	2	0.6	18	5.6
HLA School, Agodi, Ibadan	20	7	2.2	13	4.1
Uesley School for the Deaf, Lagos	20	8	2.5	12	3.8
Dato M.D, Specialist Hospital School, Lagos	20	15	4.7	5	1.6
School for the Handicapped, Sagamu, Ogun State	20	5	1.6	15	4.7
Akintunde School for the Handicapped, Abeokuta	20	5	1.6	15	4.7
Ondo State School for the Deaf, Akure	20	6	1.9	14	4.4
Osogbo School for the Handicapped, Osogbo	20	4	1.3	16	3
Orlu School for the Handicapped, Orlu, Imo State	20	4	1.3	16	3
Orji River School for the Handicapped, Enugu	20	3	0.9	17	5.3
Durbar Primary School for the Deaf, Oyo	20	4	1.3	16	5.9
Kwara State School for the Handicapped, Ilorin	20	6	1.9	14	4.4
Niger State School for the Handicapped, Minna	20	5	1.6	15	4.1
Bauchi State School for the Handicapped, Bauchi	20	5	1.6	15	4.7
Total	320	89	29.1	231	70.9

The table indicated that out of the 320 pupils that were sampled 89 pupils wear hearing aids and other assistive devices (29.1%) while 231 (70.9%) do not wear any device. The highest number of pupils that wear hearing aids in some schools ranged between the highest of 8 (2.5%), 7 (2.2%), 6 (1.9%), 5 (1.6%) and 15 (4.7%). However majority do not wear any devices with the least being 5 (1.6%) to the highest of 18 (5.6%), 17

(5.3%), 16 (3%), 15 (4.7%), 14 (4.4%), and 12 (3.8%). On the whole the average numbers of those who do not wear hearing aids and other assistive devices supercede those who wear it in the ratio of about 3:1 (3 to 1). This depict the Nigerian school situation as against the American school, where almost every deaf and hard of hearing students/pupils wear one aids or another.

Table 2 :- Types of amplification devices used by the pupils

ITEM 6		N= 320	
S/No	Types of Aids	Number	%
1	Body Worn Aids	180	56.25
2	In-The Ear Type	10	6.25
3	Spectacle Type	35	10.94
4	Auditory Trainer/Group Aids	20	6.25
5	Behind The Ear	12	6.88
6	Cochlea Implant	02	0.63
7	Other Assistive Devices (TTY, IT etc)	41	12.813
Total		320	100.013

Table 2 showed that the commonest hearing aids that are used by the students/pupils is the body-worn hearing aids with 56.25% users (180 pupils). This was followed by other assistive devices like TTY, IT, computer technology which has 12.813% users (41 pupils). This was sequentially followed by the spectacle ear aids with 10.94% (35 user). However In-the-ear aids and Auditory trainer had 10 users each (6.25%) while Behind the Ear Supercede these by having 6.88% user (22 pupils). The least used aid is the cochlea implant with 2 pupils or 0.63% users. This attest to the fact that

cochlea implant is costly and tedious to get, since one has to visit overseas to purchase one, it belongs to the extremely rich while the commonest is the body worn aids, which is less costly and easy to assess by children and youths, and it does not damage on time with good and carefully handling. Whenever behind the ear or In-the-ear falls, it may scatter to pieces which hinders its use to few individuals. The assistive devices that are used include captioning film, interpreters and TTY, hence it has a large percentage usage among the pupils sampled.

Table 3 :- Reasons for inadequate use.

