

# **Adaptation of Instructional Strategies and Learning Environment for Learners with Developmental Disabilities**

*A Case Study of Special Classes and Resource Units in  
Chitungwiza District, Harare Province in Zimbabwe*

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## **Abstract**

The focus of the present study is to investigate the adaptations that teachers make to their instructional strategies and the learning environment when teaching learners with developmental disabilities. The study sought to answer the following question: how do teachers adapt their instructional strategies and organise the learning environment to meet the needs of learners with developmental disabilities?

The study was conducted in four different schools from one district of Harare province in Zimbabwe. The study was qualitative and an explorative case study design was used. A purposively selected sample that consisted of eight teachers was drawn from the four schools.

The aim was to investigate how the teachers adapted their instructional strategies by letting them teach while the investigator observed, to capture the details of the adaptations. In order to gain more in-depth information and clarification on the teachers' actions, follow-up interviews were conducted immediately after the observations for the teachers to give their own reasoning for the actions and their own perspective of the adaptations that they made.

Overall findings showed that even though some teachers truly adapted and differentiated their instructional strategies and the learning environment for learners with developmental disabilities, others needed to be made aware of the need for some adaptations when teaching and taught the various ways that teachers can use adaptations in their instructions that can benefit the learners. The study also led to the discovery and finding of some of the impediments to adaptations that included large class sizes and inflexible environments which need to be addressed. The results however were only representative of the schools studied and could not be generalized to the whole teaching population. The study concluded with some recommendations to the findings that included reduction of the teacher to pupil ratio, the need for constant upgrading of teachers through workshops and in-service training.



## **Dedications**

I dedicate this thesis to all the students with developmental disabilities in Zimbabwe who are eager to learn so that their dreams may also come true.

I also dedicate this work to my beloved husband Joseph, my son Ronald and my two daughters Rossette and Rachel Tadiwanashe as well as to my mother Juliet. Without your support and encouragement darlings, my study could have been stressful.



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# 1. Introduction

Individuals with developmental disabilities have learning difficulties that vary considerably depending on the condition of each individual, like mental retardation, brain injury, or emotional disturbance. People with developmental disabilities have problems with major life activities such as language, mobility, learning, self-help, and independent living (Berne-Smith, Ittenbach & Patton 2002). Despite the fact that these individuals have learning difficulties and/or conditions that make them differ from the normal considerably, these children have a fundamental right to live and to participate in daily programmes at school, at home and in the society (Gulliford & Upton 1992). UNESCO (1994) proclaims that every child has a fundamental right to education. Because students present unique characteristics, interests, abilities and learning needs (Chakuchichi, Chimedza & Chiinze 2000), the education system should take into account the wide diversity of these needs and characteristics of individuals with developmental disabilities. Mpofo (2002) propounded a similar viewpoint that educational considerations for learners with developmental disabilities need to take into account the unique characteristics of each individual. Instructional strategies and the learning environment need to be adjusted and adapted to suit the individual needs of learners for them to easily access their rights to equal opportunity in education. The ability to adjust or adapt is however dependant upon the general education provision by the responsible authorities and the competence of each teacher.

## 1.1 The Zimbabwean context

Zimbabwe is a third world developing country, which lies in the southern part of Africa (see map in appendix 5).

Caine and Caine (1991) forwarded the view that the environment can influence learning and UNESCO (2001) expressed the sentiment that economy is the basic

determinant of the people's lives and education. Today the economy of Zimbabwe has declined drastically. Recently, Zimbabwe has experienced a serious negative economic decline with inflation rate of 165,000% (Manwere 2008). This high inflationary environment has negatively affected all sectors including education. The effects are seriously felt in the provision of quality education and special needs education has not been spared either. Budget on teaching /learning materials as well as infrastructural development have drastically fallen over the years.

Caine and Caine (1991) noted that culture could also have an influence on education. Because of some traditional and religious beliefs, people with developmental disabilities have been experiencing inhuman treatment while on the other hand it is religion (Christianity) which led to the early development of their education. The education of learners with developmental disabilities has not been taken seriously over the years. Today, the teaching of students with disabilities begins to take shape but is still in its budding stage.

## 1.2 The Education System in Zimbabwe

The Government of Zimbabwe established the Department of Schools Psychological Services (SPS) and Special Needs Education (SNE) in 1983 to be responsible for Education of students with disabilities. The SPS and SNE department act as the arm of the government which co-ordinates special needs education and implements all the decisions made by the Government. Students with developmental disabilities are placed in either Special Class or Resource Unit in regular schools, or in Special Schools depending on the severity of the disability (Ministry of Education and Culture 1990). SPS and SNE are responsible for the assessment and placement of the students. Very few students with developmental disabilities go beyond primary education because of the system that is examination oriented and inaccessible. The government, by way of per- capita grants funds both regular and special needs education (Chakuchichi & Magama 2001). The grants are however insufficient to run

especially the education of people with special educational needs which requires more than normal provision that is from human and material resources.

### 1.3 The development of special needs education in Zimbabwe

The education of people with disabilities developed from a philosophy of fatalism to acceptance, followed by inclusion and today there is emphasis on the empowerment of people with disabilities (Chakuchichi & Magama 2001). Traditionally in Zimbabwe, the birth of a child with a disability was regarded as a bad omen and so it was received with mixed feelings. Mpofu (2002) expressed that people with disabilities were marked by censure, abuse, inhumane treatment, abandonment, and death. Chakuchichi and Magama (2001) noted that the idea behind censuring was to create a perfect society by eliminating all imperfect human beings such as the people with disabilities. This view of fatalism developed to benevolent care and treatment, supported by religious philanthropists. In 1927, Margaretta Hugo, a Christian Missionary opened a school for the Blind. This marked the beginning of the education for people with disabilities in Zimbabwe.

At independence in 1980, many special classes and resource units were established in regular schools for the major three types of disabilities (mental retardation, hearing impairment and visual impairment). There was a shift of policy from institutionalization to the policy of integration (Chakuchichi, Chimedza & Chiinze 2000). Hadebe (1985) and Dakwa (1993) noted that special needs facilities sprouted and are now scattered all over Zimbabwe. Peresuh and Buchanan (1998) expressed that the facilities had mushroomed throughout the country.

Today, focus is now on inclusion, as Zimbabwe is a signatory to many of the International and Human Rights Declarations. Remarkable strides were noted towards changing the education of students with special needs.

## 1.4 Laws and policies that influence special needs education in Zimbabwe

In Zimbabwe, laws are generally known as Acts. The laws are passed in parliament and are named by the years in which they were passed for instance The Education Act of 1987.

The Zimbabwe Government (1987) through the Education Act is still up-to-date the only law that Zimbabwe uses to provide for special needs education. There is no specific legislation on special needs education (Mavundukure & Thembanani 2000).

The 1987 Education Act states that:

- Every child in Zimbabwe shall have the right to school education.
- No child shall be denied admission to any school on the grounds of race, tribe, colour, religion, place of origin, political opinion or social status of his parents
- Primary education for every child of school going age shall be compulsory and it shall be the duty of the parents to ensure that their child goes to school.

Laws and policies are important in that they set out practical guidelines and enable the provision of such settings. Where there is a law, it mandates, legalizes, and makes it possible for a government to budget funds that make the special education provision operative. Chakuchichi et al. (2000) clarified the fact that where there is no law on special needs education the government is not obliged to allocate funds from its treasury for providing for special needs education. Special needs education operates under the Ministry of Education and Culture thus, SPS and SNE coordinates special needs education under this 1987 Education Act.

The 1996 Disabled Persons Act is one specific Act that allows people with disabilities to claim Rights against non-discrimination. The Act places great emphasis on the inclusion of people with disabilities in all socio-economic activities through equalization of opportunities The Act is specific and allows people with disabilities to claim rights to equal opportunities. The Zimbabwe Government (1996) also concurs and articulates that no person should be subjected to torture or any form of inhuman

and degrading punishment. Mpofu (2000) specified that, however, the Disabled Persons Act 1996 does not commit the Zimbabwe Government to the education of people with disabilities in any concrete way.

Some policies were also put up to help direct the education of people with disabilities. The Secretary's Circular Minute Number P36 of 1990 directs on the procedures to be used in the placement of students in special Classes, Resource Units and in Special Schools. The policy specifies that children with disabilities can be placed in Special Schools, Special Classes and Resource Units depending on the severity of the child's disability. This policy was put as a follow-up to the shift from the policy of institutionalization to the policy of integration. The Ministry of Education, Sport and Culture (2003) through the Secretary's Circular Minute Number 3/1 on Basic Education Assistance Module (BEAM) set up another policy to assist the children from vulnerable groups to pay tuition fees, levies and examination fees. Children with disabilities fall under the vulnerable group. This move was to ensure that all children access education despite some economic constraints. It has been noted that since independence there has been marked improvement in the provision of special needs education. Hadebe (1985) and Dakwa (1993) concur that the provision of special needs education has improved greatly.

## 1.5 The research problem

Children with developmental disabilities are slow to develop physically, acquire language, and learn to look after themselves and in mastering academic concepts, (UNESCO 2005). The children encounter problems that include attention, memory, and disorders in thinking as well as in using language. Teachers therefore may need to adjust and adapt their usual instructional techniques and the learning environment for them to be able to meet the individual needs of the learner.

The research problem of this study is; *how do teachers adapt their instructional strategies and organize the learning environment to meet the individual needs of learners with developmental disabilities?*

## 1.6 Justification and of the study

Zimbabwe has one Teachers' Training College that trains teachers for students with disabilities at diploma level. The production of the teachers is slow and limited. Due to the prevailing hyperinflationary environment, the few teachers that were trained have left for greener pastures, leaving the field understaffed. Since 1987 when the Ministry of Education set up a Law on Education that states that every child shall have the right to school education and that no child shall be denied admission to school on the grounds of race, colour, tribe or religion, enrolment of students with disabilities has increased. As a result of over enrolment, the Ministry of Education is employing unqualified personnel to work with students with disabilities. This has however raised concern as to the capabilities of these untrained and overloaded teachers handle learner with developmental disabilities. It is anticipated that some of the findings from this study would unearth some of the practices that go on in the teaching and would assist the government to revisit the provision of human resources in the teaching of learners with developmental disabilities.

As an experienced teacher, my own personal experience and challenges that I met whilst teaching children with developmental disabilities compelled me for a quest for more knowledge about the kind of challenges that fellow teachers face when teaching children with developmental disabilities. Stakes and Hornby (1997) propounded the view that we come to know, understand and improve our teaching partly from what others reveal as their experiences

Kincheloe (1995) remarked that educational problems are better understood when shared. People can begin by sharing problems and end up sharing solutions to the problems. The researcher anticipates that findings of this research will reveal the adaptations that teachers make to the leaning environment and their instructional strategies and the challenges coupled to this. Additionally, all people who manage to get the chance to view the research can share with the others as it can be said that a problem shared is a problem solved.



## 1.7 Organization of the thesis

Chapter one gives the background of the study. It has a focus on the country of the study, includes issues pertaining to the system, situation and provision of special needs education in Zimbabwe. In Chapter 2, literature on the teaching of students with developmental disabilities is presented. A theory related to the study is also discussed. Chapter 3 presents the research method, design; procedures taken in the data collection and challenges that were faced are discussed. Chapter 4 gives the data presentation and data analysis. Chapter 5 discusses the findings of the research in relation to the research question and the theoretical issues of chapter 2. Conclusions are also drawn and some recommendations are presented.



## 2. Literature Review

### 2.1 Understanding learners with developmental disabilities

The term developmental disability has relatively become acceptable in place of terms such as mental retardation, mental handicap, and intellectually challenged, (Wikipedia 2008). Some countries that include Zimbabwe still use the term mental retardation even though several authorities forward the view that it carries a lot of stigma. For the purpose of this study the writer shall use the term developmental disability as it encompasses not only the mental capabilities of the learners but also all the facets of life such as language acquisition, independent living and learning as well as the factors that refer to disabilities affecting daily functioning of the affected individuals (Wikipedia 2008).

UNESCO (2001) described individuals with developmental disabilities as those that are slow to develop physically, acquire language, and learn to look after themselves and in mastering academic concepts. This definition depicts that individuals with developmental disabilities usually have slow cognitive development and language acquisition, factors that are crucial in the education of such individuals. In learning situations, this implies that teachers may need to consider making some reasonable adjustments to the curriculum and teaching methods in order to accommodate the learning needs of students with disabilities, wherever possible.

