SOCIO-INTERACTIONIST EVALUATION OF CLASSROOM DISCOURSE IN SELECTED DOWN SYNDROME FACILITIES IN LAGOS, NIGERIA

BY

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ABSTRACT

Linguistic performance among learners with Down Syndrome (DS) is an important psycholinguistic subject which has received global attention from the various fields of study in America, Europe and a few African countries. Studies on DS in Nigeria have focused on linguistic performance and speech patterns of learners with DS but few have attempted a socio-interactive evaluation of their performance in classroom discourse. The classroom discourse of learners with DS in public and private facilities in Lagos, Nigeria was investigated from the socio-interactive perspective in order to identify the speech characteristics and roles of socio-interaction variables in the linguistic and cognitive performance of the learners in the selected facilities.

Lev Vygotsky's model of the Social Interaction Theory, which emphasises roles of social interaction and More Knowledgeable Other (MKO) in the Zone of Proximal Development (ZPD), complemented by cognitive relevance of Sperber and Wilson's Relevance Theory, served as framework. An ethnographic approach was used, while ethical approvals were obtained. Twenty classroom discourses were randomly observed, recorded and transcribed across five classrooms in Down Syndrome Foundation of Nigeria, a private facility and Ipakodo Local Government Education Authority School, a public facility. Fifty-three learners and eight teachers participated. Learners were grouped based on cognitive abilities. Data were subjected to cognitive and discourse analyses.

Oral-aural disorders in learners with DS manifested through speech characteristics such as speech unintelligibility, stuttering, cluttering, dumbness and hearing impairment, while cognitive delay resulted in low comprehension. Teaching took place with the consideration of learners' socio-cultural, psycholinguistic and medical backgrounds. The MKOs were primarily teachers who applied skills for the intellectually-challenged and ensured learning through five goals within the ZPD: identification, recitation and topic, information and response. Goals were realised using scaffolds, including authentic materials, role-play and schema activation. Although proper conversation exchange management was used to facilitate teaching, the primary MKOs were inadequately equipped as none of the teachers was trained as a Down syndrome specialist or speech therapist. Besides, the language use of the teachers reflected performance errors and elements of mother tongue interference, which were passed on to the learners, who were expected to be taught with Standard British English in an English-as-Second-Language classroom. The cognitive relevance of ostensive stimuli of the learners were evaluated by teachers who used the peculiarities of stimuli to determine appropriate linguistic tools. These were reinforcement, repetition and occasional use of code-switching and code-mixing of instructions, especially in local languages to enhance the responses of learners. The participants in the private facility had better socio-interactive opportunities than those in the public facility, regardless of having similar congenital speech defects, while both groups lacked standard speech therapy.

Learners with Down syndrome in classrooms in Lagos, Nigeria are largely affected by linguistic and cognitive limitations due to the poor standard within the Zone of Proximal Development and non-specialist primary More Knowledgeable Others. Nevertheless, better socio-interactive opportunities existed in the private facility. Specialised training and appropriate equipment are prerequisites for optimal linguistic and cognitive performance of learners with Down syndrome in the Nigerian context.

Keywords: Learners with Down syndrome, linguistic performance, classroom discourse, More Knowledgeable Other, Zone of Proximal Development

Word count: 498

DEDICATION

Almighty God, the giver and sustainer of life and ambition;

My parents, Rev. and Mrs J.O. Kolawole, who counselled me to follow this path;

'Lanre, Tomisona and Sinmi, my support and joy;

and

All Down syndrome pupils in Nigeria.

CERTIFICATION

I certify that this work was carried out by Oluwafisayo Atanda (Matric. no.: 160327) in the Department of English, University of Ibadan, Ibadan, under my supervision.

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Supervisor

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O. Atanda,
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( ) unclear or unintelligible speech, silence, researcher's comment

** wrong tense or grammar

CHAPTER ONE

INTRODUCTION

1.1. Background to the study

The growth and development of every human being have to do with the physical well-being, as well as the proper development of all organs involved in the overall performance of human beings. But in some people, there are various degrees of developmental challenges which could relate to parts of the body, ranging from the internal to external organs. These include speech and language difficulties, cognitive delay, motor skills delay, physical growth delay, mild to moderate intellectual disability, characteristic facial features, and so on. People living with these conditions are grouped under various names. The most common among them are Williams syndrome, Autistic Spectrum Disease and Down syndrome. The focus of this research is Down syndrome.

The very first documented case of Down syndrome in Nigeria was reportedly in Ibadan, a city located in the South western part of Nigeria. The report was documented by Adeyokunnu (1982) that the occurrence of Down syndrome was 1 in 865 live births. (Okoli, 2007; Oloyede, 2008). Prior to this report, Down syndrome was believed to be rare or non-existent among Africans (Tompkins, 1964). There are certain factors responsible for the inaccurate data and information on Down syndrome in Nigeria. For example, not all deliveries are taken in the hospitals. Children are born at home and other unorthodox centres such as missionary centres and traditional medicine centres. It was also believed in Africa in the past that children with Down syndrome and other congenital deformities were from the devil or had been tampered with by the evil ones. Some people however, still hold on to this belief up till now. This made and still makes some parents of children with Down syndrome keep them at home or at least away from the public.

In most developed countries of the world, many people with Down syndrome were accommodated in special places like a colony and definitely excluded from the society, but that was in the early 20th century. Okoli (2007) also submits that the best option is to handle people with Down syndrome in a special school rather than the regular schools. The positive influence of special departments, schools and centres for learners with Down syndrome cannot be

overemphasised because full concentration is needed by the learners as well as their handlers to attain the best results.

Babajide (2012) attests to the essential reason for learners with Down syndrome to have special teachers for training that will serve as educational teachers while in some more peculiar cases, there will be a need for speech therapists. At some point, the inclusive education being campaigned by the parents could not cater for the needs of many of the children with disabilities, including those with Down syndrome. Although the aim of avoiding discrimination and segregation is being achieved by the inclusive system for learners with Down syndrome, the cognitive needs of these students are not being met as the case is, in Nigeria. Eni-Olorunda (2005) notes that even when there are special schools running separately for people with Down syndrome, the education authorities have not been able to handle special education without lingering struggles, let alone talking about inclusive education that demands more attention to learners with Down syndrome in all aspects.

However, inclusive education, as being practised in Nigeria, has met with a lot of challenges, which have pointed to the fact that special needs are better handled in special schools. It was observed that learners without special needs find it difficult to co-study with most of the learners with such needs. This is because they are sources of distractions with their characteristic manners. Furthermore, they are a source of setbacks to the other learners without the special needs because teachers have to move at the pace of the ones with Down syndrome. This could be frustrating to the teachers and the regular learners.

One of the main challenges of people with Down syndrome is speech retardation due to their physiological peculiarities which include absent or deficient bone growth. In addition, the muscular system is characterised by absent and extra muscles in the facial region and a large muscular tongue (Stoel-Gammon, 2001**).** These differences in structure and in tongue size influence a lot of their segmental and suprasegmental productions such as the production for example, of the lingual consonants.

In addition, weak facial muscles limit lip movement, thus affecting the production of labial consonants and rounded vowels while general hypotonicity affects lip and tongue movements involved in all aspects of speech production. Anyone of these factors is likely to influence motor

movements associated with speech and negatively impact the articulatory and phonetary abilities of children with Down syndrome (Stoel-Gammon, 2001).

All the speech-related issues mentioned above can be tackled appropriately with proper speech therapy which is a problem-specific means of handling and tackling speech challenges. This could be in terms of components of speech and language skills. It could be based on the type, level and extent of the challenge. Parents are the primary handlers of children and have been long confirmed as children's best therapists. But due to the regular attitude that greets Down syndrome in most African families and especially among the non-educated ones, parents often neglect such children and at best put them in schools. The onus thus lies on such schools to provide appropriate therapy system that will be encompassing to accommodate every therapy need of their Down syndrome students.

Consequently, this study examines the roles of socio-interaction variables during classroom discourse of learners with Down syndrome in selected facilities in Lagos, Nigeria. The study on the socio-interaction variables was selected because of the importance of social interaction as an integral factor for linguistic performance for people with Down syndrome.

1.2 Statement of the problem

Various aspects of linguistic challenges of individuals with Down syndrome have been extensively studied in different parts of the world and various fields of study including medicine, social work, special education and linguistics. Stoel-Gammon (2001), Kumin (1994, 2010) and Buckley and Sacks (2001; 2002; 2004) studied language use by different age groups of people with Down syndrome and in different settings. Speech and language skills development is one of the more problematic areas for people with Down syndrome, in fact with significant delay (Stoel-Gammon, 2001; Kumin, 1994; Buckley and Sacks, 2001; Ndung'u, 2010). The delay could however be tackled with early intervention by caregivers and handlers including parents, therapists and teachers in formal schools. Different studies have shown that although there are common speech and language problems, there is no single pattern of speech and language common to all children with Down syndrome (Kumin, 1994).

DSSK (2009) and Ndung'u (2010) considered preliminary and general overview of language use among individuals with Down syndrome in Africa. However, in Nigeria, the three major fields of

study that have explored Down syndrome are medicine, special education and social work. Eni-Olorunda (2005), Okoli (2007), Oloyede (2008), Babajide (2012) and Ajuwon (2012) all established language development challenges in people with Down syndrome in addition to physical and cognitive issues. They all stated that these challenges demand adequate and special provisions in people with Down syndrome. However, a critical study of the above-mentioned works revealed a dearth of study on the classroom discourse by learners with Down syndrome. In addition, not so much attention has been given to their language performance with the consideration of their social backgrounds and learning environment in the Nigerian context.

Therefore, this study explicated two main issues. The first is the social problem. There is a need to study how socio-interaction variables affect classroom discourse among learners with Down syndrome in selected facilities in Lagos, Nigeria. There is a need to study classroom discourse of learners with Down syndrome and the effects of socio-interaction variables in a place like Nigeria where Down syndrome is gradually gaining recognition in formal institutions. In time past in Africa, people with Down syndrome were treated with contempt and faced a lot of discrimination, open hostility and even exclusion from education as reported by DSSK (2009). The case was the same in Nigeria until recently. This was due to the culture and as well as idolatry which was prevalent then and its attendant myth and superstitions on children with congenital defects.

The second problem revolves around the linguistic and cognitive performances of learners with Down syndrome. A study by Ajuwon (2012) on Learners with Down syndrome, in one of the facilities considered for this research, revealed 78.4% level of speech or language difficulties and delay which is relatively high. The difficulties include receptive and expressive language, incoherence and mutism. One of the identified reasons for this, is lack of language professionals to handle the learners with Down syndrome in this all important aspect of their development.

This study therefore looks at the linguistic and cognitive performance of learners with Down syndrome, during classroom discourses in selected facilities where organised programmes such as speech therapy are expected to be put in place for learners with Down syndrome. This is with a closer look at the effect of socio-interaction variables on their performance, during classroom discourses, which is the basic form of communication in such settings.

1.3. Aim and objectives of the study

The aim of this study is to evaluate the socio-interaction variables obtainable in classroom discourse of selected Down syndrome facilities in Lagos, Nigeria. In line with the aim of the study, the specific objectives were to:

i. examine the peculiarities of the participation of learners with Down syndrome during classroom discourse in the selected Down syndrome facilities, in order to
ii. identify the obtainable socio-interaction variables in the selected Down syndrome facilities, in order to
iii. examine how socio-interaction variables affect learning and language performance of learners with Down syndrome in classroom discourse, so as to
iv. identify the challenges these socio-interaction variables posed in the selected facilities.

1.4. Purpose of the study

Research on people with physiological defects is an area that has been globally studied by many specialists including psycholinguists. The aspect of Down syndrome study has also attracted a remarkable attention in the developed countries but same cannot be said of Nigeria. Although, a handful of studies have been done by educationists, social workers and medical practitioners, their works have only concentrated on overview of linguistic problems of people with Down syndrome. The linguistic performance aspect of people with Down syndrome in organised settings has not enjoyed significant attention.

Although various researchers have established that people with Down syndrome have social skills as a strength, their use of language which is a basic means of communication needs to be developed in them at the level of organised educational system. This study therefore considered the classroom discourses of learners with Down syndrome, by investigating the relationship between the effects of socio-interaction variables around them and how these variables affect their participation in classroom use of language and cognitive processing.

Classroom discourse facilitation by the handlers of learners with Down syndrome, alongside their social background, go a long way in determining the linguistic and cognitive output of learners with Down syndrome. This study therefore examined the specific and ripple effects of socio-interaction variables on learners with Down syndrome.

1.5 Scope and delimitation of the study

This study primarily employed the Vygotsky's model of socio-interaction to examine classroom discourse of learners with Down syndrome. Only two Down syndrome facilities were selected in Lagos, Nigeria because of the scarcity of the facilities with this particular group of learners. The data comprised classroom discourses only. The study was carried out between July, 2016 and December, 2017.

In a bid to fulfil the objectives of the study, the researchers' observations during classroom interactions among the learners with Down syndrome and their facilitators were included alongside the data in the analysis. The facilitators mostly used subject topics that had been introduced, at least once before the data collection to the learners. This was done in a bid to get an appreciable level of response from the learners with Down syndrome. This however, did not affect the validity of the data.

1.6 Significance of the study

The study contributes to existing positions of psycholinguists and discourse analysts on classroom discourse. An investigation of the socio-interaction variables affecting learners with Down syndrome will assist handlers, facilitators and teachers in Down syndrome facilities in paying better attention to the effect of socio-interaction variables on the learners. This study will also serve as an eye-opener to psycholinguists in Nigeria to explore research areas such as those of the subjects of this research and many more with physiological disorders that affect speech and language and develop more professional programmes and facilities to accommodate such in the country.

This study is significant for its consideration of cognitive processing of learners with Down syndrome within the confines of the classroom with a special focus on the socio-interaction variables and their output on the learners. The findings of this study can assist Down syndrome facilities to improve on their provisions for speech and language, which is central to all other developmental challenges of learners with Down syndrome, to achieve far better results in their facilities.

1.7 Down syndrome profile

It is important to consider the concept of Down syndrome as a medical condition and the extent to which research has developed in the study of Down syndrome, especially the aspect that relates to language and speech development.

1.7.1 Origin of Down syndrome

The genetic disorder, Down syndrome is named after a doctor, John Langdon Down, in 1862 while he was working in an English asylum for children with mental disabilities. He noticed that many of the children shared certain physical features now associated with Down syndrome and differentiated them from the others (Buck, 1955; Carter, 1985; Leshin, 2003). The term persisted till 1970. These children had features similar to those of mongloids and the term referred to as mongolism as they were thought to resemble people of Mongolia. They were also tagged idiots because they seemed to have the most severe level of mental retardation (Kliewer,1998). Research later discovered further to establish that there are different levels of the condition. These levels were categorised as either moderate level or severe level of mental retardation (Macmillan, 1982; Smith and Luckasson, 1992) and some later described it with mild mental retardation (Pueschel et al.,1987). In 1959, the disorder was identified as a chromosome 21 by Jerome Leguene.

Some works, however, based on different individuals with Down syndrome have revealed that the condition is not 'inevitably accompanied' by mental retardation or deficiency and that they can actually have meaningful and active life (Bucks,1955; Sagoe, 1964; Carter, 1985). These discoveries led to continued reviews that disproved most of the earliest assumptions about Down syndrome patients (Butterfield, 1961; Hopkins,1983; Blatt,1987; Fredricks, 1987; Goode, 1992).

1.7.2 Etiology of Down syndrome

Down syndrome is a disease that results from the presence of an extra genetic material in an individual (NHS choices, 2003; Rowland, Wisenor. and Roberts, 2003; Crosta, 2016). The cells in the human body are made of genes grouped in thread-like structures called chromosome. These are blocks DeoxyriboNucleiAcids (DNA) and contain 'detailed genetic instructions' responsible for human features such as how the body parts develop, the colour of the eyes and the sex of the baby.

There are usually 46 chromosomes which a child inherits from each parent. In people with Down syndrome, some of the cells in their bodies contain an extra copy of chromosomes making the chromosomes 47 which causes the physical and developmental characteristics associated with Down syndrome (NHS choices, 2003). Research however indicates that scientists are yet to determine the cause of the chromosonal abnormalities and how the extra genetic causes Down syndrome (Rowland et al., 2003, Crosta, 2016). However, continuous research on Down syndrome has proved that the people affected by the condition can live a more productive life. This is why specialists in various fields study the stages of development of people affected by Down syndrome

1.7.3 Types of Down syndrome

Three distinct types of Down syndrome have been identified (NHS choices, 2003; Rowland et al 2003). Although the effects are similar, they still have basic differences.

Trisomy 21

Trisomy 21 is the most common type of Down syndrome which affects 94% of people with the condition. Every cell in the body has an extra copy of chromosome 21. Rowland et al. (2003) refer to it as 'non-disjunction' which is the failure of a pair of chromosome to separate either during meiosis or mitosis resulting in a sperm or an egg possessing three number 21 chromosomes instead of the normal two and reported Trisomy 21 to be responsible for 95% of Down syndrome cases.

Translocation

This results when a part of chromosome 21 breaks off and attaches to non-hamologous chromosome 14 resulting in a normal number of chromosomes but with a triplication of a portion of chromosome 21. This is referred to as fourteen, twenty-one translocation : t (14:12) or t (14q 21q) where q is the long arm of the chromosome. There are two other types of translocation that could lead to Down syndrome The first is t (21.21) and the second in non-Robertsorian translocation formed from the merging of two chromosome 21 forming strereoisomer of the normal 21. NHS choices (2003) reports that this type affects only about 4% of down cases.

Mosaic

This is the least common type and occurs when cells divide abnormally and end up creating some cells with the normal 46 chromosomes while the others have 47 chromosomes. This type

affects only one to two percent of Down syndrome patients and notably leads to milder physical characteristics or disabilities.

The established fact from the various literatures is that Down syndrome results from chromosome abnormal multiplication and division, a genetic disorder which effects linger throughout the lifetime of the affected person.

1.7.4 Presentation of Down syndrome

The ripple effect of Down syndrome on the individuality of the affected persons is one that can ever go unnoticed. The reason is that it affects both their physical and physiological states, right from when they are born till death (Kim, 2015 and Crosta (2016)). However, these states are interwoven and will be discussed in this section based on the various parts of the body affected. While some of these effects are health challenges that are more of clinically-related issues, others are developmental delays that usually require various therapists to handle.

Physical presentation of Down syndrome

Most people with Down syndrome have obvious characteristics that could hardly be missed and are often presented in their looks and carriage. Beyond that however, are the physiological characteristics. Kim (2015) and Crosta (2016) highlighted these features such as eyes that have an upward slant, oblique fissures, epicanthic skin folds on the inner corner, slant, white spots on the iris, low muscle tone, small stature and short neck, flat nasal bridge, bulging or protruding tongue, large space between the large and second toe and a single flexion furrow of the fifth finger.

Others include oddly shaped ears, poor muscle tone, small head and ears, and flat facial features. These features are seen in varying degrees in people with Down syndrome as observed during this research work.

1.7.5 Health-related challenges in individuals with Down syndrome

The health profile of people with Down syndrome shows that their state of health is grossly affected by the syndrome. Some of the major effects are discussed in this section.

Cardiac heart disease

Cohen (1999), Rowland et al. (2003) and Kim (2015) explain that various congenital heart diseases are found in 30 or 60% of the children with Down syndrome. The most common of these diseases are ventricular septal defects and complete atrioventicular septal defects. Often time, a corrective surgery is carried out to prevent later serious complications that may want to arise or at least to help the condition.

Cohen (1999) states that they develop early increases in pulmonary vascular resistance. This reduces the left to right intracardia shunt. There is a minimisation of the heart murmur which prevents the symptoms of heart failure and respiratory problems from being detected. It is recommended that an evaluation should be carried out before three (3) months. Records revealed a fifty-seven percent (57%) incidence of initial valve prolapse and about ten percent (10%) risk of aortic regurgitation. The findings of a click or murmur therefore should be followed by an echocardiogram.

Ear, Nose and Throat (ENT) problems

ENT problems are very rampant in people with Down syndrome and often required medical professionals to do a routine check on these parts of the body. According to Rowland et al. (2003), hearing loss is common in Down syndrome patients 'due to sensor neural loss or conductive loss due to middle ear effusion or both'. A percentage of 66 to 89 of children with Down syndrome exhibit 'a hearing loss greater than 15 to 20 decibels in at least one ear due to malfunction of the ear bone' Also, they often have very small canal and this inhibit easy examination by the paediatrician. The auditory problems may develop later than childhood and this can probably lead to a very bad behavioural problem that can be confused easily with a psychiatric case. All of these generally affect learning and therefore need a regular check by a professional (Kumin, 2015).

Cohen (1999) states that mid-facial hypoplasia, that is, underdevelopment is very common in Down syndrome patients and leads to increased difficulty with narrow airways. They have narrow nares (nostrils) that cause noisy breathing in infants. In addition, the narrow openings lead to paranasal sinuses which predispose children to frequent sinusitis or nasophayngitis. This

is easily noticed by purulent nasal discharge. They also have narrow trachea which can result in recurrent group and increased likelihood of tracheomalacial partial collapse of the trachea.

Snoring, unusual sleeping positions such as sitting up or bending forward at the waist with head on the knees, daytime fatigability, reappearance of napping in the older patients or behaviour change are all symptoms of obstructive airway disease (Cohen,1999). In some, hypotonicity and collapse of the airways lead to similar symptoms in the absence of obstruction by lymphoid tissue.

Eye and Vision Problems

Common visual problems which affect a lot of people with Down syndrome include poor vision and congenital cataract (Cohen, 1999; Kim, 2015). These affect students with Down syndrome in viewing the board well in classes and even read any form of text. A lot of them who can afford to wear glasses do so to enhance their vision while corrective surgery is done in extreme cases.

Crosta (2016) also notes that they usually have white spots on the iris which can equally hinder vision. Cohen (1999) states other eye problems such as the absence of a red reflex strabismus and nystagmus; refractive errors, keratoconus in the adolescent Down syndrome patients (which is very rare), stenotic nasolacrimal ducts which may lead to tearing in infancy, blepharitis and conjunctivitis (this occurs very frequently).

Haematological problems

These are more medical severe disorders in Down syndrome children (Rowland et al, 2003). The common ones of these issues are:

Transients leukemia

It is referred to as transcient because it appears and later disappears without treatment within just few months. It has however researched that 30% of 85% of children studied with transcient leukemia came down with acute myclocytic leukemia (AML) later in life.

Leukemia

This is a life threatening disorder that usually appears by age five (5). It occurs 10 to 30 times more often and children with Down syndrome. They also experience defects in the function of their white blood cell (WBC) which result in a decreased response to infection and fighting organisms.

Thromobocytopenia (low platelet count)

Blood platelets of people with Down syndrome can get so low that a platelet transfusion is often required. They also often have macrocytic red cells which are larger than normal and may be as a result of altered folate metabolism in Down syndrome. Cohen (1999) stated that leukemia is more common although rare in children with Down syndrome, the most common being non-lymphocytic. They however respond very well to standard treatments 'going into remission easily'.

In newborn, 10% of myelo-proliferative disorder i.e luekemoid reaction occur, with some cases developing into acute megakaryobalstic leukemia. Sixty-four percent (64%) of children studied have also been observed to have polycythemia.

Alzheimer's disease

This occurs in Down syndrome adults (Rowland et al. (2003); Kim (2015); Crosta (2016)). Plaques and tangles similar to those found in clinical observation of Alzheimer's patients are developed in their brains. Rowland et al. (2003) report a study which revealed 53 out of 171 Down syndrome patients as displaying a pattern of continued decline in function suggestive of Alzheimer's diseases. In some other individuals, however, a reversible disorder responsive to treatment were found.

Endocrinological diseases

Hormone secretion in people with Down syndrome is defective resulting in various manifestation such as shortness in height (Rowland et al., 2003); obesity and hypothyroidism, that is, low thyroid function (Kim, 2015).

There are many other health issues that have been identified as effects of Down syndrome such as epilepsy seizures, chronic constipation sleep apnea, late tooth growth (this causes problems with chewing), respiration infection, urinary tract infections, skin infections, and hip problems such as dislocation, dementia (thought and memory problems). Rowland et al. (2003) state that people with Down syndrome have Axlanto-axial instability which is the increase in mobility of cervical spine at the first and second vertebrae and gave it percentage of occurrence as 14% of Down syndrome patients. In addition,while most of them are asymptomatic, about 10% of them exhibit symptoms including neck pain, change in gait, bowel/ bladder control problems, nerve problems and loss of upper body strength. In all of these health challenges, people with Down

syndrome have been noted to have a lower risk of hardening of arteries, diabetic retinopathy and most kinds of cancer.

Bull et al., (2011) summarise health issues in Down syndrome as hypotonia, sleep apnea (50-79%), congenital heart abnormalities (50%), thyroid diseases (4-18%), digestion issues, celiac diseases (5%), diabetes and seizures (1-13%), leukemia (1%), vision and eye muscle problems. However, NHS choices (2003) opined that with parent education and careful monitoring, we can prevent or reduce complications like hearing loss, (75%), ear infection (50-75%), Gastroesophogeal reflux (heartburn), eczema, tooth decay, frequent respiration and sinus problems, respiratory infections, and mental health or behavioral issues.

Cohen (1999) states that the occurrence of thyroid disease is high among Down syndrome patients across all ages. Thyroid hormones are very necessary for growth and normal cognitive functioning. It is a bit difficult to detect as the signs are subtle. That is why a yearly screening is recommended by monitoring the TSH and T4 levels. Auto-immune conditions are common in Down syndrome patients, thus the evaluation of suspected thyroidism should include thyroid antibodies to look for thyroiditis. The result of a twenty-four (24) hour sampling revealed varying levels between normal and very high levels of T4. It is therefore recommended that the TSH and T4 tests should be repeated every six months.

Another condition highlighted by Cohen (1999) is Immune-mediated hyperthyroidism in all categories of people with Down syndrome, whereby high sensitivity TSH levels will be abnormally low. With this condition, observed weight loss, G1 symptoms and intolerance to heat are seen. Diabetis mellitus which is an autoimmune condition are seen in 1.4 to 10.6%.

Orthopaedic disorders and Atlanto – Axial Instability (AAI)

Cohen (1999) states that ligamentous laxity is grossly the cause of orthopaedic difficulties. While congenital hip dislocation is a scarce occurrence, chronic patellar dislocation leads to gait disturbances. Research has revealed that most Atlanto-axial instability (AAI) is asymptomatic. However, ten percent (10%) have symptoms such as the spinal cord being compressed by the excessive mobility of the two vertebrae forming the atlantoaxial joint and the symptom of the compression include neck pain, unusual posturing of the head and neck (torticollus), change in

gait, loss of upper body strength, abnormal neurological reflexes and change in bowel, bladder functioning.

Dental Issues

Various medical studies support the fact that there are abnormal oro-facial features in individuals with Down syndrome. These cause various dental problems such as delay and unusual order of teeth growth. In some, the primary and even permanent teeth may be missing while where present could be small and mis-shapened. The small oral cavity results in 'severe crowding' of teeth. In addition, fissured tongue and lips result from mouth breathing due to small nasal airways. In some cases, periodontal disease occurs as early as in the teen years.

Gastroesphageal Reflex Disease (GERD)

Baldwin and Rosebush (2015) describe gastroesophageal reflux disease (GERD) as associate with sinus, middle ear and respiratory problems with the major system as heartburn. GERD manifest in children with Down syndrome by refusal of more food, irritability during feedings, hoarseness, wheezing, chronic hiccups, sleep issues, chronic, vomiting, sour breath, food refusal, colic, wet burps, frequent coughing and so on.

Infectious diseases / immunological issues

According to Cohen (1999), severe recurrent respiratory and systemic infections occur in individuals with Down syndrome and greatly affect their immune system. A significant correlation is found between the decreased Intravenous gamma Globulin (IgG) subclass four (4) levels and bacterial infections. This subclass seems to play a role in pulmonary host defence or a deficiency of selenium. These immunity deficits have the greatest documented impact on gingivitis and periodontal disease.

The above sub sections have explained some of the main medical health challenges of people with Down syndrome, occurring at different stages of their lives.

1.8 Developmental delays in Down syndrome

This section explains another major area of setback that is usually experienced at different levels by individuals with Down syndrome as a result of the extra genetic material in their bodies. The areas of development that have been identified are physical skills consisting of gross, oral and fine motor skills; speech and language skills and social skills (DSV, 2009; Kim, 2015). It has been established that Down syndrome affects, but does not determine development and that the

only feature which individuals with Down syndrome have in common is some level of intellectual disability. The different skills and the extent to which they hinder development in individuals with Down syndrome are described in this section according to the categorization of NICHCY (2011).

1.8.1 Physical skills

Physical development according to NICHCY (2011) refers to the general physical growth and body development of parts of the body meant for all categories of physical activities. It can be categorized into functional types: motor (fine and gross) skills and oral skills.

Fine motor skills

These include the use of hands and fingers to be able to carry out daily activities such as drawing, handling equipment like mouse and use of the keyboard, writing and so on. People with Down syndrome are usually delayed compared to their peers without Down syndrome and this lead to delayed progress in their academic activities. Self-help skills can also be viewed from this angle, for example, difficulties in activities like buttoning, zipping, shoe lacing, eating and drinking are found in people with Down syndrome (NICHCY, 2011).

Gross motor skills

These are skills for sports activities, physical education and handling of equipments such as climbing, running, jumping and skipping. They also experience hypotonia, that is less well-developed muscle tone and this in turn affects speech (NICHCY, 2011).

Oral motor skills

The skills in the oral cavity of individuals with Down syndrome in largely responsible for the delay in their oral motor development. According to NICHCY (2011), the structural differences include a small oral cavity with a relatively large tongue and a narrow, high-arched palate. In addition, “missing, poorly differentiated or additional muscles characterise facial structures and differences in nerve”. Kumin (1994) lists the areas affected as muscle tone, muscle strength, range of motion, speed, coordination and dislocation. In addition, infants, toddlers and children with Down syndrome have anatomical (structural) and psychological (functional) differences in the mouth and throat areas that make it more difficult for them to make precise movements.

Other areas of life affected by these differences according to Kumin (1994) range from breast and bottle feeding, drinking from cups, chewing and swallowing food. The open mouth posture

and protruding tongue observed in individuals with Down syndrome are as a result of the anatomical and psychological differences. They are also sensitive to touch in the oral cavity area. They are either hyposensitive or hypersensitive. The physiological differences include low muscle tone, weak oral facial muscles while the anatomical differences include a small and narrow upper jaw, and a high palatal arch. The oral motor skills thus refer to the movement of muscle of the face, for example the lips and jaw and the oral area like tongue and soft palate. These differences account for a part of poor speech intelligibility, through dysarthric factors such as reduced speech, range motion and coordination of the articulators. Symptoms of childhood apraxia speech have also been reported (NICHCY, 2011). The report further stated that boys with Down syndrome exhibit differences in structure lips,tongue, velophangnx and are less-skilled at speech motor functions and coordinated speech movements involving the lips, tongue, velopharynx and larynx.

Baldwin and Rosebush (2015) summarise the effect of Down syndrome on oral motor skills in the figure below:

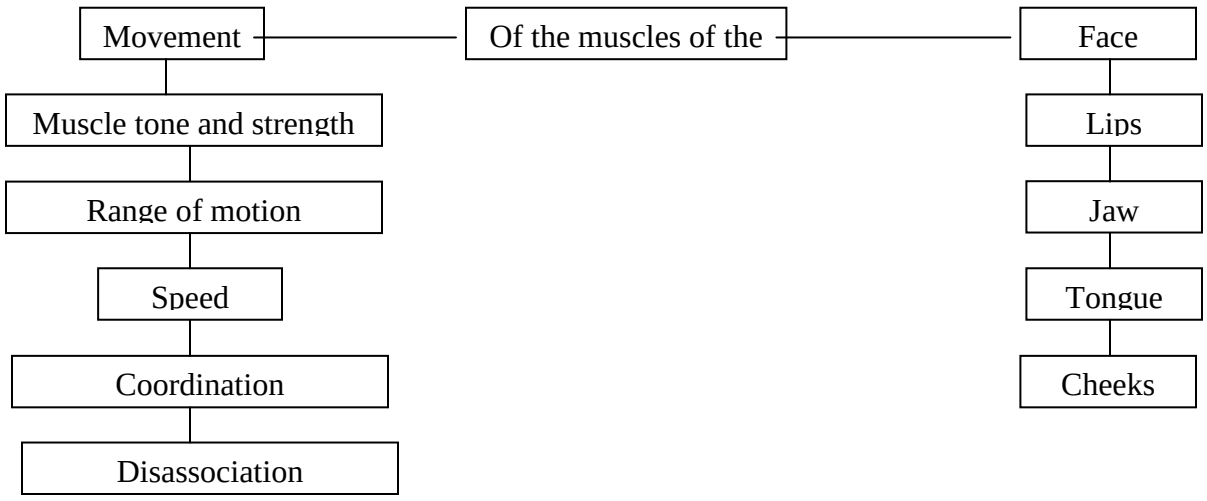

Figure 1.8.1 Oral Motor skills. (Baldwin and Rosebush, 2015:4).

The above oral motor skills schema describes the various functions (movement, coordination and disassociation) and characteristics (muscle tone and strength, range of motion and speed) of oral motor (as seen on the left of the schema). Movement is central to all the parts of the body involved in speech and eating, in order to carry out the expected function and desired speech production. As the parts of the body for speech and feeding move, they do so in a coordinated manner that makes one-part complement the other. Dissociation is the ability of the oral motor parts to move independent of one another. This process allows them to work perfectly without negatively affecting one another.

The parts of the body being used for the oral skills are highlighted on the right side of the schema. These include the face, lips, jaw, tongue and cheeks. The muscles on these parts of the body work together to coordinate activities such as eating and speech production. The speed and motion of the oral-motor parts are coordinated and regulated accordingly.

1.8.2 Cognitive Skills

These refer to the growth and development of skills responsible for perception, memory, imagination, conception, judgment and reasoning. They also involve the mental activities of comprehending information (Kumin, 2008; Baldwin and Rosebush, 2015). Cognition also involves the ability to learn and solve problems. These skills build the intellectual capability of every human being but on people with Down syndrome, when delayed, cause a significant setback. For example, their attention span is limited taking them a longer time to focus on a particular stimulus and to identify the correct or relevant information in a problem. They also have a poor memory ability (to store and retrieve information on demand (EPSDC, 2016).

Their typical short term memory skills are such that they find it difficult to retain long visual and verbal information for immediate use. They also have difficulty in retaining words and sounds and they have a memory that becomes quickly overloaded. They have listening difficulty as well as limited concentration and attention span, such that during listening, the student may switch off, zone out or become disruptive in situations with lots of listening.

For spoken instructions or guidance, it is habitual for Down syndrome patients to only retain a part of what is said mostly either the beginning or the end. According to the report by EPSDC (2016), there are three basic reasons for the poor memory ability. Firstly, due to language delays, comprehending will definitely be difficult. Secondly, people with Down syndrome have limited

repertoire of memory strategies and thirdly, they tend to be 'inactive' learners when it comes to memory. Furthermore, individuals with Down syndrome take longer to learn but show the same sequence of stages of concept attainment. However, their patterns develop at a slower rate. They also find it difficult to apply old knowledge or skills to new tasks or places and find it difficult to recognize similarities between problems and situations. In addition to all of these, they need additional motivation and encouragement during learning because they usually seem stubborn, passive and uninterested in learning. Thus they need a positive feedback than an average learner (EPSDC, 2016).

1.8.3 Social skills

Social skills include interacting with others, having relationships with friends, family and teachers as well as cooperating and responding to the feeling of others. Social understanding, sensitivity and interactive skills have been generally observed to be relative strengths of individuals with Down syndrome but are usually affected by language skills delay (DSV, 2009). They also understand non-verbal emotional cues such as facial expressions, voice tone and body language.

Khalid et al (2008) opine that Down syndrome are highly sensitive, emotional, placid and very cheerful with love for music and recreation. They however find it difficult to adjust to a new environment. Some of them have neurodevelopmental disorders including autistic spectrum disorders leading to social difficulties. Their level of social development is believed to be largely dependent on their parents and caregivers (Buckley et al., 2002). In addition, influences of Down syndrome on social development could be seen on temperament and personality, the former which reportedly has the same range as in normal kids, language and cognitive abilities, family environments as some parents find it difficult to adapt to special children, expectations and management and the last being specific difficulties such as autism, hyperactivity or obsessional disorders.

Social understanding is perceived to be a strength for individuals, with Down syndrome and 'authors have pronounced their good social skills, empathy and social competence'. Educational inclusion has been seen as one that promotes social skills as they are able to sustain relationships with good imitation skills and team spirit (DSV, 2009).