ITEM 7		N=320	
S/No	Reasons for non-use age	Frequency	Percentage
1	Inadequate information on its impact	40	12.5
2	Ignorant	30	9.4
3	Lack of proper awareness of its usefulness	80	25.0
4	Lack of good monitoring	70	21.9
5	Poverty of parents	45	14.1
6	Inability to secure one	35	10.94
7	Costly and expensive to purchase and maintain	20	6.25
Total		320	100.09

Table 3 indicated that majority of the respondents attested to the fact that they lack the proper awareness of its value, since 80 pupils (25.0%) attested to this. Other reasons adduced ranged from lack of good monitoring (21.9%) 70 pupils; poverty of parents (14.1%) 45 pupils; inadequate information on its impact (12.5%) 40 pupils; inability to secure one, 35 pupils (10.94%); ignorant (9.4%) 30 pupils; costly and expensive to maintain and purchase aids had 20 pupils (6.25%). In essence all the reasons adduced are relevant to the pupils.

In the case of the teacher qualitatively they adduced the reasons that parents do not provide it, while they themselves do not know how to assist the pupils to purchase one, even some teachers attested that they refused to monitor its usage among those who used it.

On behalf of the parents they maintained that they do not know the importance and usefulness of hearing aids to their wards while some claimed that they could not afford it qualitatively, no do they know how to manipulate it even if their children used it.

General Discussion

Judging from the findings in table 1, 2 and 3 as well as the teachers and parents responses on the use of hearing aids and other assistive devices, the use of hearing aid are grossly not channeled among the pupils in Nigerian schools since only few of them use it. Parents and teachers are ignorant, both on the maintainance, monitoring and on how to secure appropriate amplification devices for their pupils and wards through voluntary organizations like churches, philanthropist and other organizations overseas. Hearing aids usage required adequate monitoring and repairs as well as checking regularly its trouble shootines or non-functioning, even if the pupils wear it.

The importance of hearing aids and assistive devices have been widely documented in the literatures on its effectiveness by (Ling, 1976; Patterson, 1982; Quigley, power and steinkamp; 1977. The Usability, operationality, comfortability, durability, efficiency,

simplicity of hearing aid have been discussed by (Yeda and Rubin 1992), Brienza, Angelo and Henry (1995), Brooks and Hoyer (1988), aesthetics Philips (1993) performance (Scherer and Galvin, 1993). They are common devices needed by the hearing impaired which teachers and parents should find adequate means of providing for their pupils and wards in the school systems. A host of assistive devices also exist that remove the exclusion of the hearing impaired from the communication world.

Conclusion And Recommendation

Hearing aids and other assistive devices are not panacea to hearing loss, it requires adequate monitoring and training on its uses and getting adequate meanings from its usage. Hence, teachers and parents need constant overhauling of their methods and materials of training the pupils to use it in the school and at home. They should go extra-miles to see to its proper utilization and functioning in the school system. Teachers should contact well-to-do individuals to donate these aids to the school while they can channel other opportunities all over the globe to secure one for the pupils in their care. Parent should endeavour to provide these aids for their wards and monitor its usage at schools and at home. Regular seminars and workshops should be incorporated in the schools for parents learning on how to use and manipulate the aids. Auditory training and language sessions should be incorporated into the school time table, after securing an aid for the pupils; even at home, since meaningful utilization of hearing aids depend on constant bombardment of hearing impaired pupils with speech and language especially when using these aids. This service should also be incorporated at home and school in order to form association of what is heard in the brain, as well as to ensure correct coding of information into their memory and central nervous system. All required adequate practice and correct programming and reinforcement schedules, which teachers and parents must join hands to achieve for their pupils through home school visits and exchange of information and ideas. Close monitoring by both parents and teachers is important for success in order to gain from the use of hearing aids and assistive devices by the hearing impaired lots. Selection of hearing aids

depend on accurate diagnosis, ear mould consideration, orientations, motivations to use it, consideration of residual hearing, client accurate assessment and comfort level assessment, gain characteristics of the aids monaural or binaural selection, discrimination testing, knowing the maximum out-put of the hearing aid, types of the aid that is appropriate and other procedures, which must be put in place by an audiologist before any child is fitted with a hearing aid or assistive devices. All these must be adequately considered and monitored in the Nigerian schools for the hearing impaired.

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