Berne-Smith et al. (2002) added that individuals with developmental disabilities experience difficulties in societal competency. The major challenges of individuals with developmental disabilities usually relate to cognitive development as depicted earlier. Their problems include reasoning, problem solving, remembering and generalization as well as slow language development (Gulliford & Upton 1992). They display poorer functional skills as compared to their non-disabled counterparts. Kirk, Gallagher and Anastasiow (1997) asserted that individuals with developmental

disabilities encounter problems that include attention, memory, and disorders in thinking as well as in using language. In their day-to-day activities, they experience forgetfulness, failure to concentrate on intended tasks, lack of perfection in doing their tasks and clumsiness. The elements of the problems faced by students with developmental disabilities mentioned in the definitions above were focused on in this study in relation to the adaptations that teachers make in their instructional strategies as well as the learning environment in trying to meet the needs of individual learners.

## 2.2 The need for some adaptations

Adaptation means to adjust or to modify, and convert what is there (Collins 2002). Usually, the instructional strategies that teachers generally use for learners in the regular classrooms may need to be altered when teaching learners with developmental disabilities. If unedited, the generally used instructional strategies might fail to meet the learning needs of students with developmental disabilities since the individuals exhibit some limitations in learning aspects such as concentration, memory, reasoning and problem solving techniques.

Olivier and Williams (2005) discovered that special needs educators have the responsibility to offer not only good, but also highly individualized and goal-directed instruction. As earlier alluded to, individuals with developmental disabilities are slow in almost all aspects of their development, like language acquisition, cognitive development, problem solving, remembering and generalizations. The individuals also possess poor memory functions and short attention span. Given such scenarios, adaptations may need to be considered fundamental for the purpose of accommodating and/or customizing the teaching strategies and the learning environment to match the needs of each learner with developmental disabilities. Without such adaptations, teachers usually face the complex challenge of how to teach, what to teach, when to teach students with developmental disabilities. Fecho (1994) postulated that some teachers reach a dilemma, as they feel guilty and at times heartbroken when they cannot give the best assistance. Ainscow (1998) claimed that

if pupils are to receive adapted education, teachers are the key persons in facilitating the education and determining the quality of the classroom environment and the choice of teaching strategies. This means that adjustment of the instructional strategies and the learning environment is fundamental but it depends on the predisposition of schools and teachers' will as well as competence of a teacher. If the teacher has the knowledge about the abilities of and circumstances in which the child learns best (Wolfendale 1993), then it becomes important for the teacher to adjust the instruction to suit the learners abilities and needs.

Basic adaptation might entail that the instructional strategies need to be simplified to the level of operation for each learner. The curriculum content also needs some adjustment to suit the needs of individual learners. Task analyzing the learning concepts into smaller manageable units is also necessary. Handleman and Harris (1986) purported that the child's individual needs determine the parameters of the curriculum he/she should follow, the teaching strategies that suit the learner and the educational materials which teachers should use. Stakes and Hornby (1997) are against a situation where teachers attempt to fit students into a rigid curriculum rather than designing a curriculum to fit children's educational needs.

One other prime adaptation is to organize the physical layout of the classroom environment. This can easily improve the quality of the students' learning. Caine and Caine (1991) indicated that the environment could influence learning in that a learning environment that is well appealing and that changes periodically can invite enthusiasm for the learner. Research on the classroom environment has shown that the physical arrangement can affect the behaviour of the students (Savage 1999, Stewart & Evans 1997), and that a well-structured classroom tends to improve student academic and behavioural outcomes (MacAulay 1990, Walker, Colvin & Ramsey 1995). In scenarios where classrooms are not spacious or poorly organised, this limits freedom in the classroom. In addition, the classroom environment acts as a symbol to students and others regarding teachers' value in learning (Savage 1999). If a classroom lacks proper organization to support the type of schedule and activities a

teacher has planned, it can impede the functioning of the day as well as limit what and how students learn. It then follows that teachers may need to organize their classrooms to become conducive to learning and become welcoming.

The language of instruction may also need adaptations. Use of vernacular may benefit the learner, as the use of the mother tongue would always be the best way to express oneself (Grøtan 2005). It can be very difficult to make one's views heard clearly, if he/she cannot communicate properly in a language that he/she is using (Grøtan 2005). Using a foreign language poses great challenges and dilemma as students may not be able to express their views extensively since they are limited in the language they use. Vernacular language connects an individual to the content as the student finds it easy to understand all concepts. In actuality, students with developmental disabilities have difficulties in language acquisition such that the vernacular could best assist them in communication and expression.

### 2.3 Previous researches on adaptation of instructional strategies and the learning environment.

In a research by Romi and Leyser (2006), students with developmental disabilities show inability to focus on particular stimuli. Such individuals showed lack of concentration. Gregory (1991) reflected on the importance of planning clear routine activities for individual learners, removing too much and unnecessary items in order to help them focus on intended activity. Learning environments for students with developmental disabilities need not be packed with too many wall charts that distract their concentration and attention. In a research by Olivier and Williams (2005) in South Africa, findings showed that many teachers for students with developmental disabilities experience inability to handle their occupational situation effectively as they find it hard to cope with the unique demands of their tasks. The same researchers discussed a mismatch between individualization of teaching and large teacher pupil ratio of their classes. Olivier and Williams (2005) found that special needs education involves additional work and responsibility. The responses by the teachers who were

interviewed included comments like: 'I had to prepare different lessons; different activities and it meant a lot of work. I must simplify each little word and explain it.'

It then can be argued that where there is no adaptation of instructional strategies or the learning environment, the learners get a raw deal.

In a study on teaching deaf children in Zimbabwe, Mutasa (1999) found that it is necessary to modify the teaching strategies and become practical. Mercer and Mercer (1998) supported the same notion and noted that some students prefer concrete learning while others feel more comfortable with abstractions; others prefer to learn by doing. Practical teaching can entail the use of concrete objects, including real life experiences and ensuring relevance in the content taught to the individual learner's life. It follows that teachers need to be flexible to cater for the diversity of students through appropriate teaching programmes, organizations and other adaptations that are necessary (Knight 1999). In a study on the kinds of differentiations that teachers make when teaching individuals with special needs in inclusive set-ups, Adami (2004) discovered that teachers chose particular contents for specific students within the same subject matter according to their learning needs. This kind of adaptation can be explained as stratifying content according to the abilities of individuals. That means all students can learn the same concepts but at different levels. Such adaptation is important for individuals with developmental disabilities as they have different operational levels. In the same research, Adami (2004) found out that some teachers made differentiations in teacher time. Differentiation of teacher time happens when teachers assist students individually (Dickinson & Wright 1993). This can also be known as the use of one-to-one teaching. The ability of a teacher to provide such a strategy depends on the nature of the learning needs of individuals and size of the class. However, Dickinson and Wright (1993) found that teachers do not always find the time to work with students on individual basis. Romi and Leyser (2006) concluded that one-to-one teacher-led instruction resulted in significant progress by some pupils under some conditions whereas Adami (2004) concluded that since all learners are different, all teaching needs to be differentiated.

In a research on adapting instruction to address individual and group educational needs in maths, Cardona (2002) noted that classrooms teachers stressed the need for class sizes to be small and kept consistent to allow teachers to focus more attention on individuals who need help. Researches by Scott, Vitale and Masten (1998) as well as by Scruggs and Mastropieri (1996) revealed that teachers perceive environmental adaptations as necessary but they experience difficulty in implementing them in large and in inflexible environments. Large teacher pupil ratios can limit teachers to work with students at an individual basis as they find it difficult to meet the workload. The school, the major learning environment, may need some adaptations to existing infrastructure to welcome all students. For instance, there might be need to construct ramps where there are steps for easy accessibility by wheelchair users, or to reduce the door handle levels to the size of the students. Befring (2001) pointed out that physical frame factors such as school infrastructure (classroom for example) need to be addressed for there cannot be quality education in an inconducive environment. One of the problems teachers encounter in adapting instruction is rigid classroom organizational structures that do not allow flexibility as postulated by Fuchs, Fuchs, Mathses and Simmons (1997). Rigid classroom organizational structures include unedited infrastructure like small classrooms, inaccessible to wheelchair users, without ramps. Such infrastructure can hinder efforts to adapt the learning environment to meet the learning needs of individual learners. There might be some need to rearrange the classroom order in a way that leaves space for wheelchair users to manoeuvre freely and unaided. In addition, the classroom needs to be a safe and healthy environment for example epileptic students might have seizures in the class and may hurt themselves in the event of attacks in insufficient classroom space.

Eggleston (1992) found out that the language of the class may need to be adapted for it should be understood by everybody to help students to acquire extended vocabulary. All people have the right to express themselves and create their own work in a language of their own choice and particularly in their mother tongue (UNESCO 2005). Communication with the student in a language that he/she understands helps to avoid communication breakdown. With extended vocabulary,



students can express themselves without restriction and with clear meaning. In situations where the language of instruction is foreign, it becomes difficult for teachers to adapt the language of instruction to mother tongue, as it might be unacceptable even when there is need.

## 2.4 Theoretical framework

The socio- cultural perspective was used in this study. It emphasizes the importance of social interaction of human beings in their development and learning. In this perspective, Cole (1996) emphasized the essence of socialization (interaction), tool use, problem solving and their effect on cognitive development of children. In a study with chimpanzees on how they were socialized and taught in subsistence living, it was discovered that young chimpanzees developed good skills in problem solving through the way they were socialized, taught subsistence living, guided and their participation in the routine life experiences. The theory shows good results of teaching through socialization of the learner, mediation by the teacher, concretization of the teaching concepts as well as guided participation of the learner when related to teaching students with developmental disabilities. Patton (2001), in support of the same perception reflected that the socio-cultural view has profound implications for teaching students with developmental disabilities.

### 2.4.1 Tool use, problem solving and culture

Cole (1996) discovered a relationship between tool use and the cognitive development of the brain. Cole discovered that when individuals solve problems with the help of some tools as part of human needs, the individual finds it easy to do the activity. The use of tools and other objects can assist an individual to do certain activities thus simplifying the activity leading to development of one's cognition. Cole (1996) described such tools as, objectifications of human needs. Cole further described the use of artefacts (tools) as those objects that are directly used to produce easy work and immediate results and gave examples of axes for chopping wood,

needles as well as writing instruments. According to Cole (1996), the use of tools can best be done in some cultural way. In a classroom situation (a society with some cultural way of doing things), in subjects such as mathematics, counters, abacus, and number lines can be used to solve mathematical problems and thus making learning concrete and simplified for the student with developmental disabilities. Goodall (1986) cited by Cole (1996), had a research with chimpanzees, and discovered that chimpanzees used tools as a significant part of their life. The tools were used for subsistence living for example (fishing out termites with a stick, using chewed leaves to sponge out water, using stones to crack nuts). The use of such tools become part of life for an individual as it assists individuals in their day-to-day living. In a classroom situation, tool use can be equated to concretization in teaching.

## 2.5 Teaching students with developmental disabilities

### 2.5.1 Concretization of teaching

For the student with developmental disabilities to easily grasp taught concepts, concretization is of paramount importance. In most scenarios, students with developmental disabilities have difficulties in mastering abstract concepts (Handleman & Harris 1986). It is the duty of the teacher then to make efforts to concretize all teaching for the benefit of the student thereby mediating the students' learning. Concretization of teaching and learning can be related to the notion of tool use and problem solving as mediation means in learning as advocated by Cole (1996). Task analyzing students' work and concretization of teaching is in a way similar to Cole's theory of tool use and problem solving.

### 2.5.2 Temporal succession/ sequential teaching

Cole (1996) cited how the developmental domains occur and interact in individuals in their development and learning. Development seems to sequentially build upon one thing that has been learnt and the next. According to Cole (1996), one process of

development dialectically prepares for the next one, transforming and changing into a new type of development. Each higher type of development starts at the point where the previous one ended and it serves as a continuation in a new direction. Cole's theory of temporal succession can be related to sequential teaching and task analysis where teachers plan the activities for the learners considering the complexity of an activity and the operational level of the learner. The teaching begins from the very basic level of the concept and sequentially builds upon the base that has been laid. Cole (1996) said that each higher type of development starts precisely where the previous one comes to an end, and serves as its continuation, which means there is need for task analyzing students work according to the complexity of the activity.