1.8.4 Language skills

Language skills, which have the most relevance to this research work, also appear to be the most problematic area for individuals with Down syndrome. Fowler (1990) opines that despite the fact that opportunities and improvement in education have been made available, the ability to fully master the art of linguistic system is a perpetually challenging skills for many of the people with Down syndrome. This is due to the fact that the use of language and cognitive function go hand in hand, therefore difficulty in use of language will reflect in the cognitive output. This implies that all the four basic development skills have ways of affecting one another. Baldwin and Rose bush (2015) describe the effect of the four skills on one another in the diagram below.

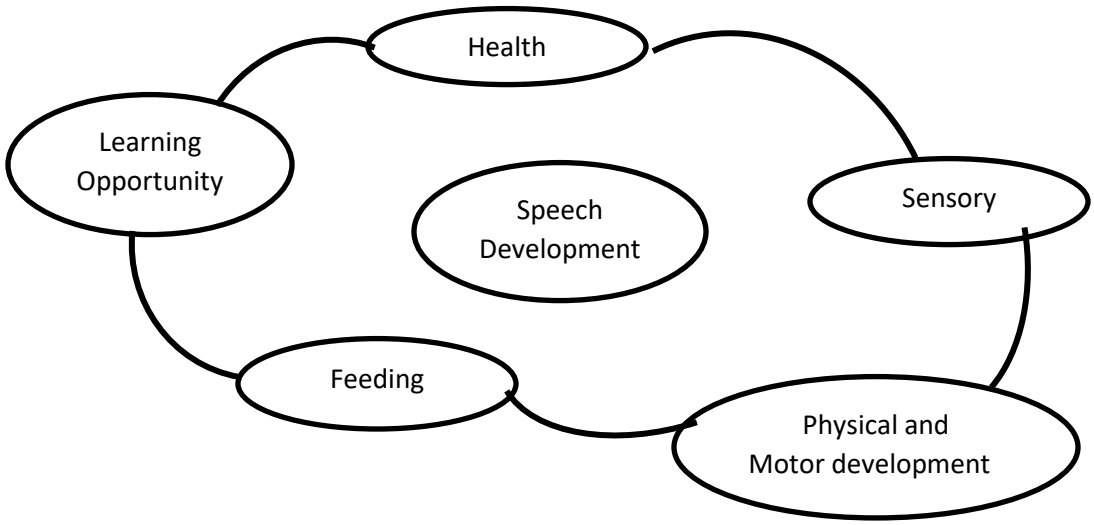

Figure 1.8.4: Development skills effect relationship

(Baldwin and Rosebush, 2015:6)

The diagram depicts speech development as central to so many other activities being carried out. The implication of this is that if speech delay can be worked on, other developmental skills which are usually affected alongside will receive a boost. The effect of this will be a controlled impact of Down syndrome on the individual.

Buckley and Sacks (2001) establish speech and language development as the highest area that suffers significant delay in people with Down syndrome. It is generally believed and research has shown that students with Down syndrome are better in receptive language than in expressive

language (Kumin,1994; Buckley and Sacks, 2001) and that receptive language skills ability could be two or three years ahead of achieving expressive skills. Thus limitations in the ability to express themselves often lead to frustration and resultantly, they manifest various behaviours to substitute verbal replies. The use of signs and gestures as means of communication is also very common in individuals with Down syndrome and is considered as a strength (Kumin, 2010).

Another common speech problem is unintelligibility. This has been traced to the high rate of hearing difficulties. A general overview of speech characteristics in individuals with Down syndrome shows that vocabulary is easier for them than grammar. Also, sequencing of sounds and words may be difficult as well as intelligibility of speech and articulation (Kumin, 1994). Some other levels of language added to the list of difficult areas are syntax and morphology due to the complex and abstract nature of these levels of language (Kumin, 2010).

1.9 Speech disorders in Down syndrome

Farmer and Brayton (1979) observe that Down syndrome subjects individuals with the condition, to various and a wide range of language and speech disorders. DSSK (2009) submits that children with Down syndrome usually experience speech and language problems in areas like comprehending verbal instructions, abstract concepts and instructions such as how task should be carried out.

Speech disorders in individuals with Down syndrome present in different ways depending on the parts of the body responsible for certain speech production and also on the type of difficulty but four major types are often common in people with Down syndrome. Talk-DS (2013) and Bray (2014) describe the four major groups of speech disorders as follows:

Speech sound disorders

There are two types of speech sound disorders. The first is articulation disorder which is when an individual has problems in making individual sounds while the second is phonological disorder, whereby the individual has problems in pronouncing groups or patterns of sounds. Thus phonological processes will be elusive.

Dysarthria

This is a motor speech disorder. This type of speech disorder arises from the muscle movement of the mouth, face and/or respiratory system being weak or at times moving slowly. Dysarthria

can occur with other speech and language issues and is usually of two types. The first is apraxia which is the difficulty in getting messages from the brain to the muscle to move them and the second is aphasia which is difficulty in having an understanding of what others say or expressing the thoughts on the mind. Apraxia is more common in individuals with Down syndrome. In speech, dysarthria manifests in slur, slow, too fast, very soft, flat, jerky or strained speech and inability to move the tongue, lips or jaw well (ASHA, WebMD).

Childhood apraxia of speech

Apraxia is a motor speech disorder like dysarthria, but it is not due to weakness. Instead, it results from the brain's difficulty to coordinate the movements of the muscles that create speech. Individuals with apraxia have limitations in producing consonant and vowel sounds. There is also an appearance of "groping" movements in trying to say sounds. Most of them are inconsistent in making sounds.

Dysfluency

This is the disorder in which the flow of speech is broken by repetitions, prolongations or abnormal stoppages of sounds and syllables. This makes speech become dysfluent. Bray (2003; 2014) observe that all of these speech disorders have different ways of affecting speech such that individuals with Down syndrome end up changing sounds, leaving off or adding sounds during speech. There are some levels at which too many hesitations and stumbling occur during speech production. The speech then is referred to as being dysfluent. Stammering/stuttering and cluttering are the most common forms of dysfluency. Stammering/stuttering is milder in terms of effect on overall speech but cluttering is an excessive break in the normal flow of speech. The individual becomes hard to understand as a result of jerky or disjointed speech, spurts and lack of flow from one word to the next.

Bray (2014) concludes that articulatory and phonological studies have shown that speech patterns in Down syndrome patients are a combination of delayed development and errors that are not seen in typical development delayed speech is developmental while disordered speech are not. It has however been established that the speech characteristics become evident at about three years of age.

1.10 Brain development and Down syndrome

With the various effects of Down syndrome on different parts of the body and its manifestations, an expected difference is observed in the brain development of individuals with Down syndrome compared to that of a typical human brain. According to Becker et al (2013), the brain of individuals with Down syndrome is reduced in size and has an altered configuration. They experience mental retardation resulting from neuronal modifications manifesting as alterations of cortical lamination, reduced dendritic ramifications and diminished synaptic formation.

For young children with Down syndrome, "selected marker enzymes choline acetyl has shown no alterations" – the normal dendritic tree has been found to be continuously expanding with early growth and development. At about four months, neurons show a relatively expanded dendritic tree but stop growing and become athropic during the first year. Becker et al (1991:133) described the activities of the content of the brain of individuals with Down syndrome that:

> Subtle alterations of other cell types such as astrocyte, olegoden drogliocyte, microglia and endothelial cells accompany these neuronal irregularities. In early infancy, one of the astrocytic markers, GFAP is not altered but there is greater expression of S-100 protein in the temporal lobe in Down syndrome. Oligodendritic dysfunction is reflected in delayed myelination in pathways of frontal and temporal lobes. Microglia appears in one prominent in Down syndrome.

Becker et al. (1991), however, explains that although expression of beta-omgloid in Down syndrome is just like in normal children, it usually disappears after age two and resurfaces in adulthood. It is also worthy of note that "a minority of children with Down syndrome have vascular dysplasias and focal calcification of basal gangli.

Koran et al. (2014) also describe the brain size, volume and reactions in Down syndrome patients that their overall brain volume is smaller as they have smaller frontal, amygolalar and cerebella volumes. They also have increased parahippo campal volume and 'relatively preserved ventricular nuclei, basal ganglia and occipital volumes'. For older adults from fifty years of age, they have displayed smaller whole prefrontal, posterior arigulate, hippocampal and parahippocampal volume. In addition, as they grow in age, individuals with Down syndrome 'exhibit a similar pattern of neuroses generation to that seen in early stages of Alzhheimer's disease in the general population in which the earliest neuropath logical changes occur at a much

younger age compared to the general population, which has been attributed to early onset or perhaps accelerated brain again.

All these exhibited effects on the brain of patients with Down syndrome have left researchers into working hard to find treatments to these brain issues. One of such is Marra Dierssen experiment, according to Bennet et al. (2013). Based on the first useful mouse model of Down syndrome T_S65DN which was developed in 1993, it submits that when mice were housed in cages with toys, they performed better on learning and memory tests. The mice were tested for a month with EGCG, a polyphenol found in green tea. Dierssen tested a combination of pharmacological and cognitive treatments in a phase two clinical trial of thirty-one teens and young adults with Down syndrome. They were made to take EGCG supplements or placebo for three months and some in each group were made to participate in computerised cognitive training.

In the test with the mice, those that took the supplements were used for the experiment performed better on learning and memory tests. There was improvement also for the children with Down syndrome who received both interventions than those who had only one. The report submits that "functional MRI revealed that the regions of their brains worked together more smoothly, suggesting better connectivity after treatment". It was also noted that improvement lasted for a minimum period of three months after treatment was stopped.

1.11 Mental health and Down syndrome

Various earlier sections have described the being of individuals with Down syndrome. However, an overview of their mental state is also worthy of note as it also affects every other coordination of the body systems.

Munir (2012) claims that at least half of all the children with Down syndrome face a major mental health issue during their entire lifespan and that those with multiple health problems usually experience a higher rate of mental health problems. Some of these problems include general anxiety, repetitive and obsessive compulsive behaviours, oppositional, impulsive and in attentive behaviours, sleep-related difficulties, depression, autism spectrum disorder and neuropsychological problems characterized by progressive loss of cognitive skills.

Mental health issues differ according to the age and stage of development of people with Down syndrome. Munir (2012) categorises them into three stages. The three stages are young and early school age children, older school age and adolescents and older adults. The mental characteristics of Down syndrome patients of these categories are discussed below.

Mental health issues in young and early school age children with Down syndrome

Communication skills, cognition and non-verbal problem solving abilities are issues faced with this category of patients. They exhibit disruptive, impulsive, inattentive, hyperactive and oppositional behaviours. They are also anxious and display ruminative, inflexible, self-immersed and repetitive stereotypical behaviours. Their social relatedness also lacks at this stage. In addition, they experience chronic sleep difficulties, daytime sleepiness, fatigue and mood-related problems.

Mental health issues in older school age and adolescents with Down syndrome

At this stage, people with Down syndrome would usually have developed better language, communication and cognitive skills. However, they still suffer from setbacks with cases of depressions, social withdrawal, diminished interests and coping skills. They are generally anxious at this level and exhibit obsessive compulsive behaviours. They also like in the young children experience chronic sleep difficulties, daytime sleepiness, fatigue and mood-related issues. Regression sets in altogether as a result of decrease in cognitive and social skills.

Mental health issues in older adults with Down syndrome

At this climax level, there is generalised anxiety as in the older school age and adolescent patients as well as regression as they experience a decline in cognitive and social skills. Depression also sets in, accompanied by social withdrawal, loss of interest and diminished self-care. This category of patients in addition, presents often with dementia.

Across all these three categories, the behavioural changes often seem to occur as a reaction to or triggered by a psychosocial environmental stress for example illness, separation from or loss if a key attachment figure (Munir, 2012). It is worthy of note that many individuals with Down syndrome across all categories have a wonderful disposition, respond to structure and behavioural interventions, with clear-cut reinforcements and rewards. Sometimes, they take these too far and get out of control. On the contrary, they can also sometimes become ‘increasingly oppositional, unable to listen and become self-immersed’. These oppositional behaviours are

more difficult to many in the patients with greater receptive-expressive communication difficulties.

1.12 Treatment and therapy team for Down syndrome

The various challenges that have been generated as a result of the anatomic and physiological differences in patients with Down syndrome require the timely intervention of professionals who can handle each of the challenges. These professionals range from health professionals to therapists. Some of the challenges and the appropriate professionals involved are discussed in this section. Cohen (1999) gives an overview of medical issues and corresponding professionals that can handle them. They are highlighted below.

Cardiologist

As a result of congenital heart disease in children with Down syndrome, leading to an early increase in pulmonary vascular resistance, that reduces the left to right intra-cardiac shunt, minimises the heart murmur as well as prevents symptoms of heart failure and respiratory problems, evaluation needs to be carried out by a cardiologist preferably before three months. The cardiologist carries out an echocardiogram and gives SBE prophylaxis to susceptible patients.

Dentist

In people with Down syndrome, the eruption of teeth is usually delayed and often occurs in unusual order and many other abnormalities. The dentist carries out a routine brushing and evaluation in preventing tooth loss as well as orthodontic treatment if necessary.

Audiologist

The audiologist performs an objective measure of hearing at birth or at least within the first three months of life. The most common method that can be used for this test is Auditory Brain Stem Responses (ABR). It is also referred to as Brainstem Auditory Evoked Response (BAER). For most Down syndrome patients, they present with small ear canals making it difficult to examine them. Such cases are referred to an ENT physician ‘to visualize the tympanic membranes’ with the use of a microscopic otoscope, manage treatable cause of hearing loss with antibiotics and tympanostomy tubes.

Intensive and early otologic care will minimize the effect of hearing loss on language development. Some Down syndrome patients develop hearing loss in their second decade of life

accompanied by behavioural symptoms similar to psychiatric disorders. A routine check is therefore important for proper diagnosis at all times.

Ear, nose and throat (ENT) physician

The ENT physician does the evaluation and treatment of issues such as mid facia hypoplasia, an underdevelopment that causes increased difficulty with narrow airways, narrow trachea, increased likelihood of tracheomalacial, obstructive airway disease, hypotonicity and so on.

Physical examinations are carried out by the ENT physician based on detailed history of the patient. In some cases, surgical procedures are recommended to prevent further complications such as heart failure. The physician keeps children overnight after procedures like tonsillectonomy and adenoidectomy for proper observations and to prevent higher rate of postoperative respiratory complications.

Endocrinologist

Thyroid disease is common among people with Down syndrome across all age groups. The signs are subtle, thus the need for screening every year through the monitoring of TSH and T (subscorp) 4 levels. Evaluation of suspected hypothyroidism should also be carried out including thyroid antibodies to check for thyroiditis. Immune-mediated hyperthyroidism, diabetis mellitus, diopathic hyperthyrotropinemia are few of the other issues being treated by the endocrinologist for controlled intervention.

Nutritionist

Infants with Down syndrome experience difficulties with the coordination of feeding activities such as sucking and swallowing. There is up to a record difference of ten percent in the basal metabolic rate of people with Down syndrome. Feeding complications can get worse such that a multi-disciplinary feeding team becomes necessary. A chart to monitor the growth of the baby should be drawn for evaluation

Haematologist

Individuals with Down syndrome especially children often experience non-lymphocytic leukemia, although it is very rare. About ten percent of then also experience myelo –proliferative disorder, that is leukemoid reaction which in some cases develops into megakaryobalstic leukemia. About 64% of some newborn studied presented with polycythemia. The hematoma

logiest proceed early treatment for these issues and usually, the patients respond positively to treatment.

Immunologist

Chronic cardiac and respiratory diseases are common in individuals with Down syndrome. Other issues include decreased igG subclass 4 level and bacterial infection. The immunologist therefore is saddled with the responsibilities of measuring the IgG subclasses, and IgG replacement therapy in patients with serious recurrent bacterial infections. Also, children with chronic cardiac and respiratory diseases are given pneumococcal respiratory synctial virus and influenza vaccines

Ophthalmologist/optician

The ophthalmologist carries out a routine examination beginning from six months of age of the child for early for early detection of issues such as congenital cataract which can lead to loss of vision, refractive errors, keratocones in adolescents and stenotic nasolacrimal ducts which may lead to tearing in inform. For issues related to treatments with glasses, the optician in contacted to issue the right one, as a lot of Down syndrome students do not get to read books and view the board properly in class.

Orthopaedic doctor

A routine radiographic screening, close clerical scrutiny and study is carried out by the doctors to handle issues relating to ligamentous laxity, chronic patellar dislocation, atlanto-axial instability and so on. Surgery is performed whenever and in any case which it is needed.

There are therapies that are not related to health issues but are equally important for the Down syndrome patient to live a meaningful life. According to NDSS (2012), these include occupational therapy, physical therapy, speech and language therapy, and alternative therapies.

Occupational therapist

This professional facilitates the child development, neurology, musical and psychosocial life using therapeutic techniques focusing on the child's ability to master skills to independence. Self-care, fine and gross motor skills related to academic performances play and leisure skills are also areas of focus. Other aspects include the health, growth and development of basic motor milestone, social interaction, personality development, temperament and sensory skills improve as need be at home and in the school

Physical therapist

The responsibility of this therapist is to accelerate the development of optimal movement patterns, good posture, proper foot alignment, efficient walking patterns, good physical foundation for exercise, and so on. The method to be used for each patient in determined by the needs of the child which could be discovered by studying them carefully, determining what motivates them and studying their unique learning styles.

Speech and language therapist/pathologist

Speech and language therapy is carried out for people with Down syndrome by various caregivers and not just the speech/language pathologist alone. Physicians, classroom teachers, special educators and family members are all saddled with the responsibility. The work begins with the parents because they carry out daily activities which must involve communication at home. Classroom teachers are meant to adapt the curriculum to handle the language needs of their students.

It has been established that vocabulary and pragmatics which are the modes for social interaction are strengths of people with Down syndrome, as well as, the use of gestures and facial expressions, syntax and morphology are more difficult for them. Therefore, the speech and language therapists must use shorter sentences to communicate to them and so on.

The language therapy professional is the speech and language pathologist who provides help with evaluation and treatment by developing a comprehensive treatment plan in the use of language for various reasons such as social and conversation skills. A speech Individual Education Plan (IEP) is developed after diagnosis and evaluation have taken place. Individual and group therapy sessions are organized. Programmes that will help them display their speech skills such as company, scouting, and so on must be engaged in.

For babies and toddlers, evaluation and treatment must target hearing, feeding, tactile and oral motor skills. Their communication is combined with the use of signs and gestures, providing models, repetition and reinforcement, using real objects and situations, following the child's interests on objects, events and persons all develop the child's communication.

Alternative therapy

According to Cohen (1999), the term ‘alternative therapy’ does not mean a traditional therapy but at the same time, it is not typically taught in any medical institution. There are various traditional and alternative methods that have been used such as the use of pituitary extract, glutamic acid, thyroid hormone. Many of them are vowed as holistic and are therefore used to treat the whole body and not any particular disease. Some of them have been claimed to improve motor, cognitive and physical features in order to give people with Down syndrome a ‘more normalised appearance and to reverse intellectual disability’. Some of them have proven to be dangerous, for example, sicca cell therapy. Therefore, many health organisations recommend only scientifically-proven and efficient methods. In addition, such recommended methods must have had their risks and side effects duly verified.

1.13 Summary

This chapter provided the background for the research and the reasons for the entire work. It also highlighted the important developmental issues that affect the overall output of people with Down syndrome and the expected therapeutical variables involved.

CHAPTER TWO

REVIEW OF LITERATURE

2.0 Introduction

This chapter contains the definition of various basic terms relevant to the research work, carefully considering past works on the topic and subjects of research as well as the theoretical framework. This was done in order to consider the extent to which studies have been done on the topic in various contexts and identify the gaps in past researches which this study filled.

2.1. Empirical studies of topical issues on classroom discourse in Nigeria

Classroom discourse is a topic that has globally enjoyed exploration especially in various fields but more in the fields of education and language. Basically, it is the main territory for researchers in the field of education. In addition to these set of professionals are linguists who spread their research tentacles over other disciplines, without limitations. For example, psycholingusitics, sociolinguistics, neurolinguistics, clinical linguistics and so on, are all disciplines that entertain linguists. Discourse analysts who are interested in all forms of talks i.e. interactions and communication always consider samples from all these fields of linguistics. The case is not different in terms of research in Nigeria

For classroom discourse, the focus is usually on the teachers/facilitators/lecturers/coordinators of classes alongside pupils/students/learners who are often ‘subjects’ to their teachers. Teachers set goals for classes and always want the goals achieved by the end of the class. This is carried out through various methodologies, with consideration for the peculiarities of the set of learners in their domain as well as the goals and content to be taught. Because there is a wide range of learners and learning goals, it is imperative to consider the operations of classrooms in different settings and most importantly to discourse analysts is the use of language within classrooms.

Alo (2003) stresses the importance of good discourse skills, not only in speaking, but also in writing. In addition, overall communicative competence is enabled when students possess great discourse skills in listening to the teacher as well as responding appropriately in classrooms and to examination questions. This is why several studies have considered the different topical issues within the scope of classroom discourse.

Ugwuadu (2013) considers the effects of discourse patterns on students' achievement in Biology in Mubi educational zone of Adamawa State, North-East, Nigeria, with focus on the democratic and authoritative discourse patterns. The research hinged on the assumption that there was no difference between the two discourse patterns and used a pre-test and post-test of randomly-selected 170 biology students from two co-educational schools for this purpose. The work evaluated the mean scores of the students in Biology. It was discovered that the two discourse patterns were glaringly different in practice from each other.

While the democratic discourse pattern allows pupils to contribute expressly to the class after the opening by the teacher and express their understanding of the question, the authoritative discourse pattern is dominated by the teacher, similar to the lecturing method. There was no group discussions and feedback as found in the democratic discourse pattern. The study concluded that the democratic discourse pattern yields a better result than the autocratic discourse pattern as the former has a great significant difference in terms of students' performance in the Biology scores.

Ugwuadu (2013) reinforces the social aspect of classroom discourse, if the classroom goals will be achieved. Although only one subject was considered for evaluation of results, if the research on a science subject could show that the results are better when questions are asked and interactions take place, one can safely conclude that the same method will be preferable for other subjects especially those that are in the humanities and language.

In a related study, Akinseye (2017) discusses English Language and Mathematics classroom discourse in Nigeria from the perspective of Halliday's Systemic Functional Grammar (SFG) with emphasis on mood and modality as the two show the relationship between the speaker and the hearer. The study further shows the relationship among physical, linguistic, psychological and sociological contexts to discourse, implying that mood and modality are vital tools in classroom discourse and learning opportunities of the students. The research sees the SFG beyond a system of grammatical rules and highlights the interpersonal relationship that exist between teachers and learners as these two sets of participants in the classroom carry out their activities.

Akinseye (2017) notes that typical of every English as a second language (ESL) setting, the local language or mother tongue which is often the first language (L1) of speakers affect the use of the English language as their second language (L2). This reflects through the interference of L1 in the use of the L2. In addition to this, is the effect of the incompetence of the teachers in L2. The work further categorised classroom discourse constituents into the declarative mood, interrogative mood and imperative mood, summarising the structures often found in a typical classroom into these three moods. Also, the discourses were grouped into clauses.

The research shows that the tenor of the teachers in the ESL classrooms was higher and such did not accommodate responses from the students. In addition, the students were not able to express themselves with various structures in the mood except for minor and incomplete clauses which affect negatively the students' extensive use of language. Akinseye (2017), therefore, recommends a tenor that shows more interpersonal relationship between the teacher and learners and structures that will allow the learners to express themselves in all the moods within the classroom discourse as English language proficiency can be an achievable goal while teaching other subjects in the classroom. Akinseye (2017) analyses classroom discourse from an angle that is all encompassing in classrooms generally, despite using just English Language and Mathematics classrooms only.

Adedun and Anana (2017) consider the relationship between English discourse patterns and the student performance in vocational centres in Lagos State. It is important to consider the kind of discourse patterns in this type of educational setting because vocations prepare learners for employment unlike the earlier classrooms considered earlier in this chapter, whose subjects prepare students for higher learning. Adedun and Anana (2017) investigate the relationship between the discourse patterns and the students' performance through the grouping of the discourses into four patterns which were: informatives, elliptical representatives, directives and representatives. This analysis aimed at evaluating if the discourses were result-oriented, cooperative, interactive and student-focused. This was done through frequent count recording and simple percentage. In all, thirteen discourse patterns were highlighted and most of them were more highly restricted and teacher-oriented. In fact, it was referred to as 'unilateral English discourse'. The thirteen discourse patterns are: informatives, expressives, representatives,

elicitation, directives, elliptical representatives, elliptical elicitation, explanatives, self-elicitation, slot fillers, nominatives, causatives and unclear ones.

Adedun and Anana (2017) further confirm what is believed to be more common in classrooms in Nigeria in terms of discourse patterns and how it affects the output or performance of the learners negatively. The paper concludes that whenever elliptical representatives, explanatives and representatives were employed, a better performance was achieved. The domain of this research was on the vocational centres because of the dearth of research on such category of education and it has further emphasised the importance of the methods through which information and knowledge is being passed to various categories of learners across the world.

Another perspective to passing across knowledge to the learners is the focus of Jegede (2011) considering code-switching and its implication for teaching mathematics in primary schools in Ile-Ife, South-west Nigeria. It was a summarised study of fifty pupils in five selected primary schools to consider if code-switching results in learning deficiency. The study was carried out through ethnographic observation and structured interview and Myers-Scolten's matrix language framework model was used to evaluate the discourses. Code-switching entails two languages: the matrix language and the embedded language and in this case, the English language was the matrix (main) language whereas Yoruba, Igbo and Hausa were the embedded languages. The researcher selected schools where students from the three ethnic background as this determined what embedded language is often used in code-switching. Questionnaires and notes of classroom interactions were used to gather the data and all were analysed using descriptive and inferential statistics.

Jegede (2011) concludes that code-switching did not result in learning deficiency in any way but rather has been considered a useful tool and strategy in making teaching more efficient in the selected schools. As much as the teachers would like to follow the recommended English Language as the official language for teaching in these schools, the difficulty encountered in using just the official language by the teachers and the discovery of the efficiency of the embedded languages encouraged many of the teachers to continue using code-switching during classroom discourses.

A review of the research works above shows that many issues are germane in classroom discourses beyond teachers' move to pass across knowledge to the learners. There is the need to consider other aspects of socio-interaction within the classroom such as the relationship between socio-interaction of teachers and learners, the content of what is being taught and the classroom environment in which the discourses take place. This is the focus of this study.

2.2 Studies on Down syndrome language and speech

Studies on Down syndrome have gained a lot of grounds in language development studies in the western world and this is fast spreading to other parts of the world including Africa. The reason for this is the interest of scholars in research of every nature especially those involving physiological differences in human beings and resultant effects. This interest made Down syndrome research very popular in different countries of the world and have given birth to research groups in different cities, who periodically release research findings on Down syndrome as new milestones are reached in Down syndrome studies. Notable among these are Down syndrome of Victoria (DSV), Canadian Down syndrome Society (CDSS), Down syndrome Education online (DSE), Down syndrome Society of Kenya (DSSK) and National Down syndrome Society (NDSS).

There are quite a number of individual researchers who have also studied Down syndrome with emphasis on language development and psycholingustics as well as how individuals with Down syndrome socialise with language and how they are handled in the classrooms to foster their language use. Notable among the contributors to this multifaceted concept include Buckley (1993), Jenkins (1993), Kumin (1994; 2001), Berglund et al. (2001), Buckley et al. (2002) and Martin et al (2002). Within Nigeria, few studies that have looked into language include Ajuwon (2012) and Kolawole (2013).

Buckley (1993) reiterates the importance of the spoken language as it expands the world view and it becomes the tool for thinking and creating ideas and concepts in children, making it a big issue for children with delay. In addition, Buckley's study considered the importance of language and speech for cognitive functions including short and long term memory functions and submits that Down syndrome children increase their own vocabulary at a slow rate and have more difficulty with grammar and syntax, but the use of lexical items is easier for them. Buckley

(1993) then concludes that adults need to communicate with Down syndrome children consciously, choosing appropriate interactional styles, encouraging the use of language beyond signs and single words but instead employing conversational sequences.

Kumin (1994) examines the intelligibility of speech in children with Down syndrome, with a special focus on the sentential level, with the observation also that children with Down syndrome respond more with single words. In addition to this, the study linked intelligibility problems in children with Down syndrome to their conversation with 'unfamiliar adults'. The studies by Buckley (1993) and Kumin (1994) assert that continuous engagement of Down syndrome children in sequential conversation and with familiar people such as parents, teachers and handlers will usually yield better results. But because parents have reported difficulties in specific speech skills and sentential level of conversation, organised classroom engagement is a more realistic way of achieving better results through discourse participation and speech therapy.

In a wider scope study, Kumin (2001) considers extensively the importance of the academic setting for a remarkable success in the overall communication development of individuals with Down syndrome, highlighting that teachers and speech pathologists play the most essential roles in adapting all available resources including augmentative and alternative communication aids for children with Down syndrome who can hardly speak. This further emphasises the significance of the classroom settings in studying linguistic and communicative skills of Learners with Down syndrome.

Martin et al. (2009) reports that conflicting statements have been made on vocabulary acquisition of individuals with Down syndrome but phonology and syntax are confirmed problematic aspects for them. Their pragmatic use of language varies as they may not be able to initiate or elaborate on topics or perform well in some linguistic aspects of narratives but they try to stay on topics and follow the content of discussions well when there are appropriate visual aids. The study points out the essential need of individual-based intervention in optimizing linguistic skills.

A study that approached the study on children with Down syndrome from an individual perspective is Berglund et al. (2001) which compares children with and without Down syndrome by investigating their vocabulary, pragmatic and grammatical performance. The study concludes that vocabulary skills develop better than pragmatic and grammatical skills, though the performance difference is not so much. The opportunities to use pragmatic and grammatical

skills can be very expressive within the classroom settings where organised discourse can be found. When compared with normative children, the children with Down syndrome were late in acquiring pragmatic and grammatical skills. This follows that if given equal opportunities and with extra and appropriate effort, children with Down syndrome will perform towards optimism.

Jenkins (1993) also carried out a comparative study of expressive language skills of three categories of children: those with Down syndrome; those with other learning difficulties and normally developing children and as expected, significant delays were experienced in children with Down syndrome. The study concludes that social and environmental factors on one hand and specific neurological processing deficit on the other hand, collectively affect the rate of language processing in children with Down syndrome. The study also considered the remedy to expressive skills as affording children with Down syndrome more communicative opportunities such as conversation initiation and expansion as well as techniques and aids such as classroom role play and aided or unaided alternative communication aids.

In Nigeria, the study of Ajuwon (2012) on individuals with Down syndrome highlights language/speech difficulty and delay as their most notable challenge, including receptive and expressive language, mutism and incoherence. The study then suggested the professional support service for solution, with emphasis on speech and language therapy.

All the studies considered in this section reviewed and established the essential need to pay extra attention to the language learners with Down syndrome, although none of them considered the discourse settings of the classroom, for the few of them that examined individuals with Down syndrome within the educational settings.

2.3. Related studies on Down syndrome classroom discourse analysis

Studies on the development of Down syndrome individuals in the medical and educational fields have been popular all over the western world since the organised educational setting remains the most populous place to find learners with Down syndrome. Many individual researchers and Down syndrome national bodies have extensively studied and are still studying the linguistic skills of learners with Down syndrome from the perspective of levels of language. From the discourse angle, few works have considered the analysis of the classroom situations and how the socio-interactive environment within the classrooms could affect the performance of individuals

with Down syndrome within the classrooms. However, studies analysing actual classroom discourses within the framework of conversation analysis is very rare.

McFadden (2014) examines the teaching of learners with Down syndrome from the perspective of three teachers and in three different schools, emphasising the teaching approach, school and classroom settings within the social, cultural and political contexts. Although the study aims at inclusion, the need for the teachers to make the classroom experience an effective and rewarding one for learners with Down syndrome was reiterated. Regardless of the content of the classroom, the roles of the teacher in engaging the students are very germane. The study did not consider the classroom discourse but used narratives to describe the experiences of the teachers with their students. The study is one of the earliest in the Australian Down syndrome research.

Kolawole (2013) is a study that focuses on conversation analysis of learners with Down syndrome in a Down syndrome facility in the southwestern, Nigeria. The study identified the speech characteristics of the Down syndrome patients to see the peculiarity within the Nigerian setting and to identify the conversation features during classroom exchanges. The research recorded both the audio and video of performances of conversations between the teacher, the researcher and the learners with Down syndrome, as they engaged in a music class. Conversational features such as turn taking rules were considered. The pupils observed the rules well as the conversations were devoid of interruptions and overlaps, due to the recognition of the teacher as the primary moderator of classroom discourse.

The study also examines the demography of six pupils with Down syndrome to see if their gender or age had any direct effect on them but none was found. The effects of Down syndrome were seen in their speech/language and cognitive skills evident in unintelligible and slurred speech. The study concluded that there was no professional Down syndrome intervention for language development of learners with Down syndrome in the facility and recommended oral-motor and linguistic skills intervention aids such as muscle stimulation, oral massage and comprehensive speech and language treatment.

2.4 Down syndrome research is Nigeria

Research works in Nigeria on Down syndrome started in 1982 by Adeyokunnu carrying out a research in Ibadan, South-west Nigeria. A record of 1 in 865 live births was made. The work was

a general overview of the incidence of Down syndrome, which was quite strange then. The research was done over a period of nine years. There were 386 patients altogether out of which 369 (95.5%) were the regular trisomy 21, translocation in 9(2.5%) and 6(1.5%) were mosaic. The rest 2(0.5%) cases were classified as miscellaneous. The incidence was high among young mothers. It was also observed that the occurrence was high in the black race as in other races too.

Medical researches on Down syndrome have considered the salient issues that can reduce the incidence in Nigeria through pre- natal diagnosis. Other possibilities of handling the medical issues are still on-going (Oredugba, 1996, Ahmed, 2003 and Oloyede, 2008). Other fields that have made statements on Down syndrome include social work and special education (Ajuwon and Brown, 2011; Okoli, 2007; Eni-Olorunda, 2005, Ajuwon, 2012).

Eni-olorunda (2005) and Okoli (2007) submit that the provision of special units for learners with Down syndrome in schools is the best. Some researchers in developed countries have advocated inclusive education whereby the Down syndrome pupils are accepted into the regular schools to increase social acceptance and boosting of social skills. However, if considered critically, the developmental challenges they have, are enormous and the effect often massive that the need will always arise to create a special unit for them, at least in their first few years or about a decade. Thus, both researchers concluded that the only way out was a special unit that will be fully equipped to meet the special needs of the student.

Ajuwon (2012) studies Nigerian families with Down syndrome family members through the Down syndrome Foundation of Nigerian. The study came up with prevailing issues of transportation, high cost of private schools; lack of special education; isolation in public places among others. The work reiterated the types of issues being experienced in Nigeria by pupils with Down syndrome. These include speech or language difficulties and delays, behavioral problems, developmental delays, physical health problems and mental health problems. Speech or language difficulties and delays were found in 78.4% of the sampled population which is the highest of the problems. These include receptive and expressive use of language, mood or anxiety disorders (including schizophrenia) and anger is the least with 6.5%.

Caregivers in the process of Ajuwon's (2012) study identifies three categories of essential services needed by people with Down syndrome which are professional services, community-

based services and home-based services. Speech and language therapy falls under the category of professional services. However, these specialists are lacking in Nigeria. This is because the cost of employing them to train people in Nigeria is very high. The probable solution that can go a long way in solving the issues is the intervention of the government at every level by setting aside sufficient funds to create various developmental programmes that will cater for as many individuals with Down syndrome as possible in organized schools and create an enabling socio-cultural environment. Ajuwon (2012) do not dwell on the language issues of the learners with Down syndrome, as its focus is on social work and the objective is an overview study.

In a more recent study, the research by Kolawole (2013) documents the state of Down syndrome in Nigeria in terms of the settings and environment where learners with Down syndrome are accommodated. The work also contextualized Down syndrome in discourse analysis. By using conversation analysis as framework, the study touched a very important aspect of developmental skills in individuals with Down syndrome, which is speech and language. This aspect of development of people with Down syndrome has not enjoyed attention as much as in social work, medicine and education.

Kolawole (2013) reiterates the need for appropriate speech therapy and conscious language teaching methodology which can only be achieved through Individualised Education Programme (IEP) to which speech/language skills development is an integral constituent. The study employed the use of video and audio recording that was transcribed for analysis and only employed simple percentage to represent the just few ethnographic information and conversational acts of learners with Down syndrome. This is far from the large scope of the dearth of research in the area of Down syndrome language study in Nigeria.