### **2.5.3 Task analysis**

Since individuals with developmental disabilities are slow in mastering academic concepts and several other skills, it could be helpful to task analyze the teaching concepts into smaller teachable units for the child to easily grasp the concepts. When concepts are broken down into manageable units, the learner grasps the concepts step by step. Concepts that have been understood enlighten the higher and more difficult ones as of Cole's theory of temporal succession. Handleman and Harris (1986) remarked that task analysis involves breaking down learning tasks into sub skills and sequencing them into appropriate learning progression so as to curb the child's inability to perform prerequisite skills. Progression to next step is usually determined by mastery of more basic concepts. Guidance of the learner then follows the task analysis and sequential teaching.

### **2.5.4 Guided Participation**

Cole (1996) explained in his theory how chimpanzees learn the tool using patterns of the community during infancy, through a mixture of social facilitation, observation, imitation and practice with a good deal of trial and error. According to Cole (1996), there was evidence of active teaching of tool use among the chimpanzees. Cole

(1996) described a case when a young chimpanzee positioned a nut the wrong way and its mother intervened to position the nut correctly. In a classroom culture, teachers may need to focus their teaching on inclusion of the learners in each activity to ensure full participation and mastery of the concepts taught. Ments (1986) advocated for teaching that focuses on the student and his understanding and that prepares the learner for future life. Ments (1986) recommended teaching that involves the student in activity that relates learning to practice and practice to real life. Traditional teacher centred methods (like the lecture method) do not usually prepare students for functional life. The situation can become formidable if it is laid on students with developmental disabilities who may need to be guided and have practical experience in almost all stages of their learning. If the learner has to benefit from the teaching, he/she has to participate in all learning actively. The teacher simply acts as a guide for the learner where he/she supports, encourages and redirects the learner. According to Roggoff (1990), teachers can structure the child's involvement in learning through joint participation. When teacher and child work together on a task the learner may find it easy to understand and builds for him/her positive self- esteem when he/she experiences success in performing tasks. Rogoff (1990) lamented that adult involvement can motivate the learner towards a goal and can focus their attention together. By working together chances of repeated failure are minimized. For young children, participation creates a better mastery of concepts than when they only hear as they easily forget (Westwood 1997). Therefore, more focus should be on children's participation for their own development. Young children rapidly develop into skilled participants in their own societies that they accomplish through routine, tacit and guided participation as they observe and get involved (Roggoff 1990). With experience and continuous participation, children then internalize the processes and develop more mature approaches to problem solving.

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### 2.5.5 Mediated Learning Experience

Feuerstein and Feuerstein (1991) developed a theory that has focus on the interaction between human beings and their environment via a mediator. According to Feuerstein and Feuerstein, human mediation is a conscious attempt of an adult to adjust his strategies and modify the environment in a way that will ensure the learner will benefit from it. Mediation occurs when another person serves as a mediator between a learner and the environment. The mediator's role (teacher) is selecting, framing and modifying the stimuli before it gets to the learner, which will help him respond in a competent manner (Feuerstein & Feuerstein 1991). Cole (1996) also cited another case similar to mediation when a mother chimpanzee sat watch a daughter chimpanzee who unsuccessfully cracked a nut, the mother joined to direct and demonstrate on the correct use of the stone to crack the nuts. The daughter understood the lessons perfectly after some demonstration and the mediation. During the teaching of students with developmental disabilities in a classroom situation, teachers need to employ mediated learning and teaching. In the mediation process, direct exposure to the stimuli provides the individual with a variety of events and experiences. Cole's theory and Feuerstein theory are concerned with the interaction among peers and the mediation and support of the learner. In essence, students learn by assistance by adults and peers that are more capable. Ainscow (1998) postulated the view that social interaction in cultural institutions such as schools and classrooms have important roles to play in an individual's cognitive development. Klein (2001) also supported mediated learning, and defined mediated learning experience as the process of learning that occurs when another person serves as a mediator between the child or learner and the environment; preparing and reinterpreting the stimuli from the environment so that they become meaningful and relevant for the child. The teacher intentionally plans and gives support for a learner to strengthen his/her capabilities. Kozulin (1995, p. 68) remarked that, 'there is a qualitative gap between learning based on direct exposure to stimuli and learning mediated by another human being.' In applying mediation in learning, the teacher aims to develop child's performance to a higher level that can reflect a difference in operational levels when

aided and unaided. The teacher interposes himself between the learner and the learning material, and makes the learning interventional (Feuerstein & Feuerstein 1991). It can then be deduced that mediated learning is not incidental or accidental but that it is intentional and a consciously planned activity with presupposed expectations or outcomes from the learner. In mediated learning, the teacher plans the child's learning material in a way that stimulates the child. The teacher focuses the child's attention on a task thus he/she also expects child's reciprocity by way of responding to the stimuli. Through planned action, the learner then benefits from the planned experiences. This in actuality can prepare the learner for more advanced learning. Feuerstein and Feuerstein (1991) thus defined mediated learning experience as the quality of interaction between the organism and its environment. This means that when teachers plan the children's learning activities, it should be born in mind that learners need guidance, participation, mediation in their learning, interaction and that learning should be situational.

### **2.5.6 Peer Tutoring**

The concept of having a class automatically brings in the idea of children learning alongside their peers. By learning together, positive feelings towards one another may easily be cultivated through sensitization on the importance of learning together. Students need to develop feelings of ability to cope with diversity (UNESCO 2005). A positive attitude towards peers may mean that all students become more mentally and emotionally prepared to give help and support to every child (Steenkamp & Steenkamp 1992). McCoy (1995) described such a scenario whereby students can help each other to learn as peer tutoring. Peer tutoring can be very beneficial to both the tutor and the tutee. Where a child has a marked problem, peers quickly notice and immediately help. The one who helps automatically benefits by further strengthening his/her understanding of the concept. McCoy (1995) termed this dual benefit as both helping the tutee to acquire new skills or information and providing the tutor with extra practice in an acquired skill to increase fluency. Additionally, peer work increases social competences, interaction and establishment of peer relationships in

the classroom. Research sheds light that children who play and work together shun peer rejection; teasing, ridicule or avoiding other peers with disabilities. Westwood (1997) argued that social interaction is important particularly for children with disabilities who are low in self-esteem and confidence.

### **2.5.7 Communication and Class Interaction**

Cultivation of good class interaction and communication skills is in itself successful teaching of students with developmental disabilities. By nature of their disability, some students with developmental disabilities have communication disorders. The disorders might have emanated from poor or lack of sound communication during development (Vygotsky 1978). In addition, the above-mentioned author propounded the view that during child development, communication is important; it develops the child into a social being and creates foundations for mental development. It is therefore important for the teachers to have an understanding on the need and value of interaction, communication and dialogue in the classroom. Roggoff (1990) like many other proponents of quality early socialization postulated the view that mutuality and understanding between social partners is fundamental. Rye (2001) remarked that the interaction that goes between the caregiver and the child in the child's development creates the foundation of all mental development. Nobody can deny that one's ability to communicate gives him/her a better chance to express oneself, to reason and to solve problems amicably. Teachers should invite children to take part in dialogues in the class in connection with concepts being taught so that they become personally involved. The students can talk about shared experiences for practice, better understanding and fluency. Rye (2001) lamented the view that the ability to communicate remains a prerequisite for meaningful human development, and learning plays a key role throughout the child's entire life. The ability to communicate and become fluent is gained through practice. It is therefore helpful for the teacher to initiate communication between teacher and child or among children themselves. In most instances, children with developmental disabilities have limited language, communication and interaction skills. Some have no speech at all; some

have very underdeveloped speech while some have proto-language that is involving one or two word utterances. Such situations limit the affected individuals to participate in functional communication. Practice therefore can curb such anomalies. Mercer and Mercer (1998) argued that the lack of good communication skills as well as speech gives great limitation to very important components of one's thought expressions. Given such a scenario, it then follows that teachers need to possess good repertoires of varied teaching methods and to ensure that they create learning, social and interactive environment since learning is embedded within the social events and occurs as the individual interacts with people, objects and events in the environment (Handleman & Harris 1986).

### **2.5.8 Teachers` Instructional strategies**

When teaching students with developmental disabilities the teacher needs to be flexible to cater for the diversity of students through appropriate teaching programs, organizations and other adaptations that are necessary (Knight 1999). They need to work with individual children at their instructional levels. Appropriate instructional strategies can enhance confidence in both the teacher and the child. The strategies include teaching children as individuals with unique needs. The teacher needs to select, adapt and sequence learning content to suit individual children (Dyson 1994). Concretization, task analysis, mediation and participation are of importance wherever necessary.



### **3. Methodology**

This chapter discusses the research method, research design used, the research instrument, the population, the sample, the sampling criteria, piloting of the study and the procedure for data collection. It also highlights some personal experiences encountered in the process of data collection. The aim is to investigate and gain information on how teachers in the purposefully selected sample of eight teachers in four cases adapt their instructional strategies and organise the learning environment when teaching learners with developmental disabilities.

#### **3.1 The Research approach**

A qualitative research approach was adopted for this study for the reason that a qualitative approach is explorative and descriptive as I intended to explore into my phenomenon and describe the action. A qualitative approach was also chosen since it involves an in-depth understanding of human behaviour and the reasons that govern human behaviour (Lofland & Lofland 1984), in view of my study, which has focus on the teachers and how they adapt their instructional strategies and the learning environment when teaching such students.

#### **3.2 Research design**

The qualitative approach that was used was a case study design, which is defined as an empirical inquiry that investigates a contemporary phenomenon within its real life context (Yin 2003). The phenomenon under study was the instructional strategies and the learning environment and how the teachers made some adaptations to them when teaching learners with developmental disabilities. For the investigator, it meant that I had to go to the teachers during their teaching sessions and watch them as they taught the students. Case studies are particularly useful in that they depict and portray the whole/particular aspects of a client's experiences (Patton 2001) while Gall et al

(2003) added that it is best to get the real situation from the participants' perspective. Since I intended to investigate on the adaptations that teachers make on their teaching strategies and the learning environment in teaching learners with developmental disabilities and the challenges that they face, real teaching experiences could best describe the instances. The real life context in this study was classroom and the participants were teachers for learners with developmental disabilities. When the teachers taught in my presence, I could see how they adapted their instructional strategies and the learning environment according to my own view of what adaptations are. I also sought for some clarification in form of short follow-up interviews immediately after the observation, before the teacher forgot on some unclear points and from the perspective of the participant. This study is a multiple case study design, which has four cases (schools) and eight participants (teachers) with similar characteristics.

### 3.3 Data collection methods and instruments

As the study focused on the adaptations that teachers make in their instructional strategies and the learning environment when teaching students with developmental disabilities, observation which is a systematic way of watching, recording, describing, interpreting and analyzing what people do, behave and say (Robson 1993) was used in the study as the main methods of collecting data. Observation was also chosen to be the main method because I believed that observation has the power to enlighten and give a clearer picture to the investigator better than what people can say or describe. It was prudent to observe how teachers adapted their teaching strategies and the learning environment through my real presence as teaching took place instead of being told about it. A follow up interview immediately after the observation was used to obtain clarifications on some of the adaptations made by the teachers before they could forget what they did during the teaching. The interview would assist me to probe more deeply using open ended questions so as to obtain more information and also make follow up to the respondent's answers to obtain more information (Gall et

al. 2003). I also obtained more information from the interviewees through their body language for instance the way they stress a point with some gestures or with accompaniment of facial expression. Whenever the interviewee did not understand the question, I would rephrase it for clarity sake and I would clarify vague statements in the question.

From all the eight teachers who qualified to participate in the study, I observed a single full lesson from each of them. Each lesson lasted thirty minutes. Thereafter I immediately had a follow up interview with each teacher observed.

Table 1 below gives a summary of the Cases, teachers, their acronyms and the type of the class that they were observed in respective schools.

*Table 1: Summary of cases, teachers, classes and their acronyms*

Name of school/Case	Type of school	Type of class	Acronym of teacher observed
One	Regular	Special class	Jose
One	Regular	Resource Unit	Ethy
Two	Regular	Special Class	Ron
Two	Regular	Special Class	Taku
Three	Special	Resource Unit	Rose
Three	Special	Resource Unit	Rue
Three	Special	Resource Unit	Rach
Four	Regular	Special Class	Tadi

To avoid interference of the lessons as I observed the teachers, I used non-participant observation. Hoepfl (1997) stresses the need to reduce interference with non-participation observation. Being a non-participant observer, I therefore enhanced unobtrusiveness as lessons were largely observed in a natural environment.

An observation guide was developed for this study to guide the researcher on what to look for and to avoid observing everything. The practical aspects of adapted teaching

methods constituted the observation guide (see appendix 5). A camcorder was used to record the lessons. Wittrock (1986) support the use of such technological devices as they enable one to obtain as much information as possible. Initially, I fixed myself at the doorway so that I could be in full view of the actions of the teacher and the students as well as the classroom environment; afterwards I shifted positions depending on the distance of what I wanted to record. After the observations, I could then easily play back the tapes to gather as much information as possible in each of the lessons that I had observed.

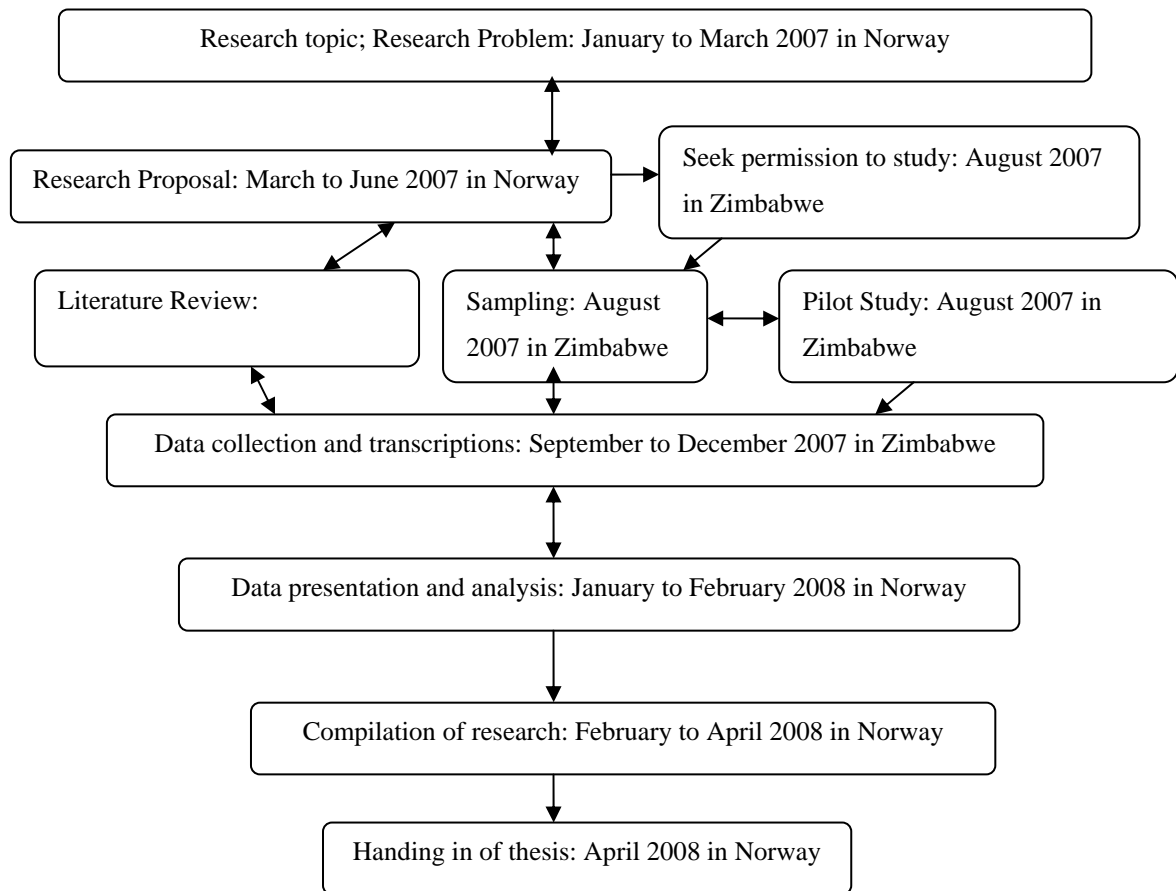
## 3.4 Procedures

### 3.4.1 Gaining Access to the participants

The initial steps in data collection entailed seeking permission from the gatekeepers that included Ministry of Education's Head Office, Regional Office, District Office, from school heads and participants of the study. Permission was granted without any problems since I had all the necessary documents that they required. The process was a top-down approach as I began with the highest office in the Education System down to the participants. The plan for the research procedure had been planned as illustrated below in Figure 1.

Figure 1 gives an illustration of the research pattern that was followed during the study.

Figure 1: Time plan for the research study



All work planned for the research went on as was earlier planned for even though there were some challenges encountered in the process of data collection (See challenges faced during data collection).

### 3.5 Population and sampling

The study focused on schools in Chitungwiza District of Harare Province in Zimbabwe. The selection of this area was based on accessibility to its schools and my knowledge of the district as where a number of resource units and special classes have sprouted over the years since independence. Lately, the number of special classes has risen to nineteen while Resource Units are eight (Ministry of Education

and Culture 1990). According to Gall et al. (2007) it is only when a target population has been identified that a sampling procedure can be instilled. The target population in the present study was identified as teachers who taught learners with developmental disabilities in special classes or resource units in special or regular schools. Purposive sampling which is based on the researcher's typicality (Robson 1993) was used. In the investigator's typicality, I could see from the criteria that I set for sampling that this teacher could suit very well in the population of the study. The District Office in Chitungwiza assisted me by providing the teachers' educational profiles, from which I could purposefully select my informants. Gall et al. (2003) supports purposive sampling that it enables the selection of cases that are likely to be information rich. Information rich participants in my view would need to be experienced teachers for students with developmental disabilities who also had background knowledge in special education. This study cannot be generalized to all teaching population in Zimbabwe; however it can show some representation of what can happen in schools.

**Selection of schools:** Two levels of sampling were used up to the ultimate selection of participants in the study. The schools were selected provided they

- *were located in Chitungwiza District of Harare Province, Zimbabwe;*
- *had Resource Units and/or special classes and students with developmental disabilities learnt in those resource units and special classes*

**The selection of the participants:** The special needs educators, hinged on the following criteria:

- *i) teachers had to be teaching students with developmental disabilities*
- *ii) the teachers had to have had a minimum of five years teaching experience*
- *iii) teachers had to have background knowledge about special needs education*

### 3.6 Pilot study

Yin (2003) noted that the purpose of a pilot study is to refine data collection plans with respect to the content and procedure to be followed. A pilot study was carried out at a school in a different district of Harare Province which ultimately did not qualify in my final study as the focus was on schools in Chitungwiza District. The school had the same characteristics as those outlined for my final participants.

Through the pilot study I realized that I needed to refine my original plan to fix myself at the doorway then I had to change positions as I observed the lessons, since I needed to record some parts of the adaptations much closer to the teacher or to the pupils. I also realized that I needed a second battery for the camcorder as electricity was generally unavailable during school hours. With satisfaction of the adjustments made after the pilot study, I proceeded to the main data collection process.

### 3.7 Organization and analysis of data

Data was collected from the eight teachers as noted earlier. The data went through a process of interpretation and analysis. Structural analysis was adopted for the purpose to identify the patterns that are formed in the phenomenon (Gall et al. 2007). Data was presented Case by Case. The schools are the Cases but of particular interest within the Cases are the teachers and their teaching methods. The schools were chosen to be the cases to simplify and organise the presentation and analysis of the data. After the presentation, cross case analysis was also done. The steps of data analysis involved transcribing the data from the video cassettes to verbatim. This was made possible by playing the tapes several times back and forth to put to verbatim all words and actions that were observed.

- Translation from Shona (mother tongue) to English was also another part of the process to help easy understanding for people who read the transcription.

- Data was then organised by classifying and categorizing individual pieces of data, put into themes and sub categories.
- All the informants were coded from Teacher1-8 with given names, the schools were coded as Cases One to Four, type of classes that were present were two that is the Special Class= SC, Resource Unit=RU.
- Pseudonyms were given to the participants as: Teacher 1=Jose, Teacher 2=Ethy, Teacher 3=Ron, Teacher 4=Taku, Teacher 5=Rose, Teacher 6=Rue, Teacher 7=Rach and Teacher 8=Tadi.
- I read through my data repeatedly to know it in and out.
- Data was then broken down into two major themes-i) Instructional Adaptation ii) Environmental Adaptations.
- Categories were formed from the major themes as well as the sub categories under each of the themes so that similar data would give similar conceptual labels (Strauss & Corbin 1990).
- I designed some working sheets to plot in my data as advised by Miles and Huberman (1985).
- I marked my raw data with different colour markers on sections that matched the same theme, categories and sub-categories for the purpose of identifying aspects on focus.
- Data was then entered onto the summary sheets for deeper analysis.

### 3.8 Limitations of the study

The process of data collection was met with challenges, which needed the researcher to decide of alternative plans to ensure that I managed to obtain data.



The major challenge was that due to the hyperinflationary situation in Zimbabwe, the teachers (including the participants that I had selected for the study) went on strike for salary increment for an indefinite period between September and November and before I had started collecting my data. Faced with such a situation, I had to make special and personal arrangements with the school heads and the participants that I had selected for the sample to allow me to have just single lesson from each of them. Fortunately, all was agreed and I managed to observe the lessons from the teachers in their classrooms.

The other problem was of disruption of power supply in residential areas and schools. We had regular power cuts (electricity) almost four fifths of the day without electricity and that interfered with my data collection in that I could not fully charge my Video camera to last the whole session in recording. It was worse with transcription which I could not do soon after observation (as intended) since it needed more power for the cam coder. I had to buy a second battery for the camcorder and then would charge both batteries when I got electricity.

The problem of failure to get the teachers in their normal teaching sessions also interfered with my original plan to observe three or more lessons from one teacher to strengthen the validity of my research. Failure to transcribe my data also hindered my opportunity to transcribe while I vividly still remembered the actions and body language that the teachers used and it overloaded me with work while at the same time it kept me nervous about time.

### **3.9 Efforts to secure validity and reliability**

In this research, validity refers to the extent to which the investigator manages to be consistent and accurate throughout the study. Maxwell (1992) described descriptive validity as the factual accuracy of account as reported by the qualitative researcher. Silverman (2004) enlightened that since description is the foundation upon which qualitative research is built, the researcher should try and record as accurate as

possible what he or she judges to be important. In trying to secure validity of my research, an observation guide was made and a pilot study was carried out in a different district, at a school with teachers who held similar characteristics with my informants. This was intended to ensure that I corrected the instrument and test the video recorder to make sure that I recorded exactly what I was supposed to measure according to the purpose of the research.

Faced with the situation that teachers in Zimbabwe went on strike for an indefinite period, I had to make special and personal arrangements with my informants to observe just a single lesson to ensure that I managed to get data within the period of data collection. I discovered that my research was threatened with reliability since I could not have several observations per teacher. Silverman (2004) advised of a risk of temporary processes like recordings of single encounters, he advised that usually people can change the way they do things. I made frantic efforts to ensure maximum inclusiveness of the recorded data. I also made efforts to collect my data using both audio and video recordings, the video camera that could record audio and teachers' actions as well as the interviews. With the video camera I believed that I would capture as much data as possible and that, it could provide as much as possible a picture of what goes on in teaching students with developmental disabilities. In trying to give an accurate report of the data that I collected, I made sure that I did not alter the raw data.

Triangulation of data sources was also used to secure the validity of my research. Miles and Huberman (1985) propounded that data triangulation can be done by collecting data at different times, at different places, and with different people. I had to increase the number of the cases and informants from two cases and four teachers originally planned to four cases and eight teachers to have a wider range of data sources as well as to see if the findings would corroborate across the variants (Gall et al. 2007). With the rich information gathered from the informants the researcher could have a better understanding of the phenomenon.

### 3.10 Ethical Considerations

Considering the fact that I was dealing with human subjects in my study, I was obliged to respect their rights, dignity, privacy as well as other sensitive issues. In order to conform to acceptable ethical standards I cleared `official channels by formally requesting permission` (Bell 2003, p. 45). I sought permission from the Ministry of Education and Culture (see Appendix 3). In possession of the permission from the Ministry, I then sought permission from the school heads, and the prospective participants. Informed consent by the participants was vital in the study. Any participant was free to withdraw from the study at any stage as advised by Cohen & Marion (1994). I explained to the prospective participants the objective of the study so that they made their own informed choices. I also obtained permission to video record the participants. Pseudonyms were used on all the participants and the Cases. I ensured full disclosure of the findings of the study to the participants and the gatekeepers as suggested by Kvale (1996). I also guaranteed confidentiality and anonymity to the participants.