The above reviewed works considered language use in a very minimal way compared to the myriads of research opportunities in language of learners with Down syndrome. In addition, it is necessary to investigate the content of and process involved in achieving linguistic performance by learners with Down syndrome. That is why this study becomes very imperative to contribute to the existing literature in language use of individuals with Down syndrome in Nigeria.

2.5 Theoretical framework

There are two main theories that have been employed for this study: socio-interaction theory, a psycholinguistic theory and relevance theory, a theory of pragmatics. Their components and application are discussed in this section to put the analyses into perspective.

2.5.1 Socio-interaction theory

Social interaction theory is one of the few modern theories of language acquisition. Its approach is based on the interactionists' view which looks at the factors that affect language acquisitions by the process of socialisation. According to KENPRO (2010), Social Interaction Theory stresses the environment and context in which language is learned such as the home and the cultural environment especially in early childhood language acquisition.

Mcleod (2014) explains the relationship between social interaction and language as viewed by Vggotsky that language develops from social interaction and for the purpose of communication. Language is a powerful tool of intellectual adaptation and the means by which information is transmitted to children by adults. Closely related are thought and language which are initially separate systems from the beginning of a child but merge around three years of age, at which point the two become interdependent.

The interactionists researched that language development is both social and biological by studying the models of "collaborating learning" in children through their conversations with older ones (Shaffer et al., 2002). It is not only language that is learnt from the adults, but also beliefs, culture, values and intellect. The social interaction theory focuses on pragmatics instead of grammar, views language as not innate and believes in language being based on culture and environment, as well as being "context and time- bound".

Socio-interaction theory recognises the need for cultural, cognitive and altitudinal bridges between ESL students and their new environment. Vygotsky stated that between that cognitive, social and motivational factor were interrelated in development. The application of theory to this arch work is what Ann Brown et al (1993: 239) summarised as follows

> One advantage of a sociocultural approach is that in studying human being dynamically within their social circumstances, in their full complexity, we gain a much more complete and valid understanding of them and some of

> them a more positive view of their capabilities and how our pedagogy often constrains and just as often distorts what they do and what they are capable of doing.

Thus, teaching is expected to be done based on adequate background knowledge of the students to meet up with the demands of learning. Steiner and Tatter (1983) also support learning culture and environment factors as important because “for children, the development of language is a development of social existence into individual persons and into culture’.

Since it has been established that interaction is key to communication, it is pertinent to make use of an appropriate framework that will go hand in hand with the linguistic theory that encapsulates the aim and objectives of language use among Learners with Down syndrome.

Basic components of social interaction theory

There are three established components that have been identified by Vygotsky and so many other scholars who have worked on his basic write ups. These are social interaction, Zone of Proximal Development, (ZPD) and the More Knowledgeable Other (MKO). (KENPRO, 2010; Lewis, 2010; Vygotsky, 1934; Mcleod (2014); Brown et al,1993)

2.5.1.1 Social interaction

The proponent of the social interaction theory, Vygotsky established that social interaction precedes development and plays a fundamental role in the process of cognitive development. Social learning takes place as soon as an individual is born into a cultural environment. A child’s cultural development occurs on two levels. The first is the social level (which is interpsychological) and the second at a later stage – the individual level (which is intrapsychological) (Vygotsky, 1998)

Children could be seen in different socio-cultural contexts through which their cognitive development is advanced through their social interaction with individuals that are more skilled than them. They help them in actively constructing language (psychologyonlineresources, 2003)

Social interaction is critical for cognitive development as thought, language and social interaction are all interwoven (Ferranti, 2013). Language has been described as a social concept that is developed through social interactions, that is, the relationship between language and social interaction. In another view, language acquisition involves both thought and language as it is not

just for a child to be exposed to words; instead, it is also about an independent process of growth between the two. Therefore, language, thought or cognition and social interaction are closely knitted (Oropezovich, 2012).

In relating social interaction, language and the physical context, Oropezovich (2012) opines that through social and language interactions, older and more experienced members of a community teach younger and less-experienced members the skills, values and knowledge needed to be a productive member of that community. Vygtoky stressed the social nature of language learning with an emphasis on the environment in which the child is raised. It is this background experience which the children have, that they come to the school environment or community with and the teachers or caregivers are saddled with the responsibility of building on that.

2.5.1.2 Zone of Proximal Development

Various scholars have described the concept of zone of proximal development based on Vygotsky's basic ideas. Ndung'u (2010) says the tone of proximal development refers to the distance between a student's ability to perform a task under adult guidance and could be with the collaboration of the peers and also the student's ability in solving problems independently. This is closely related to Mcleod's (2014) expression that the zone of proximal development is the area where most sensitive instructions or guidance should be given, as this will allow the child to develop skills they can use on their own later. This establishes that there are some tasks the children can do on their own whereas they will need guidance or assistance for some.

The lower limit of the zone of proximal development is the level at which a child can solve a problem or carry out a task without any assistance and the upper limit is the level of 'additional responsibility' that a child can receive with the support of a skilled instructor (psychologyonlineresources, 2013).

There are several groups of people and resources that can serve as the zone of proximal development for a child. These include "people, adults, and children with various degrees of expertise, but it can also include artifacts, such as books, videos, wall displays, scientific equipment and a computer environment intended to support international learning". (Anne, 1993:191)

The role of the zone of proximal development in the educational context has been emphasized based on research works by various scholars as more organized problem solving and tasks are found there. Vygotsky believes in the role of education providing children with experiences that aid the advancement of their individual learning in their zone of proximal development. In the classrooms for instance, students form a community of learners and share ideas and express their level of understanding in various degrees on any given topic or subject (Palinscar et al., 1993). Teachers and students take turns to participate in the activities and make do with 'structure dialogue'.

The zone of proximal development reveals a pattern of developmental change (Kublen et al, 1998). This will show the difference between the time before a child is brought into the organized school system and after a period of time spent. Learning awakens some internal developmental processes that the child will not ordinary display except when interacting with peers and people in his environment. Properly organized learning results in mental development (John-Steiner and Mahn, 1996). Besides, when children who are not competent or confident relate with their peers, their potentials are unleashed. They are encouraged to participate better.

Vygotsky (1986) sees the need to rehabilitate the handicapped child but with a modified approach to the regular educational programme while maintaining the same goals. He recommended a specialised location and specially trained teachers only who will dutifully use unique teaching methods. It is difficult to ascertain whether a child's delay involves neurological abnormalities, physical abnormalities of the mouth and tongue, hearing problems, attention deficits, cognition or a combination of these factors. Individuals with Down syndrome presents a 'unique syndrome-specific profile of neurological, developmental, language and sensory deficits and strengths'. Tutors in the zone of proximal development can guide the students through providing verbal instructions or modeling behaviours. This can be achieved through 'cooperative or collaborative dialogue' (Mcleod, 2014).

Another term that falls within the purview of ZPD was put up by Fatin (2013) introducing the Zone of Current Development (ZCD). The ZCD consists of what the learner can do independently while the ZPD is the 'gray' gap between what a learner can accomplish independently and what a learner cannot do, even with assistance. According to Fatin (2013), as

the ZPD decreases or becomes ‘less gray’, the ZCD increases and further categorized ZPD into four stages.

The first stage is the assistance by the MKO which takes place when the child is being taught a new subject matter or skill and requires help from someone with greater knowledge than his own. Learning at this stage involves instrumental methods such as lectures, questions and answers, problem solving and positive reinforcement. The second stage is the assistance provided by the pupils themselves whereby they perform the tasks without relying on the person who was assisting in the first stage. They become confident enough even with occasional mistakes.

The third stage is the automatisation stage whereby the performance becomes automatic and fully developed. Skill internalisation and proficiency in performance occur at this stage. The fourth stage is called the deautomatisation stage whereby the ability to perform at a proficient level decreases due to increase in age. Personal crisis, trauma and gradual erosion of skills occur at this stage and there will be a need to go over the learning cycle to regain mastery.

Noble, Kravit and Braswell (2013) give an example of ZPD as when pupils are reading aloud to the MKO and come across an unfamiliar word and ask for help. Instead of directly telling them the word, the MKO could show pictures or ask questions about what they read and with that they can figure out the word on their own and understand what the word means. They will learn to do this at every difficult instance and learn to do it first on their own before asking for help.

Wen-Hsing (2013) stresses the role of imitation in learning, role of collective activity and learning under the guidance of more capable learners within the ZPD. Also, it highlights the structure of classroom discourse as important in achieving classroom goals within the ZPD – the IRF structure must be productive while considering the field, tenor and mode. The tenor should be one that is complimentary to the ZPD and make the interaction between the primary MKO and learners very result-oriented, by using the right mode (in this case, alternating monologue and dialogue, as well as, using a native speaker of English together with a local teacher).

2.5.1.3 Scaffolding

Mcleod (2014) explains the concept of scaffolding, a closely related term to the zone of proximal development. It is the temporary support provided by the skilled tutor which will enable the child to perform a task until the child can develop adequate skill to perform the task independently. The tutor does this by studying the learning pattern of the child to know the level of quality and quantity of support to be provided for the child during teaching. The level of guidance to be provided must also be in accordance with the students' levels of performance. Familiarity with the task enhances the skill of the child and teacher reduces the level of guidance or can perform the task successfully and independently. The teacher considers a child's cultural and class realities in dealing with the students (psychologyonlineresources, 2013)

Greenfield (1984) shows the essentiality of scaffolding as it assists children in the zone of proximal development not by simplifying the task but 'through graduated intervention of the teacher'. The instructor uses focused questions and positive interactions in a way that will increase the student's understanding and will facilitate learning for them. The concept of scaffolding adopted, is a powerful tool for language teaching. Educators use it to prepare standard lessons for the students. According to tesolclass.com, scaffolding can be applied in reaching the four language skills and more beneficial in teaching reading and listening. This helps in understanding the theme to be taught in the class better.

Wen-Hsing (2013), in relating classroom discourse to scaffolding, opines that classroom discourse is not meant to just pass the information to the learners buy should be carefully used for scaffolding and reconceptualization. This means that the primary MKOs need to assist the learners in a 'complex learning environment'. Wen-Hsing (2013) highlights discourse patterns of choral responses, factual-narrow questions and recitation mode as ways in which some primary MKOs facilitate their classes. In addition, co-teaching of classrooms by native-english speaking MKOs alongside local teachers aid the delivery of classroom goals and allowing the learners' first language (L1) for low achievers.

Another strategy in Vygosky's model of socio-interaction theory is modeling whereby the teacher demonstrates what the students will have to do through a role play. It can also be used to instruct in games, drills and activities. It is a form of visual aid. Schema activation is also a scaffold that can be used based on the student's past experiences. They can be asked to narrate

their experiences and the teacher then relates these to the activities that are to be taught. Hand body gestures are useful too in giving instructions in a class. They could be used to convey ideas.

Authentic materials such as real life materials that will serve as guide can be used for teaching. These also include 'pictures, videos clip from TV shows, maps, audio conversations' and so on. Instructions on the board are also an important scaffold as well as group work as students are free with their peers often time. The last scaffold highlighted is seating arrangement. Seats should be arranged in classes to suit the lesson objectives such as cluster or u shaped --seating for discussions. Higher – leveled students strategically placed when they need to help the others and regular rows which students are to produce their own work.

2.5.1.4 The more knowledgeable other (MKO)

The more knowledgeable other refers to anyone who has a better understanding or a higher ability than the learner, with respect to a particular task, process or concepts. MKO could be a teacher, coach or an older adult. It could also be peers, a younger person or even computers (Ndung'u 2010, psychologyonlineresearch, 2013). The more knowledgeable other that is very key to any child is the parent. The home is the social – cultural backdrop of the child. The parents are significant adults needed to direct and organized the learning experience of a to master and internalized learning (psychologyonlineresearch, 2013).

2.6 Relevance theory

Relevance Theory (RT) is one of the cognitive approaches to discourse, which is interested in the mental processes in encoding and decoding discourse (Oyeleye and Sunday, 2013). It derived from the fourth maxim of cooperative principle. RT could be seen as an attempt to work out in details Grice's claim on expression and recognition of intention by deducing conclusion from an input, which is a combination of an utterance together with the context. (Sperber and Wilson,1995).

RT has been described as a 'cognitive psychological theory (Sperber and Wilson, 2006), as it views communication as a cognitive process highly important to communication. The basic idea is that the human cognitive system maximises relevance in any communicative situation. Human beings are naturally endowed to with an ability to maximise the relevance of incoming stimuli

(ostensive stimuli) including linguistic utterances and communicative behaviours (Sasamoto, 2013, Sperber and Wilson, 1995).

According to Wilson and Sperber (2006), the central claim of relevance theory is that the expectation raised by an utterance are precise and predictable enough to guide the hearer to the speaker's meaning. This same opinion is expressed by Allot (2013) that utterance comprehension is an inferential process which receives as input the production of an utterance by the speaker with the contextual information and outputs an interpretation of the speaker's meaning.

In deriving implications, there are two types of implicatures, the first being the strong implicature where the interpretation satisfies the 'addresse's expectations of relevance' and the second is weak implicature where the utterance 'suggests a range of similar implicatures' (Sperber and Wilson, 2004; Brown, 2006). RT claims that an utterance is expected to meet the relevance requirements by being 'precise and predictable' for a hearer to determine the meaning. However, this is not always the case as greater relevance leads to greater cognitive effects referred to as optimal relevance and with little processing effort (Wilson and Sperber, 2004), while a lower relevance is obtained when the processing effort of the utterance is greater.

Relevance is a property of not only utterances but of thoughts, memories and conclusions of inferences (Sperber and Wilson, 1995). Relevance theorists claim that 'the speaker's abilities and preferences play an equal and parallel role in comprehension so a speaker who fails to provide some required information may just be well understood as (in appropriate circumstances) as implicating that she is either unwilling or unable to provide it' (Wilson and Sperber, 2004: 608) whereas in Grice's framework, the cooperative principle (CP), speakers can blatantly violate a maxim in searching for implicatures. This is not acceptable in RT.

Foster-Cohen (2000) views relevance as a relative notion, that is, an utterance may be relevant. This is based on two factors: the first is the contextual effects whereby if the new information conveyed by the utterance fails to connect with anything in the cognitive context, it is either simply a repetition of existing assumptions or it is inconsistent with existing assumptions but because it is too weak to overthrow them, the utterance may be irrelevant. Secondly, the effort required to derive the contextual effect is very important because whereas some utterances have significant contextual effects but takes too much effort to derive them, they may be irrelevant.

To understand the concept of RT in practice, there is a need to highlight the basic concepts guiding the theory and terms that are being referred to when applying RT to conversations and discourses. According to Wilson and Sperber (2006), the code model of communication explains how the communicator encodes their intended message into a sign which is decoded by the audience using an identical copy while the inferential model of communication is when the communicator provides evidence of her intention to convey a certain meaning which is inferred by the audience on the basis of the evidence provided. To determine the relevance of the input (sight, sound, utterance, memory), an individual processes the input and if it connects with background information he has available to yield 'a positive cognitive effect', it is relevant.

Optimal relevance is achieved if the ostensive stimulus is relevant enough to be worth the audience's processing effort and the most relevant one compatible with the communicator's abilities and preferences. Ostensive stimulus is the overt act by the communicator designed to attract an audience's attention and focus it on the communicator's meaning ostensive-inferential communication requires two intentions. The first is the informative intention which is the intention to inform the audience of something while the second is the communicative intention which is the intention to inform the audience of one's communicative intention.

Wilson and Sperber (1995) explicate the two principles of relevance. Cognitive relevance is referred to as the first principle of Relevance Theory which states that human cognition tends to be geared to the maximisation of relevance and the second is the communicative principle which states that every ostensive stimulus conveys a presumption of its own optimal relevance.

Other terms that are equally important are implicature and explicature. Implicature is an ostensively communicated assumption which is not an explicature, that is, a communicated assumption which derived solely via process of pragmatic inference while explicature is an ostensively communicated assumption which is inferentially developed from one of the incomplete conceptual representations encoded by the utterance. Other reviews on RT came up with the understanding of the above terms including Carston (2002), Xiao-hui (2010), Sasamoto (2013) and Allot (2013).

2.7 Conceptual framework

It is important to consider the adaptation of the two theories for this study: socio-interaction and relevance theories, so as to put the them in perspective for analyses. Socio-interaction theory considers the social environment in which learning takes place and the more knowledgeable others (MKO) who are the containers of knowledge, while relevance theory focuses on the cognitive processes of learning.

In applying relevance theory to discourse of patients with impairments such as Down syndrome, the case is a bit peculiar. The physiological effects are felt in various areas of development including conversation. Wilson and Sperber (2006) agrees that there is always relevance and coherence in the discourse of people with impairments. They are found repeating expressions and lexical items they want to stress as they 'carry the burden of their ostensions'. They use fillers and single-word utterances. Explicatures and contextual resources are used more in order to understand such people.

Context is an integral part of relevance theory. According to Sperber and Wilson (1986/1995), a context comprises mentally represented information of any type including beliefs, doubts, hopes, wishes, plans, goals, intentions, questions and so on and the appropriate ones are selected in the course of the comprehension process from the range of potential contexts available. The human cognitive system has therefore developed a variety of mental mechanisms or biases which give attention to the inputs with the greatest relevance and process them in the 'most relevant-enhancing way'.

As earlier highlighted, the human cognition processes and selects the maximally relevant cognitive effects for less effort than the one with greater processing effort. Handlers and teachers of Learners with Down syndrome use background knowledge in relating and communicating with them beyond the linguistic level. This will enable them contextualise utterances by the patients and explore probable meanings of such utterances with less effort. Learners with Down syndrome always strive to be relevant in discourse, but they do not have full control over their cognition. They use related words or things to explain their points as the case may be in order to make their listeners and audience understand them.

According to Xiao-hui (2010), contextual effects can be achieved in three ways. The first is by combining newly presented information with an old information from an existing representation of the world to yield to contextual implications. This can create a mental picture that will aid cognition. The other two are strengthening and contradicting assumptions. These will give room for retention of the right information and discarding the wrong ones respectively. Xiao-hui (2010) also posits that mental activities of comprehending information by students involve perception, imagination, judgement and reasoning. Teachers apply the principles of RT to derive meaning from their students' utterances and react to them in different ways such as indicating an incorrect answer, expanding or modifying an answer, summarizing and criticizing.

The combination of relevance theory and socio-interaction theory from the various reviews represents an ideal juxtaposition of cognitive and psychological theories used in comparing the relevance of inputs by learners with Down syndrome during classroom discourses. The two theories can be summarised as the more knowledgeable others ensure positive and relevant cognitive effects through scaffolding and other available means on the learners with Down syndrome within the zones of proximal development. This summary makes the two theories very suitable for a psycholinguistic study such as this.

2.8. Summary

This chapter explored theoretical issues on Down syndrome, classroom discourse analysis and theoretical framework for this study. It further shows the complimentarity of relevance theory and socio-interaction theory, that both are ideal, for cognitive and psychological analysis of classroom discourse. The next chapter explains the methodology for this research.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter explains the methods and instruments employed in carrying out this research. This includes the data collection methods, the samples considered and the method of data analysis

3.2 Research design

This research is both descriptive and analytic. It describes the recorded and transcribed classroom discourses in all the Down syndrome classrooms in the two facilities considered in Lagos, Nigeria. It is analytical as the data from the classroom discourses were subjected to cognitive and discourse analysis.

3.3 Data collection and sampling method

The data for this research were collected from natural classroom discourse in two Down syndrome facilities in Lagos, Nigeria, using purposive sampling. The choice of the two facilities was based on the concentration and availability of the learners with Down syndrome enrolled in the facilities. This is a very rare occurrence. Down syndrome Foundation of Nigeria is the only Down syndrome specialist facility in Lagos State and all the learners in the four classes there participated in the data collection. The second facility, Ipakodo Local Government Education Authority School, is one of the special unit locations in Lagos and it records the highest number of learners with Down syndrome across the state. Only the pupils with Down syndrome participated in the research.

The data collection was undertaken within a period of one year and six months. This led to different set of learners being recorded at different times as a result of their irregular attendance in school. School vacations and several other activities that were given preference in their curriculum slowed down the data collection. There were periods when there was no opportunity to obtain any data due to the psychological evaluation of the pupils by their teachers and handlers.

To have a comprehensive data, the data collection was carried out with the use of electronic video camera, audio recorder and personal interaction with the teachers and learners, by the researcher. Additional medical and socio-economic background information on the pupils were

obtained through interaction with the teachers and some parents of the Down syndrome pupils. These assisted in the holistic analysis of the pupils.

3.3.1 Ethical consideration

Down syndrome is a condition that is exhibited by facial features. Therefore, for comprehensive recording to be carried out in the Down syndrome facilities, introductory letters were given to the two facilities and the request for video and audio recording was granted by both of them. Copies of these approvals are in the appendix. Written approvals for the research to be carried out in the facilities were given. This enabled the study to be carried out with full access to the classrooms and details of the pupils were obtained from the records of the teachers. These details were usually obtained from parents at the point of registration. They usually include the medical diagnosis of the pupils and some of them have therapeutical recommendations by medical experts and occupational therapists. The approvals were important before the research was carried out because the analysis was done with the real names of the learners with Down syndrome.

In addition to the steps mentioned above, an interactive session was organized at the Down syndrome public facility and this afforded the researcher the opportunity to be introduced to the parents, who showed no reservation in the research involving their children and wards, after the purpose and scope of the research were explained to them.

3.4 Sample size and technique

Classroom discourses were recorded on different visits to the two Down syndrome facilities for this study, twenty of which were purposefully selected for analysis. The data collection was carried out from July, 2016 to December, 2017. A total of Fifty-three students participated in five classrooms: four in Down syndrome Foundation of Nigeria and the only one in Ipakodo LGEA School. Seven special unit teachers facilitated the twenty classroom discourses. The data included classroom discourses spread over various classroom objectives, creating diversity in data analyses.

In order to ensure clarity, names of learners with Down syndrome were used in the analyses, as they were used by their teachers. This is expedient as some of the participants featured in more than one discourse based on their availability in the course of the research and their ability to respond in class. Pupils who could not respond well and those who could not respond at all were

also considered as their responses with silence, gestures and reactions were documented and analysed.

3.5 Research instrument

The instrument for data collection in this research was a video camera. This captured both the audio and video aspects of the data. In addition, all the activities of the Down syndrome patients were captured as their acts involved paralinguistic features which were significant for communication. Also, the video camera captured the socio-interactive environment of the Down syndrome facilities in which the classroom discourses took place. There were few occasions of interactions with parents of the pupils. The teachers volunteered helpful information on some of the pupils. Notes from the researcher's interaction with teachers, pupils and parents were useful in obtaining more information for analyses on the learners with Down syndrome. These include ethnographic and medical information of the individuals with Down syndrome, facility and facilitators.

3.6 Study location

The research was carried out in facilities in two different parts of Lagos State. The first is Down syndrome Foundation of Nigeria (DSFN), Surulere, an elite area of Lagos State. DSFN is a private Down syndrome centre with four classes. All the four classes participated in the classroom discourses. The second one is Ipakodo LGEA School, Ikorodu, an area with mixed groups of people. The facility is a public and day school. It has only one class for special unit pupils. This classroom was segregated to accommodate the Down syndrome ones from the other special unit pupils, for the purpose of the data collection.

3.7 Inclusion and exclusion criteria

There were only two facilities that gave approval for a study to be carried out in and on their premises. Apart from Down syndrome Foundation of Nigeria which is a proper Down syndrome centre/school/facility, other formal places where individuals with Down syndrome are found in Lagos, have other intellectually challenged learners. This served as a brick wall for the study in more than two facilities.

The authorities of Ipakodo LGEA School were approached for an opportunity to have the Down syndrome pupils to be separated during recordings and this was granted. The two facilities allowed all their available learners with Down syndrome to participate on each visit. These

included those with and without speech abilities. There was no exclusion in the private facility whereas the public facility has other patients who are not Down syndrome individuals. The non-Down syndrome pupils were excluded in the public facility.

Apart from the limited accessibility to Down syndrome facilities which led to the consideration of two facilities for this research, the socio-interactionist purpose of the study necessitated the use of facilities in two different areas and levels of establishment. The Down syndrome Foundation of Nigeria is a private facility, located in Surulere, a high brow area of Lagos State. It is strictly for pupils with Down syndrome and they are grouped into four classes. The facility run a hostel where most of the pupils were brought from daily, while the very few who live out of the hostel came in from different areas of Surulere. As it is common that most areas also have where low-income earners live, the case is not different in Surulere.

The private facility had four classes with different teachers for the pupils with Down syndrome. They were usually grouped based on assessment and abilities at the time of registration. Progress reports were usually made based on continuous assessment on the pupils to determine what class they should be at the beginning of each term. The four classes in the private facility were considered for study during this research.

The first category of pupils considered were in the beginners' class comprising of just four students who could barely talk except at the syllable level, at the beginning of this research. They improved much later as this reflected in their performance. The second class considered was a mixture of the level two and level three pupils who were of average performance on the scale of the Down syndrome facility while the third one was the class of the most developed set of pupils who have either stayed long in the facility or were brought at a later age but with some level of development. Most of them could communicate well and relate with what the teacher taught them.

Down syndrome Foundation of Nigeria has a centre in Ibadan, Oyo State in South west, Nigeria and it would have been very expedient to consider a facility outside of Lagos to further do justice to the considerations of socio-interactive factors. However, the centre had just taken off the process of admitting pupils in the course of the study.

The public facility is the special unit of the Ipakodo LGEA School, located at the Ebute – Ipakodo area of Ikorodu town in Lagos state. Ebute area has its highbrow area with different choice houses and organised areas as well as the local areas where old family houses are located. The school is located in the centre of Ebute.

Students were registered in the school from the area where the school is located as well as other areas all over Ikorodu town (which has both the developed and less developed communities). The school has a special unit divided into three classes: the hearing impaired, the visually impaired and the intellectually-challenged. The intellectually-challenged occupied just a classroom regardless of the nature of the disability, which include Down syndrome, autism and William syndrome. Some parents simply bring in their children once they notice any form of abnormal look coupled with developmental retardation.

The school did not have adequate space or provision for this large turn-out of students. For example, the class had forty-three (43) pupils altogether, with twenty-three (23) of them with Down syndrome. They were usually taught together. Each time the recording for this research was to be done, the teachers arranged the pupils with Down syndrome together on one side of the class, whereas they would normally sit in different corners of the classroom. The school is free and government –owned.

3.8 Method of data analysis

The recorded video and audio classroom discourses were listened to in order to transcribe them for documentation. A rough transcription of the classroom conversations was done using some of the main conventions of conversation analysis according to Levinson (1983). In addition, non-verbal acts of the participants in the Down syndrome classrooms were noted. Other background and ethnographic information that had been taken note of were also useful in the course of the analyses. This was done according to the sociolinguistic method of classroom discourse analysis of Turner and Meyer (2000) which allows researchers to ‘capture a central part of classroom life’. It also enables the researcher to interpret the context and any observable dynamic change in the context of the classroom.

The data for this research were analysed using Sperber and Wilson (1995)’s Relevance theory to derive relevance in the classroom discourse of learners with Down syndrome in the facilities

used for the research. Cognition in the learners with Down syndrome were evaluated and an analysis of the derivation of relevance with their ostensive stimuli despite their speech deficits such as speech unintelligibility, stuttering/stammering and cluttering, was carried out. Spectograms were used to represent the speech production of some of the learners at the word, phrase and sentence level. The responses by the teachers, who were conversant with the pupils and related with them based on their individual cognitive abilities were also analysed. The topic and goal for each class discourse served as basis for the analysis in that learners with Down syndrome were made to achieve different purposes by each classroom activity.

The effect of the principles of Lev Vygotsky's (1934) socio-interaction theory which are social interaction, more knowledgeable other and zone of proximal development were considered on the learners with Down syndrome and their facilities. The effect of the socio-interaction variables on the pupils and the overall discourses were also analysed. The consideration of two categories of facility (private and public) allowed for a comparative analysis of the learners with Down syndrome in relation to socio-interaction factors and how environmental factors surrounding their study in either a private or a public facility environment affect their output as intellectually-challenged learners.

3.9 Summary

This chapter has been able to present the methods for data collection, research design, ethical consideration, sample size and technique, research instrument, research location, inclusion and exclusion criteria and the method of data analysis. The next chapter presents the first set of analysis.

CHAPTER FOUR

GOALS, CONTENT AND COGNITIVE PERFORMANCE OF DOWN SYNDROME LEARNERS IN CLASSROOM DISCOURSE

4.0 Introduction

This chapter contains the analyses of the data for this research, concentrating on the linguistic and cognitive content of the classroom discourses between teachers and the learners with Down syndrome in the selected facilities in Lagos, Nigeria. An overview of the discourses was presented to show the goals of each discourse, how the content was meant to facilitate learning and serve linguistic and cognitive purposes for the learners in various ways and how relevance is drawn from the responses of learners with Down syndrome

The data comprised classroom discourses from two Down syndrome facilities over a period of one year and six months. The first is a public facility where DS learners were together with pupils with other developmental challenges, who did not participate in the study while the other is a private facility where learners with Down syndrome were grouped into four classes. The analysed classroom discourses from these two facilities are twenty and tagged discourse one to twenty. They all involved learners/pupils and teachers' interaction within the classrooms, so the pupils/learners are referred to as 'P'using different numbers for them depending on the sequence in which they took their first turn in each discourse. For example, the first patient is 'P1', whereas the last person to be called by the teacher or participate in a class of eleven pupils is 'P11'. The teachers were tagged 'T' but in a situation where there were two teachers (which was only in one of the discourses), they were tagged 'T1' and 'T2'. Words in the mother tongue/ first language of the participants were italicised for ease of identification.

4.1 Discourse goals

The goals of discourses in Down syndrome classrooms go beyond impartation of knowledge. Every activity is aimed at a holistic approach to the development of the learners with Down syndrome. This is with an understanding that these learners have a long list of challenges, affecting most especially their linguistic and cognitive capabilities. An overview of the data for this research confirmed this. Most of the classroom discourses that the researcher was able to obtain were revision classes on topics that have been previously facilitated by the teachers.

It is not strange or out of place that learners with Down syndrome forget the simplest things they have been taught once in a while or give contradictory or conflicting responses, especially as the discourse become lengthier. This was further established in the course of this study. Naturally, learners with Down syndrome, especially those of them who have speech ability, usually will respond. Those without speech abilities were mainly in two categories. The first category consists of learners ready and anxious to talk but could not. Learners with Down syndrome in this category mostly used paralinguistic means such as laughter, nods, demonstration with hands, coughing and so on. The second category often sat without much interest in the classroom. There are some of them in this category who also had hearing deficiency, hindering the ability to get the information in the first place.

The cognitive challenges of learners with Down syndrome informed the basis of contents and methods being used in facilitating classroom discourses. The twenty classroom discourses comprising the data for this study has been grouped into four categories based on the goals of the classes and the activities involved. The discourses were employed in various ways to make the learners with Down syndrome participate, as the teachers guided them to achieve relevance in their responses.

4.1.1 Topical goals

Some of the classroom discourses entailed the learning of new topics in different subjects. In any formal or academic environment, this is often the major aim of classroom discourse. It was observed that all the topics have been taught at one time or the other, either earlier introduced or fully taught. Such topics involved different elements of the topic and the pupils were tested to see if they could recall the content of the topic. For example, the 'Family' was discussed in two classes; one in the public facility as seen in discourse 17 and discourse 20 in the private facility. This topic was facilitated differently, although simplification of the topic was observed in both classrooms. This was to minimise the volume of information given to the pupils at once, in order to ease retention. Instead of giving a definition of 'family', the people who comprises the family were used to discuss it. The teacher in discourse 17 did not state the definition of 'family' but agreed to the answer the pupils gave. For instance:

Excerpt 1. T: Samuel, what is family?
P2: Father, Mother, Father, Children
T: Roll it up for Samuel

In the above excerpt, the Down syndrome learner, P2 gave the constituents of the family which are the father, mother and children as his own definition of family. The teacher was obviously satisfied with the ostension of the pupil as he gave a relevant response in the context of the classroom. Although P2 repeated 'father' in his response, that did not reduce the level of his relevance. The repetition could have been as a result of the regular revision of the topic and the way the teacher would have turned the constituents of 'family' into a rhythm for the pupils. Therefore, P2 did not likely realise the mistake in his ostension and so did not make any attempt to correct it.

The wrong stimulus was the answer the pupils gave all through the discourse. the number of times. None of them made an attempt to define the word 'family' in another way. It can be deduced that in order to achieve relevance in the facilitation of discourses, teachers can employ simplification of concept definitions, which aids the learners with Down syndrome in achieving maximum relevance.

In discourse 20, the teacher asked 'what is family'? The two pupils who responded said the same thing as follows:

Excerpt 2: T: What is family? Who can try?
P2: A family consist of father, mother and children
T: Clap for Solomon
Pupils: (Clap)
T: Who else can try?
Pupils: Me
T: Favour
P3: A family consists of Father, Mother and their Children.
T: Clap for Favour
Pupils: Clap
T: Everybody, what is family?
Pupils: A family consists of father, mother and their children.

In the above excerpts, it is clear that the simplest way to make the pupils understand, derive optimal relevance and remember the topic was used. The discussion continued in discourse 17 by asking the pupils the roles of each component of the family. For example, 'who washes plates': 'who sweeps' and who cooks food' but in discourse 20, the teacher emphasised the types of family and the component of each type of family. As much as the topic was not new to them, mix –up of answers and in some cases wrong answers were still given by the learners with Down syndrome. Their ability to remain relevant during classroom discourse diminished as the topic became wordy and was taken a step further.

In discourse 20, after the pupils defined family and also responded to the questions and types of family, they could not answer the questions, 'what is nuclear family and extended family'. The teacher had to explain what they were by herself. This indicated that, once the information becomes more, retention seems to diminish and consequently, optimal relevance cannot be achieved. The only pupil that attempted to respond got it wrong as below.

Excerpt 3: T: I said nuclear family consists of

P2: Uncle

T: Nuclear, nuclear

P2 gave a relevant but incorrect answer; relevant in that he gave a constituent of an extended family instead of that of a nuclear family. That was why after some silence by the Down syndrome learner, the teacher intervened again and put the difference in the components of nuclear and extended families side by side. She did not allow them repeat the response again as she recognised the cognitive challenge of her pupils. It was not a difficult task to derive relevance in the pupil's response. His performance could be identified as a case of difficulty in the cognitive processing of this Down syndrome learner as his cognitive environment received more or too much information (for him) on a particular topic.

In discourse 17, the pupils responded more with single words as the second level of question was 'who does what?' after the first question of 'what is family? The repetition of topic is observed as a necessary tool in order to achieve a positive cognitive effect on the pupils because, even after the topic has been repeated, the responses were still not accurate.

In discourse 3, the topic ‘Noun’ was revised by the teacher. The questions the pupils were asked ‘the definition of noun’ and the ‘examples of types of noun’. Most of them responded well to the topic and their responses showed optimal relevance. Their recall skill was observed as higher, in this particular discourse.

In discourse 18, the topic was addition of numbers. This entailed each pupil going to the board to solve a sum while their colleagues responded positively. The addition was done in their books before the discourse was recorded during the problem-solving on the board. The addition topics was observed as a topic well-taken by the pupils. Mastery of topics through repetitions and simplification could be seen in discourses 3 and 18. Considering the ages of the learners with Down syndrome, it is obvious they should have passed the stage of simple addition and definition, but for their cognitive capability, they are still being taught such topics at that age.

Other instances where topics came up were in discourse 5 and discourse 18 where some topics were mentioned briefly for revision purpose. In discourse 5, the teacher asked ‘what is culture?’ and a pupil responded correctly. In discourse 18, the teacher first asked them questions on the topic ‘harmful object’. The topic was observed to be taught with examples of what harmful objects are. It was tasking for the pupils so the teacher resolved to use definition through exemplification as follows:

Excerpt 4:

T: Very good who can tell we what harmful objects are.

Pupils: (silence)

T: Just give me examples of harmful objects

Pupils: (raises their hands)

P1: cutlass

P2: Scissors

P3: Knife

P4: blade

P1: Sharpener

The learners with Down syndrome above responded well when exemplification was used. This further stressed the fact that simple words and answers are easily retained by them and assists them in optimal relevance.

4.1.2 Identification goal

This is an important observed goal in Down syndrome classroom activity. Identification in some of the discourses were accompanied by demonstration. For instance, two classes in the private facility demonstrated two-letter words to ensure the pupils identified the two-letter words and also know the meaning, In discourse 5, the two-letter words were particularly demonstrated by the teacher and pupils. For example:

Excerpt 5:
P2: N – O – No

T: Clap for Tomi

Pupil: (Clap)

T: N – O- No. Everybody say it (demonstrating the word with their hand and head)

Pupils: N - O – No

Demonstrations accompanied the words ‘GO’, ‘WE’ and ‘ME’.