## 4. Presentation and analysis of data

The research question for this study is, *how do teachers adapt the instructional strategies and organise the learning environment to meet the needs of students with developmental disabilities*. Data is presented according to the themes selected (thematically). Data was organised into two parts, adaptation of the instructional strategies and adaptation of the learning environment. The data is presented and analysed case by case, under given categories and sub-categories. In the data, presentation excerpts from the observations and follow-up interviews were selected, depending on the parts that gave clear explanation for the presentation and analysis. Pseudonyms are used in the presentation for the cases and informants as they were presented in the methodology chapter.

### 4.1 Case One

Two teachers participated in Case One. There was one Special Class and one Resource Unit in Case One. The teachers taught students with developmental disabilities. Both teachers were females who had basic training in regular classroom teaching. Teacher Ethy had additional qualification of Bachelors degree in Special Needs Education. Both teachers had teaching experience of over twenty years.

#### 4.1.1 Aspects of adaptations looked at under instructional strategies

Teachers in Case One differentiated their instructional strategies as shown in sub-categories below.

##### *Lesson introduction*

The two teachers that were observed in Case One introduced their lessons differently. Teacher Jose began the lesson with a traditional rhyme that led to the content that was to be taught. The pupils subsequently joined into reciting the rhyme. The letter

sounds for the reading lesson were introduced thereafter, and the lesson continued. Teacher Ethy simply organised the pupils who would be working on their own as the teacher worked with one group at a time. The pupils were told to take their counters and be settled. The pupils followed the teacher's instructions. Few pupils remained unsettled; the teacher noticed them and ordered them to get settled. She then got straight into the lesson from there.

### *Language of instruction*

The two teachers who were observed in Case One used different languages of instruction in their teaching. Teacher Jose taught a vernacular language lesson subject and she also taught in vernacular. She did not adapt the language of instruction since it was also taught in vernacular. Teacher Ethy in another class taught a Maths lesson. She switched the language of instruction from the official medium of instruction English to mother tongue as shown in the example below:

Teacher Ethy: Ehe tonyora one. One tomuisa apa kuti tisazomukoshiwa. One wedu watakera handika. Toti one plus two. (Yes, we write 1 and carry 1. The 1 that we carried, we put it on top of these numbers so that we don't forget it. Then we add  $1+2$ ).

Teacher Ethy used vernacular language in teaching a Mathematics lesson. The normal order is that Maths lessons are taught in English. She mixed both Shona language and English language in her instruction. She could be heard switching to mother tongue especially when she emphasized points and when she repeated instructions. She also allowed pupils to answer to her questions in Shona as well. Her mode of instruction also included facial expressions and hand gestures when she put emphasis on some of the instructions. Pupils' response to the teacher's questions was seen to be high.

### *Individualized Instruction*

In a Maths lesson, Teacher Ethy gave the instruction to small groups of pupils. The small groups worked on similar activities but the activities differed for each group depending on the operational level of the pupils. She did not instruct individual

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pupils. One group worked on multiplication, the other group worked on addition, another group worked on identifying numbers. She moved on to individual groups to instruct them on their activities. Some of the pupils were seen further explaining the instructions to fellow pupils in the small groups. Teacher Jose, in another class directed her instructions first to the whole class and later to small groups of pupils who worked on reading syllables and joining them to make words. Out of the ten pupils, the same four pupils were noticed to quickly raise the hands to respond to the teacher's questions.

### *Task analysis*

Teacher Jose broke down the learning aspects of her language lesson. She worked with letter sounds first, syllables next, then word formation and reading of the words that the students and the teacher formed in a language structure lesson in vernacular. She introduced the letter sound “g” by writing it on the chalkboard and asked pupils the name that was given to the letter. The pupils got the correct responses. They progressed to making sounds, syllables and later formed some words with the sound “g”. This task analysis involved working from simple to complex concepts and also involved reading and understanding of the words that were formed. The excerpt below gives an example:

Teacher Jose: Here is capital `G` and small letter `g`. *Teacher demonstrates how to write the letter.*

Can you give me meaningful words that contain sound of the letter `g`. Give me words that have the sound `g`. *She emphasized.*

Pupil: Chigaro. (Chair)

Teacher Jose: So I want you to identify the words with `g` sound as in ga ge gi go gu`, `ga ge gi go gu`. Which words contain letter `g` plus any vowel?

*One child shouts:* Gomo! (Mountain)

Another child: Guru (Hole)

The class started with the simple names for the letter of the alphabet. The teacher progressed to letter sounds and to words with the sound “g”. When the pupils had shown that they had understood the basic concept of the letter “g” the teacher

progressed. Thus, the teacher first broke down the reading concept of the words with the “g” sound. She only progressed to the next step after the pupils had mastered the prior concepts. Teacher Ethy task analysed the group activities depending on the capabilities of the pupils. The content for the slower group that worked on numbers was broken down into more simplified units than the faster group that worked on multiplication.

### *Use of concrete objects*

Teacher Ethy in her mathematics lesson used counters to teach addition, subtraction and multiplication. She divided the pupils in groups according to concepts that they were working on. She had four groups of pupils. The first group worked on addition and subtraction as in the example shown.

Teacher Ethy: Oliver’s group please can you come nearer. Where are your counters, take your counters with you. We want to use them. ...Each one of you should be counting. Bring your counters and start counting how many you have.

The second group worked on addition with carrying and the third group worked on multiplication, products of four with numbers in the range one to five. The fourth group was identifying numbers and representing them with stones. With the counters, the pupils could practically add, multiply and representing numbers with concrete objects as assigned. The pupils showed that they were taught to use concrete objects especially in mathematics where the investigator could hear the pupils encouraging one another to use counters. Teacher Jose used flash cards that had some letters written on them. The pupils did not read the words from the flash cards but from the chalkboard that the class built as the lesson progressed.

### *Step by step guidance*

Teacher Ethy used guided participatory method in where she guided the students in addition with carrying sums as she worked together with the students step by step up to the end. An example was the activity on addition with carrying with vertical layout as follows:



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$$\begin{array}{r} 17 \\ +24 \\ \hline 41 \end{array}$$

The teacher guided the students step by step as follows:

Teacher Ethy: We are working on addition with carrying. I just want to give you one example then you go and work on your own. Let us start the addition. Right, 4 plus 7, 4 plus 7, what do we get?

Pupil: Eleven!

Teacher: Yes! So what do we write here?

Pupil: One, carry one

Teacher: Yes, we write 1 and carry 1. The 1 that we carried, we put it on top of these numbers, the tens column, so that we don't forget it. Then we add 1 and 2.

Pupil: Three!

Teacher: Three plus three, Three plus three, Three plus three.

Pupils: Six!

Teacher: Yes, then we write six. Please don't forget to write the 1 that you carry so that you don't forget it. You then add it to the numbers in the next column isn't it? So then you can start working on the sums that I put on your cards.

The teacher also guided other groups of pupils as they worked on their activities in the same way. As observed, the step by step guidance of the teacher and the participation of the pupils assisted pupils to move to the next step after mastery of the previous step. In the other class in Case One, the investigator did not see step by step guidance of the learners.

### *Motivation*

Teacher Jose in her class tried to motivate the pupils by formulating a rhyme in learning new words. The teacher introduced the rhyme in form of a traditional song. The rhyme went like: ga ge gi go gu! Ga ge gi go gu! Ga- gara pasi, ge- gera vhudzi, gi – gita rira, go-gore dema, gu-guru guru. These are words in mother tongue that all had meaning and had been put in form of a rhyme. The children would repeat the rhyme several times and children wanted to keep on doing the rhyme. Similar words with similar sounds were learnt on their own in the traditional song. This included the learning of vowel sounds at the same time. In repeating the rhyme, words that were

formed from the rhyme were also mastered as they were sung. The investigator even heard the students repeating the rhyme at break time showing that they had enjoyed the rhyme. Teacher Ethy in another class motivated her pupils with positive verbal reinforcements for the correct responses that pupils made for the questions to the class activity. She also included well-known jokes for the pupils to entice their intention to want to go on with the learning.

Teacher Ethy: That is right, very good, very good! We are happy for Mary today. Mary has managed to draw sweets with stick holders, nice ones; I think we would all like to eat such sweets. Let us clap hands for Mary. *Teacher is trying to encourage Mary to put more effort by cracking some jokes with her.*

The friendly learning atmosphere, which the teacher created that included sharing jokes between the teacher and the pupils was also another way to motivate the pupils.

### ***Content sequencing***

Both teachers in Case One sequenced the learning content for the students to work according to the complexity of the activity, that is from simple to complex; where the ideas followed a logical progression, each new step building sequentially on the step before. This helped the pupils to progress steadily. Teacher Ethy sequenced her teaching content as shown in the excerpt below.

Teacher Ethy: Two plus two plus two!

Pupils: Six!

Teacher Ethy: Two plus two plus two plus two!

Pupils: Eight!

Teacher Ethy: Right, two plus two plus two is the same as three sets of two. *Teacher illustrates with sets on the chalkboard.* Three sets of two is also the same as  $2 \times 3$ .

Therefore, three times two is....

Pupils: Six!

In a follow-up interview with Teacher Ethy, she explained that she had to sequence all her teaching to avoid confusing the pupils.

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Teacher Ethy –Interview 2: I always begin with the very basics for each child. I don't rush them, I simply follow all the steps that lead the pupils to addition and then proceed to multiplication through repeated addition. In that way, I see my pupils benefit from teaching all the steps.

#### **4.1.2 Aspects of adaptations looked at under the learning environment**

On classroom organization and management, the investigator considered all of the things that a teacher did towards ensuring student involvement and establishing a productive working environment, the physical layout of the learning environment that included the arrangement of desks, provision of the working area, the attractiveness of the bulletin boards and the storage of the class materials.

##### *Classroom Organisation: Furniture Arrangement*

Both teachers in Case One used the same classroom but at different times. Teacher Jose used the classroom in the morning session while Teacher Ethy used the same classroom in the afternoon session. In a follow up interview, Teacher Ethy stressed the point that by afternoon the pupils would be too tired to participate in any meaningful lesson activity. The furniture arrangement was set in form of horse shoe in four groups. The tables were used as the writing surfaces and they were quite spacious. There was freedom of movement in the classroom. The group tables were spaced away from each other and pupils were not restricted in their sitting positions. Students could be seen changing sitting positions as they progressed from one working activity to another. They could find extra sitting places in the groups that had been formed. The two teachers had agreed on the furniture arrangement of their class as they confirmed.

##### *Sitting arrangement- space*

Both teachers in Case One preferred that the students sit facing the teacher whether the teacher would be in the front or at the back of the classroom. Teacher Ethy and Teacher Jose were concerned with sitting the students so that they could make eye

contact with every student and reach each one with ease as they expressed in a follow-up interview. They arranged the tables and chairs in rows in a way that each pupil faced the teacher and the chalkboard. As a result, there was free movement of pupils in the class and the pupils were in full view of the teacher either in the back of the class position or in front.

### *Class displays*

Attractive class displays that showed that they were made in a variety of ways existed in the classroom for both teachers. The class displays were quite colourful and the teachers explained that they made the displays themselves. Each teacher had her own section where she displayed her own work. The charts were displayed according to subjects. Both teachers said that the pupils read the information on the charts after they finished their prescribed activities in different subjects. Only two pupils in Teacher Ethy's class were seen reading the charts as they managed to finish early.

### *Class size: Teacher-pupil ratio*

By class size, the investigator looked at the teacher pupil ratio of the class according to the official numbers as stated by the Ministry of Education and Culture (1990) in Secretary's Circular Minute Number P36 on the Assessment and Placement of pupils with disabilities. The teacher pupil ratio in Special classes had to be one teacher to nineteen students while in Resource Units it should be one teacher to seven students.

Teacher Jose had a teacher to pupil ratio that was more than the stipulated figures. She had ten pupils instead of seven pupils for a Resource Unit. In a follow-up interview, she commented that she was overloaded. Teacher Ethy had a teacher to pupil ratio of twenty-one pupils instead of nineteen for a Special Class. She was seen making efforts to reach for each pupil by calling almost all their names during teaching time. In a follow-up interview, Teacher Ethy also commented that: 'the enrolment is too big and yet they expect us to plan for individual children, you end up failing to meet the work demands and the workload'.

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### *Classroom space and ventilation*

The classroom for both teachers in Case One was big, spacious and well ventilated. Windows were kept open to allow for improved ventilation in the room. There were no distracting objects that posed a danger to the pupils. Pupils could move from one position to another freely especially when the group leaders gave out some writing books they were free to move to any place of the classroom.

### *Maintaining cleanliness in the classroom*

In Case One, the classroom which both teachers used was chapped off on the floor. Teacher Ethy was unhappy with the condition of the floor in their classroom. The floor had potholes and was chapped off. The floor needed some renovations. In a follow-up interview with Teacher Ethy, she remarked as follows:

Teacher: In addition, another thing is the quality of the provision that we get. Like, as you can see the floors are worn out, see they have potholes, they are dusty; we do not get floor polish to smear. If we decide to have some activities on the floor, it is difficult because the floor is dirty and some children have some allergies, which is not suitable for this. The learning environment is just not good enough, we can't adapt even the learning environment, and we can't do other activities which may need us to use the floor.

Overall observation for Case One indicated that the two teachers shared on their experiences and teaching methods. This was observed as common methods of grouping pupils to work together especially the pupils who operated at almost the same level were seen. Concretisation in teaching as used in both classes seemed to make it easier for the teachers to draw the concepts closer to the pupils' understanding. The pupils were seen to manage the activities that they were assigned to with the assistance of teaching aids. Both teachers put effort to motivate their pupils to learn. The use of the rhyme in Teacher Jose's class triggered the desire by the pupils to want to go on practicing the letter sounds thereby mastering the concept taught. In a Teacher Ethy's class, the creation of a conducive learning environment whereby the teacher could share jokes with pupils was one of the teacher's desires.

## 4.2 Case Two

Two teachers also participated in Case Two. Both classes were Special Classes and students with developmental disabilities learnt in these classes. Both teachers were females who held Bachelors Degrees in Special Needs Education in addition to Diplomas in Education. They also had a regular classroom teaching experience of over fifteen years each.

### 4.2.1 Aspects of adaptation considered under instructional strategies

#### *Lesson introductions*

Teacher Ron taught an English Language structure lesson which was based on the aspects few and little. She began by explaining how the word structures are used in sentences. She gave a variety of examples to illustrate what she meant. There was no response from the pupils. Thereafter she then called on to the pupils to do similar activities that used the items few and little in sentences. The pupils struggled to do the similar activities that the teacher had set. Here the investigator noticed that the teacher went straight into the topic for the day with no specific introduction.

Teacher Taku, in another class began by giving explanations to the upcoming activities. The teacher worked with only three pupils for the time that she was observed. The three pupils had differentiated activities in a Mathematics lesson. Teacher Taku gave some explanations as she began her lesson. She called the pupils whom she wanted to work with and drew them nearer to her. The rest of the pupils were taken to other classes for integration in regular classrooms. The pupils that the teacher taught followed the instructions quietly after the instructions. No specific introduction was visible in this lesson.

#### *Language of instruction*

Teacher Ron taught the full lesson in English, the official medium of instruction, even though she included a few vernacular words to emphasise her points. The lesson

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was also based on an English language structure. She also expected the pupils to respond in English. However, the pupils found problems to respond to the teacher's questions in English. In another class, Teacher Taku adapted the language of instruction for her pupils to mother tongue. Teacher Taku taught a Maths lesson and all her instructions were simplified to mother tongue. An example is as follows:

Teacher Taku: Right, kana tichitaura kuti area, totarisa zvakaita table inoiyi, handitika. Kubva apa, kusvika apa, toti ndiyo width, *Teacher is demonstrating using the table with facial expressions looking into the child's eyes.* (Ok, if we talk about area, let us look at what this table looks like. From this corner to this corner this is what we call the width).

### *Individualized instruction*

Teacher Taku individualized her instruction according to child's operational level on the same content. She occupied the other students with some work while she worked with one student on a concept before she moved on to the next pupil. In a follow-up interview, Teacher Taku explained how she individualized her instruction. She remarked: 'Before I concentrate on one kid, I first occupy the others. I know the topics that each one is working on so I just tell them to take their materials and I start working with individual students like that.' The teacher also worked with the individual students on a one to one basis. Teacher Ron in another class did not individualize her instruction to individual students or to a particular group. Her instructions were directed towards the whole class. The teacher posed questions to the class. Only a few hands were raised to respond to the teacher's questions. One pupil answered correctly to the teacher's first question. The teacher expressed her reason for failure to individualize her instruction. In a follow-up interview with Teacher Ron, she expressed her disgruntlement in working with too many students and expressed the difficulty in individualizing instruction in such settings. She remarked:

Teacher Ron: I could not give the children individual instruction ... with 28 pupils in one class! I have to resort to teaching them as a class to make my life easy.

### *Task analysis*

Teacher Ron worked with the whole language structure and she did not task analyse the content into simpler and manageable units. Observation showed that quite a number of pupils could not do the activities set for them. Some of the pupils were so quiet throughout the lesson. Teacher Taku task analysed her instruction for the pupils whom she worked with. She broke down the concept of working out area for one pupil until the steps were simple and manageable. This helped her to curb the student's inability to perform prerequisite skills in working out area. She started with simpler aspects of the concept like identifying the length, width and next to how to calculate the area of given shapes like the rectangle. Mastery of the basic concept determined progression to next step. At the end of the lesson, the pupil was able to calculate the area of a rectangle.

### *Use of concrete objects*

Teacher Ron in her class did not use any concrete objects in her teaching that were observed. She was, however heard keeping on referring to cups, packets of sugar and salt in absentia. The pupils were very quiet; few pupils could be seen raising hands and most of the time they got the answers wrong.

Teacher Taku in another class used teaching aids during her teaching. She used number lines, empty containers of shop items for a buying and selling concept and the shape of a rectangle when she taught how to calculate the area of a rectangle. She began by asking what was in the shop for the day in a customary way. The pupil who was acting like the shopkeeper mentioned the items and the cost of the commonly needed items. The teacher used paper coins to buy from the pupil's shop. She then called the pupil to start working on buying and selling sums. The classroom tables were also referred to in the teaching and so they were also used as concrete objects.

The use of concrete objects (teaching and learning aids) helped the teacher to simplify her explanations and instructions of the concepts to her individual students. On the use of teaching aids, Teacher Taku in a follow-up interview commended



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that: ‘concretisation in teaching seems to make it easier for my pupils to understand the concepts better.

### *Step by step guidance*

There was no observed step by step guidance in Teacher Ron’s lesson. In another class Teacher Taku used step by step guidance and participation in her teaching. She guided the pupil on the steps to find the area of a rectangle systematically until the student could find the area by herself.

Teacher Taku: Ok, if we talk about area, let us look at what this table looks like. From this corner to this corner, this is what we call the width. *Teacher is demonstrating using the table with facial expressions looking into the child’s eyes.* This side is short, then from this part to that part, we call it the length, what do we call it Sharon?

Sharon: Width

Teacher Taku: Then all this part which has been taken by the table is the area. *Teacher explains how to find area step by step to the student.*

Teacher Taku: This side is how many centimetres Sharon?

Sharon: 4m

Teacher Taku: We say 4cm, not 4m, say that again Sharon.

Sharon: 4cm

Teacher Taku: Yes, The length is how many cm Sharon?

Sharon: 7cm

Teacher Taku: Then how do we find area of the rectangle Sharon, I told you before?

Sharon:  $4 \times 7$

Teacher Taku: Ye-ee-s! That’s correct Sharon. Now can you find the area of these rectangles?

The teacher’s guidance and child’s participation in the activity made Sharon to become confident and was able to accomplish the given tasks.

### *Content sequencing*

Teacher Ron followed a sequential order in delivering her lesson to the pupils. The lesson was organised from simple to complex. Pupils were expected to work on simple phrases on ‘few and little.’ As the lesson progressed the pupils were expected

to work on sentences that had missing words of ‘few and little’ the pupils however struggled with the activity.

Teacher Taku in another class sequenced the content of the pupils’ activities to follow a kind of a sequence where the steps followed a logical progression, each new step building logically on the step before. In a Maths lesson when Teacher Taku worked from identifying the sides of a rectangle, finding the length, the width and later calculating the area of a rectangle, the concept was logically arranged in form of progression from simple to complex.

### *Content differentiation*

In content differentiation, Teacher Ron taught the same content to the whole class. There was no content differentiation observed. Teacher Taku differentiated the learning activities, which also took care of the fact that tasks for average and struggling learners had to differ as she noted in a follow-up interview. She added that fast learning pupils had more challenging work than the slower ones while slower pupils were given more time to do their activities than the faster group. The investigator also discovered the use of multiple texts in the lesson as also content differentiation. Teacher Taku had different activities for the pupils which related to pupils’ individual needs. One pupil worked on finding the area of the rectangle, the other pupil worked on buying and selling, calculating addition and subtraction of money sums while the other worked on profit and loss.

## **4.2.2 Aspects of adaptation looked at under the learning environment**

### *Classroom organisation: Furniture arrangement*

Teacher Ron had limited space in her classroom. Her classroom organisation and furniture arrangement was affected by the size and shape of the classroom. It was a small classroom; tables that they used as writing surfaces were arranged in a linear order to save space for free movement of students. The classroom was hollow, poorly

lit and crowded with the furniture that followed the shape of the room that limited freedom of movement for the students. Pupils' behaviour became a problem to control because the teacher could not reach for every child, as there was limited space for free movement. The teacher resorted to calling students to bring their books to the front to reduce movement amongst the congested students.

Teacher Ron: Those who have finished writing number one can you bring your books for marking.

Teacher Taku also had a small classroom. The tables that they used as the writing surfaces were crowded in the classroom. The tables were also arranged in a linear order. She decided to move the rest of the class pupils to her colleague teachers for integration and remained with three students whom she worked with. In a way, her intention was to create space as it was observed that she went on to move some of the tables into a corner and left some spaces in-between.

### *Sitting arrangement- space*

Teacher Ron arranged the sitting order of her pupils in rows. She mixed boys and girls in the sitting arrangement. The pupils were over-crowded in the hollow and non-spacious room. There was not enough space for the teacher to explore the whole classroom. The writing space was also very limited for the pupils, as they would be disturbing each other during writing. The sitting places were also insufficient for the pupils. The pupils therefore ended up fighting for the seats because it would not be comfortable for the pupils to spend the whole lesson while standing. Teacher Taku in the other class organised that she reduced the number of the pupils in the lesson that was observed. The three pupils who were in the classroom sat freely, without any disturbances.

### *Class displays*

Both teachers had class displays in Case Two. The displays were quite attractive and were made in a variety of ways. The class displays were quite colourful while some of the displays included work that was done by students. Classroom displays for

Teacher Taku had some pupil's work that was displayed on the bulletin boards in the class. Both teachers noted that the pupils read the activity charts when they finish their day's work. In a follow-up interview with Teacher Taku on why she displayed the pupils' written activities, she explained that it was a form of motivation for the pupils. She said that pupils were very happy to see their work displayed.

Teacher Taku: The pupils compete for their work to be displayed. Those who don't get the chance to get their papers displayed this week will make an effort to do better and we consider displaying their work when they show effort or improvement.

In Teacher Ron's classroom, some of the class displays were almost falling off due to insufficient hanging pins while others were heaped in a corner. Asked why some of the displays were not hung on the bulletin boards, she commended that she could not get the pins to hang the charts several times, as they constantly fell down. She however noted that she creates time for the pupils to read the work on the charts.

### *Class Size: Teacher to pupil ratio*

Both classes in Case Two were special classes hence the enrolment was expected to be one teacher to nineteen students. Teacher Ron had a teacher to pupil ratio of one to twenty eight. These were actually two classes that were joined in one. The other teacher for the other class had gone on study leave. No replacement had been made but they expected to get the teacher as soon as possible. Teacher Taku had twenty one pupils in her class. The teacher to pupil ratio was also bigger than the normal size of a special class.

### *Classroom size: space and ventilation*

In Teacher Ron's classroom, there was very limited space and ventilation was poor. There was insufficient working area for the pupils. The pupils were crowded in a hollow classroom and the sitting places were not enough for all the pupils. When the pupils were handing out books for writing, it was difficult as there was no space for the pupils to move around freely. One group leader was cautioned for throwing other books since he could not reach for some places due to limited space in the classroom.

The space in the classroom was restrictive. Asked to comment about the classroom environment, Teacher Ron commended that ‘The environment itself also poses many problems.’ In the classroom for Teacher Ron, there was a clear indication that classroom ventilation was typically inadequate. During the period the observation was being carried out, the researcher felt extremely hot due to poor ventilation of the classroom. Teacher Taku, a teacher in another class also had a small classroom. She however moved the pupils whom she was not working with during that period of observation to other classes for integration. In that way, she created more working space and improved ventilation for the few pupils whom she worked with.

### *Maintaining cleanliness in the classrooms*

There was general cleanliness that was observed on the floors in both classrooms of Case Two. The floors were clean and not dusty. The teachers maintained the floors by using wet mops and constant sweeping. No unnecessary objects lay on the floors.