Most of the pupils remembered the words and examples of eight two-letter words were given without the teacher reminding them. This shows that learners with Down syndrome gain more from goals that involve identification and demonstration. They did not have to overtask their cognitive capabilities to process the words accompanied by demonstrations and also with simplicity. The words were taught with two alphabets for each word.

In discourse 10, the pupils who were in level 2 were led by the teacher to identify two-letter words He spelt the two-letter words and the pupils were able to identify eight two-letter words altogether but with minimum demonstration, although the pupils were restless in the classroom. Their level of cognition was not as high as those in discourse 5 classroom that had the same activity.

Colours were identified in two classrooms, one in the public facility and the other in level three of the private facility. The latter set of learners with Down syndrome must have been used to the topic at every level since the beginning of their days in the facility. This could be ascertained from their performance below:

Excerpt 6:

T: Very good

What colour is this? (puts up a red object)

Pupils: Red

T: Oh, you are too much. Clap for yourselves

Pupils: (Clap)

T: Colour

Pupils: Red

T: Very good

(picks up a green object)

Pupils: (clap)

T: Colour

Pupils: Green

T: I will show you another colour now. If you get it, I will give you two Biscuits. Wait *o. Hun Hun* what colour is this? What colour is this?

Pupils: Black

T: Oh, Oh clap for yourself

A good mastery of colours could be seen as displayed by the pupils as their teacher commended them. It was observed that colour is one of the concepts found in charts that were displayed on the wall, in each classroom in the classroom. Therefore, the topic must have been incorporated into the learners' cognitive environment bit by bit until they got to level 3. The role of consistency in achieving learning goals could be seen in the performance of the pupils. A topic introduced at an earlier stage in the life of a learner with Down syndrome should be repeated until full mastery is achieved.

Contrary to the performance of the Down syndrome pupils of the private facility in the above excerpt, the pupils in the public facility found it very difficult to assimilate the same topi colours. Their performance was the opposite of what obtained in the other facility. For instance:

T: colour school uniform

P2: shirt

Shirt is one of the components of the school uniform. It does not have any correlation with colour. The primary MKO went further to ask:

T: colour school uniform

P2: check

The pupil's response here is describing the pattern of the shirt instead of the colour. The cognitive processing of the learner related the colour of the school uniform to shirt and check. His response cannot be considered as completely irrelevant because by mentioning shirt and check, he was still referring to something about the school uniform. However, considering that the concept concept of 'colour' which is very common was not accurately processed by him, it reflects a deficit in word and concept identification in the learner's cognition.

In another set of discourse turns between the primary MKO and the pupils, the following exchange took place:

Excerpt 7:

T: And what colour is this? (Raises the green object)
Pupils: (Gives different wrong answers)
T: Colour school uniform
P2: Shirt
T: *Hen?*
P2: Check
T: *Emi mo wipe* check *ni* but what is the colour of the school uniform?
Pupils: (Silence)
T: Green
Pupils: Green
T: Quadri, *o nwo'ta, E e* play ball *leni o.* No ball today. What colour is this?
P3: Blue
T: Green

The teacher made several analogies and examples of colours with corresponding objects, but the responses of the learners remained haphazard. The objective was for the pupils to identify the colours and be able to distinguish each colour from others but they found it too tasking for their

cognitive capability. The responses of the primary MKO handling the classes in the two facilities indicated the difference in the performance of the learners with Down syndrome. While the one in the private facility approved the responses of the learners, the one in the public facility showed disapproval and kept correcting them almost throughout the class session.

In the private facility, the pupils were expected to identify shapes. The pupils responded one after the other as they displayed ostensive behaviours. Some of them did not make any attempt to respond. The pupils who participated chorused the answer in identifying triangle, square and circle. An issue of clarity in identification arose at a point as found in the following turns:

Excerpt 8:

T: Very good. Who can tell me the name of this shape?

Pupils: (talking as the teacher draws) Oval

T: Wait o. This one (cleans and draws again) what is the name of this shape?

Pupils: Circle

The learners mistook oval for circle shape, but the teacher realised it must have been from the way she drew the shape. She adjusted it and became clear to the pupils. The discourse performance found above shows that clarity is very important in facilitating class goals especially identification. This aids what gets stuck in the memory of a learner with Down syndrome.

Identification of parts of the body was done by pupils in level one in the private facility through a rhyme. They were asked one after the other to touch parts of their bodies in discourse nine. While two of the pupils touched all the parts of the body called by the teacher, a certain pupil, P2 was observed with playful traits, hanging out his hands in the air, close to the stipulated parts of the body, but not touching parts. P1 who had also earlier touched the parts of the body he was meant to identify, in another turn given to him by the teacher, touched the wrong places. It was observed that he did this on purpose.

4.1.3 Responsive goal

Another important goal identified in the Down syndrome class discourses was to make pupils respond. This goal worked on the oral motor skills of the pupils, alongside the linguistic and

cognitive purpose. There are some pupils who can speak almost fluently while some manifest various deficiencies on different levels.

In some of the discourses, the pupils were asked personal information, to make them talk about themselves. They were asked personal questions, the answers they will be able to respond well to, just to make them exercise their oral-motor areas. Examples of this could be seen in discourses 3,7,15 and 16.

In discourse 16, the pupils had different levels of speech ability. It was observed that about half of the class could only utter few word and mostly inaudible. For instance:

Excerpt 9:
T2: Sam, *o ya* look here
T1: Hello Sam
P1: (Looks away)
T2: Uncle is talking to you
T1: Sam, good morning. How are you?
P1: (Silence)
T2: Sam, how are you? *O ma da emi l'ohun (meaning 'he will answer me')*
P1: (stutters) fine.
T2: Sam, how are you?
P1: Fine (whispers)
T2: How is daddy?
P1: (whispers) daddy
T2: Mummy
P1: (whispers) ma
T2: Say mummy, daddy
P1: (whispers and looks away) daddy
T1: Ok, look here Sam
P1: (No response)

The pupil in the excerpt above barely made audible sounds. It was observed that he did not respond to the first teacher's question to him. His ostensive behaviour showed he was not ready to respond probably because the teacher was not his regular handler. His handler intervened when she said *O ma da mi l'ohun* which means 'he will answer me'. At this point, he tried to respond in whispers. For him to have answered to 'Sam, how are you?' by his regular teacher, that means he could at least relate with the classroom. When he was asked 'how is daddy? He repeated 'daddy' instead of answering 'fine'. When the teacher said 'mummy' he said 'ma'. He kept whispering and looking away.

The goal to respond is also an opportunity to task the cognitive ability of the learners with Down syndrome. They must have processed the question at a certain cognitive level before responding appropriately or otherwise. In the case of P1 above, his first two responses were relevant and required no effort to understand. He could only repeat the lexical item ‘daddy. It is expected that someone who responded to ‘how are you’ should also be able to respond correctly to ‘how is daddy’ because of the recurring ‘how’ and structure of the questions.

The ostensive behaviour of the pupil shows that it is not always the case that cognitive relevance will be derived by a learner with Down syndrome because of similarity in words or sentence structures. It is possible that for P1, ‘how are you’ is very familiar to him, but not ‘how is daddy’. However, it is also likely that he is used to the word ‘daddy’ and he might have thought that his daddy was around to pick him. In fact, it is possible that the lexical item ‘daddy’ distracted him as the word could be processed in his cognition as ‘going home’ or any other activity related to his dad.

The pupil was about thirty years and yet could only produce words in whispers and could not give appropriate responses. In all the recorded discourses in the classroom he belonged, that was the only time he was engaged because learners with Down syndrome like him slow down the pace of the others, since they have just one large class for all of them.

Another pupil with whispering answers was focused by the teacher:

Excerpt 10: T1: How are you?

P3: (whispers) Fine

T1: I am fine, thank you.

P3: (imitates the teacher’s gestures without audible speech)

T1: Good

This pupil initially whispered ‘fine’ but the attempt by the teacher to make him speak more expressively became a difficult task for him. He could not make a speech any longer, instead, he banged his hands in the air like the teacher did and just moved his mouth without speech. It can be deduced from here that the pupil could process the question, but the modified response by the teacher placed a higher task on his speech skills. It is possible that he understood the teacher’s modification but his speech level failed him. This reiterates that cognitive skills and speech skills

are supposed to work together to achieve optimal relevance but where one fails, it affects the output of the other.

Another pupil in this class session was asked:

Excerpt 11: T1: Ayo, how are you today?

P6: I'm fine *ku*

His response could be as a result of stuttering or an imitation of the earlier response of the teacher in excerpt 9 'I am fine, thank you' was shortened to 'I'm fine *ku'*. It was observed that he made his responses as brief and fast as possible probably before his speech skills will fail his cognitive skills, with the structure he had stored in his memory.

To further achieve the response goal of the discourse, the teacher asked two of the pupils who were very active in the classroom, the name of the school.

Excerpt 12: T2: Daniel, tell us the name of your school

P4: ( ) primary school. Ipakodo school

T1: Clap for yourself

This pupil interpreted the question he was asked well as he gave a reluctant but relevant response by mentioning 'primary school' although his first word was unintelligible and could not be ascertained what exactly he said. However, his further response of 'Ipakodo school' which is also very reluctant and the 'Ipakodo' must have been the word he unintelligibly spoke the first time. He omitted the 'primary' in the second clause. The teacher approved his two responses without correction as it was impressive to him that the pupil had processed his ostensions well by giving relevant responses twice. P4 was obviously not sure if his cognitive processing of the teacher's question was right or wrong in terms of the name of the school, therefore, he made the earlier part of his response unintelligible but stated clearly the part of the response which he was sure was correct. His ostensive behaviour reflected some hesitation and lowering of voice probably out of fear of being wrong.

The second pupil who responded to the same question responded in an almost similar way.

Excerpt 13: T1: Emeka, what is the name of your school?

P3: ( ) Primary School

T2: Stand up and say it.

P3: ( ) School

T1: Ipa……

P3: Ipakodo School

The pupil uttered unintelligible first words in each response but the first time, he mentioned 'Primary School' and the second time, 'School'. The teacher assisted in giving him the word he found difficult to produce twice and immediately the teacher pronounced the first two syllable I/pa of the four-syllable word I/pa/ko/do, he quickly responded and produced the word in full 'Ipakodo' and added 'school' to it.

Expressive skills drawing from cognition could be observed at work here. The two pupils both produced unintelligible words but were able to achieve more relevance with a little more processing. The question, 'what is the name of your school' is a question that many of them in that class could not answer and even when the teacher asked them to repeat the name of the school after him, just few pupils spoke audibly. In the above classroom discourse, the learners would be more relevant when teachers give them more time to put their answers right and putting them through with a form of scaffold.

In another discourse in the same public facility, the pupils were asked their names. The pupils who could hardly produce any speech tried to respond to the question. There were two observed pupils who were very small in stature and could only utter few sounds. However, when asked what their names were, they responded relevantly. This showed that they could actually hear and understand questions, maybe simple ones at least but do not have adequate motor skills to respond. Their responses were as below:

Excerpt 14: T1: What is your own name?

P2: ( )

T1: Azeez?

T2: Basit

While the pupil's response was initially fully inaudible and unintelligible, the teacher felt he heard 'Azeez' but when the second teacher mentioned the pupil's real name 'Basit', it was discovered that the two names sounded alike. Therefore, the pupil must have mentioned his name but in a very low tone, the first time. In the response of the pupil, his ostensive behaviour was

very positive and his input could be seen as relevant, although hindered by unintelligibility resulting from weakness in his oral-motor skills. The opportunity given by the primary MKO to the Down syndrome learner to retain the discourse turn, encouraged the pupil to vocalise his ostensive behaviour. It could be deduced here that learners with Down syndrome are to be given more time to respond during classroom discourse. In addition, the primary MKO handling the learners must be ready to put in extra effort in decoding the ostensive stimuli of their pupils in order to maximise relevance in the responses of the learners with Down syndrome.

Another pupil was reluctant to respond to the primary MKO as found in the following discourse:

Excerpt 15: T1: What is your name?

P3: (silent and covers his face)

T1: What is your name now?

P4: *dide*

T1: Do you understand English?

P3: (stands up) Yes

T1: What is your name?

P3: (slurs) Divine

T2: Divine

The pupil with Down syndrome stood up on the instruction of the teacher and an interrupting order from his peer, another learner with Down syndrome. When he responded, he gave a slurring answer, which was a partially unintelligible. The regular teacher assisted the learner in pronouncing his name (the response) better. His initial ostensive behaviour interpreted with his response eventually showed speech deficiency. This deficiency could also be responsible for his initial ostensive behaviour and reluctance.

Another important feature of the responses of the learners with Down syndrome is varying degrees of relevance in terms of degree of processing effort, in determining what informed the responses. For example:

Excerpt 16: T2: Emeka, how old are you?

P6: Five years old.

T2: *Hen*?

P6: Five (shows five with his fingers)

T2: You are not five years old *o*. You are eighteen years old. Stand up.

P6: Stand up

T2: You are eighteen years old

P6: Ten years old

T2: You are ten years old?

P6: (nods)

T1: Ok, sit down.

This Down syndrome learner had earlier responded to the name of his school, but when he was asked his age, his ostension was short of the teacher's expectation when he said 'five years old'. He was the first pupil to be asked the question. His response though wrong, was relevant according to the structure of his sentence: Five years old. He did not just say five or five years but five years old. This means that he is conversant with the question. However, the teacher corrected him that he was eighteen years old. This shows that his cognitive processing was relevant except that he did not know his exact age. The idea of the measurement of age is elusive to him as he said ten years despite the teacher's correction.

Another pupil was asked of his age. The different responses he gave lacked coordination as he accepted any contradiction of his ostensive stimuli. For example:

Excerpt 17: T2: Ayo, how old are you

P1: (Shows four fingers but made unintelligent sound)

T2: Twenty years old

P1: Yes

T2: No, o you are not twenty years old. You are eleven years old. *Hen*?

P1: Eleven

There was a difference between P1's ostensive behaviour and stimuli. He indicated four years with his fingers, yet he agreed to the age the teacher initially put forward to him but since the teacher knew his real age, she corrected him and he went ahead to agree again.

The learners showed relevance in their responses to the questions even though the answers may be wrong. They used figures as answer, which means they could understand the word ‘age’. A patient mixed up lexical items in his response when he was asked his age.

Excerpt 18: T2: Osikoya, stand up. How old are you?

P7: Four

T2: You are not four years old. You are twenty years. How old are you?

P7: Nine

T2: I will beat you *o*

P7: Twenty

T1: You are twenty years old

P7: Twenty naira (laughs)

After he was corrected that he was twenty years, the teacher wanted him to learn the proper response to ‘how old are you?’ by putting ‘years old’ and not just stating the figure, but the pupil mentioned the unit of Nigerian currency instead. This response was unexpected and the teacher simply ignored the pupil and went ahead to the next person. By laughing, it was obvious that the twenty years that was called his age reminded him of money and he was excited about it.

These above attempts by the learners in giving relevant but sometimes wrong answers suggest that they understand certain concepts but may not be able to contextualise them, as the case with age because usually, an average child without Down syndrome would have known his/her age at three years.

Another responsive class was found in discourse 18 in a mathematics class, where the teacher nominated different pupils to solve sums on the board, while the other pupils to solve sums on the Board, while the other pupils were to respond and participate as if it was the teacher who was teaching them. Some of the pupils led the class well and ensured the participation of their colleagues in the addition of numbers. One of them kept to himself and his turn to solve the sum was just in single words. He knew what he wanted to do but did not bother to make his colleagues follow like the others did, with different participatory clues such as ‘we are counting’, *Oya*, ‘we will add together’, ‘everybody, what is this’. These learners with Down syndrome displayed optimal relevance with their ostensions through role play.

4.1.4 Recitation goal

The recitation goal is a regular and effective tool in Down syndrome classroom as it enables the pupils to bring back or produce what they had committed to memory. Recitation also enables them to flow in connected speech or string of words, thereby enhancing their oral-motor skills. It also aids their cognitive skills in that through constant repetition, they know when they are wrong during recitation.

In discourse 4, two of the pupils were asked to recite different things they have been taught. P1 was asked to recite the multiplication table of number 2. He did this without any hitch. It was done in a very fast way. It must have been that the pupils were usually made to read it on a regular basis, whereby some of them will just follow the other pupils. In this case however, the recitation was done in isolation and it reflected the cognitive ability of the pupil. He recited with the movement his head sideways all through the recitation, to the rhythm.

The second pupil was asked to recite the months of the year. She immediately looked at the chart on the wall where the months of the year were listed. It could not be ascertained if she was actually reading from the poster or not. She skipped 'January' and anticipated 'February' instead. Therefore, she mentioned February twice. The ostensive behaviour of omission and replacement during repetition shows that during cognitive processing, not all the contents may be fully mastered, as some may just be by rhythm.

In discourse 13, the pupils were asked to take turns to recite the days of the week. The teacher allocated turns to thirteen pupils here, to enable as many of them as possible to participate and exercise their ability. This is one of the discourses that enjoyed wide participation in that facility.

P1 and P10 tried their best to get it right, but not without skipping a day in the list below:

Excerpt 19: T1: Days of the week, start

P1: Monday, Tuesday, Wednesday, Thursday and Saturday

T: Good. Clap for him

The pupil omitted 'friday' but the teacher did not mention this, probably because he was intelligible and arranged the days well, except for Friday which he skipped. The cognitive performance of the pupil could be seen as fair. Recitation rhythm made the day he skipped oblivion to him.

P10 recited with the same level of skipping as found below:

Excerpt 20: T: Daniel, days of the week

P10: Monday, Tuesday, Wednesday, Thursday and Saturday.

This pupil also skipped 'Friday' and this trend could be as a result of being exhausted in the process of recitation by reciting 'Saturday'. The teacher's approval also confirmed that they really tried in their performance. The recitation of P2 and P4 were also similar as found below:

Excerpt 21: T: Quadri, days in the week

P2: Wednesday, Tuesday, Saturday, Friday, Saturday, Friday, Saturday,

T: Good, clap for him

The recitation had skipping, rearrangement and repetition as the pupil skipped 'Sunday', 'Monday' and 'Thursday'. In addition, he could not arrange the days accordingly. 'Wednesday' was the first day he mentioned instead of Sunday and he also repeated 'Saturday'. He however ended the recitation with 'Saturday' and with a tone to indicate that he had ended the recitation. The teacher approved the recitation despite all the errors in the performance.

P4 had a close performance as well as found below:

Excerpt 22: T: Ayo, Ayomide stand up. Days in the week

P4: (week) Thursday, Tuesday, Wednesday, Thursday, ( )day

T: Good. Clap for him

The pupil also rearranged, repeated, skipped and ended the recitation with a partially unintelligible words as the only syllable heard of the last day was 'day'. He started with the fifth day of the week and ended up completely omitting four days. The teacher still encouraged him by asking the other pupils to clap for him.

P3, P6, P7 and P8 all recited mentioning just two days of the week. Unintelligible speech characterized the rest of their recitation:

Excerpt 23: P3: Friday, Tuesday, Tuesday and ( )day

P6: Thursday, ( )day, ( )day and Tuesday

P7: Friday, Saturday, ( ), ( )

P8: Days in the week: Monday, Tuesday, ( ) day, ( )day

The excerpt above shows the performance of four pupils reciting the days of the week. P3, P6 and P7 skipped most of the days and also rearranged them. P6 ended the recitation with 'and Tuesday' following the earlier pupil who recited, and 'Saturday'. It is likely that the teacher taught them using that particular word as the ending conjunction and they had committed it to memory having known that all the words of the days of the week ends with 'day'. P7 started with the last two days but could not go further and kept uttering some unintelligible words to complete his recitation. P8 started off on a very confident note by first repeating the teacher's instruction in his response: days of the week'. He followed this with the skipping of the first day followed with the second and third day and ended the recitation with some unintelligible words.

P9 and P13 said unintelligible words but pronounced only 'day' audibly. They kept repeating the syllable 'day' until the teacher gave the turn to another person. The teacher helped P13 finish up his recitation by saying 'and Saturday' to bring it to a close.P11 and P12 could not utter any word at all. These two had no speech ability to respond to the teacher and this made it difficult to know if they could actually hear or comprehend the class topic at all. P11 moved his lips but nothing was produced while P12 did not make any visible attempt to talk.

The analysis of the recitation goal as presented in the selected facilities, it could be deduced that recitation assists in enabling learners with Down syndrome to participate more in classroom discourse; strengthens their oral-motor skills and allow them exercise their cognitive skills by committing things to memory. A major disadvantage found with the recitation goal on learners with Down syndrome is that some of them do not master some contents properly but rather follow the rhythm or flow of the recitation.

4.1.5 Informative goal

The informative goal identified in the data was tested by the teachers to see how much information especially current affairs that the Learners with Down syndrome could store and recall. At different times, they had been taught names of people who matter in government, institutions and generally in their immediate environment.

In discourse 8, only three of the pupils were able to give the required information while some of the others could only participate in general response along with other colleagues. In the answer of the pupils who responded, there were mix – ups but the teacher employed scaffolds to assist the pupils to the right answer. For example:

Excerpt 24: T: Yes, who can tell me the name of the Governor of Lagos State?

Pupils: (silence)

T: The name of the Governor of Lagos State. Who wants to try if you still remember? You can try now.

P1: [Raises his hand]

T: Chinemerem, try.

P1: Mohammadu Buhari

T: No *o o*, No. The Governor of Lagos State

P1: (silence)

T: Sit down. You tried. Clap for him.

The recognition of the question as current affairs shows that the pupil is relevant and his cognitive skills active, although he got the answer wrong. P1 recognized the question that he was to mention the name of the helmsman of either a state or the country. The question was the name of the State Governor but he gave the name of the President of the country, Nigeria. The primary MKO recognized his ostensive behaviour and stimuli by telling his colleagues to clap for him. For learners with Down syndrome, such an attempt is a good one, therefore, the pupil should be scaffolded to derive optimal relevance of the ostension. A second pupil answered the question as found below:

Excerpt 25: T: Governor of Lagos State. Who can tell me?

P2: (raises his hand)

T: Yes, Tomi

P2: Akinwunmi Ambode

T: Akinwunmi Ambode (clap for him)

The second pupil gave the correct answer. It could be that he was earlier confused like P1 but after the primary MKO eliminated the answer by P1, P2 became left with the second name he could remember, which happened to the correct answer. It could also be that he knew the answer to the question initially, but did not display the relevant ostensive behaviour. The primary MKO reinforced the answer to all the pupils to repeat after her and this led to her second question which now happened to the appropriate question for the wrong answer initially given by P1.

Excerpt 26: T. Who can tell me the name of the President of Nigeria?

Pupils: (Silence)

T: President of Nigeria?

P1: (Raises his hand)

T: Yes

P1: Muhammadu Buhari

T: Clap for Chinemerem

Pupils: (Clap)

T: Muhammadu

Pupils: Buhari

T: That is the name of the President of Nigeria

The first pupil who gave the wrong answer was the only pupil who raised his hand again and he supplied the right information this time. The primary MKO followed up with the pupils by reinforcing the answer. The pupils also showed at this point that they have an idea of the answer but they may want to be careful so as not to give incorrect answers. The reinforcement allowed information stick more to the memory of learners with Down syndrome. Also, when the teacher allowed them to echo words, it had a lasting effect. Despite the fact that most of the classes were reinforcement classes, some of the learners still showed poor cognitive skills.

The teacher requested another information that she knew the pupils would know:

Excerpt 27: T: Emeka, what is the name of the President of Down Syndrome Foundation of Nigeria?

P4: (laughing)

T: The President, Down Syndrome Foundation of Nigeria. The President. Tomi

P2: ( )

T: Boluwatife

P3: Mrs. Rose Mordi

T: Clap for Boluwatife

The first pupil, P4 was asked the same question by the primary MKO to respond but could not answer. The learner was quiet almost throughout the class session. All he did was to laugh when

the teacher called on him. It could mean that he did not want to respond or he did not know what answer to keep. It could not also be determined if he was attentive to the discussion or not. It could be that hearing his name made him smile.

The second learner was asked but could not give the answer. He was the one that answered the first question correctly when P1 got it wrong. He said something inaudible, as if he was checking by himself if his intended ostensive stimuli were right. The primary MKO then gave the turn to another pupil who gave relevant ostensive stimuli. The manner in which the answer was reinforced to the pupils and their response demonstrated again that the memory of learners with Down syndrome constantly needs to be tested and refreshed to ensure their retention. As soon as the teacher wanted to repeat the information for emphasis, the pupils echoed it simultaneously:

Excerpt 28: T: Very good. Mrs. Rose Mordi

Pupils: (overlap) Rose Mordi

T: That is the name of the national president of Down Syndrome Foundation of Nigeria.

The primary MKO added the modifier 'national' to the title she had first mentioned. It is possible that since the pupils got the name correctly, the new information could be added to what the pupils knew already, although she did not emphasise the modifier. She further asked for the name of the administrator of Down syndrome Foundation of Nigeria. P1 raised his hand again to respond.

Excerpt 29: T: Who can tell me the name of the administrator in Down syndrome Foundation of Nigeria? The name of our administrator

P1: (raises his hand)

T: Chinemerem

P1: Mr. Majek

T: Clap for chinemerem

Pupils: (clap)

T: The name of our administrator is Mr. Majek

Pupils: (overlap) Majek

T: That's the shortened form *o.* It is Mr. Majekodunmi. You know I have taught you several times. Mr. Ma-je-ko-dun-mi. but you are fond of Mr. Majek. Very good. You have done very well.

The primary MKO continually introduced the keywords to which she needed the pupils to give information about, one after the other. Only one of the pupils raised his hand. He got the answer right, although the teacher corrected the pupils that they are used to that shortened form. She called out, syllable by syllable, the full name of the administrator. In this classroom discourse, it was noted that the pupils echoed the names, each time a pupil had responded correctly and the teacher affirmed it. This indicated that some of the learners were confused with the key words and did not want to give a wrong answer. This must have been the reason for not attempting to answer the question.

In the later part of discourse16, the teacher wanted the pupils to mention the name of their school. He wanted to test how accurate the information they have on the name of their school which is referred to in a variety of ways. The teacher requesting the information was not their regular teacher. The pupils responded in various ways as below:

Excerpt 30: T2: Daniel tell us the name of your school?

P4: ( ) primary school – Ipakodo school

T1: clap for yourself

T1: Emeka , what is the name of your school?

P3: ( )school

T1: Ipa …….

P3: Ipakodo School

P4 at the first attempt could not pronounce the name of the school. He said something unintelligible as the name of the primary school. He made another attempt, getting the name of the school but removed the 'primary'. P3 however could not mention anything except 'school'. The teacher assisted him by pronouncing the first two syllables of the four-syllable word. With this, he got a clue to the answer and pronounced the name in full. Other pupils were requested to answer the same question but none of them responded. The teacher also wanted to correct the name the two pupils called the school, as that was not the official name. He then concluded by saying:

Excerpt 31: T1: Ok, everybody let us learn the name of our school today.

T2: The name of my school is Local Government School. Say it after me

Pupils: Local Government School

The area where the school is ‘Ipakodo’ and that is why it is atimes referred to as such. It could be that the confusion of the name of the school led to the other pupils not being able to give the information, although participation in that particular class was generally low, as most of the pupils in this facility generally have a low-participatory level in academic work, because of different resultant levels from Down syndrome.

The informative goal could be seen as a tasking one for learners with Down syndrome in terms of cognitive processing because of the amount of information they have to know and remember. As the information becomes more, they tend to mix-up them up. The need to know the zones of proximal development is very important in achieving this goal as this will help in guiding the teacher to know when to stop or to introduce additional information. Cognitive evaluation of the learners is very important, as this will assist in achieving the best results within the zone of proximal development.

4.1.6 Learners with Down syndrome and levels of language use

Having considered the features of the classroom discourses of learners with Down syndrome, their cognitive processing and relevance, it is also important to consider their language use and analyse the factors that affect or determine their modes of language use. This could be viewed in terms of the extent to which they can respond at the different levels of language. The response of learners with Down syndrome varied in terms of this usage. There were varying requirements of questions asked by the teachers. Many of the learners preferred to make their responses as brief as possible while others responded in finite sentences.

Factors identified as being responsible for these choices were firstly, the readiness to speak, as some of the learners were shy to respond. These set of pupils responded with single words and atimes inaudibly too. Secondly, the learners’ cognitive level of processing determined the responses. The third factor is the effect of speech disorders such as stammering, stuttering and cluttering. Learners responded using keywords and eliminated other parts of the sentence. The choice of the linguistic units employed by the learners with DS was determined by a combination of their speech abilities (the nature and extent of individual and peculiar oral-aural disorders) and also the expected response of the questions asked.

In discourse 1, for instance, most of the questions asked by the teacher required a single-word answer because questions were subjective in structure and the learners were expected to respond with the missing words. For example: 'Christians worship in the…' The question mark indicated that the sentence was a question and the teacher expected the pupils to fill in the missing word. This pattern dominated the discourse. However, the structure of the question changed in another turn when the teacher asked the pupils to mention the types of religion. The answer required enumeration. The pupils were expected to list the answers. Therefore, the pupils listed the types of religion. Another structure was a full question: 'who *preach* in the church'.

If the learners have been used to proper sentences or if the classroom discourses had placed full attention on linguistic development alongside the content of the discourse, response by learners to a question such as: who preaches in the church would have been: A pastor preaches in the church.

In discourse 2, apart from the first question that required the pupils to define a noun, most of the other questions were meant to give examples of classes of noun. Most of these were also simple words. The pupils were expected in Discourse 3 to express themselves in various ways. For example, P1 was asked, 'what is your name' and he responded with 'Demide' (a word). The next question he was asked was 'is Demide a boy or a girl'. He responded 'a boy' (a phrase) and the third question was 'what is the name of your school' to which he responded 'second boarding school' (which can be taken for a phrase). He responded with partially relevant ostensive stimuli, although he got the name of the school wrong.

P2, in the same discourse, responded in clear sentences than the pupils mentioned earlier. For example, when the primary MKO asked 'what is your name', P2 responded that 'My name is Makinwa' and to the question: 'how old are you', he responded 'I am thirty-nine years old. To the question, what class are you, he responded that 'I am in primary four green'. This improved structural response was used by many of the other pupils in discourse 3. The above performance shows that some learners with Down syndrome can actually attain the level of correct and standard expressive skills, as well as highly improved cognitive improvement when exposed to such opportunity. The discourse above was performed by the highest level class in the private facility.

In discourse 12, which also had many turns and a high rate of pupil-participation, the learners were to identify colours. As the primary MKO asked them about the colours, they only responded with the name of the corresponding colours in single words such as ‘green’, ‘blue’, and so on. There was no single response in a full simple sentence like ‘It is green colour’. The few sentences that were in discourse 12 were in the Yoruba language. In discourse 14, where the topic ‘colour’ was discussed also, the case was the same.

The above use of language shows that the best expressions and use of language by learners with Down syndrome in the public facility were achieved with the use of the mother tongue as their first language and their language of communication. There was a free flow of responses with their mother tongue instead of the English language which is the official language.

In discourse 15 where the goal was responsive, pupils were asked personal questions. It was observed that pupils responded to the questions in single words, not with the full sentence pattern. P4 and P5 were the only pupils who responded once in a full when giving their names.

Discourse 18 was the only discourse where pupils had the teacher-pupil role-play swap, whereby the pupils assumed the role of the teacher. They took turns to solve sums at the classroom board. Four pupils out of the entire class were allocated turns by the teacher. P2, P3 and P4 were able to express themselves in sentences as they took the lead in solving the sums step by step. P1 used single words although his turn was almost non-interactive, he was still able to successfully solve the sum in his turn.

The above overview of the data for this study revealed a low language performance of the learners with DS in terms of proper usage of full sentences. It further stressed the fact that the participation of the learners is taken as much more important than emphasising or leading them to use proper sentence constructions that will develop better linguistic skills alongside the cognitive skills.

4.2 Oral-aural characteristics of Down syndrome classroom discourse

This section considers the nature and extent to which learners with Down syndrome are affected by deficiencies in their oral and aural regions for speaking and listening respectively.

4.2.1 Speech unintelligibility

The occurrence of speech unintelligibility was high in the classroom discourses of both facilities considered. Apart from some of the pupils who have reached a height of clear speech, some were next in level to them whereby their speech could be understood if subjected to context-relevance analysis. However, there were some of the pupils whose speech could not be understood. The different ways intelligibility manifested in the responses of the learners are discussed with examples.

4.2.1.1. Speech unintelligibility caused by discourse content

In discourse 13, the pupils were asked to recite the days of the weeks, some of the pupils produced unintelligible speech at some point. These unintelligible words were indicated by empty parentheses (( )). For example:

P3: Friday, Tuesday, Thursday and ( )

This pupil was observed to have mixed up the order of the days. He mentioned Friday and Tuesday in that order and repeated Tuesday. His attempt to mention another day failed as all he could do was to produce an unintelligible word to continue in the recitation. He did this just once and stopped.

P4: Thursday, Tuesday Wednesday, Thursday, ( ) day

This pupil got the order of days of the week wrong and also repeated “Thursday”. He could not continue with the other days and the last day he called was unintelligible as the only comprehensible part of the word was ‘day’. This was the trend with P6, P7 and P8 and P1, as they recited with only the ending syllables (day) as the comprehended part of their recitation. P9 said the day three times.

P9: ( )day, ( )day, ( ) day

The above unintelligible performances by the Learners with Down syndrome show that similar words in recitation can be a difficult task for some of them. A Down syndrome learner wants to

master a few words at a go, but when the words are up to seven as in the days of the week and also similar in sounds, the likelihood of the above performance will be the result. The pupils may not have the instinct that either their ordering or pronunciations are wrong, since to them, they are trying their best to participate in the classroom discourse.

4.2.1.2 Speech unintelligibility resulting from moral-motor skills weakness

A good percentage of unintelligibility cases is caused by the weakness of the oral-motor parts of the body. Learners with Down syndrome tried to control their oral-motor parts to be able to produce intelligible and audible speech at the same time but the weakness often failed them. Since most of the classroom discourses consisted of single words and short responses by the pupils, the instances of unintelligibility were scattered across the discourses, especially in pupils who had notable speech challenges. The primary MKOs seemed to understand them better than an outsider. Few instances of this could be found in some of the discourses as found below:

In discourse 2,

Excerpt 32: T: Peter, name of a person

P3: ( ), James, Uloma, Solomon.

The first name mentioned by the pupil could not be clearly heard. The primary MKO either ignored this or understood what name he called but to a stranger, it was unintelligible but he was able to call other names well. The same was the case with P4 when she was asked to give the name of things

Excerpt 33: P4: ( )
T4: TV
P4: VD, VD, you play *hen* film
T: DVD
P4: [nods her head]

In the above excerpt, P4 mentioned the name of something that was unintelligible. The primary MKO mentioned what she felt was P4's ostensive stimuli, but she got it wrong. P4 then tried to explain as clear as possible by stating the function of the gadget her stimuli represented. The teacher was able to understand the explanation. P4 was able to explain in a controlled speech whereas her first word was unintelligible. It can be deduced from here that intelligibility could fluctuate in learners with Down syndrome.

In discourse 3, some of the pupils (P2, P4, P5 and P8) called either their surnames but could not be understood. This could also be that the pupils were used to calling the names like that and the teacher was also accustomed to the names. Most of the times, the primary MKOs were not particular about the pupils' production details. The emphasis was more on the participatory skills of the pupils and also in the goals of the class discourses.

In discourse, 7 some pupils produced unintelligible lexical items, all bordering on names as well. For example:

Excerpt 34: T: Chibuke, what is your surname? Chibuke what?
P6: ( )
T: Nwokocha
P6: Nwo ( )

The pronunciation of the last name was a problem for P6, as he initially was not understood. The teacher helped him with the name. He repeated a part of it and the other part was not clear. He answered one more question clearly but wrongly because he said he was one year old. He was further asked the food he liked best.

Excerpt 35: T: what is the name of your best food? The food you like best?
P6: ( ) (points to a distant place)

The pupil made an unintelligible utterance here again, while pointing to an unknown distant place. It could be that he was referring to his home, since the school just resumed from a short holiday and the teacher had earlier asked one of the pupils about what he ate at home. The teacher did not know what exactly the pupil intended by his ostensive behaviour. Intelligibility could again be seen here as a fluctuating characteristics in speeches of some learners with Down syndrome.

4.2.1.3 Speech unintelligibility from the mood of learners with Down syndrome

Some learners with Down syndrome exhibit unintelligibility in certain circumstances that make their audience curious. For instance, the pupil in the following conversation, P8 made quite a number of unintelligible utterances as found below:

Excerpt 36: T: Aunty, what is your name?
P8: ( )
T: Okpara what? Your name, your name

P8: ( )

T: Okpara Chinedu

P8: ( )

T: How old are you?