Overall observation for Case Two showed quite different actions between the teachers. The two teachers used different languages of instruction. Teacher Taku considered helping the students as individuals with more personalised assistance while Teacher Ron taught the pupils as a class. Most instructional adaptations that Teacher Taku made were not considered in Teacher Ron’s class. The two teachers seemed to operate differently from one another.

## 4.3 Case Three

Three teachers, all females participated in Case Three. All the three classes were Resource Units. Case Three was a Special School for pupils with moderate developmental disabilities unlike the other three schools which were regular schools that contained Special Classes and Resource Units. All the three teachers who

participated in Case Three had teaching experience of over fifteen years and basic training as regular classroom teachers. The three teachers had also worked in the special school and with students with developmental disabilities each one for not less than seven years.

### **4.3.1 Aspects of adaptations looked at under instructional strategies**

#### *Lesson introductions*

Teacher Rose taught a practical lesson on baking cakes. It was however imitation of baking as she and the pupils pretended to be baking, using clay as the cake dough, empty tin containers as the baking sheets. To get started with her students, she began by moving the pupils from the usual sitting positions to a more spacious area on the floor. She began the lesson with a demonstration. She took some cake dough, put it into a baking tin, shook the baking tin and then emptied the dough and the cake was ready. She began giving the pupils some materials to use in the lesson. Meanwhile, she talked to the pupils, giving some demonstrations as below:

*Teacher Rose: Let's all come and sit down here. Peter, kneel down here. Teacher got into a kneeling position and asked Peter to copy from her. The teacher also held hands with all the learners to show togetherness as they begin the lesson. As I promised you last time, today we bake some cakes.*

She also demonstrated the posture of the kneeling position and asked the students to follow. The teacher included a non-verbal gesture in traditional Zimbabwe of joining hands to show togetherness as they worked.

Teacher Rue in another class introduced her lesson with a song. She referred the introductory song as the song for the visitors. The investigator was the visitor to whom they referred.

*Teacher Rue: Who can give us a song to sing for our visitors?*

Pupils raised their hands to choose a song. One pupil chose a song and the class began singing joyfully while the teacher led in the singing.

Teacher Rue: Ndi-i Je-e-su, ndi-i Jesu che-ete, ndi-i-i Je-esu, ndiyeyu Jesu chete

Pupils: Ndiyee-e-e mudiwa wa-angu, we-e mwoyo wangu

Teacher and Pupils: Hakuna mumwe-e-e Jesu, Ndiye mudiwa wangu we-emoyo wangu.

Teacher Rach, in another class taught a lesson on protective foods. She began her lesson by telling her pupils to take away all the other materials that they had been using and to get pupils settled down. She also included in her introductions some explanations to the content to be taught. She posed a question for the pupils to name the foods that protect their bodies from illnesses. Pupils raised their hands for some responses. They gave correct responses. The lesson progressed thereafter.

### *Language of instruction*

Some pupils in classes for Case Three had very limited language while others had no language that was audible. The teachers however could hear and communicate with their pupils immaculately. In some of the instances like in Teacher Rose's class it was the teacher who did all the talking as the children could not express themselves clearly but the pupils understood all that was being said by the teacher. The three teachers in this case used the vernacular language for their instructions. Teacher Rach could be heard sometimes repeating her instructions two to three times in both vernacular and in English. Teachers in case three included voice modulations, high and low pitched voices as well as differentiated body language during their teaching as part of instructional adaptation. Teacher Rose and Teacher Rach used a variety of body language styles like to express approval of an answer, examples are as follows:

Teacher Rose: Wow! Look at Tinotenda's cake; it is a good one! *Teacher claps for Tino and hugs him.*

Teacher Rach: Ye..e e s! That's perfect! *Teacher nodded her head with wide opened eyes to express approval.*

The above-cited teachers added to their instructions a combination of words, gestures, and facial expressions to express with full meaning to their pupils what they wanted

them to do. With wide opened eyes that showed approval, the teacher commented on Kuda's work. Kuda understood the language and smiled for the teachers' approval. In another class Teacher Rose went on to hug Tinotenda, a communication by touch. Tinotenda was also seen smiling for the teacher's approval. Throughout the lesson, Tinotenda kept on putting more effort and seeking for the teacher's approval.

### ***Individualized instruction***

Teacher Rose gave her instructions to individual pupils. The teacher was seen to move from one pupil to the next instructing each pupil on how to bake the cake. Throughout the lesson, she went round the class, inspecting pupils on their practical activity, physically prompting (individualised assistance) the pupils to bake the cake. She helped the pupils to put the dough in the baking tin, press it and then empty the baked cake with all the assistance of physical prompts. In a follow up interview, she explained the need for physically prompting the pupils. Her comment was that:

Teacher Rose –Interview 5: I only depend on physical prompts with the types of disabilities that my children have if I have to achieve something. So I take them one by one, I literally get hold of their hands and physically prompt them.

She also expressed the fact that it was difficult to meet the demands of individual students in a class with too many pupils but expressed that she put her best effort.

Teacher Rose–Interview 5: Ah! (With a sigh), It is not easy but I make sure that I reach for each and every child in that one lesson. If I do not manage to finish I can consider him in the next lesson.

The teacher showed that she had a concern for her students as she noted that she puts her best effort even in difficult circumstances and made a follow-up of students whom she left out in the previous lesson assisting them with individualized instruction like that. The other two teachers of Case Three worked with the whole group at the same time. Their instructions and questions were not directed to particular individuals.



### *Task Analysis*

Evidence of task analysis was seen in the content that was delivered to the pupils in Teacher Rose's class. Teacher Rose in her baking lesson broke down the activity of baking for the pupils. The pupils were expected to achieve the pre-requisite skills of taking the dough, putting the dough into the baking tin before they finally emptied the baked cake. Teacher Rue in another class taught a lesson on crops that are grown in different parts of Zimbabwe. It was not easy for the investigator to identify how the lesson was task analysed. However she began her lesson by teaching aspects of growing crops up until they talked about the crops that are grown in Zimbabwe and the regions where the crops were grown. Teacher Rach also taught a lesson on the foods that protect the body from illnesses. The class talked about the foods that were useful for the body. The class went on to talk about foods that protected the body from ill health. They discussed and finally wrote and made drawings of the foods that protect the body.

### *Use of concrete objects*

Teacher Rose used clay as cake dough. Empty containers were used as baking sheets, real water while sticks represented spoons. Each pupil had his or her own materials to use. Teacher Rue in another class used concrete objects in her teaching. She brought real maize, groundnuts and millet for the lesson on crops that were grown in Zimbabwe. She began by asking the names of the crops that people grew in the farms and rural areas. Pupils mentioned very few crops and one pupil was dominating the learning. The teacher later brought to the table the seeds of the crops that she had brought to the class. It was only then, that the pupils realized that they had left out many crops that were grown in Zimbabwe and they began to raise their hands.

Teacher Rue: Right, come closer. I have these crops, can you give me the names of these crops. We also grow them in Zimbabwe. *Teacher pushes a paper bag of the crops closer to the children to have a closer look.*

Pupils: Maize, sorghum, rapoko, millet, groundnuts, round nuts.

It was observed that this form of adaptation made it easy for pupils to tell and remember the crops with ease. The pupils also became familiar with the real objects

especially for those who might have forgotten or might have not seen the crop, since the different crops are grown in different parts of the country. Teacher Rach in another class did not use any concrete objects in her lesson. The investigator however heard the teacher referring to the fruits that she had brought to class on another day.

### *Step by step guidance*

Teacher Rose guided her pupils with physical prompting and created a situation for the pupils to participate with the intention that they take part in the baking of the cake.

Teacher Rose: Here you are Simba, take this. *Teacher knocks the tumbler to draw Simba's attention.* Take the cake dough from here and put in this tin. The teacher *directs and points to the tumbler.* Try Simba, try, take the dough and put in the baking tin then bake your cake. *Teacher physically prompts the child. She is doing almost all of the talking because Simba does not have audible speech, she also gets involved in the baking herself.*

The physical prompts assisted the teacher to get the students become involved in the activity. With step by step guidance the pupils were seen to be able to take part during the lesson. There was no step by step guidance of individual learners in teachers Rue and Rach's classes.

### *Mediated teaching*

In Case Three, Teacher Rose used mediated teaching throughout her teaching. She interposed her assistance for an activity in a bid to simplify it for the learner. Teacher Rose went round her class during the baking activity assisting individual pupils to hold the tin, to take the cake dough, to press the cake dough and even in emptying the ready-made cake. Her effort was seen most in identifying the neediest and interposing her assistance to modify and/or to simplify the activity so that the pupil would respond in a more competent manner. In another class, Teacher Rue was seen to include mostly verbal mediation from her sitting position, helping the pupils out mostly verbally. She could identify pupils who needed help in matching words for the

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crops that are grown in Zimbabwe with the pictures. She would simply call the pupil to her place or to help verbally while she was seated. Teacher Rach in her class did not use mediated teaching in her lesson.

### *Motivation*

All the three teachers in Case Three put an effort to motivate their pupils. In a follow-up interview with Teacher Rose, she explained that, 'she tried all the time to raise the inspiration for the learners to want to go on with the activities because they lack intrinsic motivation.' Teacher Rose used reinforcements mostly to motivate the pupils to want to go on. She made positive comments for each one of the pupils on the cakes that they had baked such as in the excerpt 'Yes Chipo! Uh! Good cake, today we shall eat your own cake Chipo, Good.' Chipo produced a wide smile.

Teacher Rue in another class motivated her pupils with a song that the pupils had chosen to sing. One pupil chose a song and the class began singing joyfully while the teacher led in the singing. She made frantic efforts to arouse the children's interest with a song and to draw their attention to choose to sing for the visitors. Teacher Rach used positive reinforcements to motivate her pupils. She praised individual pupils for efforts that they made to the teacher's questions. The pupils who would have received praise and reinforcement kept trying and putting more effort to get more praises.

### *Prompts*

In Case Three all teachers were seen to employ physical and verbal prompting as well as visual cues in their teaching. It was observed that the teachers intentionally employed the prompts like gestures and facial expressions, some of the prompts came naturally while physical prompts were well planned. The teachers included both natural and planned prompts as ways to adapt the instruction for the students with developmental disabilities. Teacher Rose expressed that physical prompts were quite vital in her teaching and said, 'I only depend on physical prompts with the types of disabilities that my children have if I have to achieve something. So I take them one

by one. I literally get hold of their hands and physically prompt them.’ Teacher Rach in the third class in case Three used visual cues mostly to refer to the chart that was pinned on the bulletin board for the pupils to refer to it for the answers to her questions.

#### **4.3.2 Aspects of adaptations looked at under the learning environment**

##### *Classroom organisation: Furniture arrangement*

The physical layouts of the learning environment in Case Three were almost similar in all the three classrooms. These included the arrangement of desks, provision of the working area and the storage of the class materials and supplies. These were observed to be very well organised learning environments. Their class sizes were relatively small and so it got easy for the teachers to make improved furniture arrangements. There were big group tables for the whole classes which were arranged in semi circular order. This was similar in all the three classes observed. The group tables were then placed in the middle of the classroom. The rest of the classroom space was left for free movement of pupils.

##### *Classroom space: Sitting arrangements*

Sitting arrangements for the pupils in classrooms for Case Three were also seen to be similar in the three classes that were observed. The teachers preferred sitting the pupils facing the teacher and the chalkboard. The positions of the tables were arranged in ways that allowed the pupils to face the teacher in any position in the classroom except when the teacher stood behind the pupil.

##### *Class displays*

Attractive class displays were observed in the three classes and were made in a variety of ways. The displays were quite colourful in all the three classrooms of Case Three. Outstanding displays were noticed in Teacher Rach’s classroom where the resources in the classroom were clearly marked and neatly arranged. The materials

were easily accessible for the pupils and this could help the teacher to ‘eliminate delays, disruptions, and confusion as students prepared for differentiated activities’ as she noted in a follow-up interview. In Teacher Rue’s classroom, the teacher stored the frequently used items such as scissors and paste in several different containers that were marked beautifully in the classroom. All the three teachers that were observed in Case Three noted that they create time for the pupils to read the work on the bulletin boards as a form of revision.