P8: I am two years old

T: You are not two years old. You are thirty-nine years old

P8: Thirty-nine years old

T: What is the name of your school?

P8: Down syndrome Foundation of Nigeria

The above pupil made unintelligible responses to the first three exchanges between her and the teacher. She could not say her name in any clear way. Even when the teacher mentioned her two names, her attempt to repeat the names was unintelligible. It was however surprising, that when asked how old she was, her speech was a bit clear. Although she gave a wrong age, her response was a bit relevant to the question. Lastly, she answered the third question correctly which the name of the school. Further turns with the teacher revealed how P8 replied to the question about the food she liked best. She gave a series of food items as her best food.

This particular learner exhibited mood changes in the response time and varying responses, for probable reasons. Firstly, it could be that this learner was shy and initially putting herself together before resounding. Secondly, it could be that she was considering either to take up the turn or not because a pupil who was not audible or intelligible in the first few turns exhibited a new ostensive behaviour and ended up responding intelligibly, relevantly and audibly in later turns.

A common trend that calls for consideration is that some unintelligible utterances in the discourse were due to difficulty in pronouncing indigenous names, despite the fact that names are personal and should be one of the things learnt first. Typical children without Down syndrome learn to say their names as early as possible and as soon as their memories become active but from the examples above, P8 for instance at thirty- nine years of age did not seem to be able to pronounce her names in three attempts. In discourse 17, another learner displayed abrupt varying ostensive behaviour. He initially was reluctant to the primary MKO's turn prompt as found below:

Excerpt 37:

T: Victor, number 2

P3: (reluctant to step out)

T: Victor, number 2. If you don't know it, I will call somebody to come and do it for me

You know I don't know it. (other pupils offer to help)

P3: what is this?

Pupils: three

P2: count

T: don't control him o

P3: answer me

The learner here changed his ostensive behaviour after the primary MKO challenged him to participate, to show that he knew what he was being taught in class. The teacher was unable to influence the learner's mood positively, as he overcame the initial silence and reluctance in participating in the discourse.

The instances of unintelligibility in this discourse were basically in lexical items only, since most of the questions were expected to be replied in simplified language. On few occasions, the teachers tried to revert to the unintelligible speech for clarification, but in most situations, the instances were skipped by the teachers and either asked proceeded to another question or moved on to another pupil. The goals of the classrooms served as the driving force, especially for the participatory ability of the pupils.

4.2.2 The effect of hearing impairment and dumbness on learners with Down syndrome

The discovery of hearing impairment and dumbness was not overt in any of the learners. However, during the classroom discourse, some pupils were silent all through. It was difficult to determine if these pupils were without speech abilities or if they had hearing impairment.

In the private facility, three pupils were in the level 2 class who had no speech ability but were often allowed into level 3 classrooms in order to relate with others who had improved over time, for activities and anticipated verbal participation. These pupils were observed to be far away from the activities of the classroom despite being physically present. They were found taking their snacks all through the discourses. They were grown-ups, who were registered in the facility

quite late. Their ages ranged between twenty and early thirties. According to their teacher, while one of them could barely hear, the other two had fluctuating hearing ability; whereby they heard sounds that dropped to their senses once in a while.

The teacher could not ascertain the exact level of the hearing impairment but worked once in a while to involve them in writing skills to keep them busy. The details of alternative activities they were involved in could not be captured since the study aimed at the abilities involved in speech. However, in the next chapter, socio-interactive opportunities used to engage such learners with Down syndrome were discussed. The hearing impairment of the learners consequently affected their speech as they could only respond to what they hear and since they could not hear, let alone understand anything, they made use of signs and gestures more. Some of this category of pupils were found also with the level one pupils of the private facility. According to their teacher, these ones were dumb but could hear. Therefore, the teacher involved them in the activity of touching parts of their body in discourse 9. They could listen to instructions that were directional and their level of understanding of such instruction was limited.

On dumbness, teachers tested if the learners got what they were asked to either touch or identify. These included letters and diagram on the board or around the classroom. An example from discourse 9 was P4 who was without speech ability but could hear. The teacher asked him to identify parts of his body. His response was as below:

Excerpt 38: T: Chinelo, touch your nose
P4: (Touches his head)
T: Touch your nose
P4: (Moves his hands close to his nose but did not touch it)
T: Chinelo, touch your teeth
P4: (Touches teeth)
T: Touch your Teeth
P4: (Touches teeth)
T: Touch your hand
P4: (Starring at the teacher)
T: Touch your hand
P4: (Puts his hand on the his eyes)
T: Touch your hand
P3: Hand (touches P4's hands)
P4: (Shows his hand)

T: Chinelo, touch your legs
P3: (touches P4's leg)
P4: (touches his legs)
T: Clap for Chinelo

P4 had no speech ability but he was able to follow directions to an extent as seen in the above excerpt. He was asked to touch his nose, but touched his head instead. The teacher repeated the instruction. He did not touch the nose but moved his hands around the nose region. It is possible that he was not sure of the part called nose or he had a hearing deficit at that point. When asked to touch his teeth, he did immediately. The teacher repeated the instruction to ascertain that P4 did not gamble the part he correctly touched. He was able to confirm this through the pupil's response.

The next instruction was to touch his hand. He starred at the teacher who repeated the instruction to him. P3 then assisted P4 to touch his hands and said 'hand' trying to call P4's attention to what the teacher expected of him. He held out his hands after P3's intervention. The last instruction to him was to touch his legs which P3 also assisted him in identifying. He also touched it after P3 did. This learner, even though without speech ability was able to exhibit relevant ostensive behaviour but without vocalized stimuli. This explains that learners with Down syndrome can still be cognitively relevant despite their various challenges in linguistic or oral-motor skills. It is then the job of the teacher to find suitable activity in which to engage every category of learner with Down syndrome.

This pupil (P4) who had no speech ability fluctuated in obeying instructions but it could not be ascertained if his hearing ability was impaired or it was just that he could not identify most of his body parts appropriately as he did not know the names of all the parts of his body, despite his age. The second activity that involved singing excluded him as he did not have the speech ability to participate. P4's performance shows that guided activities for dumb learners with Down syndrome without speech ability can still go a long way to engage their cognitive processing and discourse participation.

In the public facility, the few learners who were hearing-impaired did not participate in the discourses. They were not able to hear what the teacher said at different points. For example, whenever the teacher asks them to stand up, they remain seated until the teachers turned their

gaze and signed to them to stand up. Some of them followed the movement of their peers on few occasions. Two of these pupils were conspicuous as they either put their heads on their desks and sleep or just looked on without any much facial expression or display of understanding of activities around them.

In discourse 12, the teacher asked a pupil, P11 to identify a colour. She knew he could not express himself and that his ability to understand what was being taught in the class was very minimal. P11 could not identify the colour, as expected. The teacher only wanted to engage him in the discourse. The three pupils identified in this classroom had their dumbness and hearing impairment go side by side. As in the private facility, this category of learners was made to write more, ranging from scribbling to letters and numbers.

4.2.3 Stuttering and cluttering in learners with Down syndrome

Most pupils with Down syndrome that have the ability to speak could exhibit various levels of stuttering and cluttering in order to ensure they responded to questions or participated in any discourse. While some of them exhibit this in minimal ways, the manner and extent to which some others stutter affect the whole idea being expressed.

Stuttering and cluttering were two features observed in the analysed discourses for this study, these two speech characteristics were observed. Some of the instances of this feature were captured in the transcription of discourse in Appendix 1. They were obvious from the pupils' ostensions while some ostensive stimuli were inferred from the output of the pupils' response attempt. Concentration of stuttering and cluttering were found in discourses that required the pupils to give responses or answers longer than a lexical item, a higher percentage of it being stuttering. These speech characteristics are considered below.

In discourse 3, the first notable instance of stammering and cluttering was found in P2 in the following conversation:

Excerpt 39: T: BJ, what is your name?
P2: My name is ( ) Makinwa.
T: What is the name of your School?
P2: Errrm, Down syndrome Foundation of Nigeria.

The above patient was observed to be a stammerer. His expressions in the first sentence showed this and there was elongation of 'is' before he called his name. The first name was called with cluttering in a fast speech to the extent that it sounded unintelligible, although the teacher did not ask him to repeat himself for clarity, probably because he had a nickname which he was mostly called by or the teacher already knew the name.

In answering the second question, the stammering was more obvious with 'errrm' before finding his voice to say the name of the school. When he eventually found it, it was forceful. He bent forward as he spoke and nodded his head simultaneously. An overall appraisal of speech in this pupil showed that meaning was not hindered during his responses although he cluttered most of his responses in fast or spontaneous speech.

P3 is another patient who displayed stuttering and cluttering at the same time, as below:

Excerpt 40: T: What is your name?
P3: My name is Peter O – Oboteh.
T: Is Peter a boy or a girl?
P3: A boy.
T: How old are you?
P3: Twenty two, no Twenty One
T: Twenty one, clap for him.

The patient in his first response held the first syllable of his last name for some seconds and with a pause before he started the name again. His responses were characterized by clutters either due to his eagerness to respond or naturally due to his speech deficit characteristics. However, this did not affect the cognitive relevance of his response because he was able to differentiate when he gave his age as twenty-two, instead of twenty-one and was able to correct himself.

P7 is a patient with a higher display of stuttering. Although, he had stood up before he was assigned a turn by the teacher, he did not speak until he was eventually pointed to by the teacher who started off the conversation by asking for his name:

Excerpt 41: T: What is your name?

P7: (puts his right hand on his chest) My name, my name, *ehn*, Oluwaseun Adeboye.

T: What class are u?

P7: (puts his hand on his chest again)

Pupils: (jeer at him)

T: What class are you? Level

P7: Level 4

The eagerness of the pupil to respond was slowed down by the sudden stuttering in his first attempt to respond. All he could do was to place his right hand on his chest, as if to identify himself. He repeated 'my name' and used the filler '*ehm*' before he could eventually call out his name in a clutter. His inability to call his name in the about three moves prepared him for the moment he eventually pronounced his name. He could not give the response in a well-formed sentence, due to the earlier stuttering.

When P7 was asked the second question 'what class are you', he put his hand on his chest again and wrongly replied 'I am in three years old'. The manner of this response and the content resulted in being jeered at, by the other pupils. He must have studied the trend of the other pupils who responded earlier to 'how old are you?' and 'what class are you'. He merged the format of the two responses together in bits. The teacher's intervention however put him through without further explanation and he responded well to the last question he was asked.

In discourse 12, the conversation at the beginning was made highly interactive by the teacher bringing out responses from the pupils. The teacher communicated using local language and this also encouraged the pupils to respond.

P3 who had a bulged tongue and stammered mostly in connected speech responded as below:

Excerpt 42: T: Quadri, *o foso* School *e*.

P3: (stammering and describing washing) nile lana (beats his chest)

T: *Ki lo fi foo?*

P3: *Ose*

P3 stammered and cluttered as he responded to the teacher's questions. His tongue was full in his mouth and raised his voice as he responded. He accompanied his difficult speech with demonstrations which were seen before the words got pronounced by him. It was observed that all his responses in discourse 12 were loud and usually sounded like outburst because of his tongue, leading to cluttering and stuttering. The pupils with larger tongues engaged in more

cluttering and stuttering. P3, P7 and P9 fell into this category. Their responses were forceful, jerky and outburst-like. They repeated initial parts of words in their responses.

In the same discourse 12, P2 showed the characteristics of rapid speech even in the single words and sentences. The pupil was observed not to have a fully clear speech but was clear enough to properly communicate his thoughts. His speech was accompanied with loudness. It could not be ascertained if he had any other oral-aural disorder (for example, hearing impairment) that resulted in him speaking loudly, as he may not know if he was loud. The same pupil responded the same way in discourse 16. P1 in discourse 12 exhibited the same rapid speech characteristics but his own speech was not accompanied with loudness. P1's fastness made his responses brief. P4 in discourse 20 is another example of a pupil with rapid speech.

Instances of non-rapid speech manifested more obviously in discourses that were mainly interactional and demanded the pupils to speak for a longer period of time. For example, the pupils who stammered had oro-facial DS features and exhibited slow speech the more because of bulging tongue. They tend to speak out but the tongue blocked the free flow such that the words were hindered.

An attempt to carry out an acoustic analysis on the discourses revealed a more complex cluttering than when the Down syndrome speech is analysed based on how the researcher perceived it. For example, a Down syndrome learner was asked where his father was, and he intended to respond with 'in the shop'. However, a PRAAT analysis captured the pictures below:

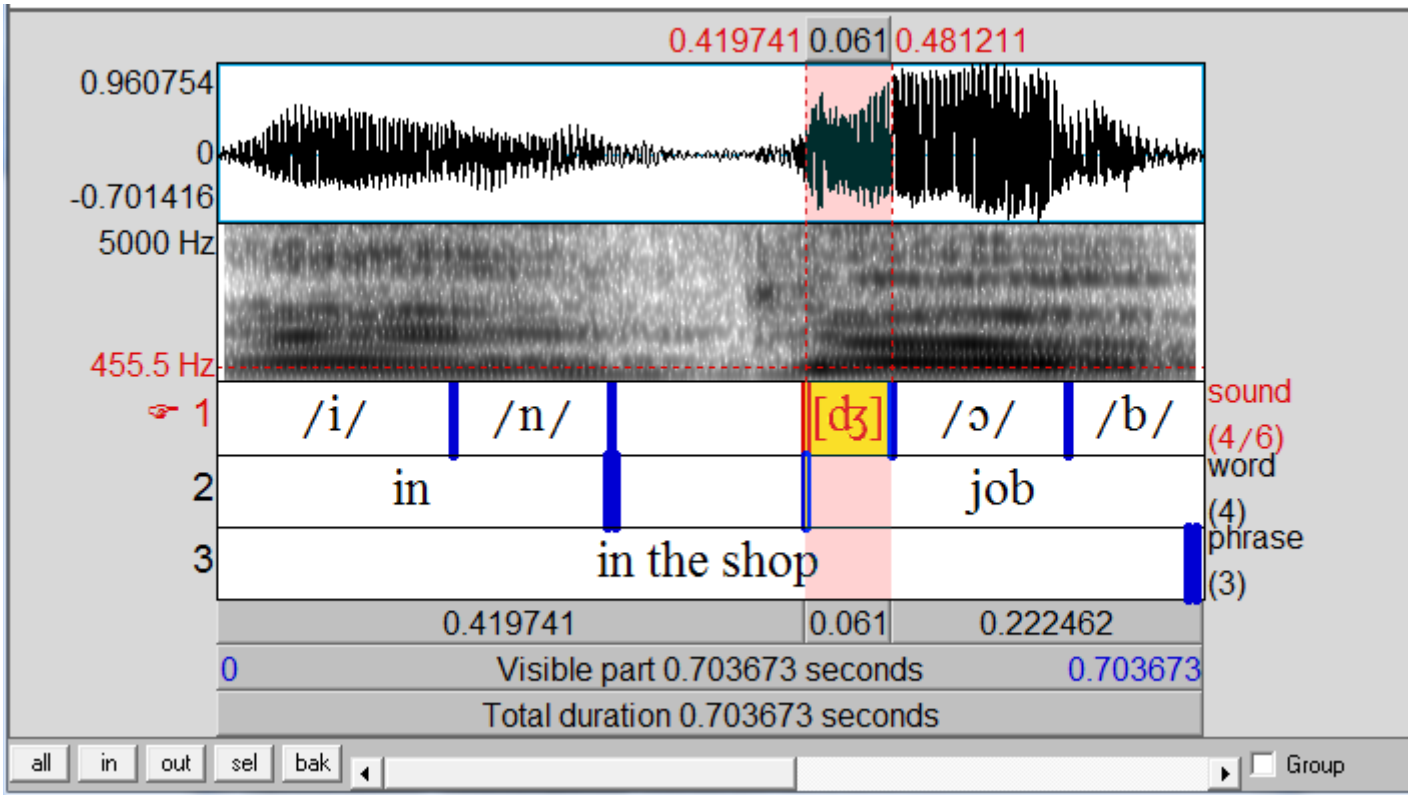

Figure 4.3.3 (a): Phrase spectrogram 1

The above spectogram shows the cluttering in the speech of the learner. The 1st tier shows the expected pronunciation of the intended phrase whereas the phrase as pronounced is found in the second tier and sounds like ‘in job’. The word ‘the’ was as good as not pronounced as could be seen above because the intensity could not be captured unlike the ‘in’ and the ‘job’. This shows cluttering at the level of the phrase. The learner’s expression would result in a totally unintelligible one, except for someone like the teacher who used her background knowledge that the parent of the student has a shop and would be there.

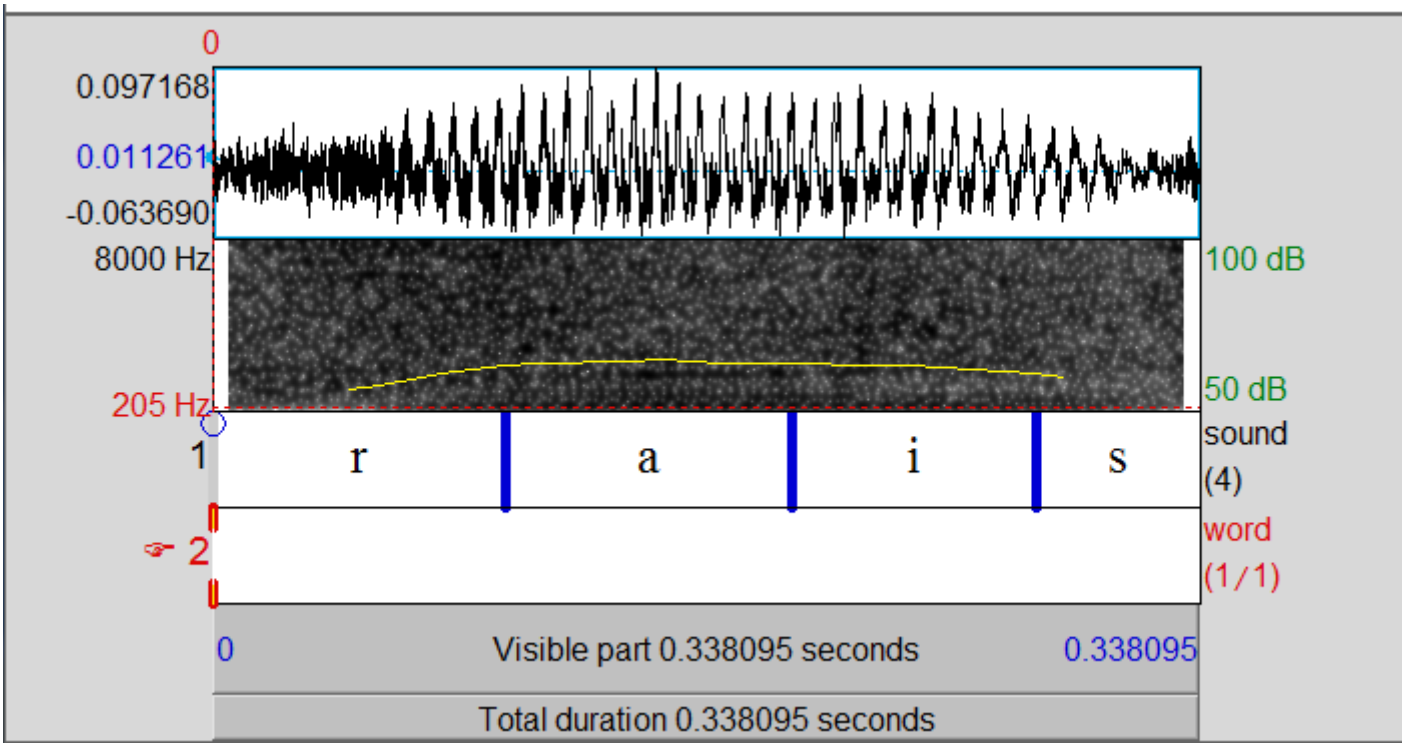

Figure 4.2.3 (b): Word spectrogram

The above spectrogram shows low intensity in the pronunciation of the word ‘rice’ by learner. The formant structures are not clear to pick the perturbations which indicates the diphthong overtones. Situations like this arise from low air energy in the vocal tract leading to no distinction by the vocal tract. Secondly, the bulged tongue can add to the inability of the speaker to produce unintelligible sounds and word as shown by the unclear patches above.

An instance that shows stammering is that of a learner who wanted to say ‘he is fine’ when asked the question ‘how is daddy’? He displayed initial stammering in an attempt to make his sentence as analysed below:

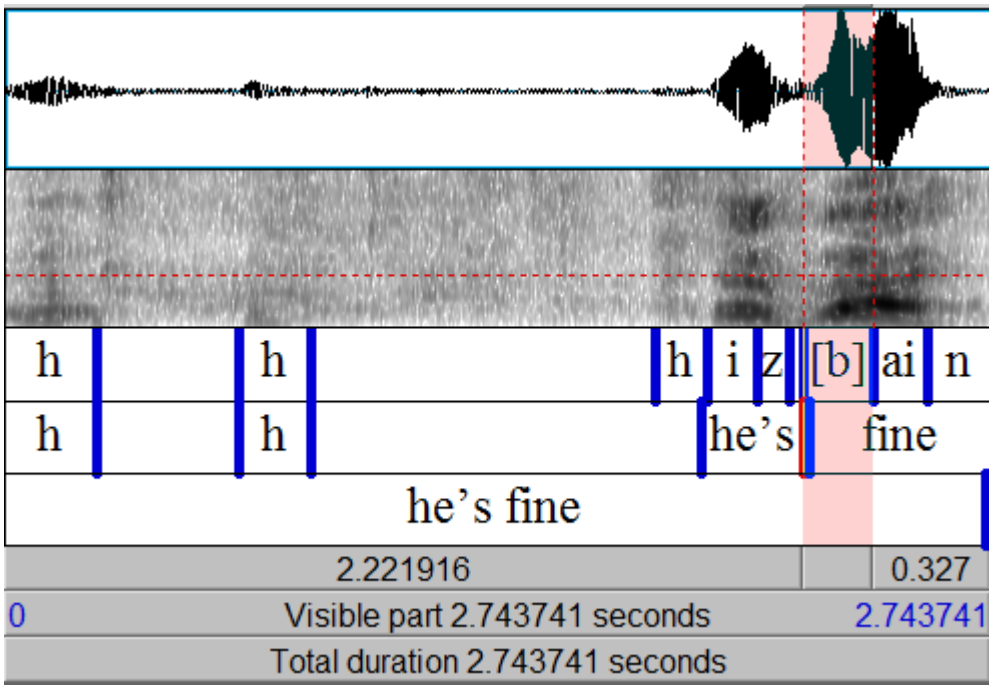

Figure 4.2.3 (c) Sentence spectrogram with stammering

The spectrogram above shows the stammering on the /h/ sound by the Down syndrome speaker, in an attempt to say 'he'. This could be seen from the amount of total time spent on the pronunciation with the stammering as above compared to the time spent when he eventually found his voice and pronounced as found in figure 4.3.3 (d) as below:

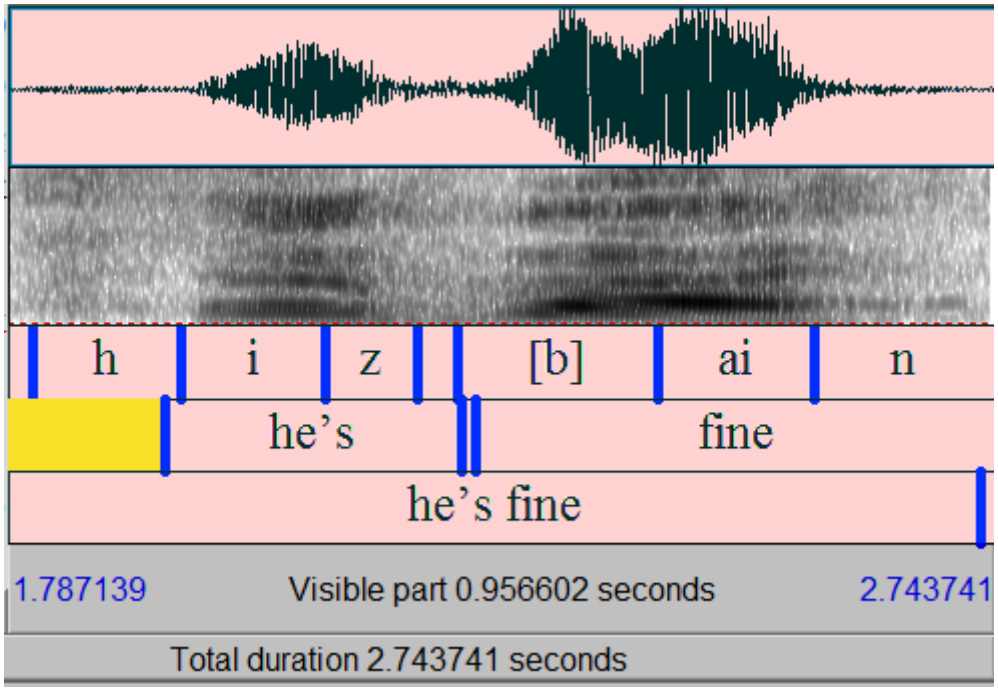

Figure 4.2.3 (d) Sentence spectrogram without stammering

4.3 Cognitive evaluation of Down syndrome pupils in classroom discourse

Like every regular pupil, it is not out of place for learners with Down syndrome to comprehend at different paces, but in learners with Down syndrome, it is more complicated and sometimes slows down teaching and achieving the stipulated goals in their classrooms.

A very good illustration of this was found in discourse 12 where the teacher facilitated the teaching of colours. It was very difficult for the teacher, who kept showing examples of the colours to familiarise the pupils with each colour. After much explanation, pupils were asked to identify specific colours, they could hardly give the right answer. An example is found in the excerpt below.

Excerpt 43:

T: Quadri, what colour is this?

P3: [stutters] colour green

T: So what is the colour of your school uniform?
P2: [pulling his shirt collar] Red
T: So what is the colour of school uniform?
P2: Blue
T: Green. *Hen*?
P2: Green

In the above excerpt, the pupils were asked the same colour that the teacher had taken pains to teach earlier in the discourse. She used their school uniform and the flag of Nigeria to teach green colour, yet the pupils kept mixing the colour up with another. This performance shows that this Down syndrome learner could not cognitively process the relationship between the green colour and the school uniform which is also green. This further confirms that the more verbose explanations and illustrations are, the more confused some of the learners could be, instead of giving them more clarity.

After identifying the colour as green, the pupil was supposed to understand the meaning of the lexical item 'so' as used by the teacher but his cognitive processing failed him. The teacher decided to engage them again with other colours to test the pupils' retention skill as below:

Excerpt 44: T: Samuel, what colour is this?
P9: (stutters) Blue
T: Daniel, what colour is this?
P2: Red
T: No, *mo ti so fun yin.* Colour *aso yin*
P2: Uniform (pulls his collar)
T: *Hen, ki wa ni* colour *e*?
P2: Red
T: Emeka, what colour is this?
P1: Blue
T: Blue *ni* school uniform? What colour is this?

The teacher in the above excerpt decided to revisit the green colour since the school's uniform is green and if they would not recognise any other colour, they should register the colour of the school uniform which is readily available in their cognitive environment. The cognitive performance of the learners show weakness in certain aspects of the pupils especially in identification of specific things.

The use of the mother tongue 'colour *aso yin*' means 'the colour of your uniform'. The teacher then said '*hen, ki wa ni* colour *e'* which means 'so what is the colour'. Two of the learners responded with 'red' and 'blue'. For the learners with Down syndrome in this facility, colour as a concept proved a very difficult one for all of them to process in their cognitive environment. All the teacher's effort to illustrate relevance with her creation of mental picture did not yield any positive result.

The teacher temporarily lost hope in the pupils getting the green colour right, as she moved to another colour without finalizing on the green for the pupils. This was because the pupils kept mentioning other colours as the green colour. Her repetitions and reinforcements did not seem to have any positive effect on the pupils' cognitive processing. However, after teaching some other colours, the teacher revisited the green colour the third time.

Excerpt 45: T: (picks up the green object) what colour is this?
Pupils: (give different wrong answers simultaneously)
T: *Ha, ha* school uniform *yin*! *Ki ni mo pe* colour school uniform *yin*?
Pupils: [give different wrong answer again]
T: Green
Pupils: Green
T: Again
P: Green

At this point there was on outburst by the teacher code-mixing in the Yoruba language, to show her surprise at the pupils for their refusal to comprehend the green colour, despite the illustration with their school uniform which is the most familiar green item around the cognitive environment. Each time she told them the colour again, they will correctly repeat it immediately, but after sometime, the pupils would mix the colours up again. For instance, after the above excerpt, the teacher still asked two pupils but they could not respond about the green colour. She asked a pupil who could talk, one of the pupils who had earlier echoed the 'Green' and his responses again were as follows:

Excerpt 46: T: Makinde, what colour in this?
P5: Blue
T: Colour Green
P5: Colour Green
T: Hen?
P5: Colour Green

P5 could not link the green colour he just echoed with his colleagues to the item the teacher was holding as the same colour. He displayed a very weak cognitive processing as earlier displayed

by some of his colleagues too. The pupil mentioned blue colour despite the fact that he had just shortly re-echoed 'green' with his colleagues. The teacher moved to others before ending the class with the green colour again as found below:

Excerpt 47: T: And what colour is this? (Raises the green object)
Pupils: (give different wrong answers)
T: *Colour school uniform*
P2: Shirt
T: *Hen*
P2: Check
T: *Emi mo wipe check ni* but what is the colour of the school uniform?
Pupils: (silence)
T: Green
Pupils: Green
T: *Quadri, on wo ita. E e play ball leni o.* No ball today. What colour is this?
P3: Blue
T: Green
P3: Green
Pupil: Green

P2 referred to the shirt as check. It was a surprise that he knew the shirt was check and yet mixed up the colour. The teacher code-mixed at this point to explain to the pupil that she knew the shirt was check, but that she was referring to the colour. One could deduce from here that some learners with Down syndrome fluctuate in their retentive and cognitive capacity. It is as if the words are only retained temporarily. None of them could respond correctly and the teacher mentioned that the pupils would not be allowed to go the playground for football session, which obviously some of them were eager to go for. This could probably be one of the reasons why the pupils were not concentrating. At this point, concentration and cognitive processing was placed side by side by the teacher who felt the poor cognitive performance of the pupils was due to distractions outside the classroom. However, this is not likely to be the case because the learners with Down syndrome in the other facility performed very well on the same topic.

The same topic of colours was taught in the private facility. The teacher also used coloured objects. However, these pupils got most of the colours right, calling out each of the colours

together, as the teacher raised each matching object. The rate at which the pupils got the answers correctly gave rise to the teacher's comments such as

Excerpt 48: T: oh, you are too good. Clap for yourselves.
T: oh, you are too much. Clap for yourselves.

After they had identified so many colours, the teacher assumed the pupils would not recognize black colour so she said:

Excerpt 49: T: I will show you another colour now. If you get it, I will give you two biscuits. Wait *o. hun hun.* What colour is this?
Pupils: Black
T: *Oh, oh,* clap for yourselves

The above showed that the pupils processed the colours well and were probably used to them within and outside their classrooms. When the teacher asked them to identify brown and white colours, the pupils could not, probably because it was not a common colour being used in preparing learning/ teaching aids for not being colourful or bright enough. One of them got it right eventually as follows:

Excerpt 50: T: This one nko?
Pupils: (silence)
P2: Brown
T: Clap for Chinemerem
Pupils: (clap)
T: very good. What colour is this one
Pupils: (give different wrong answers)
T: *Hun, hun,* this one colour White
Pupils: White

None of the pupils got the white colour right until the teacher gave the right answer. This was the only colour none of the pupils made an attempt to respond to. The class was the level three class in the private facility whereas the class where the same topic-colour was taught in the public facility is a mixed class of all categories of pupils with DS. This raises questions as to why the pupils in the two settings did not have similar cognitive performance in terms of colour. It can

then be deduced that early and correct exposure to concepts should be done at a very early stage of the life of individuals with Down syndrome.

Comprehension could be evaluated in the discourses based on relevance of stimuli by the pupils. In most of the discourses where questions were answered, most pupils gave relevant answers, but not necessarily correct. For example:

Excerpt 51:
T: Aunty, what is our name?
P10: My name is Mayowa. Mayowa Mrs. Jamal Amuda Lawal
T: Mrs. *iya re wo lo fi soruko re* (laughing) What is your name?
P10: (silence)
T: Mayowa Amuda-Rahman
P10: Mayowa ( )
T: Amuda –Rahman
P10: Amuda –Rahman
T: How old are you?
P10: Ten years
T: You are thirty-one years
P10: Thirty-one years old

This pupil was asked by the teacher 'what is our name' she did not allow the construction of the question to disrupt her expected answer. She knew that the teacher was asking for her name. However, she responded by saying 'my name is 'Mayowa Mrs. Jamal Amuda-Rahman'. This response was very hilarious to the teacher, because the pupil added 'Mrs.' to her name. The 'Jamal' was not also a part of her name but she included it. According to the teacher who later corrected the pupil, her name was Mayowa Amuda-Rahman, therefore the insertion of 'Mrs.' and 'Jamal' could be best explained by the pupil. It could be that a relative of hers bore the name 'Jamal' with the title 'Mrs.' or it could be that the two words were not in any way related.

The pupil was further asked of her age. She responded with 'ten years', but the teacher said she was thirty-one years old. She did not disagree with the teacher. Although she understood she was being asked her age and that age means number, she did not understand that the difference between her age and the ten years she mentioned are wide apart. The pupil above was not the only one who had such comprehension challenge. For example:

Excerpt 52:

T: Aunty, what is your name?

P8: ( )

T: Okpara, what? Your name, your name

P8: ( )

T: Okpara Chinedu

P8: ( )

T: How old are you?

P8: I am two years

T: You are not two years. You are thirty-nine years old

P8: Thirty-nine years old

T: What is the name of your school?

P8: Down syndrome Foundation of Nigeria

This pupil was asked her name three times but she could not make any intelligible response, but when asked her age, she responded very well, although she gave a wrong age. She said 'she was two years, whereas, she was thirty-nine years. She did not know her age as well as the difference in being two years and thirty-nine years of age. The answer she gave to the name of her school showed a very relevant and absolutely correct answer.

From the above excerpts, it could be deduced that the level of cognition of learners with DS could only be well evaluated when teachers probe further whenever inappropriate, wrong, or varying responses are given by the pupils, to determine their cognitive interaction and processing.

In discourse 15, the pupils that responded all recognized that the question they were being asked (their age) required a numerical answer. P6 said he was five years old but the teacher corrected him that he was eighteen years old. He then said he was ten years old. If he knew he was ten years, why did he mention five earlier? The teacher did not want to argue with him, therefore he was told to sit down. P1 was another who showed lack of comprehension on the same age question as found below:

Excerpt 53:

T2: Ayo, how old are you?

P1: (shows four fingers but made unintelligible sound)

T2: Twenty years old

P1: Yes

T2: No, *o*, you are not twenty years old *o*, you are eleven years old. *Hen*?

The pupil did not know his age. The teacher guessed an age for him and he agreed, but when the teacher gave him another age, he agreed again. This meant that he did not know how old he was. P7 created another level of comprehension in his turn as below:

Excerpt 54:

T2: Osikoya, how old are you?

P7: Four

T2: You are not four years old. You are twenty years. How old are you?

P7: Nine

T2: I will beat you *o*. how old are you?

P7: Four

T2: You are twenty years old. How old are?

P7: Twenty

T1: You are twenty years olds

P7: Twenty naira (laughs)

This pupil rejected the age the teacher told him he was and insisted on being four years old, even after the teacher threatened to beat him for saying the wrong answer. The reason why this pupil kept saying 'four' remained unknown. The teacher was able to prevail on the pupil to agree to twenty years eventually, only for the pupil to say twenty naira instead of twenty years old. This means that the sound of twenty brought money to the memory of the pupil and his comprehension processed twenty as money, which is a concept he was more familiar with.

Looking at the above pupil's response again, the comprehension of the fact that his response was meant to be numerical; his response of four and nine respectively as his age, which are numbers far from his real age of twenty and his seeming acceptance of twenty as his age but adding naira to it instead of 'years old', bring to the fore again the comprehension challenges of learners with DS.

In discourse 17, comprehension of multiple questions posed a challenge to some of the pupils. For example:

Excerpt 55: T: Olagbin, who is the head of the family?
P8: Mother and children
T: No father? Who is the head of the family?
P8: (silent)
T: Who gives mummy money to cook food?
P8: *Eba*
T: *Eba ko, iyan ni.* Olagbin! sit down

In the above excerpt, the pupil was confused by answer earlier given by other pupils. He knew some of them had mentioned 'mother' and 'children' but did not understand to what question. His responses in the excerpt showed he picked lexical items to answer. For example, he must have picked 'family' from the first question to respond with 'mother and children'. If the question was 'what is a family' based on what they were taught, the correct response should have been 'father, mother and children', but how could his answer to who is the 'head' be 'mother and children' instead of 'father'? This showed he did not comprehend the question.

In response to the third question, he was asked 'who give mummy money to cook food? And he responded 'eba'- a cassava delicacy in Nigeria. This could mean that he picked the word 'food' and then mentioned 'eba'. The question 'who' was replied with a thing, instead of a person. This showed a cognitive breakdown in the pupils' comprehension.

Another pupil in the same discourse displayed both comprehension and incomprehension almost at the same time as found in excerpt below:

Excerpt 56: T: who use to prepare food for us at home?
P9: Mummy
T: Good. *Atama* for him. Another name for father is what?
P9: (stand up) *fowo foso*
T: Daddy
P9: Daddy

When P9 was asked the first question, he responded correctly, but his response to the second question raised a number of concerns. The first is that he was asked for a name which is 'Daddy'

but he responded with a verbal phrase which literally means washing clothes with hands. It is very difficult to relate the question with the response, except it could be that since the first question asked the role of the mummy, the pupil on hearing 'father' in the second question thought it meant the role of the father and could it mean the role of the father is to wash with his hands? Or could it be that he was trying to say another role mummies play without paying attention to the demands of the second question?

The pupil also expressed himself in the Yoruba language. There is no ready explanation for his code-switch, but whatever he was trying to express was best understood by him because he accompanied his code-switch with paralinguistic gestures by showing the washing of clothes with his hands. He probably would have been able to explain himself better if the teacher had analysed his response.

P3 in the same discourse showed the lack of understanding of the question he was asked.

Excerpt 57:
T: Who wash plates at home?
P3: (describes washing of plate with his hands)
T: Is it father or children?
P3: Father, mother

This pupil seems to understand washing of plates with the gesture but did not give any verbal response. However, when the teacher asked if it was father or the children who washed plates, he started with listing of the components of the family. This showed that he did not understand the question in the first place but picked phrase 'washes plates'.

4.4 Conclusion

This chapter contained the analysis of the cognitive performance of learners with Down syndrome and how relevance was derived in their classroom discourses. The cognitive ability of the pupils was underplayed in most of the discourses, as the teachers did not devote enough time to that. Xiau-hui (2010) stated that teachers apply the principles of relevance theory to derive meaning from their student's utterances. Some of the reactions to the derived meaning include indicating incorrect answer, expanding or modifying an answer, summarizing and criticizing. These were not the usual case in the analysed discourses especially when need be, probably because for every class goal, there was a time limit and many pupils to participate. The effects of the oral-aural disorders were also analysed as well as their use of language.

CHAPTER FIVE

SOCIO-INTERACTION ANALYSIS OF DOWN SYNDROME CLASSROOM DISCOURSE

5.0 Introduction

This chapter is designed to evaluate the socio-interaction variables as identified by Lev Vygotsky (1934), in the data, in the two facilities where the data were obtained. It was observed that the two environments were different in terms of location, organization and available resources. Therefore, a facility-based analysis is employed to depict the uniqueness of each of the facilities.

5.1 Facility A: the public facility

This facility is in one of the middle class areas of Ikorodu, Lagos State. The facility is owned by the state government and it is the only facility with the special unit for the intellectually challenged in that part of the state. Consequently, the population of intellectually-challenged pupils is very high. The management admits pupils with most categories of intellectual challenges including Down syndrome, Autism, Williams' syndrome, mild mental challenge and so on. However, it was observed that the facility had more learners with Down syndrome than those with other conditions.

The school had a single class with two teachers at a time for all of them. On each visit for this study, the Down syndrome patients were usually separated for the classroom discourses that served as data.

5.1.1 The more knowledgeable others (MKOs)

Three types of MKO were identified during the study. The first group of MKO are the primary MKOs which are the teachers/handlers, the second type of MKO are the peers of learners with Down syndrome and the third are the Augmentative and Alternative Communication (AAC) aids/educational materials employed in the course of classroom discourse facilitation.

5.1.1.1 The Primary MKO (The teachers)

The primary MKO in this facility were the four teachers encountered. Three of them are females while one of them is a male teacher who came in during one of the sessions being the school's sports coordinator and is familiar with some of the pupils. He agreed to facilitate the class on a particular day. The teachers are without any form of physical or intellectual challenge. They all

coincidentally trained in the same college of special education in Nigeria. They were trained to handle intellectually challenged pupils, but not specifically for learners with Down syndrome.

The primary MKO and their linguistic performance

The teachers in the special unit of the public facility trained on intellectual-disability. None of them was a trained English Language teacher. This reflected in the standard of the English language used to pass instruction to the pupils. Various forms of linguistic interference occurred in the English language performance of the teachers. This could be seen as a result of the training of the teachers which concentrated more on the intellectual-challenge and the influence of the environment of operation where teachers often used the unofficial language among themselves to communicate within the classrooms and also outside the classroom, even in the presence of their pupils.

It was also observed that the participation of the pupils seemed more like the primary objective; the impartation of knowledge, secondary, while less attention was given to the general use of language. The use of the English language in this facility was that of a typical ESL classroom with the elements of mother tongue (MT). The means through which language was used by the facilitators varied. This included the use of code-mixing and code-switching and instances of lexical transfer, lexical insertion and lexical reordering showed elements of mother tongue interference. All these were used partly to create facilitation effects during classroom discourse. They also depict language of convenience for the teachers as the best way to express themselves. These various use of language are discussed below.

Codemixing and code switching

The primary MKO in this facility were from the same Yoruba ethnic group, which is also the predominant ethnic group of the pupils and the environment in which the facility is located. This encouraged the teachers to employ the use of code mixing and switching as the need arose in the course of teaching. Some extensive examples of the use of the mother tongue were found in discourses 12 and 20.

In discourse 20, the teacher started off with a question in a mixed code as soon as the pupils settled:

Excerpt 58: T: *lana, ta lo foso school e lana?*

P1: (beats his chest) *emi*

T: *o foso school e?*

P1: (describes washing with his hands)

T: *Ki lo fi foso school e?*

P1: *Omo*

T: *Omo. O* sure?

P1: (nods his head in agreement)

The MKO asked the whole class if they washed their uniforms at home the previous day. She must have expected all of them to understand the question. One of the pupils answered and she asked him further questions on what soap he used in carrying out the washing. The MKO used this means of communication to bring the class to a familiar and mental picture, to aid her teaching. She asked the second pupil in the same code

Excerpt 59: T: Daniel, *o foso school e*?

P2: (looks down)

T: *Oo foo*!

P2: *Mi foo*

The learner in the above excerpt did not initially respond to the MKO's question directed at him, but when the MKO said that means he did not wash his school uniform, this pupil quickly replied that he washed it. P2 emphatically replied the teacher when he was asked the second time. The L1 was very easy for him to identify with and that was the aim of the primary MKO also. The MKO moved to the third pupil and asked the same question but in a more tasking way:

Excerpt 60: T: Quadri, *o foso school e*?

P3: (stuttering and describing washing) *nile lana* (beats his chest)

T: *Ki lo fi foo*?

P3: *Ose*

T: *Ose*

This pupil transferred the question into the actual event of washing the uniform the previous day, so instead of responding positively or negatively, he simply said *nile lana* meaning 'at home, yesterday'. This showed a further cognitive reasoning by the pupil and with his next ostension to the MKO that he washed the uniform with soap, when he was asked what he washed his uniform with.

The next learner (P4), was asked in English language if he washed his school uniform. At this point, the question arises why the teacher asked P4 the question in English language. It is possible that the pupil did not understand the Yoruba language. The pupil replied the question also in English Language. The MKO initially asked the fifth pupil in English but later in Yoruba language.

When she moved to the topic for discussion, the MKO introduced the topic in English but after asking a few times without any response, she interpreted the question in the Yoruba language as found below:

Excerpt 61: T: now, who can tell me the colour of your school uniform?

Pupils: (silence)

T: Who can tell me the colour of your school uniform?

Pupils: (silence)

T: *aso school yin. Ta lo le so colour aso school yin fun mi? hen?*

Ta lo le soo? Mo ma ti koo yin ri. Ta lo le so colour aso school yin fun mi?

The primary MKO explored the convenient language of interaction with the learners. She used the mother tongue for different purposes:

i. to facilitate, teach and explain
ii. to paint vivid mental pictures

With the use of the mother tongue, the MKO was able to achieve a bit more, therefore, she decided to dwell on the Yoruba language as an alternative means of instruction to this set of learners. She tried as much as possible to explain to the pupils who did not know the right response to the question she asked. The class session was a fully codemixed and codeswitched class because of the response of the pupils which were incorrect most of the times. To clarify, she then explained as follows:

Excerpt 62: T: This is colour white (she shakes it)

Pupils: White

T: *Se e ri wipe o ndun. Ki lo wa ninu e to fi ndun bayi?*

P2: *O nshake*

T: *O n shake. Ehn*, this is colour white (picks up a red object).

Se e ri wi pe eleyi o dun? This is colour red

For the pupils to understand the topic, the primary MKO observedly found chose to explain to the pupils in Yoruba Language which most of them understood. She created a mental picture in the above excerpt. This was followed by positive reactions from the Learners with Down syndrome whose cognitive processing became simplified with the teacher's effort.

In the conventional system, English is the language of instruction schools in Nigeria, but in some public schools, teachers violate this rule based on convenience and also in order to come to the level of some pupils who may not be brilliant enough to communicate expressly in English language. In the case of the primary MKO in discourse 12, she employed the use of the Yoruba language first as a language of convenience to drive home her points in the course of teaching and considering the cognitive peculiarity of her pupils.

In the concluding part of the discourse which was characterized by a lot of mix up in answers by the pupils, the teacher was frustrated by the pupils and she expressed again in Yoruba language:

Excerpt 63: T: Quadri, *o nwo 'ta*. *E* play ball *leni o*. No ball today. What colour is this?
P3: Blue
T: Green

The pupil, who the MKO observed was looking at the playground, was asked to identify a colour again. The learner was still unable to process the concept despite revising the colour several times and despite the threat by the teacher that they will not be allowed to go to the playground, due to their poor cognitive performance in the class. The colours that were mixed up do not look alike. It was therefore a clear case of low level of cognition and in this case, recognising and distinguishing colours. Learners of their age without Down syndrome would have achieved such recognition stage many years back.

In discourse 20, the teacher switched intermittently to the Yoruba language in facilitating the discourse. The instances were observed for probable reasons

Excerpt 64: T: Quadri, *ta lo fun e l'ounje*?
P: Mummy

This instance was the first time the teacher code-switched in the discourse, except the brief code mixing in the preceding turn. This may be because of the MKO's knowledge of the pupil's cognitive ability as to what he can process faster. The pupil responded correctly to this. Also, the questions earlier asked were questions with fixed answers. These were definitions and examples. But when it was the instance of a question that required higher cognitive processing by the pupil, the MKO decided to use the pupil's L1 which is Yoruba language to ask the question. The pupil replied immediately.

The primary MKO had earlier asked a pupil that did not share the same L1 with her, a question that required higher cognitive processing in the same discourse. She asked the question in English language as below:

Excerpt 65:

T: Who cooks food for us? Who cooks for you, Emeka?

P5: Food (puts hand in his mouth) Daddy

T: Who cooks food for you?

P5: Daddy

T: Daddy *abi* mummy?

P5: Mummy

In comparing the excerpts, it could be seen that the response of the pupils when the mother tongue was used was that of clarity and smooth cognitive processing.

Another example was when a pupil responded in his MT. The teacher keyed into that to follow up on the response.

Excerpt 66: T: Who sweeps compound?

P: *Nile*?

T: *Yes, ta lo ma n gba ile*?

The pupil related the word 'compound' to the Yoruba word *ile*. The primary MKO accepted the learner's interpretation and asked him a further question but the pupil just kept on saying *ile* and *nile*. Relevance could be derived from the ostensions of the pupil in excerpt 62 as he picked the lexical item 'compound' as a concept of home and was able to respond with '*ile'* and '*nile*'.

Although this learner could not answer appropriately, his ostensions showed some cognitive relevance in terms of lexical use.

A third instance where she used the MT was not for formal instruction but to express her surprise at a pupil's incoherent response.

Excerpt 67: T: Who gives mummy money to cook food?

P: *Eba*

T: *Eba ko, iyan ni.* Olagbin!

Eba is a Nigerian delicacy made from cassava while *iyan* is another delicacy made from yam and also referred to as pounded yam. The pupil gave a wrong response to the question he was asked. This triggered the sarcastic response of the teacher that can be interpreted as 'it is not *eba*, it is *iyan*'. In the Yoruba ethnic group, if such a reply is given, the addressee will know that the answer is unfavourable and could be for different reasons. In the case of the pupil here, the teacher did not care if he understood her sarcastic response as it was more of a response on reflex.

The Primary MKO and lexical usage

The use of the mother tongue as discussed in code-mixing and code-switching above, also reflected in the choice of lexical items by the MKO. This reflected the elements of linguistic interference found in some bilinguals. In discourse 12, the topic was COLOUR. In the process of teaching, the teacher said:

Excerpt 68: T: No. it is colour green

T: Your school uniform is colour green. What colour is this? Colour

Pupils: Green

In another instance, she asked a pupil what colour what is was. Instead of the 'green colour', the primary MKO said 'colour green' to the pupils in the first two instances and in the third instance, she proposed to the pupil the way he will answer the question by saying 'colour what', then the pupil answered 'blue'. He would have said 'colour blue' if he wanted to add the 'colour'. The lexical arrangement was seen all through the discourse by the teacher and all the pupils that responded except the ones who mentioned the colours without putting the word 'colour'.

This expression is very common within the Nigeria ESL classroom settings when teaching the topic COLOUR to learners. This is as a result of interference from the Yoruba language which places the word 'colour' before stating the exact colour for example: *Alawo pupa*. 'Alawo' is an adjective that shows or means colour, while 'pupa' means red. The combination of the two words literally means colour red but should be red colour in Standard British English. This is an instance of linguistic interference in L2 settings.

Lexical insertion and transfer

A non-standard language usage common among the Nigerian users of the English language and in this case a Yoruba speaker of English, was found in discourse 12 and some of such expressions by the teacher as seen in the conversation below:

Excerpt 69: T: This is colour red. Colour

Pupils: Red

T: *Hun hun.* (picks up a white object that has particles inside and shakes it) what colour is this?

Pupils: Blue

T: *Ha ha*. This is colour white. *Hen*?

Pupils: Colour white

In the above excerpt, the teacher was showing her frustration at the wrong answers being given by the pupils. She expressed this with lexical transfers from the Yoruba language such as *hun hun* in place of 'no' and *ha ha* in an exclamatory way to show her surprise at the pupils. She also used *hen* to ask if the pupils got what she said.

In discourse 15, the same teacher exhibited other instances of this as found below:

Excerpt 70: T2: Ayo, how old are you?

P1: (Shows four fingers but makes unintelligible sound)

T2: Twenty years old

P1: Yes

T2: No *o*, you are not twenty years old *o*. You are eleven years old. *Hen*?

P1: Eleven

In the above conversation, the pupil could not respond to the question asked by the teacher. The teacher decided to assist him and gave him a certain age which she assumed from the data of her students which she was always conversant with. On realising that she had mentioned an age that was not the pupil's, the teacher immediately reversed her statement and gave the age as eleven. Because she wanted the pupil to realise this, she used the lexical insertion of an additional 'o' after the 'no' and after 'old'. This is a common feature of the Yoruba language. It is a filler usually used for different purposes and in this case, the use to which it was put by the teacher could mean two things: the first is to emphasise to the pupil that the first age she mentioned was wrong while on the other hand, it could be a note of warning that the pupil should not make the mistake of taking that wrong age as his age.

In her conversation with another pupil in the same discourse 15, the teacher used the expression *o* again as could be seen below:

Excerpt 71: T2: Osikoya, stand up. How old are you?
P7: Four
T2: You are not four years old. You are twenty years old. How old are you?
P7: Nine
T2: I will beat you *o*. How old are you?
P7: Four
T2: You are twenty years old. How old are you?
P7: Twenty
T2: You are twenty years old
P7: Twenty naira

In the above conversation, the pupil appeared difficult as he was just picking different figures for his age, as a response to the teacher's question. The teacher realized the pupil was being playful and had to warn him with the expression 'I will beat you *o*, emphasising the warning to the pupil. The pupil's ostensive behaviour depicted relevance as he knew that the teacher was asking of his age, although he gave a wrong age. His ability to also relate 'twenty' to the currency denomination 'twenty naira' showed that he understood the ostensions of his MKO but only wanted to prove difficult.

Even with the warning, the pupil could be seen continually smiling, as he still gave a wrong answer different from his age but after one more emphasis of the right age by the teacher, he eventually decided to agree to the teacher's corrections by repeating the right answer. However, because the pupil said 'twenty' without putting 'years old', the teacher decided to remind the

pupil of that. The response of P7 at this point was ‘twenty naira’ instead of ‘twenty years old’. The continuous emphasis by the teacher must have triggered the pupil’s cognitive reasoning to the unit of money which he used to buy things. The teacher at this point ignored P7’s diversion as the turn was taking longer and she wanted other pupils to also participate within the discourse period.

In discourse 16, another expression that was used by the two teachers in the discourse was *o ya*, which is a cue for a speaker in conversation, in the Yoruba language. Apart from its usage in conversation, the general meaning of the word in the language is a go-ahead. T1 used the word to call the attention of P1 in that conversation when he said, “Sam, *o ya*, look here”. The teacher noticed the pupil was looking at different directions in the class. He seemed to shift his gaze around based on where he felt sounds were coming from. The teacher who was not his regular teacher needed to gain his attention. T1 wanted to ensure P1 responded. However, the pupil looked away from the teacher before the second teacher, who was the regular classroom teacher and handler decided to intervene in a manner she knew P1 would cooperate with. It could be deduced that for this learner with DS, the conversation cue did not make any difference to him as he could barely respond to his MKO.

The second MKO in this discourse also made use of the expression *o ya* in a latter part of the discourse when he asked the pupils a question, as found below.

Excerpt 72: T1: Daniel, tell us the name of your school
P4: ( ) primary school. Ipakodo school
T1: Clap for yourself
Pupils: (Clap)
T1: Emeka, what is the name of your school?
P3: ( ) primary school
T2: Stand up and say it
P3: ( ) school
T2: Ipa
P3: Ipakodo school
T2: Sit down. *O ya*, another person. Who knows the name of our school here?

The pupils who responded to the question asked by the teacher expressed their answers in various ways but T2 was not satisfied with the answers. Therefore, he wanted other pupils to try to respond therefore using '*o ya*' as a cue in this regard. There was no other response from any of the other pupils after this cue, as the few who were very active in the class had responded and probably some of the other ones knew the answer but did not respond, since the teacher did not specify their names like he did with the two pupils who had earlier responded. The teacher then gave the appropriate way to say the name of the school.

Examples of these and other interference features were seen all over the discourse and casual conversations from this facility and as the pupils become accustomed to them, they internalize these expressions and they form their vocabulary as it will reflect more in casual interaction among the pupils and their teachers.

5.1.1.2 Limitations of the primary MKOs

The teachers in the public facility were faced with various challenges which greatly affected their performance and output. In the first place, their qualifications are grossly inadequate to handle learners with Down syndrome and those with other intellectual disabilities in their facility. Their primary aim was to teach while other therapeutical aspects could not be appropriately handled. This could be exemplified when the pupils give some barely intelligible speech. For example, in discourse 20,

Excerpt 73: T: speak up now. Say father

P4: *ta-ta*

T: mother

P4: *ta-ta*

T: and children

P4: *chil-n*

In the above excerpt, the MKO could only say the correct word but could not assist the DS learner in any way to improve or work on the speech. The burden on the MKOs to make extra efforts in processing the cognition of the DS learners and to make them gain speech ability no matter how minimal is so much already, that little or less attention is being given to the ability of the learners to vocalise the words correctly. This aspect is left to develop with time.

According to Bird and Buckley (1999), it is very important for staff to be updated in training to keep up with best practices in handling the pupils, especially in speech therapy but in the case where there are no appropriate training facilities within the country, facilities have to utilize the available human resources and the scope of training they have, which is not Down syndrome-specific. It costs a lot to provide from overseas, professionals who can train the teachers as well as to provide refresher courses.

Another limitation of the MKOs which affected the general performance of the pupils is the fact that there is a limited time frame by few MKOs to handle numerous pupils daily and the various focuses of the classrooms were diverse. Also, they needed to accommodate participation by almost all the DS learners. The time to concentrate or focus on pupils' speech was very limited, as writing skill is also prioritized to support pupils who are interested in writing more than speaking. For example, when the learners were being taught family, despite so many wrong answers, the MKO could not dwell on a particular pupil until s/he is able to get the content. The implication of this is that when next the pupils would be taught the same topic, the same effort will still most likely be expended and may achieve the same minimal results.

5.1.2 The peers

Pupils with higher cognitive ability either from initial evaluation or that have improved over time serve as MKOs in this facility. They responded better to questions during discourses and this help other pupils follow and pay prompt attention. These better peers could take more than a turn at once, can respond to questions complete sentences and have outgrown some of the characteristic linguistic challenges, although the attendant oral-aural disorders cannot be completely ruled out in them. For example, in discourse 12, some of the pupils performed well as below:

Excerpt 74: T: *lana, ta lo foso school e lana?*

P1: (beats his chest) *emi*

T: *o foso school e?*

P1: (describes washing with his hands)

T: *Ki lo fi foso school e?*

P1: *Omo*

T: *Omo. O* sure?

P1: (nods his head in agreement)

The above learner was able to sustain the discourse with cognitive clarity. Some of the other learners, after seeing the reward of clap and positive disposition of the MKO to their classmate, were eager to participate also, even if they could not give appropriate response. Although, the effect of peers as MKO works out better in facilities where pupils are grouped based on initial evaluation of abilities and individual educational programmes, peers in the public facility served as MKO too but in a very minimal way as all the twenty-three pupils were located in the same classroom and alongside pupils with some other different intellectual disabilities. The older and active peers went on errands for the teachers and played older siblings role for the younger ones as observed during the visits.

It was not all the older peers that could perform peer roles in the context of socio-interaction and classroom discourse, because there were some of them who despite being old could hardly talk. For example:

Excerpt 75: T2: Sam, *o ya* look here

T1: Hello Sam

P1: (looks away)

T2: Uncle is talking to you

T1: Sam, good morning. How are you?

P1: (silence)

T2: Sam, how are you? *O ma da emi lohun*

P1: (whispers) fine

T2: How is daddy?

P1: (whispers) daddy

T2: mummy

P1: (whispers) ma

The above patient was a thirty-nine-year-old. He was registered in the facility barely a year before the data collection. This was after many years of being kept at home by his parents. As seen in the above conversation, he could barely whisper his answers. He initially did not respond

to the calls of the first teacher, who was an unfamiliar face to him. He only responded to that of his regular teacher who also served as his handler in this case. He looked away each time the new teacher spoke to him. He did not seem to have a total hearing deficiency but chose to answer what and who he wanted to.

Pupils like P1 watch the activities of other active peers and over time, some of them are influenced by this, while others develop in their own way and at their own pace. In discourse 15, a bold and active pupil interrupted the turn between the teacher and a pupil as below:

Excerpt 76: T1: What is your name?
P3: (silent and covers his face)
T1: What is your name now?
P3: (silence)
T1: stand up
P4: *dide*
T1: Do you understand English?
P3: (stands up) Yes
T1: what is your name?
P3: (slurs) Divine

The bold, older and more active peer (P4) saw the reluctance of P3. He felt he could shout him into standing up or order him because he was older. He interrupted the conversation between the teacher and the pupil, in the Yoruba language. He said *dide* which means stand up. The older pupil gave the order as he simultaneously gesticulated the act of standing with his hands.

The more active peers in this facility engaged in activities such as Olympic games, vocational training and other social activities being organized by different groups for pupils with intellectual disabilities like them. Therefore, strength is needed in most activities outside the classroom. The older and more active peers become an ‘authority’ in these activities.

In this regard, the older peers took the lead. Consequently, in classes too, they were more vocal and responsive. The teachers allocated more turns to them to keep the class running while the less active pupils took clues from them. In discourses 12, 15, 16 and 20, multiple questions were asked some of the pupils who were older and the more active ones. They sustained conversations

with multiple questions even ‘though the responses were wrong in many cases. This was not the case with the other pupils some of who had oral-aural deficiencies that had greater effect on their performances.

A certain pupil in this facility had many turns in the various discourses despite being a stammerer and recorded many slurred and cluttered speeches. His tongue was bigger than most of his colleagues but that did not stop him from attempting to speak or participate fully in the class. He participated in all the recorded discourses in his facility. In discourse 12, he participated as below:

Excerpt 77: T: Quadri, *o foso school e*
P3: (stammering and describing washing) *nile lana* (beats his chest)
T: *Kilo fi foo?*
P3: *Ose*

The learner responded to both questions which the MKO asked. The first was if he washed his school uniform. He responded in the affirmative, nodding his head, beating his chest and describing washing of clothes with his hands. He responded to the second question that with what did he wash the clothes and he said ‘soap’. He supported himself with body languages and gestures to complement his stammering-laden speech. This learner had six other turns within that discourse. He responded to all the questions he was asked although he gave wrong answers to some of them. In discourse 13, he had a turn in the short discourse. In discourse 15, the pupil was able to answer the question he was asked correctly as found below:

Excerpt 78: T: what is your name?
P5: my name is Quadri Dosumu

In the above, the pupil responded but the answer was both slurred and cluttered. He forced out the answer as he did not want the stammering to hinder him from answering the question. Attempts by him to always respond in the class encouraged the teacher as he had more turns in discourse 20 as well. Peers who were active like the pupil above served as a driving force for participation in the classrooms and often time outside the classroom.

5.1.3 Augmentative and alternative communication (AAC) aids/educational materials

AAC aids and other educational materials that served as MKO in the facility included audio clips, video clips, pictures and charts on different topics with descriptive words. They were usually used in creating mental pictures for the pupils and assist their cognition within the classroom. However, during all the visits to the facility during this research, there was hardly power supply to support the use of video and audio gadgets available. The DVD player was also faulty and could not even be used to play clips to be watched on the television.

The MKO were left with the options of aided AACs such as pictures, charts and a few objects they had available to them, to support teaching. This limitation made the pupils to be at a disadvantage because there is a limit to which the teachers could teach the pupils in this facility. The stress involved in facilitating a class of about forty pupils with different kinds and levels of intellectual disability has a negative effect on what can be used. For instance,

Excerpt 79: T: This is colour white (she shakes it)
Pupils: white
T: *se e ri wipe o ndun. Ki lo wa ninu e to fi ndun bayi?*
P2: *O nshake*
T: *O n shake. Ehn*, this is colour white (picks up a red object)
Se e ri wipe eleyi o dun? This is colour red

In the above discourse, the MKO had to describe the colours to the DS learners using some handy materials, each covered with clothes of each colour. The MKO improvised these materials alongside the colours of the uniforms and clothes worn by the learners, as she maximised the limited resources, few pictures and charts within the classrooms. In addition, there were few cognitive and motor skill resources such as building blocks, balls, shapes and letters for arrangement and handling to strengthen the pupils' skills.

AACs in terms of computerised pictographs (COMPIC) and speech therapy gadgets were unavailable in this facility. This means that there were no automated or computerized resources available to the pupils whereas there are a lot of computerised educational gadgets and resources that have been developed for speech and other developmental issues of individuals with Down syndrome.

For the learners who could not speak, unaided AACs such as signs were minimally employed as the MKOs were not trained in signs. The best they did was to show with their hands some actions that describe certain lexical items, for example, washing of plates or clothes and eating. The teachers gesticulated to the learners who could hardly speak just to catch their attention. In the case of a particular learner who was observed to be quiet and could hardly hear, according to the MKO, he responded as follows:

Excerpt 80: T2: Sam, *o ya* look here
T1: Hello Sam
P1: (looks away)
T2: Uncle is talking to you
T1: Sam, good morning. How are you?
P1: (silence)
T2: Sam, how are you? *O ma da emi lohun*
P1: (whispers) fine
T2: How is daddy?
P1: (whispers) daddy
T2: mummy
P1: (whispers) ma

The DS learner had hearing problems and did not hear so much. He moved his body to the familiar MKO's side as he looked away from the new MKO who was trying to gain his attention. However, most of the learners extensively used signs and gestures to support

5.1.4 Zone of proximal development (ZPD) and scaffolding

The teachers approached teaching in these classroom discourses by simplifying the topics as much as possible by using simple sentences and simplified language. New topics are introduced with different methods that prepare the pupils mentally.

In discourse 12, the teacher wanted to teach the topic 'colour'. She had taught them this topic before then, according to her. She chose to start the class by asking which of them washed their uniforms the previous day and with what they washed them. She made many of them respond

and this act made the pupils alert for the discourse. She followed this introduction up by asking for the colour of the pupils' uniforms which was green and the first colour to be taught as below:

Excerpt 81: T: now what is the colour of your school uniform?
Pupils: (silence)
T: who can tell me the colour of your school uniform? *Aso* school yin, ta lo le so colour *aso* school yin fun mi. hen? *Ta lo le soo. Mo ma ti koo yin ri. Hen? Ta lo le so colour aso school yin fun mi?* Emeka, what colour is this (raises a green object)
P1: yellow

The teacher connected the introduction to the main topic to familiarise the pupils with the topic as well as begin with a colour she thought they would be familiar with. Unfortunately, none of the first six pupils she asked could answer the question correctly. She had painted a mental picture and used a familiar item to form the picture.

In a later part of the discourse, the teacher used different objects of different colours to proceed in the teaching but because the pupils were not getting to understand the colours as much as they should and were mixing up the colours, she went further to use the characteristics of the objects to show the difference as found below:

Excerpt 82: T: (picks up the white again) this is colour white. Colour (she shakes it)
Pupils: white
T: *se e ri wi pe o n dun? Ki lo wa ninu e to fi n dun bayi?*
P2: *o n* shake
T: *o n* shake. Ehen. This is colour white. (Picks up a red object) *se e ri w ipe eleyi o dun*? This is colour red. What colour is this?
Pupils: red

The teacher compared the white object and the sound it made with the red object which made no sound. The comparison was made to make the pupils take note of the difference and assumed that will assist the pupils in comprehending the difference in the two colours. The teacher further differentiated between white and yellow colour as below:

Excerpt 83: T: (picks up a yellow object) *Se e ri wi pe* this one is making a little sound? *Die die.* Can you hear the sound?

Pupils: yes

T: (picks up the white object to compare the loudness) You can hear the sound now. This one is loud(shaking the white object). This one is small. Can you hear the sound? *Se e n gbo*? O n sound.

P2: *O n* shake

T: *O n* shake. So this colour is yellow. What colour is this?

Pupils: yellow

The teacher compared the loudness of the two colours to identify them to the pupils. She made her comparison of three colour as red is without any sound, yellow as making little sound and white as making a louder sound. The teacher ensured the use of real objects such as the school uniform and the singlets of some of the pupils to describe the colours to the pupils. These are scaffolds enhancing the cognition of the pupils. The teacher employed the method of not saying something directly but describing instead to take the pupils to the right answer. For example:

Excerpt 84: T: and what colour is this? (raises the green object)

Pupils: (give different wrong answers)

T: colour school uniform *yin*

P2: shirt

T: *hen*

P2: check, check

T: *emi mo wipe* check *ni* but what is the colour of the school uniform?

Pupils: (silence)

T: green

Pupils: green

The teacher moved between the ideas the pupils expressed about the colour she was asking them. The response by one of them showed he had an idea. When the teacher raised the green object which was also the colour of the uniform, the pupils gave wrong answers but when the teacher further told them that it is the colour of their uniform, P2 said ‘shirt’ and with that, it could be understood that he related it to the uniform. Again he said ‘check’ which was the pattern of the

shirt. The teacher made him realise that she knew what he was saying but that she demanded them to say the colour. The teacher after abortive efforts then told the pupils that it was green colour.

This was an attempt to work within the zone of proximal development using scaffolds to aid the teaching and learning.

In discourse 15, the teacher made enquiries of the name and age of the pupils. The first question was to give their names which most of them answered while it was the age that was a bit challenging to most of them. It is possible that they were hardly asked their age unlike their names which is usually used to identify or even call them.

In discourse 20, the topic was "family". The teacher tried to simplify the topic to the pupils by defining the family as 'father, mother and children'. Some of the pupils were able to memorize the phrase. Some of them could not pronounce the words well but tried their best. The teacher increased the ZPD by asking the pupils the roles of individual family member. Most of them who attempted the definition thereafter were either quiet or gave incoherent answers. The teacher provided scaffolds in different ways including the use of expansion of sequence to clarify her questions and the answers given by the pupils and the use of the mother tongue. For example:

Excerpt 85: T: who sweeps compound?
P7: *nile*
T: yes, *ta lo ma ngba ile?*

The pupil initiated the code switch to his mother tongue which the teacher followed up on as to encourage the pupil, but he did not change his response for two more turns which the teacher afforded him, as a form of reinforcement. When the teacher realised the weakness, she changed the language of instruction back to the English language and moved on to other pupils since the pupil with the current turn could not get it and asked the next next pupil:

Excerpt 86: T: Quadri, *ta lo fun e lounje,* daddy *abi* mummy?
P3: Mummy

Here, the teacher deliberately asked the question in the pupil's mother tongue, probably because the pupil responds better to instructions in the language. He had earlier responded to a question

in the English language. Wrong answers varied from pupils giving an answer that listed members of a family instead of answering the question “who’ or giving a completely irrelevant answer.

The time limit did not allow the teacher stay long on the turn with the pupils to allow others to participate. The disadvantage of this is that the cognitive skill of the pupil is not allowed to work out from the wrong or irrelevant answers gradually to the right ones within the zone of proximal development.

5.2 Facility B: The private facility

5.2.1 Learners with Down syndrome and social interaction

The facility had forty registered learners with Down syndrome. Pupils found in this facility were mostly from elite homes while a few of them were from low or middle-income homes but had opportunity to be registered in the school. Many of them resided in the school hostel and the organised system continued till they got home on holiday. The boarding system had helped in various ways as some of their handlers were the teachers who taught them in their everyday classes. The setting made use of English as the main language of instruction and social interaction, as the facility had learners from different ethnic background and that will have different indigenous languages.

Three of them lived outside of the hostel. Two of them, who are both with Down syndrome, lived in a less developed area as the parents were low income earners but were registered in the school on scholarship, as their mother was the cook for the hostel. This affiliation, however, afforded them the opportunity to stay for longer hours in the organised setting before retiring to their home in the evenings. The other pupil who was a day student had a lecturer-father with a terminal degree. He preferred his child to be at home for personal monitoring.

The facility provided a high level of social interaction for the pupils as they were exposed to some of the materials used in overseas countries though in a very limited way. They were made to freely interact and taught the modern way of doing things including communication. Most of them seemed to have an enabling socio-cultural environment where they were accepted as most of their parents were learned and exposed.

The school made available to them the services of physicians and specialists who carried out regular check-ups and kept progress reports on them. This encouraged them to speak out and

gave them many opportunities of activities including sports, music, drama, literature and so on. With the availability of these resources, they found it easy to relate with their environment as well as the people without Down syndrome in their locality.

They were taken to corporate events organized by the foundation that owned their school and other events which they were invited to. Many support and awareness programmes had been organised and they had always participated. All of these were boosts to their social interaction level yielding a high and improved status for them as years rolled by.

5.2.2 The more knowledgeable other (MKO)

A total of four teachers were encountered in this facility in the course of the study while there were four classes for four different levels of students. They were usually categorized based on assessment at the time of registration into the facility. Some of the learners with Down syndrome served as MKO peers to their colleagues. Also, there were AACs and educational materials employed by the facility as teaching aids. The roles of all these are discussed in the following section.

5.2.2.1 The primary MKO

A total of four teachers served as primary MKO in the private facility. They specialised in teaching people with intellectual disability but not Down syndrome. The school lacked a speech and language therapist. The primary MKO taught English Language with the rudiments of phonics being introduced to upgrade their language acquisition. Most of the learners with Down syndrome had English as their family's first language.

The primary MKO handled all the subjects taught in the classroom except extra-curricular activities such as sports, catering and music. These activities had specific coaches for each of them. Their methods of teaching allowed the pupils to fully participate in the classrooms. Since the pupils were categorised based on their ability, teachers set goals and limits for what was being taught based on each level.

Primary MKO and language use

The evaluation of the standard of English used in the Down syndrome classrooms of the private facility is very essential since it has already been established that the teachers were not English language trained teachers. An overview of the discourses revealed the elements of non-

standardised English in the language use of the teachers, which has a way of extending to the pupils who were meant to be taught the right usage in the facility which is a formal setting.

The interference of other languages as commonly found in ESL classrooms manifested in the various discourses in the private facility in the expressions of the teachers. This ranged from code mixing and switching, lexical insertion and transfer, syntactic errors and phonological interference. It was observed that most of the pupils were very responsive and this increased the length of the discourses. This also placed more pressure on the teachers' use of language and consequently, a higher record of linguistic errors. It is necessary to consider how the primary MKO's use of language affect the classroom discourse. The effects are can be seen in the use of language in facilitating the discourses, the characteristics of their language and the effect on the learners with Down syndrome. These are considered below.

Code-mixing and code-switching

The rate of code mixing and code switching was high in some of the discourses in the private facility. The codes were used to serve different purposes as observed in the usages. In discourse 2, the teacher asked the pupils to list examples of classes of noun. Whenever she wanted the pupil to give more examples, she made use of the word *ehen*, which is common in Nigeria and not really restricted to any local language. It could mean in English –Yes? With a tone that the listener is waiting for the next thing to be said by the speaker. For example:

Excerpt 87: T: Wumi, name of a person?
P4: Ruth
T: Ruth, *ehen*?
P4: (looks up for a while) Seyitan

The act of looking up by P4 and thinking on the next example to give corroborated the fact that the teacher was actually expecting the pupil to give more examples, hence the use of *ehen*. In the teacher's turn with P5 also, she made use of the same word as found below:

Excerpt 88: T: name of a place, not thing
P5: Edo
T: *Ehen*?
P5: Ibadan, Akure

The pupil was seen listing more examples after the teacher used the word *ehen*. The word was used again in the teacher's second turn with P4. There seemed to be a mutual understanding of the conventional use of the word by the pupils. It was not a strange expression to them.

In discourse 6, the teacher was drawing different shapes on the board and as she asked the pupils the name of the shapes, they responded. At a point she asked:

Excerpt 89: T: this one *nko*?
Pupils: Oval.
T: *hen*?
Pupils: oval

The expression 'this one *nko*' means 'what of this one'. The word *nko* is common among the Yoruba users of English Language in informal and casual conversations. The use of the word *hen* also is a common expression in the Yoruba language which was used here by the teacher to make the pupils repeat the answer they gave for the purpose of reinforcement. This replaces the use of words like 'again'? or say it again' as often used by teachers during class facilitation.

The word *ehen* earlier used in the continuous listing of items was used in another form in discourse 7 as found below:

Excerpt 90: T: or you don't like food?
Pupil: I like it
T: *Ehen*. So what is the name of the one you like eating?

The word *ehen* was used differently here as a confirmation or acceptance of what the pupil said. It is even sounded differently from the first one. The word replaces the affirmation 'yes'. While the first one comes with a question mark, the usage here comes with a full stop.

In discourse 7, the teacher used a code switch to express her surprise at a pupil who was asked for her name as follows:

Excerpt 91: T: aunty, what is our name?
P10: My name is Mayowa. Mayowa Mrs Jamal Amuda Lawal
T: Mrs *iya re wo lo soruko re* (laughing) what is your name?
P10: (silence)

T: Mayowa Amuda-Rahman

In the above excerpt, the pupil was confused as she had already given her first name but later added some other names which were not her names and also added a part of her compound surname. The aspect of it that amazed the teacher was that the pupil who was not married added the title for married women 'Mrs' to her name. This came to the teacher as a surprise and could not help herself from the following outburst in the Yoruba language with an expression that means 'which nonsense 'Mrs' did you add to your name?'

In discourse 17, the teacher and the one of the pupils code switched as found below:

Excerpt 92: T: Solomon, *abi* B.J., how far?

P1: I *don* finish

T: you *don* finish?

P:I am doing number 2

P2: number 2 for what?

P1: (counts aloud)

T: B.J. we are waiting for you, *o* (background noise as everyone waits for B.J) oya Solomon,

P2: *Ehen*

The use of the Yoruba word, *abi* was found in the above to mean 'or'. The teacher has earlier called a pupil before her attention caught a pupil who was still solving his sums. The use of the Nigerian pidgin English was found being used by P1 here to mean 'he has finished'. The teacher repeated the use of the expression to ask him if he was done with his work to which the pupil responded that he was still on the second question. The teacher used '*o*' to sound a note of warning to the pupil that he was the one the whole class was waiting for after which she used the word '*oya*' again to cue the pupil that was to solve the sum on the board. P2 also used the word '*ehen*' to mean he was ready for the problem solving on the board.

Lexical insertion and transfer

In different sections of the discourses in the private facility, instances of lexical insertion and transfer of words from the Yoruba language were found being used by the teachers. The use of 'ehen' to mean 'okay' and 'continue' discussed under code switching and mixing in the above

section falls under this category also. Some other instances of lexical insertion and meaning transfer are as below:

While drawing a shape on the board, the teacher noticed that she did not draw the shape well and it could confuse the pupils to look like another shape:

Excerpt 93: T: very good. Who can tell me the name of this shape?
Pupils: (talking as the teacher draws) oval
T: wait *o.* this one (cleans and redraws) what is the name of this shape?
Pupils: (draw imaginary circle) circle
T: circle

The teacher inserted the word *o* to sound as a note of warning to the pupils not to jump into conclusion but be patient to see what she was trying to draw to be able to give an appropriate answer. She used the word *o* also in a part of discourse 8 as found below:

Excerpt 94: T: the name of our administrator is Mr Majek
Pupils: (overlap) majek
T: that's he shortened it *o*. It is not Majek *o*. It is Mr. Majekodunmi. You know I have taught you several times. Mr. Majekodunmi

The expression was used here by the pupils to sound a note of warning on the correction he was making and for the pupils to get it once and for all. In another instance that seemed more like a mannerism to the teacher, she inserted 'o' to her words in the same discourse: "that is the name of the president of Nigeria. I will ask you on Monday *o.* if you do not answer me, I will not give you biscuit. I will not buy biscuit for you. You know me *o*."

In the above expression by the teacher, she used the word *o* to emphasise what she was telling the pupils and sounding a note of warning to the pupils of the consequences of their action or inaction. The sentence would have still made sense without the insertion of 'o' as she could have reframed the sentence in English to capture the emphasis and warning, but because the use of the word has gained careless usage among the Nigerian users of the English language, people use it indiscriminately, assuming the listener knows what it means in any expression.

In discourse 17, the same teacher was found inserting *o* into her expression when she said "BJ, we are waiting for you, *O*". The use of the word *oya* to indicate cues for the pupils to talk was prevalent in some of the discourses too. Examples of this was found in discourse 17 and 19. Expressions such as '*oya*, Jessica', "*oya*, stand up", "*oya*, next one" were found in the two discourses being used by the two teachers.

The pupils were observed to be used to these transferred expressions as well. For instance, in discourse 17, when the pupils took turns to solve the sums on the board, they made use of the word *oya* each time they want their colleagues to count the numbers with them. In discourse 18, a pupil even used the expression to tell the teacher not to be annoyed with her:

Excerpt 95: T: you are not clapping. No biscuit for you tomorrow
P1: *oya, pele*
T: *oya*, sit down

The above shows that the pupils were so used to these insertions and transfers to the English language that they are been used unconsciously, not just in casual conversations but even in official communication to the extent of using it in conversing with the teacher.

Phonological and syntactic errors

There were series of errors prevalent in the discourses under review in the private facility. In the first place, the phonological errors seemed to be a regular one common to all the teachers in the facility. There is no trace of using the correct diction in communicating with the pupils. For example, in discourse 9, the teacher instructed the pupils through songs to identify parts of their body by touching the part he called. The teacher pronounced the word

Touch - /t^tʃ / as /tɔʃ/ throughout the discourse. The same error was made in pronouncing 'circle' by the teacher of the elementary class of the facility. She pronounced /sekl/ and /sa:ku/. The participation of the pupil took more priority than the correct diction in most of the discourses.

Some syntactic errors were found in the discourses. In discourse 1, the teacher repeated the tense error as found below:

Excerpt 96: T: Christian worship in the
P1: church

T: Moslem worship in the

P2: mosque

T: Traditional worshippers worship in the

P3: shrine

The first two utterances by the teacher had tense errors. It should have been either ‘Christians / Moslems worship’ or ‘a Christian / Moslem worships’. The error was not repeated in the third utterance and the tense was correct. In discourse 7, the teacher said:

Excerpt 97: T: who *cook* it for you?

Pupil: my-my-mummy

The teacher used the plural verb in place of the singular verb. Other minor syntactic errors were also found in the discourses such as the use of ‘colour’ as a modifier instead of being the headword in discourse 13. This is a very common error that has been passed down over the years among some ESL speakers.

5.2.1.2 Limitations of the primary MKO

The teachers in this facility were trained in handling intellectual disabilities, but they did not have training in language use or therapy. Although, English is an integral part of most institutions training teachers worldwide, the need for a special training to be able to handle the special students alongside teaching the content of the curriculum is very essential. The number of students to be attended to in this facility was fair with an average of fourteen pupils in a class. There was no standard Individual Education Plan for each pupil, therefore the teachers used their discretions and evaluations of their pupils to determine what would be taught and how to go about it.

The teachers did not have any formal training in handling learners with Down syndrome. They learnt on the job and they are with little exposure. The availability of special teaching aids was minimal, and the few ones around could not be effectively used since the teachers were not trained to use them.

5.2.1.2 Peers as more knowledgeable other

In this facility, Learners with Down syndrome were grouped based on evaluation and abilities. Therefore, peers were categorized together to enable the teacher focus on the similar needs of their pupils. However, some of them in the same class had higher abilities than the other, as there were different factors responsible for the level at which each of them was. The better peers became MKO to their colleagues with less abilities as they were usually tasked more by the teachers and in the process, those with less abilities learnt.

Since the pupils were grouped already, they had little influence on themselves except on few occasions when classes were merged. For instance, in discourse 9, the pupils in the level 1 class were merged with those in the level 2 class. When the teacher asked P2 to touch parts of his body, he was playful and did not touch any of the parts but was hanging out his hands. The teacher realized this but did not want to distract the class. He moved to the next pupil very quickly so that P2 will not be a bad influence on the other pupils.

In discourse 11, the class setting was the same as in discourse 11. The same pupil in the discourse 9 (P3 here) was asked to sing the 'five magic words' song. He covered his face and sang reluctantly and playfully. He ended the song by calling the name of one of his colleagues 'shadrach' as the last magic word, instead of 'pardon me'. It could be that the pupil was playful as he had passed the level of the activities he was being engaged in.

Some level 2 pupils were also combined with level 3 pupils and they were all serious in the classroom as seen in discourses 5, 6, 7 and 8. They all participated in the class except few of them who did not have speech ability at all.

5.2.1.3 Augmentative and alternative communication aids/educational materials

The use of few aided and unaided Augmentative and alternative communication (AAC) aids were available especially in the beginners' class as most of the pupils at this level could barely talk. The aids included charts and pictures on the wall, physical objects that can be used to teach topics like colours and shapes and pictorial books. Speech and communication aids were conspicuously missing, and the facility did not have a speech laboratory for speech therapy. Therefore, the pupils relied solely on whatever the teacher could offer. There were few electronic materials serving as MKO for these pupils which include CDs and video clips of interactional activities.

5.2.1.4 Zone of proximal development and scaffolding

As earlier mentioned, there were various materials made available for different instructional purposes in this facility. The method being used by the teachers were to use few words at the beginning of each activity class topic or theme learning. They rather use visual aids that will expose the pupils to images that last, alongside the topics and themes. Later, the teacher explained more verbally.

Most of the topics in the discourses analysed were topics that the pupils had been taught at least once. This did not guarantee an excellent performance in the discourses. The teachers understood this and explained repeatedly any aspect noticed to give the pupils some challenges. In discourse 20, a family was meant to be explained or defined as a group of people related by blood, but in order to simplify the topic, the definition was made less wordy and in a simpler sentence as found below:

Excerpt 98: T: What is family? Who can try?

P2: A family consists of father, mother and their children.

This, though not a standard definition, was taught the pupils to have an idea. As the pupils advance, they will be taught standard definitions and more will be expected of them. The teacher at this stage allowed them to just give slight ideas as their level of cognitive ability was considered and they must not be over burdened with too much information that could get them confused. The teacher inquired the types of families. The pupils were not responsive. Even after providing scaffolds, by explaining all over the two types of families, none of the pupils was confident to speak. This showed that as topics become wordy or advanced, the pupils' cognitive ability is tested and threatened.

A disadvantage of the simplified method was observed while the teacher was trying to distinguish between a nuclear family and an extended family as found below:

Excerpt 99: T: Nuclear family and extended family. What is nuclear family? Who can tell me? What is nuclear family? Just explain or tell me something about nuclear family. I said nuclear family consist of father, mother and children. That is nuclear family. What of extended family?
Pupils: (no response)
T: What of extended family?
Pupils: (no response)

T: Hmmm… Extended families are your uncles, aunties, your grandparents and cousins

In the above definitions, there was no clear distinctions between the definition given for a family and that of the nuclear family. This must have been very confusing to the pupils. It could be one of the reasons why the pupils could not make the distinction between the nuclear and the extended families, when asked by the teacher. The zone of current development and that of proximal development was confused at this point. The teacher was expected to clear doubts in ZCD at this point to move the pupils to the ZPD, but it was clear that the teacher was not aware of this distinction.

In discourse 18, the teacher noticed the pupils were not fully clear with the topic of discussion. They mixed up their answers, although she had expected them to understand and answer correctly, she still took the pain to take them through again. For example: "Do you still remember the topic I taught you? Harmful objects"

She knew they might be confused as to which of the topics. She quickly rescued them and once she mentioned it, the pupils remembered, and they were able to give examples. It is also notable that definitions were being taught by components. For example, the pupils were not taught to commit to memory the exact meaning of harmful objects but were taught the examples. For instance:

Excerpt 100: T: Are we supposed to play with harmful objects?

Pupils: No

T: Very good. Who can give me examples of harmful objects?

This is a form of scaffolding. The teacher simplified the topic in a way the pupils were able to relate with.

5.3 Summary

This chapter showed how socio-interaction variables manifested in the classroom discourses of the selected Down syndrome facilities. The roles of the primary MKO, their use of language and its effects on the classroom discourses and the Learners with Down syndrome were considered. The levels in the zones of proximal development in which the MKO operated were also considered. The roles of peers as MKO were also looked at as well as the employment of Augmentative and alternative communication aids.

CHAPTER SIX

6.0 Introduction

This concluding chapter of the study provides a summary of the study, conclusion and recommendation for future research.

6.1 Summary

This study has focused on how cognitive relevance was derived in the communication of learners with Down syndrome during classroom discourses were obtained and how socio-interaction variables affect their linguistic performance. A general introduction of the study was done, providing an insight into Down syndrome, its type and its effects on various aspects of human development with emphasis on cognitive and linguistic development. This was followed by the purpose of the study highlighting the objectives, outlining the scope and delimitation of the study. It further outlined the major concerns of the subjects of the study which is the classroom discourse in Down syndrome facilities.

The introductory section was rounded up by discussing the lingering needs of individuals with Down syndrome and the peculiar ones related to speech and language, deriving a clue from the dearth of research on how the socio-interaction variables affect learning and the use of language in learners with Down syndrome in formal facilities during classroom discourse. The significance of the study as the socio-interaction emphasis of Down syndrome classroom.

A review of literature relevant to the study was done. The existing works on psycholinguistics and classroom discourse, pertaining to individuals with Down syndrome were outlined. The principles of relevance theory and variables of socio-interactionist theory which served as the theoretical framework for the study were explored. Down syndrome cognitive and linguistic profile, which are major developmental areas that pose challenges to learners with Down syndrome were reviewed.

The whole process of data analysis was discussed and this included the data design, method of data collection and analysis. The ethical considerations as well as the inclusion criteria for the data were also highlighted. The analyses were grouped into two sections. The first used the principles of relevance theory to explore how learners with Down syndrome use their ostensive

stimuli to achieve optimal relevance in classroom discourse and how discourse goals facilitate learning.

The second section of analysis presented the effects and influences of social interaction, more knowledgeable other and zone of proximal development as socio-interaction variables on learners with Down syndrome in classroom discourse. In addition, the way the primary more knowledgeable others employed scaffolds in achieving classroom discourse objectives were also considered. All these factors were considered in two facilities with different settings. The essential benefit of scaffolding was also analysed. The findings of the research can be summarised as follows:

1. **All the learners with Down syndrome in the selected facilities experience linguistic and cognitive challenges at varying degrees as a result of congenital malformations, regardless of their socio-cultural background and socio-interaction settings.**
   (a) These affect their physiological, anatomical and neurological systems leading to various developmental challenges. The effect of the aforementioned on all the affected systems are manifest at various levels of development such as social, linguistic, motor (oral, physical and gross) and cognitive skills development. These lead to oral-aural effects on their linguistic performance.
   (b) Oral-aural characteristics of learners with Down syndrome during classroom discourse include cluttering, stuttering, speech unintelligibility, hearing deficits and total lack of speech. Those of them lacking speech are unable to speak at all while some can only utter few sounds. Some hear only occasionally and that is when they respond. This affects the quality of their responses as they are unable to follow the classroom discourses. Those who stammer and stutter are able to express their cognitive skills better unlike the ones with unintelligible speech, whose cognitive state cannot be determined. These are the set of pupils whose ostensive behaviours and stimuli require greater processing effort in determining their relevance.
   (c) Every Down syndrome learner has specific deficiencies which are not necessarily background dependent, but the socio-interactive variables around them and opportunities available to them, determine their improvement over time. This can be seen in the settings of the two facilities in this study. The private facility had four classes for

different levels of pupils depending on their abilities and inabilities, whereas, the public facility had a classroom for all the pupils with DS and other special unit pupils such as autistic and mentally-retarded ones.

2. **Classroom discourses are explorable in determining extensive cognitive and linguistic performance of learners with Down syndrome.** The classroom discourses are aimed at different goals and objectives most especially linguistic and cognitive development. The strategies of obtaining linguistic expressions, responses from learners with Down syndrome and an average participation are given preference over the content to be taught and process of being taught by the primary More Knowledgeable Other.
3. **Learners with Down syndrome make effort to be as relevant as possible with their ostensive stimuli.** Every learner with Down syndrome who has the ability to talk always ensure they respond with appropriate answers during discourses. They are encouraged by the response of others and the appreciation that follows. This is seen in their efforts in responding to questions no matter how right, wrong or irrelevant their answers were.
4. **Cognitive processing by learners with Down syndrome varied**. The primary MKO used simplification, exemplification, demonstration and mental pictures for the learners with Down syndrome which aided learning and obtaining optimal relevance by the Down syndrome. Retention of discourse content diminished with more volume of content. Similar linguistic items do not guarantee cognitive relevance by the learners with Down syndrome as they were seen exhibiting fluctuating cognitive processing.
5. **The primary more knowledgeable others (MKO) were the major type of MKO found in the selected Down syndrome facilities and they made use of language in various convenient ways to facilitate cognitive and linguistic goals in their classrooms.**
   (a) The use of simplified English to explain, teach and create mental pictures in the cognitive environment of learners with Down syndrome was commonly found alongside the linguistic interference features such as lexical transfer, insertion and reordering prevalent in the usage of English language by the MKOs.
   (b) The MKO in the public facility also made use of the mother tongue as a medium of instruction to express themselves better to any learner that shares the same mother tongue with them.

(c) The effect of peers as MKO was very minimal in the classroom discourses. Also, the availability of Augmentative and alternative communication (AAC) aids was also very scanty. Unaided AACs such as computerized pictographs were absent, making the primary MKO fully relying on their knowledge as regular intellectual-challenge trained teachers to handle the learners with Down syndrome. The use of signs was not employed by the primary MKO as they were not trained in it.

(6) There are very few educational facilities that accept individuals with Down syndrome in Lagos, Nigeria, because of lack of special facilities to handle their special needs and challenges including speech problems.

(a) The two facilities selected for this study have the relatively best available resources but are overwhelmed by a large number of learners with Down syndrome despite the minimal facilities. The case was better in the private facility where the learners were grouped as those within the same range of cognitive processing were together.

(b) The private facility runs a more organized system as those within the same range of cognitive processing were grouped in together in four stages. Boarding facility was also available which has ninety percent (90%) of the learners with Down syndrome. This affords them the opportunity of continuous organised socio-interaction outside classroom discourses.

(c) The pressure in the public facility deprives the learners with Down syndrome from having maximum opportunities in exercising full cognitive and linguistic potentials, as there is special attention during classroom discourse to follow through the cognitive process because of time constraint. Being in the same class with those with other varying degree of Down syndrome is a disadvantage as they all experience different rates of cognitive processing. This makes the class to either pull the improved ones backwards or make the class discourse too complex and consequently non-beneficial to the ones who are beginners.

(7.) There is no professional Down syndrome primary MKO in the facilities. The private and public facilities have teachers trained in the same higher institution of learning. The institution is the only available special education training ground in Nigeria. None of them was trained for special language teaching and speech/language therapy/pathology. Most of them were from the Yoruba ethnic group in South-west, Nigeria and speak the Yoruba language as their first

language, evident in their interference-laden lexical choice of words and their occasional code-mixing and code-switching in giving instructions to the learners with Down syndrome for those in the public facility. The learners who shared the same mother tongue with their teacher benefitted from instructions translated to them. They responded better on such occasions except for those learners who still have a high level of cognitive challenge. It was also observed that the MKOs in the public facility used Yoruba language more as the medium of instruction to the pupils outside the classroom discourse. This was not the case in the private facility.

(8) Classes are formally meant to be facilitated at the English as a second language level but the language use of the teachers showed that the standard of English used was not prioritised in these facilities. The probable reason may be that Learners with Down syndrome are usually viewed as having a high-level of speech problems, therefore, parents, handlers and schools become satisfied as far as their children and pupils can improve significantly in speech production and cognition. Therefore, the improved learners with Down syndrome who have achieved a high level of improvement and could converse well did so with mixtures of elements of Nigerian English.

(9) Speech deficits in learners with Down syndrome linger without appropriate therapy.

(a) The private facility has few speech stimulation materials such as honey therapy, massaging and phonics resources. These are unavailable in the public facility. This lack of standard therapy slows down the expected milestone improvement in the speech production of learners with Down syndrome in formal settings. This makes it difficult to match the cognitive improvement of some of the learners with their linguistic improvement as the latter slows down the rate of cognitive development in some of them.

(b) The primary MKOs were not trained in speech/occupational therapy except their basic training on intellectual disability. They did not have the resources to diagnose the appropriate levels of the learners. They relied on reports from the hospitals brought by the parents and the best they can offer was to group them and use the limited resources and their non-Down syndrome professionalism to handle the learners with Down syndrome.

6.2 Contribution to knowledge

This study contributes to the existing knowledge in the following ways:

a. The research presents an input to psycholinguistic study in Nigeria, in the aspect of child language and speech disorders.

b. It also adds to the existing ideas on Down syndrome classroom discourse analysis within the Nigerian context, with the analysis from the perspective of socio-interactive factors.

c. The research highlights the linguistic challenges of people with Down syndrome in Nigeria and lack of appropriate interventions such as the lack of speech therapy, which is fundamental to the linguistic skills and development of people with Down syndrome.

6.3 Conclusion

It is quite challenging to view the linguistic performance of learners with Down syndrome from the standard perspective as there is a wide gap between them and the pupils of their age brackets without Down syndrome. However, there is a large extent to which the effect of linguistic and cognitive aids can go in assisting their developmental skills to a globally acceptable level. The teachers who are the primary More Knowledgeable Other (MKO), in the facilities considered for this study, employ relevant activities and scaffolding methods that cushion learning for their pupils within the Zone of Proximal Development (ZPD) for maximum output.

The available resources and practices by these facilities are far below the standard of the provisions made available and best practices in developed countries for learners with Down syndrome in all areas of development including linguistic and cognitive facilitation.

6.4 Recommendations

Based on the conclusions of this research, the following recommendations are made: Individualised educational programme (IEP) should be put into practice in all schools to cater for specific speech needs of all Down syndrome pupils. The primary MKO should be given appropriate and standardised trainings specifically for handling learners with Down syndrome.

There is a scarcity of special education training institutions in Nigeria, therefore, it is imperative that the government should provide more of them to make the cost of training affordable for

interested people, either as a teacher or parent that has a child with Down syndrome. This will enable them meet the linguistic and cognitive needs of each learner with Down syndrome.

There is a need to review the curriculum of special education for people with Down syndrome to include speech and language therapy, oral and motor skills development, as well as adaptation of the topics of classroom discourse to suit their pace and level of cognition. The special schools need to employ other handlers, apart from the special classroom teachers. These will include speech and language therapists alongside other therapy team members especially for organs of speech production. A standard special unit language laboratory is inevitable and must be provided in every Down syndrome facility.

Availability of more affordable Down syndrome facilities will assist the parents of the numerous individuals with Down syndrome in Nigeria who would love to register their children in formal and standard facilities in giving the best linguistic and cognitive opportunities. Secondly, this will decongest the already existing facilities and more time devoted to each learner. Organised formal system and boarding facility give better opportunities and output than those in the local environment. The organised school system will provide opportunities for adequate stimulating materials for linguistic and cognitive improvement.

6.6 Suggestions for Further Studies

Studies on linguistic and cognitive development of individuals with Down syndrome in Nigeria is gradually gaining ground. There are important aspects of this field that should be considered for further studies to bridge the gap in the existing studies and the new developments in the study of Down syndrome. The effect of specific comprehensive speech therapy on individuals with Down syndrome in Nigeria is a study that can be carried out over a period of time, on a group of learners, as they move from one academic class to another. This will enable comparisons between the results of the learners, when they are in a class or level, and when they have graduated to the next level.

Linguistic and cognitive Individualised Education plan (IEP) is a psycholinguistic tool that can be used, to narrow down the various deficits of Learners with Down syndrome. A study using IEP to investigate linguistic and cognitive abilities of individuals with Down syndrome, in

settings such as homes and regular schools is also a very important area to investigate and determine the best setting that maximises opportunities for individuals with Down syndrome.

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APPENDICES

APPENDIX 1

DISCOURSE 1

Our topic in Religion. What did I say?

Pupils: Religion

T: How many types of religion do we have? Mention them

Pupils: Christian Religion, Islamic religion, Traditional Religion

T: Clap for yourself

Pupils: (Clap)

T: Christian worship in the

P1: Church

T: Raise up your hand if you know it. Christian worship in the (points to a pupil)

P1: Church

T: Muslim worship in the (points to another)

P2: Mosque

T: Traditional worshippers worship in the

P3: Shrine

T: Shrine. Clap for yourself

Pupils: (Clap)

T: If you know you are a Christian, raise up your hands

P: (Most of them raised their hands and said I am a Christian)

T: Who preach in the church?

P4: Pastor

T: Pastor. Clap for your self

Pupils: (Clap)

T: Who preach in the mosque? (Points to a pupil)

P3: Alfa

T: Clap for yourself

Pupils: (Clap)

T: And the priest *stay* in the

Pupils: Shrine

DISCOURSE 2

T: What is a noun?

P1: A noun is a name of a person, animal, place or things

T: Clap for him

P: (Claps)

T: Moyo, noun is a name of a person. Name of a person

P2: Solomon, Seun

T: Peter, name of a person

P3: ( ), James, Uloma, Solomon

T: Wumi, name of a person

P4: Ruth

T: Ruth, *Ehen*

P5: (Looks up for a while) Seyitan

T: Solomon, name of a place

P5: Fan

T: Name of a place, not a thing

P5: Edo

T: *Ehen?*

P5: Ibadan, Akure

T: Clap for him

Pupils: (Clap)

T: Peter, tell me name of a thing

P3: (Silence)

T: Name of thing (points around)

P3: Fan

T: Osas, tell me name of thing

P6: (Silence)

T: Name of a thing (silence) (Points around) name of a thing: fan

P: (silence)

T: Wumi, name of a thing

P4: Radio

T: Radio, *ehen*

P4: Computer

T: Computer, *ehen*

P4: ( )

T: T.V

P4: V.D, you play *hen* film

T: D.V.D?

P: (Nods her head)

T: Clap for her

Pupils: (Clap)

T: Moyo, name of animals

P2: Lion

T: Lion

P2: Tiger

T: Tiger, Clap for him

Pupils: (Clap)

T: Seun, name of animal

P7: Leopard

T: Leopard

P7: Tiger

T: Tiger

P7:*popotamus*

T: Hippopotamus, clap for him

Pupils: (clap)

DISCOURSE 3

T: Stand up Demide

P1: (Stands up)

T: What is your name?

P1: Demide

T: Is Demide a boy or a girl?

P1: A boy (stretches his body up and sideways)

T: What is the name of your school?

P1: Second Boarding School (Smiles)

Pupils: (Laugh and jeer)

T: (Clap for him)

Pupils: (Clap)

T: BJ, what is your name?

P2: My name is ( ) makinwa

T: What is the name of your school?

P2: *Errrrm*, Down syndrome foundation of Nigeria (nods and bends forward as he says each word)

T: What class are you?

P: I am in primary four Green

T: How old are you

P2: I am thirty nine years old

T: Is BJ a boy or a girl?

P2: Boy

T: Is BJ fair or dark

P2: Dark

T: Is BJ fair or dark

P2: fair

T: Clap for him

Pupils: (Clap)

T: What is your name?

P3: My name is Peter Oboteh

T: Is Peter a boy or a girl?

P3: A boy

T: How old are you?

P3: I am twenty-two, no twenty-one

T: Twenty-one. Clap for him

Pupils: (Clap)

T: (Shifts gaze to a pupil with her mouth) What is your name?

P4: My name is Wumi

T: How old are you

P4: I am thirty two

T: What class are you?

P4: Level 4

T: What is the name of your school?

P4: Down syndrome Foundation of Nigeria

T: Down syndrome foundation of Nigeria. Is Wumi boy or girl

P4: Girl

T: Clap for Wumi

Pupils: (Clap)

T: (Shifts gaze to a nearby pupil) What is your name?

P5: My name is Moyosore ( )

T: How old are you?

P6: I am twenty two years

T: What class are you?

P6: I am in… I am in Basic Four.

T: What is the name of your school?

P6: (Looks down for a while) Down syndrome of Nigeria Foundation

T: (Interrupts) Down syndrome Foundation of Nigeria. What is the name of your class teacher?

P6: (Wants to sit) Aunty Peju.

T: Clap for him.

Pupils: (Clap)

T: (Points to a faraway student who is already eager to talk) What is your name?

P7: (Puts his right hand on his Chest) My name is…my name, *ehh,* Oluwaseun Adeboye

T: What class are you?

P7: (Puts his hand on his chest again) I am in three in three years

Pupils: (Jeer at him)

T: What class are you? Level

P7: Level 4

T: Level 4. Is Seun a boy or a girl?

P7: A boy

T: A boy. Clap for yourself

Pupils: (Clap)

T: What is your name?

P8: ( ) Asuquo

T: How old are you?

P8: I am five years old.

Pupils: (Jeer)

T: You are not five years old. How old are you?

P8: Nine

T: You are not nine years old.

Pupils: (Jeer)

T: How old are you?

P8: I am four years old.

T: You are not four years old. How old are you?

Pupils: (Jeer)

P8: (Silence)

T: Is Suntai a boy or a girl?

P8: A girl

Pupils: (Jeer)

T: A boy. Clap for him.

Pupils: (Clap)

T: (Shifts gaze to another pupil) What is your name?

P9: Ehinna

T: Ehinna what?

P9: Uloma

T: How old are you?

P9: Eighteen years old

T: What class are you?

P9: (gazes at the teacher)

T: What class are you? Level

P9: Level 4

T: Is Ehinna a boy or a girl?

P9: I am a boy.

T: Clap for Ehinna

Pupils: (Clap)

T: (Shifts gaze to another pupil) What is your name?

P10: Remi (pause) Omolaja

T: How old are you?

P10: Nine years old.

Pupils: (Jeer)

T: Are you nine years old?

P10: No (Shakes her head) Thirty Nine, thirty nine

T: (Nods) Thirty Nine years old. What class are you?

P10: (Silence)

T: Level

P10: Level 4

T: Is Remi a boy or a girl?

P10: Girl

T: Clap for her

Pupils: (Clap)

DISCOURSE 4

T: Solomon. Two times

P1: (recites two times table nodding and moving his body to the rhythm)

T: Wunmi, month of the year.

P2: Months of the year (looks at the poster on the wall) February, February, March, April, May, June, July, August, September, October, November and December

T: Clap for Wunmi

Pupils: (Clap)

T: How many days do we have in a week? If you know it raise up your hand.How many days do we have in a week? BJ

P3: Seven days

T: We go to church on

P3: Sunday

T: Clap for him

Pupils: (Clap)

T: Clap for yourselves

DISCOURSE 5

T: Who can remind me, yeah, I taught you culture. Everybody say culture.

Pupils: Culture

T: Yes, who can tell me the meaning of culture? What is Culture? Yes, Chinemere

P1: ( ) is a way of life.

T: (A sound clap) Everybody say

Pupils: Culture is a way of life

T: Now, we are going to talk about two letter word.Again

Pupils: Two letter words

T: Again

Pupils: Two letter words

T: Who can give me an example?

Pupils: I, I

T: *Hunhunhun,* wait Mayowa, I am talking about two letter words. Yes. Raise up your hand. No chorus answer. Yes, Tomi.

P2: N-O-No

T: Clap for Tomi

Pupils: (Clap)

T: N-O-No (demonstrating) everybody say it

Pupils: N-O-No (demonstrating the word NO with their hands)

T: Who can tell me another one?

P3: ( )

T: *Hen*?

P2: O-N-on

DISCOURSE 6

T: Our shapes, different types of shapes that we have. Who can tell me, what is the name of this shape?

Pupils: Triangle

T: Hen?

Pupils: Triangle

T: clap for yourselves

Pupils: (clap)

T: This is triangle, everybody say it

Pupils: Triangle

T: What is the name of this shape? This one o. If you know it, raise up your hand. Tomi.

P1: Square

T: Clap for Tomi

Pupils: (Clap)

T: Everybody, it is square

Pupils: Square

T: Very good. Who can tell me the name of this shape?

Pupils: (talking as the teacher draws) Oval

T: wait o. This one (cleans and draws again) what is the name of this shape?

Pupils: circle (drawing imaginary circles)

T: again

Pupils: Circle

T: This one nko?

Pupils: Oval

T: Hen?

Pupils: Oval

T: again

Pupils: Oval

T: I can’t hear you

Pupils: Oval

T: Say it again

Pupils: Oval

T: What is the name of this shape? This one. (She draws)

Pupils: ( )

T: Hen?

Pupils: ( )

T: No

P2: Rectangle

T: Rectangle. Clap for Chinemerem

Pupils: (Clap)

T: Everybody say rectangle

Pupils: Rectangle

T: Very good. What about this one?

Pupils: Cone

T: Hen?

Pupils: Cone

T: Clap for yourselves

Pupils: (Clap)

T: I can see that you studied very hard this mid-term. I owe you one one biscuit.

DISCOURSE 7

T: What is your name?

P1: My name is Dada Ayo

T: Dada Odunayo

P1: (nods his head)

T: How old are you?

P1: Am am I am fourteen years old

T: Fourteen years old. Are you a boy or a girl?

P1: Boy

T: I am a boy. Say it

P1: I am a boy

T: What, abi, what is the name of your school?

P1: Down syndrome Foundation of Nigeria

T: Very good. What is your best food? What food do you like best?

P1: (Silence)

T: The food (puts hand in mouth to describe food)

P1: (silence)

T: Or you don't like food?

P1: I like it

T: Ehen. So what is the name of the one you like eating?

P1: I eat it

T: What is the name of your best food? The food that you like? (demonstrates eating)

P1: I eat rice

T: You like rice?

P1: Yes

T: Rice and what?

P1: And beans

T: Did you eat rice and beans when you travelled to Abeokuta?

P1: Yes

T: You ate it?

P1: Yes

T: Who cook it for you?

P1: My –my-mummy

T: Your mummy? Where is my own?

P1: Is at home

T: Is at home. You finished it.

P1: No, no

T: You did not finish it

P1: (shakes his head) No, no

T: Clap for Dada

Pupils: (Clap)

T: Uncle (points to a pupil)

P4: (stands up)

T: What is our name?

P4: Chinemere

T: Chinemere what?

P4: Umeokoli

T: Umeokoli. How old are you?

P4: Level 3

T: How old are you?

P4: Twelve

T: Twelve years old. What class are you?

P4: Level 3

T: What is the name of your best food? The food you like best

P4: (silence)

T: The food you like eating

P4: Rice

T: Rice and what?

P4: Beans

T: And what?

P4: Chicken

T: And chicken. Clap for Chinemere

Pupils: (Clap)

T: Tochi, stand up now

P5: (stands up)

T: What is your name?

P5: (Silence and puts his hand on his chest)

T: (whispers his name to him)

P5: (silence)

T: Ugochukwu Ezedeonkwu. How old are you?

P5: (silence)

T: You are thirty-one years old. Sit down. Clap for Ugochukwu

P5: (sits)

Pupils: (Clap)

T: (points to a pupil) Chim chim. What is your name?

P6: My name is Chibuke

T: Chibuke, what is your surname? Chibuke what?

P6: ( )

T: Nwokocha

P6: Now ( )

T: Chibuke, how old are you?

P6: I am one

T: You are one year old? He! Chibuke. How old are you?

P6: I am one years old

T: What is the name of your best food? The food you like best

P6: (pointing to a distant place)

T: Clap for Chibuke

Pupils: (Clap)

T: (Facing a pupil) Aunty, what is our name?

P7: My name is Boluwatife Oladunjoye

T: How old are you?

P7: I am twenty-one

T: Twenty-seven

P7: Twenty-seven

T: years old

P7: years old

T: What is the name of your school?

P7: Down syndrome Foundation Nigeria

T: What is your best food? The food you like best

P7: Indomie

T: Indomie and what?

P7: and egg

T: and egg. What is your mummy's name?

P7: Oladunjoye

T: Oladunjoye what?

P7: Oladunjoye ( )

T: Yinka

P7: ( )

T: Clap for Boluwatife

Pupils: (Clap)

T: That is not how to clap. Again again

Pupils: (Clap)

T: Aunty, what is your name?

P8: ( )

T: Okpara what? Your name, your name

P8: ( )

T: Okpara Chinedu

P8: ( )

T: How old are you?

P8: I am two years

T: You are not two years. You are thirty-nine years old

P8: Thirty-nine years old

T: What is the name of your school?

P8: Down syndrome Foundation of Nigeria

T: Clap for Chinedu

Pupils: (clap)

T: Clap for Chinedu now

Pupils: (clap)

T: What is the name of your best food? The food you like best

P8: Rice, chicken, soup, and malt

T: Ha, you like chicken and malt. Chinedu, you are enjoying o. Give, me your juice now. Hey Chinedu mwa. Clap for Chinedu

Pupils: (claps)

T: Aunty, what is our name?

P10: My name is Mayowa. Mayowa Mrs Jamal Amuda Lawal

T: Mrs *Iya re wo lo fi si oruko re* (laughing). What is your name?

P10: (silence)

T: Mayowa Amuda-Rahman

P10: Mayowa ( )

T: Amuda-Rahman

P10: Amuda_Rahman

T: How old are you?

P10: Ten years

T: You are thirty-one years old. What is the name of your school?

P10: Down syndrome Nigeria, Down syndrome

T (interrupts) Foundation of Nigeria

P10: Foundation of Nigeria

T: very good. What class are you?

P10: (silence)

T: level 3

P10: Level 3

T: What is the name of your best food?

P10: Indomie

T: Indomie and what?

P10: Chicken

T: Ehee, Mayowa o. Indomie and chicken. Clap for mayowa

Pupils: (Clap)

DISCOURSE 8

T: Yes, who can tell me the name of the Governor of Lagos state?

Pupils: (Silence)

T: The name of the governor of- Lagos-state. Who wants to try if you still remember? You can try now

P1: (raises his hand)

T: Chinemerem, try

P1: Muhammadu Buhari

T: Noo, no. The Governor of Lagos state

P1: (silence)

T: Sit down. You tried. Clap for him

Pupils: (Clap)

T: Governor of Lagos state. Who can tell me?

P2: (raises his hand)

T: yes Tomi

P2: Akinwumi Ambode

T: Akinwumi Ambode. Clap for Tomi

Pupils: (Clap)

T: Everybody say it: Akinwumi Ambode

Pupils: Akinwumi Ambode

T: That is the name of the Governor of Lagos state. Who can tell me the name of the president of Nigeria?

Pupils: (Silence)

T; President of Nigeria

P1: (raises his hand)

T: Yes

P1: Muhammadu Buhari

T: Clap for Chinemerem

Pupils: (clap)

T: Muhammadu

Pupils: Buhari

T: That is the name of the President of Nigeria. I will ask you on Monday *o*. If you do not answer me, I will not give you buscuit. I will not buy biscuit for you. You know me *o*. So, the name of the President of Nigeria is Muhammadu Buhari

Pupils: (overlap) Buhari

T: Again

Pupils: Muhammadu Buhari

T: Emeka, what is the name of the President of Down syndrome Foundation of Nigeria?

P4: (laughing, no response)

T: The President, Down syndrome Foundation of Nigeria. The President, Tomi.

P2: ( )

T: Boluwatife

P3: Mrs Rose Mordi

T: Clap for Boluwatife

Pupils: (Clap)

T: That is not how to clap. I've taught you several times how to clap again again

Pupils: (Clap)

T: Very good. Mrs Rose Mordi

Pupils: (Overlap) Rose Mordi

T: That is the name of the national President of Down syndrome Foundation of Nigeria.Who can tell me the name of our Administrator in Down syndrome Foundation? The name of our Administrator?

P1: (raises his hand)

T: Chinemerem

P1: Mr Majek

T: Clap for Chinmerem

Pupils: (Clap)

T: The name of our administrator is Mr Majek

Pupils: (overlap) Majek

T: That's he shortened it o. It is not Majek o. It is Mr Majekodunmi. You know I have taught you several times. Mr Majekodunmi, but you are fond of Mr Majek. Very good. You've done very well.

DISCOURSE 9

(The Teacher leads the song)

T: Muna, touch your head

PI: (touches his head)

T: Muna, touch your ears

PI: (Touches his ears)

T: Muna, touch your hair

P1:(Touches his head)

T: Muna touch your nose

P1: (Touches his Nose)

T: Muna, touch your teeth

PI: (touches teeth)

T: Muna, touch your Chest

PI: (touches his chest)

T: Muna, touch your shoulder

PI: (touches his shoulder)

T: Touch your legs

P1: (touches his legs)

T: Clap for Muna

Pupils: (Clap)

T: A sound clap (twice)

Pupils: (sing along)

T: Shedrack, touch your nose

P2: (Responds by hanging his hands in front but not touching the part of the body)

T: Shedrack, touch your teeth

P2: (still hanging out his hands around the part mentioned, another pupil put his hand in the mouth)

T: Clap for Shedrack

Pupils: (Clap)

T: A sound clap

Pupils: (Clap)

T: Jessica, touch your head

P3: (She was jumping around, then sits on hearing her name, touches her head)

T: Jessica, touch your stomach

P3: (Touches her stomach)

T: Jessica, touch your chest

P3. (Touches her chest)

T: Jessica, touch your shoulder

P3: (Touches her shoulder)

T: Jessica, touch your legs

P3: (Touches her legs)

T: Jessica, touch your fingers

P3: (waves her hands to show her fingers)

T: Touch your teeth

P3: (Touches her teeth)

T: Jessica, touch your waist

P3: (Touches her waist)

T: Touch your waist

P3: (Touches her waist)

T: A sound clap

Pupils: (Clap)

T: Muna, touch your nose

PI: (Touches his head)

T: Muna touch your nose

P1: (touches his ears)

T: Touch your nose

P1 : (Touches his head)

P3: Nose (touches P1's nose)

T: Touch your nose

PI: (Touches his head again)

T: (shifts gaze from P1) Ok. It's Chinelo. Chinelo, touch your Nose

P4: [touches his head]

T: Touch your nose

P4: [moves his hands close to his nose but did not touch it)

T. Chinelo, touch your teeth

P4: [touches his teeth)

T: Touch your teeth

P4: [touches his teeth)

T: Touch your hand

P4: (starring at the teacher)

T: Touch your hand

P4: (Puts his hand in his eyes)

T: Touch your hand

P3: Hand (touches P4's hands)

P4: (shows his hands)

T: Chinelo, touch your legs

P3: (touches P4's legs)

P4: (touches his legs)

T: Clap for Chinelu

Pupils: [Clap]

DISCOURSE 10

T: Two letter words

Pupils: Two letter words

T: I – T

Pupils: It

T: I – T

Pupils: It

T: I – S

Pupils: IS

T: I – S

Pupils: IS

T: W – E

Pupils: We

T: W – E

Pupils: WE

T: M – E

Pupils: me

T: M – E

Pupils: me

T: U – P

Pupils: UP

T: U – P

Pupils: up

T: G – O

Pupils: Go

T: N – O

Pupils: NO

T: S – O

Pupils: SO

T: S – O

Pupils: SO

T: Clap for yourselves

Pupils: [Clap]

DISCOURSE 11

The teacher and pupils all sing.

All: There are five magic words/3ce That I know

Pl: Please, excuse me

All: Please, excuse me, Sorry, thank you

Pl: Pardon me

All: And the last one, pardon me.

T: Jessica, sing again, speak loud. There five magic words

P2: There are five magic ( ) know, please excuse me, sorry, thank you

And the last one, pardon me [holds her hanks across her Chest]

T: Muna, get up and sing for us

P3: (reluctant)

T: Get up and sing your own. There five magic words

P3: (Covers his face) There are five magic words/3ce that I knowPlease, excuse me, sorry, thank you, and the last one pardon me.

T: Come and sing for aunty. Start again

P3: (Covers his face)

T: Don't cover your face

P3: (removes his hands from his face but closes his eyes) There are five magic words/3ce that I know, please, excuse me, sorry, thank you and the last one, Shedrack! (Opens his eyes)

DISCOURSE 12

T: Stand up, sit down

Pupils: (stand up, then sit down)

T: Give yourself a clap

Pupils: (clap)

T: *Lana, ta lo foso school e lana*?

P1:(beats his Chest) *emi*

T: *O foso School e*?

PI: (describes washing with his hands)

T: *Ki lo fi foso School e?*

P1: *Omo*

T: *Omo? O sure?*

P1: (nods his head in agreement)

T: Daniel, *o foso school e?*

P2: (looks down)

T: *O o fo o*

P2: *Mi foo*

T: Quardri, *o foso school e*

P3: (Stammering and describing washing) *Nile lana* (beats his chest)

T: *Ki lo fi foo?*

P3: *Ose*

T. *Ose.* Divine, did you wash your school uniform yesterday?

P4: Yes

T: Are you sure?

P4: Yes

T: Who helped you to wash your school uniform?

P4: My mu……mummy

T: *Hen* – Makinde, did you wash your school uniform yesterday?

P5: (nods his head and describes washing hands)

T: *O foso e. Ki lo fi fo*?

P5: ( )

T: You washed it

P5: Wash

T: Good. Clap for yourself

P5: (Claps)

T: Now, who can tell me the colour of your school uniform?

Pupils: (Silence)

T: Who can tell me the colour of your school uniform?

Pupils: (Silence)

T: *Aso school yin. Ta lo le so colour aso school yin fun mi?Hen, ta lo le so o?Mo ma ti ko yin ri Hen?Ta lo le so colour aso school yin fun mi?*Emeka, what colour is this (raises a green object)

P1: Yellow

T: *Ehn*

PI: Yellow

T: No. What colour is this, Emeka?

P1: (touches his shirt Uniform

T: No. What colour is this Quadri?

P3: Colour white

T: No. Ope, what colour is this?

P6: Black

T: No. Ayomakinde, what colour is this

P5: Blue

T: *Hen*?

P5: Blue

T : Blue . Good. *Hen*, Fatiu, what colour is this?

P6: (Inaudible, points to the object the teacher holds)

T: *Hen?*

P6: (Whispers) blue

T: Blue. Is it colour Blue?

P6: (nods)

T: No. This is colour green. What colour is this?

Pupils: Green

T: *Hen*?

P2: Colour green

T: So your school uniform is colour green. Colour what?

P1: Green

T: What colour is your school uniform, Tobi?

P7: (stutters) Green

T: *Hen?* (pulling the collar of a pupil's shirt)

P7: (stutters) green

T: So what colour is this, Ope?

P6: Black

T: Colour green. Colour green. Colour

Pupils: Green

T: Your school uniform is what colour?

Pupils: Green

T: *Mo ti so fun yin*, Nigeria flag *naa*, green, white, green, Say it.

Pupils: (Silence)

T: Green, white, green. So what colour is this? Say it Daniel.Colour

P2: (whisper) blue

T: Good. Clap for Daniel

Pupils: (Claps)

T: Colour

Pupils: (Clap)

T: Quadri, what colour is this?

P3: (stutters) color green

T: So what is the colour of your uniform?

P2: (pulling his shirt collar) Red

T: So what is the colour of school uniform?

P2: Blue

T: Green. *Hen?*

P2: Green

T: And what colour is this? (raising a blue object)

P2: Black

T:Aaron. Don't say black. What colour is this?

P6: Blue

T: Clap for Aaron.

Pupils: (Clap)

T: (raises a red object) Samuel, what colour is this?

P9: ( )

T: *Hen*

P9: (Whispers) Colour blue

T: Makinde, what colour is this?

P5: Colour blue

T: Emeka, what colour is this?

P1: Colour white

T: Tobi, what color is this?

P7: (Stutters) colour white

T: What colour is this?

P4:Colour blue

T: This is colour red. Say it

Pupils: Colour Red

T: Colour red

Pupils: Red

T: Colour

P1: Red

T: Good. Clap for Emeka

Pupils: (Clap)

T: This is colour red

Colour

Pupils: Red

T: *Hun hun* (Picks up a white object that has particles inside and shake it). What colour is this?

Pupils: Blue

T: *Ha ha.* This colour *o*. Look at Divine‘s singlet [pull out the singlet]. What colour is Divine’s singlet? Stand up, Divine. What colour is the singlet? (Makes the pupil face the class) colour.

P6:Red

T: No *o o*. This is colour white. *Hen*?

Pupils: Colour white

T: Again

Pupils: Colour white

T: So what colour is this Aaron?

P6: White

T: *Hun*?

P7: (Stutters)

T: White. Good. (Picks up a yellow object) What colour is this?

Pupils: (silence)

T: This is colour yellow

P2: Yellow

T: Colour

Pupils: Yellow

T: Colour

Pupils: Yellow

T: And what colour is this? (raises the white object)

P2: White

Pupil: White

T: Clap for yourselves

Pupil: (Clap)

T: Tobi, what colour is this?

P2: Blue (Stutters)

P3: Red

T: Clap for Quadri

Pupils: (Clap)

T: So what colour is this?

P3: Red

T: Good. And what colour is this Aaron? (picks up the green object)

P6: (silence)

T: Samuel, what colour is this?

P9: (stutters) Blue

T: Daniel, what colour is this?

P2: Red

T: No, *ti mo so fun yin.* Colour *aso yin*

P2: Uniform (pulls his collar)

T: *Hen, ki wa ni colour e?*

P2: Red

T: Emeka, what colour is this?

PI: Blue

T:Blue ni school uniform ? What colour is this?

PI: Yellow

T: Quadri, what colour is this?

P3: Yellow

T: (Picks up the white again). This is colour white. Colour (she shakes it)

Pupils: White

T: *Se e ri wipe o n dun? Kilo wa ninu e ti o fin dun bayi*?

P2: *O n shake*

T: *O n shake*. *Ehen*. This is colour white. (Picks up a red object). *Se e ri wipe eleyi o dun*? This colour is red. What colour is this?

Pupils: Red

T: *Hen?*

Pupils: Red

T: Again

Pupils: Red

T: This is colour

Pupils: Red

T: (Picks up yellow object) *Se e ri wipe* this one is making little sound *die die*. Can you hear the sound?

Pupils: Yes

T: (Picks up the white object to compare the loudness). You can hear the sound now. This one is loud (shaking the white object). This one is small. Can you hear the sound? *Se n gbo*? *O n* sound.

P2: *O n* shake

T: *O n* shake. So this colour is yellow.What colour is this?

Pupils: Yellow

T: Divine, what colour is this?

P4: Yellow

T: Again

P4: Yellow

T: Ekwuewe, what colour is this?

P8: (stutters)

T: *Hen?*

P8: Red

T: (Picks up the green object) What colour is this?

Pupils: (give different wrong answers simultaneously)

T: *Ha ha*, school uniform *yin, kini mope colour school uniform yin*?

Pupils: (give different wrong answers again)

T: Green

Pupils: Green

T: Again

Pupils: Green

T: Basit, what colour is this?

P10: (touches his chest but stutters an unintelligible sound)

T: Fatiu, what colour is this?

P11: (Silence)

T: Makinde, what colour is this?

P5: Blue

T: Colour green

P5: Colour green

T: *Hen?*

P5:Colour green

T: And what colour is this?(raises the blue object)

Pupils: (different incorrect answers)

P3: Blue

T: What colour is this Quadri?

P3: Blue

T: Again

P3: Blue

T: Clap for Quadri

Pupils: (Clap)

T: This is colour blue.

Pupils: Blue

T: Again

Pupils: Blue

T: (Raises and shakes the white object) and what colour is this?

Pupils:White

T: Colour white

P6: (Shows his singlet)

T: *Wo* singlet Aaron, white *lo wo*. *O n fin han*, white.

P4: (Shows his singlet too)

T: What colour is it?

P4: White

T: What colour is this? (picks up the yellow object)

Pupils: (gives various wrong answers)

T: Blue *ke*? *Wo aso too wo*. Daniel , look at your cloth, the inner one, not the uniform. *Heen*, colour wo niyen?

P2: (Pulls out his inner vest)

T: So what colour is this now?

P2: (Silence)

T: Yellow

P2: Yellow

T: *Hen*?

Pupils: Yellow

T: (Compares the vest and the object). Can you see that it is the same? Tobi, what colour is this?

P7: Yellow

T: Again

P7: (Picks up the red object) and what colour is this?

P2: Red

T: Clap for Daniel

Pupils: (Clap)

T: What colour is this? (Raises the blue object)

P2: Blue

Pupils: Blue

T: Clap for yourself

Pupils: (Clap)

T: And what colour is this? (Raises the green object)

Pupils: (Gives different wrong answers)

T: Colour school uniform

P2: Shirt

T: *Hen?*

P2: Check

T: *Emi mo wipe* check *ni* but what is the colour of the school uniform?

Pupils: (Silence)

T: Green

Pupils: Green

T: Quadri, *o nwo'ta, E e* play ball *leni o.* No ball today. What colour is this?

P3: Blue

T: Green

P3: Green

Pupils: Green

T: Colour

Pupils: Green

T: Colour

Pupils: Green

DISCOURSE 13

T: Days of the week, start

P1: Monday, Tuesday, Wednesday, Thursday, and Saturday

T: Good. Clap for him.

Pupils: (Clap)

T: Quadri, days of the week

P2: Wednesday, Tuesday, Saturday, Friday Saturday

T: Good. Clap for him.

Pupils: (Clap)

T: Ekwuewe

P3: Friday, Tuesday, Tuesday, and ( )

T: Clap for Ekwuewe

Pupils: (Clap)

T: Ayo, Ayomide stand up. Days in the week

P4: Week. Thursday, Tuesday, Wednesday, Thurday, ( ) day

T: Good. Clap for him

Pupils: (Clap)

T: Divine. Days of the week

P5: *Dide*

T: Stand up

P6: Thursday, ( ) day and Tuesday

T: Good. *Atama* for him

Pupils: (Clap)

T: Aaron, days in the week

P7: Days in the week (counting on his fingers) Friday, Saturday, ( ), ( )

T: Good . *Atama* for him too good.

Pupils: (Clap)

T: Samuel (points to him) days in the week

P8: Days in the week: Monday, Tuesday ( ) day, ( ) day

T: Good, clap for him

Pupils: (Clap)

T: Tobi

P9: ( ) day, ( ) day, ( ) day

T: Daniel, days in the week

P10. Monday, Tuesday, Wednesday, Thursday and Saturday

T: Basit

P11: ( )

T: Days in the week

P12: (Silence)

T: Days in the week

P13: (Counting on his fingers) ( ) day, ( ) day, ( ) day, ( ) day, ( ) day, ( ) day

T: and Saturday. Atama for him

Pupils: (Clap)

DISCOURSE 14

T: (Holding objects of different colour) Yes, if you know it, signify by raising your hand.

What colour is this?

P1: Yellow

T: Clap for Tomi

Pupils: (Clap)

T: Everybody, what colour is this? Colour

Pupils: Yellow

T: Colour

Pupils: Yellow

T: What colour is this

Pupils: Blue

T: Very good. What colour is this? (puts up a red object)

Pupils: Red

T: Oh, you are too much. Clap for yourselves

Pupils: (Clap)

T: Colour

Pupils: Red

T: Very good (picks up a green object)

Pupils: (clap)

T: Colour

Pupils: Green

T: I will show you another colour now. If you get it, I will give you two Biscuits. Wait o. *Hun Hun*, what colour is this? What colour is this?

Pupils: Black

T: Oh, Oh clap for yourself

Pupils: (Clap)

T: Colour

Pupils: Black

T: This one *nko*?

Pupils: (Silence)

P2: Brown

T: Clap for Chinemerem

Pupils: (Clap)

T: Everbody, say it is colour

Pupils: Brown

T: Colour

Pupils: Brown

T: Very good. What colour is this one?

Pupils: (give different wrong answers)

T: *Hun*, *Hun*, this one, Colour White

Pupils: White

T: What colour is this?

P3: Orange
Pupils: Orange
T: You are too good, Clap for yourselves
Pupils: (Clap)
T: Clap for yourselves now.This is colour Orange.Very good, I love you.

DISCOURSE 15

T: What is your name?

P1: My name is Ayo Makinde

T: Clap for Ayo

Pupils: Clap for Ayo

Pupils: (Clap)

T: What is your own name?

P2: ( )

T1:Azeez?

T2: Basit

T: *Oya*, clap for him

Pupils: (Clap)

T1: What is your name?

T2: Basit

T: *Oya*, clap for yourself.

Class: (Clap)

T1: What is your name?

P3: (Silent and covers his face)

T1: What is your name now?

P3: (Silence)

T1: Stand up

P4: *Dide*

T1: Do you understand English?

P3: Divine (Slurs)

T2: Divine

T1: Divine. *Atama*

T2: *Atama*

Pupils: (Clap)

T2: *Oya*, sit down

T1: Sit down

T1: What is your name?

P5: (slurs) My name is Quadri Dosumu

T1: Please, *labako* for Quadri

Pupils: (Clap)

T1: Ok, big boy, what is your name?

P4: (Silence)

T1: Stand up. What is your name?

P4: My name is Daniel

T1: Daniel what?

P4: Titilola Daniel

T1: *Labako* for Daniel

Pupils: (Clap)

T1: I know my age. How many of you know your age?

Pupils: (different answers)

P4: Eighteen years.

T1: Please, *atama* for Daniel

Pupils: (Clap)

T2: Emeka, how old are you?

P6: Five years old

T2: *Hen*?

P6: Five (shows five with his fingers)

T2: You are not five years old o. You are eighteen years old. Stand up

P6: (Stands up)

T2: You are eighteen years old

P6: Ten years old

T2: You are ten years old

P6: (nods)

T1: Ok, sit down. Ayo stand up

T2: Ayo, how old are you

P1:(Shows four fingers but made unintelligible sound)

T2: Twenty years old

P1: Yes

T2: No o, you are not twenty-two years old o. You are eleven years old. *Hen*?

P1: Eleven

T2:Osikoya, stand up. How old are you?

P7:Four

T2: You are not four years old. You are twenty years. How old are you?

P7: Nine

T2: I will beat you *o*. How old are you?

P8: Four

P1: You are twenty years old. How old are you?

P7: Twenty

T1:You are twenty years old

P7: Twenty naira (laughs)

T2: Aaron, how old are you?

P8: Four

T2: You are not four years old. You are twelve years old

T1: Ope is twelve years old.

T2: How old are you?

P8: Twelve years old

T1: Clap for Ope

Pupils: (Clap)

T2: Fatiu, how old are you?

P9: (Silence)

T2: You are eight years old. Say eight.

P9: (Silence)

T2: How old are you? Eight years old

P9: (Whispers)

T2: Eight (uses her hand to raise his mouth).Samuel, get up, how old are you?

P10: Eight, eight years old

T2: Good

T1: Very good

T2: Ojikutu, how old are you?

P11: (Slurs unintelligible utterances)

T2: You are not eight. Seventeen years old. How old are you? Seventeen

DISCOURSE 16

T2: Sam, o ya look here

T1: Hello Sam

P1: (Looks away)

T2: Uncle is talking to you.

T1: Sam, how are you? *O ma da emi lohun*

P1: (Stutters) fine.

T2: Sam, how are you?

P1: (whispers) fine

T2: How is daddy?

P1: (Whispers) Daddy

T2: Mummy, daddy

P1: (Whispers and looks away) daddy

T1: Ok. Look here Sam.

P1: (No response)

T1: How are you today?

P2: I am fine thank you

T1: How are you today?

P3:(Whispers) fine.

T1: I am fine thank you.

P3: (imitates the teacher's gestures without audible speech)

T1: Good

T1: How are you?

P4: I am fine, thank you.

T1: Quadri, how are you?

P5: (Slurs) am fine, thank you.

T1: Ayo, how are you today?

P6: Am fine *ku*

T1: Very good, clap for yourselves.

Pupils: (Clap)

T2: Daniel, tell us the name of your school.

P4: ( ) primary school. Ipakodo school.

T1: Clap for yourself

Pupils: (Clap)

T1: Emeka, what is the name of your school?

P3: ( ) primary school

T2: Stand up and say it

P3: *Ipa*

P3: Ipakodo school

T1: Sit down. *O ya*, another person. Who knows the name of our school here?

T2: Aaron, stand up and say it

P7: (Silence)

T2: Say it now

P7: (Silence)

T1: Ok, everybody, let us learn the name of our school today.

T2: The name of my school is Local Government School. Say it after me

Pupils: Local Government School.

DISCOURSE 17

T: Solomon, wants to teach me I don't know addition of numbers, so Solomon wants to teach me

P: (Interrupts)come and sit down (to his colleagues)

T:Ah Ah, B.J, what are you still writing? (Other pupils joins in calling B.J)

T: Solomon, *abi*, B.J., how far

P1: I *don* finish

(Background noise)

T: You *don* finish

P1. I am doing number two

P2: Number two for what

P1.: (counts aloud)

T: B.J, we are waiting for you *o* (background noise as everyone waits for P1)

Oya Solomon

P2: *Ehen*!

T: (to the other pupils) Look up everybody

P2: What is this?

Pupils: One

P2: We are counting One. (Pupils answer together)

Pupils: One

P2: We are counting two

Pupils One, two

P2: Let's count

Pupils: One, Two, three

P2: The answer is

Pupils: Three

Teacher: *Oya*, the next one: five plus one (background noise)

P2: (to one of the students) shut up your mouth, no manners

T: continue

P2: We count five

Pupils: One, two, three, four, five

P2: we now count one

Pupils: (overlap) one

P2: Let's count

Pupils: One, two, three, four, five, six

P2: Six. The answer is six

T: Victor

P2: No 2

T: Wait, go and sit down. Victor, number two (background noise)

P3: (reluctant to step out)

T: Victor, number 2. If you don't know it, I will call somebody to come and do it for me. You know I don't know it (other pupils offer help)

P3: What is this?

Pupils: Three

P2: Count

T: Don't control him *o*

P3: Answer me

T: *Oya*

Pupils: (count together) one, two, three

T: You will count two

P3: *Oya*, answer me *o*

Pupils: One, two

P3: (points to the beginning of the strokes)

Pupils: one, two, three, four, five

P2: Five correct

Pupils : correct

P3: *Oya*, go

Pupils: One, two, three four

P3: We count two, *oya*

Pupils: One, two

P3: (points to the board from the beginning stroke)

Pupils: one, two, three, four, five six

P3: (writes six)

T: Clap for Victor …

Pupils: (clap)

T: We did not remember to clap for Solomon

Pupils: (clap)

T: Oluchi, no three

Pupils: (inaudible voices)

P4: We are counting one

Pupils: One

P4: We are counting four. *Oya*, let's go

Pupils: One, two, three, four

P4: We will add together

Pupils: One, two, three four, five

P4: Everybody, what is this

Pupils: Six

P4: We are counting six, *oya*

Pupils: One, two, three, four, five, six

P4: Children, everybody, what is this?

Pupils: Three

P4: (counts strokes on the board)

Pupils: one, two, three

P4: We will add together

Pupils: One, two, three, four, five, six, seven eight, nine

P2: Ten

T: *Eh*, Solomon, *o bere*

P2: Nine nine,

Pupils: (claps and audible voices overlap)

T: B.J., come here

Pupils: (laugh and hail B.J.)

T: If you don't do it very well, you will see, I will report you to your daddy. Where is your glasses?

P1: (puts on glasses and points to the board)

Pupils: One, two

P1. One

Pupils: one, two, three

P1: (points to the board)

Pupils: one, two

P1: one

Pupils: one. one, two, three

T: clap for B.J

Pupils: (clap)

T: clap for yourselves

Pupils: (clap)

T: again, again

Pupils: (clap)

T: you now know addition of numbers

A visitor comes in

T: (beats the table)

Pupils: (stand) Good afternoon ma. We are happy to see you. God bless you. Amen

Visitor: Good morning students. It is not afternoon- thank you

Pupils: (they all laugh)

DISCOURSE 18

T: (sings) if you're happy and you know it clap your hands. Wumi, Wumi, stand up

P1: *Hun* (lifts her head from the table and scratches her eyes)

T: Stand up

P1: (stands up)

T: (resumes singing) you are not clapping your hands. No biscuit for you tomorrow

P1: *Oya, pele*

T: (imitates her) *Oya* sit down

P1: Thank you

T: Yes, who can tell me? Do you still remember the last topic I taught you? Harmful objects

Pupils: Harmful objects

T: Are we supposed to play with harmful objects?

Pupils: No

T: Very good. Who can tell me what harmful objects are? Just give me examples of harmful objects

Pupils: (raises their hands)

P2: cutlass

P3: Scissors

P4: Knife

P5: Blade

P2: Sharpener

T: Sharpener is not a harmful object. Clap for yourselves

Pupils: (clap)

T: We are going to talk about family. Say family

Pupils: Family

T: Family

Pupils: Family

T: What is family? Who can try?

P2: A family consists of father, mother and children

T: Clap for Solomon

Pupils: (clap)

T: Who else wants to try?

Pupils: me

T: Favour

P3: A family consists of father, mother and their children

T: Clap for favour

Pupils: (clap)

T: Everybody what is family

Pupils: (answer together except Awele who was just looking round) A family consists of father, mother and their children

T: How many types of families do we have? Wumi

P1: Ma

T: How many types of families do we have?

P1: Twelve

T: Stand up and answer me

P2: Stand up

P5: father, No

T: Keep standing. B.J, how many types of family do we have?

P4: (raising his hand and standing up) two

T: very good, clap for BJ

Pupils: (claps)

T: Everybody, how many types of family do we have?

Pupils: Two

T: Again

Pupils: Two

T: Again

Pupils: Two

T: Clap for yourselves

Pupils: (clap)

T: Yes, who can mention the types of family for me? Peter

P5: (comes forward) father

T: Who can mention them?

Pupils: Aunty, me

T: BJ, yes, mention the types of family

P4: Nuclear family

T: And what?

B.J (clutters) Extended family

T: clap for BJ

Pupils: (clap)

T: Nuclear family and

Pupils and teacher: Extended family

T: Awele, how many types of family do we have?

P6: Extended family, nuclear family

T: Nuclear family and extended family – what is nuclear family? Who can tell me? What is nuclear family? Just explain or tell me something about nuclear family. I said nuclear family consist of father, mother and children that is nuclear.

Pupils & teacher: Family

T: What of extended family?

Pupils: (no response)

T: What of extended family?

Pupils: (no response)

T: *Hmm.* Extended families are your uncles, your aunties, your grandparents, your cousins. They are your extended

Pupils: Family

T: Yes, who can explain nuclear family for me now? Nuclear family

Pupils: (no response)

T: I said nuclear family consists of

P2: Uncle

T: Nuclear, nuclear

Pupils: (silence)

T: Nuclear family consists of father, mother and children while extended family consists of your grandmother, grandfather, your uncles, your aunties, your cousins, every members of your family, they are your extended family

Pupils: Family

T: clap for yourselves

Pupils: (clap)

DISCOURSE 19

Teacher:	Hello
Pupils:	(no response)
Teacher:	Hello
Pupils:	(no response, but one stood up to meet the teacher, she hugs her and instructs her to sit down she reluctantly did)
Teacher:	who can recite letter A – H for us
Pupils:	(no response)
Techer:	Me, I can recite it (she recites it) Oya, Jesica, stand up and recite letter A – H
P1:	(stands up) A, A, B, B, G, H (Teacher joins her to say G H)
Teacher:	Clap for Jessica
Pupils:	(Two pupils jump up to clap with excitement while the others sat)
Techer:	Adesola, *oya* stand up and recite letter A – H for us
P2:	(slightly unintelligible) A, B, C, D, E, F, H, H
Teacher:	Clap for Adesola
Teacher:	Chinelo, stand up and recite letter A – H for us
P3:	(stands up) A, E, D, F, B, A (creates with the rhythm of the teacher)
Teacher:	Ezekiel, stand up and recite letter A – H
P4:	A, A, A, A, A, A, A, A,
Teacher:	Half clap for Ezekiel. We will give u full clap
P4:	(laughs and sit down)
Teacher:	Who can show me circle? (Draws circle in space)
P4:	Circle (touches a circle on the wall)
Teacher:	Chinelo, go and show me circle
P3:	(Touches a circle on the wall)
Teacher:	Go and show me colour yellow
P3:	(Points to purple colour)
Teacher:	No no no. Jessica, show me colour yellow
P1:	(Climbs a chair and points to a yellow colour shape)
Teacher:	Show me triangle

P1: Circle

Teacher: Why now? Ok, let's stand up and draw circle in the air

Pupils: (Stand up but make audible noise and refuse to imitate the teacher)

DISCOURSE 20

T: Ayo: Tell mummy: what is family?

P1: Mother and children

T: *Atama* for him (pupils clap their hands)

T: Samuel, what is family?

P2: Father, mother, father, children (indicates, counts with his fingers)

T: Roll it up for Samuel. (Pupils clap) What is family? Fatai what is family?

P4: (counts his fingers like others and moves his mouth without uttering anything)

T: Speak up now, say father

P4: *Ta-ta*

T: mother

P4: *Ta-ta*

T: And children

P4: *Chil-n*

T: Emeka, who is a father?

P5: Mother, Mother and children

T: Father, father, not family. Father is the head of the family. The head of the family is what

Pupils: Father

T: Who cooks for us? Who cooks for you, Emeka?

P5: Food (puts hand in his mouth) Daddy

T: Who cooks food for you?

P5: Daddy

T: Daddy *abi* mummy?

P5: Mummy

Mother: Quadri, *ta lo fun e lounje*? Daddy abi Mummy

P3: Mummy

Teacher: Samuel, who cooks for you at home?

P2: Daddy

Teacher: *Hen*?

P2: Daddy

Teacher: Daddy or Mummy

P2: Mummy

Teacher: Kekere, who is the head of the family

P6: *Fad*

Teacher: Father!

P6: *Fada*

Teacher: Who is the head of the family?

Pupils: Father

Teacher: Are you sure it's father? Yes or no

P6: *Ye* or no

Teacher: Yes

P6: Yes

Teacher: Who washes plates at home?

P3: (describes washing of plate with hands)

Teacher: Is it father or children?

P3: Father, mother,

Teacher: Emeka, who washes plates at home

P5: I wash plate

Teacher: Good. Emeka used to wash plates himself. Ayomide, who sweeps at home? Ayomide stand up.

P7 : (stands up)

Teacher: Who sweeps compound?

P7 : *Nile*

Teacher: Yes, *ta lo man gba ile?*

P7: *Nile*

Teacher: Who sweeps at home?

P7 (Raises his hand) *Ile*

Tecaher: Say it is me

P7: *Ile*

Teacher: Me, *ile* (mocks him) *joko*. Olagbin, who is the head of the family?

P8: Mother and children

Teacher: What is family? *Oya*, let's start from there

P8: Mother and children

Teacher: No father? Who is the head of the family?

P8: (silent)

Teacher: Talk now. Who is the head of the family?

P8: (Silent)

Teacher Who gives mummy money to cook food?

P8: *Eba*

Teacher: food *Eba ko, iyan ni* , Olagbin, sit down. (Faces another pupil).Who use to prepare for us at home?

P9: Mummy

Teacher: Good. *Atama* for him. Another name for father is what?

P9: (stands up) *fowo foso*

Teacher: Daddy

P9: Daddy (sits)

Teacher: Another name for mummy is what?

Pupils: (give different answers)

Teacher: Mother

Pupils: Mother

Teacher: Children are boys and

Pupils: Girls

Teacher: *Oya*, lets sing the family song (they all sing)