### *Class size: teacher-pupil ratio*

None of the three classes of Case Three had the teacher to pupil ratio that was in agreement with the official figures stipulated in the Secretary’s Circular Minute P36 of 1990 as stated earlier. Teacher Rose had a teacher-pupil ratio of one teacher to ten students in a Resource Unit. In an explanation to the teacher-pupil ratio in a follow-up interview, Teacher Rose said that ‘We had to co-ordinate with the district Office for me to have more pupils but I know that the teacher pupil ratio should be one teacher to seven pupils. Teacher Rue in another class had nine pupils in her class instead of seven pupils for a Resource Unit and she also said that she was also overloaded. Teacher Rach also had nine pupils in her class. She expressed the same sentiment that the teacher to pupil ratio was not manageable especially considering the individualization of teaching that they do. The three teachers all commented the same concern that they were overloaded and that they got the instruction from the higher office in the District to accept the extra pupils into their classes.

### *Classroom size-space and ventilation*

The sizes of the three classrooms that were observed in Case Three were just of average size. There was space that was left out after the arrangement of the group tables. The classrooms were well ventilated with big windows that were kept open for fresh air to circulate. However, in Teacher Rue’s classroom a wheelchair user used the rest of the space in front of the group table. In some cases, pupils were seen

to bump into the wheelchair when they went out to the toilet. The general space was however sufficient for the small classes.

### *Ramps for wheelchair users*

One participant of this study had a student who used a wheelchair for his mobility as he was paraplegic. In Case Three, all the classrooms were made accessible to wheelchair users. Ramps were constructed in front of the doorways so much that wheelchair users and any pupils with other physical disabilities like those who used crutches had access to the classrooms with no limitation at all.

### *Maintaining cleanliness in the classrooms*

The floors in the classrooms for the teachers in Case Three were smart and well maintained. The teachers maintained the floors by using wet mops and constant sweeping as they explained. Teacher Rach -Interview 7 remarked: 'I make sure that my children thoroughly clean the classroom everyday before they go home. They use water and mops to do that.'

Overly, it was observed that Case Three had unique environmental adaptations. There was accessible infrastructure for learners who were wheelchair users and crutch users. It was also observed that teachers in Case Three used prompts as instructional methods which was not commonly used in the other cases. The teachers also included differentiated mode of communication, verbal and non-verbal (wide-open eyes or smiling face, clapping and hugs) in their instructions. It was also observed that non verbal communication made a difference to the teachers' instructions as pupils were seen to behave differently in the lessons. Actions like nodding the head in concurrence with verbal support also showed a meaning to pupils. In Teacher Rose's class the teacher went on to hug Tinotenda. That gesture even drew Tinotenda closer to the teacher's attention as Tinotenda kept seeking the teacher's approval throughout the lesson.

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## 4.4 Case Four

One teacher participated in Case Four. She was a female teacher who held a Bachelors degree in special needs education in addition to a Diploma in Education. She had teaching experience of eighteen years. She taught pupils with developmental disabilities in her class.

### 4.4.1 Aspects of adaptations that were looked at under instructional strategies

#### *Introduction to lesson*

Teacher Tadi introduced her lesson with a song. The teacher settled the pupils down and told them that she would like the class to sing a song. The teacher introduced the song to the pupils and they began to sing. The class knew the song as all the pupils participated in the song. At the end of the song, the pupils showed that they were waiting for another song. Some pupils whispered from behind that they wanted to sing another song. The teacher then introduced the topic for the day when the pupils showed that they were all alert. The introductory song was short but interesting to the pupils, this was even seen when the pupils could sing with joy and movement.

#### *Language of instruction*

Teacher Tadi adapted her language of instruction from the official English language to mother tongue. She mixed both vernacular and English in her instruction. She kept on asking individual pupils whether they had understood and she could switch to mother tongue on all repetition of instructions that she made.

Example: Teacher Tadi: Chiverenga matenths aya mangani. Ten ten ten handiti. Zvinoreva kuti muone whole mangani. Mangani awawana ipapa? (Now can you count how many tenths you have.)

This was a mathematics lesson, which was given some instruction and explanations in mother tongue. It was observed that learners went on to participate after the

instruction was simplified to mother tongue. Teacher Tadi also included voice modulations, high and low pitched voices as well as differentiated body language during her teaching as part of instructional adaptation. She could be heard using almost very high-pitched voice and at some times she would be using normal to very low voice. It was discovered that she raised her voice when she intended to stress a point. Hand gestures and facial expressions could be seen to be used quite often. On some facial expression, she could be seen to tighten the face, look into the pupil's eyes or to pull a long face especially in disapproval of a response. The above-cited teacher added to her instructions a combination of words, gestures, and facial expressions to express with full meaning to her pupils what she meant in her instruction.

### *Individualized instruction*

Teacher Tadi directed all her instructions to individual learners. Individual pupils were given different activities to work on, thereby she individualized her instruction. Some pupils worked on language aspect while others worked on mathematics. In addition, she did not rush the pupils to finish their work. Instead, she encouraged them to take their time and to make sure they do their work perfectly. In a follow-up interview with Teacher Tadi, she expressed that, 'All these children have individual differences and so they should be treated differently as they all have different needs, and we cannot teach them as a class.' The pupils worked on their individual activities and were seen constantly seeking approval from the teacher individually.

### *Task analysis*

When Teacher Tadi taught her pupils, she task analysed the pupils' work differently. For some pupils she considered starting with simpler aspects of the concepts, the concepts went harder as the teacher and the pupils progressed. It was also discovered that mastery of the basic concepts determined progression to the next step. For the others she did not break down much of the content. The teacher worked with one pupil at a time, and on one aspect until the pupil showed that he or she had mastered



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the aspect, then they would progress to the next step. She worked with one pupil on finding the fractions of shapes that were divided into parts. The task was simplified into manageable units and it was also sequenced, from simple to complex.

### *Use of concrete objects*

In Case Four, Teacher Tadi used concrete objects as well. Pupils who worked on addition and subtraction used counters; one pupil used a small fraction chart that the teacher had made. One pupil used pictures to answer questions that were given to her and quite a number of pupils were seen referring to wall charts that were displayed on the bulletin boards. Each of the pupils was seen to be using learning aids in their learning. All the concrete objects that were used seemed to be known to the pupils except the boy who was introduced to the fraction chart on the day of observation. It was not easy for him to use the fraction chart, he struggled with it but at the end he showed that he had mastered how to use the fraction chart. The pupils were seen to work with ease with their concrete objects especially in calculations of addition or subtraction were the pupils learnt by doing.

### *Step by step guidance*

Sequential guidance of the pupils was also noticed in her teaching. Pupils were guided step by step on their individual activities. She guided a boy who worked on fractions; halves, fifths, quarters and tenths as in the excerpt below:

Teacher Tadi: Timothy, look at this rectangle. How many parts has it been divided into?

Timothy: Into two parts.

Teacher Tadi: Yes! They are called halves. How many parts are coloured here?

Timothy: one part is coloured.

Teacher Tadi: Good Timothy, then what fraction of the rectangle is coloured?

Timothy: one halve is coloured.

Teacher Tadi: Wonderful, now I want you to work on numbers 1-4 in your book in the same way.

Timothy was guided step by step on how to identify the fractions that were coloured and Timothy could work on his own without assistance at the end.

### *Mediated teaching*

Teacher Tadi used mediated teaching in her teaching. She could interpose her assistance when the pupils were stuck on an activity. She moved around her class to check on pupils who needed assistance and could mediate whenever she saw the need. She identified a pupil who could not work on the fractions as she had instructed before. She then mediated in the child's learning until the pupil could work on her own. With the mediation of the teacher, the pupil was able to do the activities that the teacher gave him. It was observed that the pupil knew his fractions so well but had developed some little confusion in-between that needed the teacher's intervention. When the teacher mediated in the pupil's learning, all his confusion disappeared and he could work on his own.

### *Class interaction*

There was remarkable class interaction in the class, pupils communicated with each other. Pupils were seen to be assisting their peers even though they worked on different activities. The teacher was charming and was able to keep a cordial relationship between her and the pupils. This was seen from the way the teacher responded to the pupils' questions. Interaction and communication in her class kept the class busy when the pupils helped one another.

## **4.4.2 Aspects of adaptations that were looked at under the learning environment**

### *Classroom organisation: Furniture arrangement*

Furniture in Teacher Tadi's classroom was arranged in a linear order with group tables. Four groups had been formed, that lay opposite each other, two adjacent groups in front of the classroom and two similarly laid behind. The group tables were meant to sit the pupils in groups so that they help one another in class activities as the teacher stated. Tables that were used to make the groups were quite spacious and they gave big working area for the pupils. The size of the tables and the benches that were used for sitting were proportional and to the size of the pupils.

### *Sitting arrangement-space*

The pupils were arranged to sit in rows that faced the teacher at the front and even when the teacher was at the back of the classroom. The sitting benches were long and spacious; the pupils did not fill the benches, pupils sat freely. There was no congestion in the class. The pupils also sat far away from one another that they would not disturb each other.

### *Class displays*

The bulletin boards were filled with displays. The displays were quite colourful, stimulating and attractive as well as eye catching. The displays included the pupils' activity work and pictures pasted on manila sheets with activities to be done. The displays were made in different many ways that made them to be attractive and reduce monotony. Pupils were seen going to the bulletin boards to do the activities that were on the charts after they completed doing their day's work. Teacher Tadi expressed that her aim was to create a substitute teacher from the physical layout of her classroom. Asked to explain further on the substitute teacher, Teacher Tadi simply laughed and added that the learning environment would motivate the children to work on their own and that it had the capability to enhance learning itself. In addition to the class displays, the storage of the frequently used items such as scissors and paste was done in several different ways, labelled differently which made them to be attractive and admirable.

### *Class size: Teacher to pupil ratio*

Teacher Tadi's teacher -pupil ratio was one teacher to twenty-one pupils. As a Special Class, the class was expected to have a teacher to pupil ratio of one teacher to nineteen pupils. The teacher made a comment that the enrolment was not manageable especially if she had to consider individualized teaching.

### *Classroom size, space and ventilation*

The classroom was quite big, spacious and it was well ventilated. The windows were big and they were kept open during the learning times. There were no distracting

objects that lay on the floors or that posed possible danger to the pupils. The size of the classroom created freedom of movement for the learners when they gave out books or reached for materials to use in the class.

### *Maintaining cleanliness in the classroom*

General cleanliness lacked in Teacher Tadi's classroom. The floor in Teacher Tadi's classroom was dusty, dirty and chapped off. When they cleaned at the end of the day, dust was seen accumulating in the atmosphere of the classroom. The pupils sprinkled some water to capture the dust. The teacher herself had the problem of dusty allergy as she was seen to instruct the pupils to sweep and clean from outside the classroom. The problem lay on the floor that was chapped off and dust particles kept on accumulating in the classroom. Some pupils were also seen to be coughing dust after sweeping. The floor needed some renovations but the teacher reported that the materials were not available.

Overall observation for Case Four showed that Teacher Tadi worked with a cordial relationship with her pupils. There was only one class in Case Four, she used individualized instruction and this assisted the teacher to ensure that her instruction was directed to the intended pupil. The learning tasks were organised in ways that made it simple for the pupils to do the basic activities and the tasks got harder upwardly. The teacher also used concrete objects in her teaching. It seemed that pupils who were not comfortable with abstractions benefited from the teacher's concretization of teaching as they showed some progress after using some concrete objects.

## 4.5 Cross case analysis

This section gives the summary of the findings and makes comparisons of the adaptations that were observed in all the four cases in this study. Since the study followed a structural analysis, patterns of the adaptations that were formed in the phenomenon would be drawn from the findings.

The background information given for the eight teachers showed that all the teachers had teaching experience and background knowledge on the teaching of students with developmental disabilities. Findings however show that some of the teachers who had knowledge of special needs education and experience in teaching did not make much adaptation to their instructional strategies. Lack of competence to make the adaptation to instructional strategies cannot be ruled out given such scenarios. It was not clear whether failure to adapt the instructions for the learners was due to incompetence, lack of knowledge or just the fact that being an expert does not warrant being a good teacher. Experience in teaching did not show the ability to show improved teaching in the teachers.

Time factor could also have contributed to the failure or the minimal adaptations that the teachers did. The teachers had only one lesson to demonstrate their full competence due to unforeseen circumstances (see limitations to the study). It cannot be disputed that availability of time can govern the teacher's ability to display his/her creativeness. Possibly the teachers took the available time that they had and slotted in the possible adaptations that could fit in and make sense for the learners.

Teachers that participated in this study were all females. There was no evidence in the data that shed light on the effect of gender bias in teaching learners with disabilities.

The table below shows the distribution of the forms of adaptations that the teachers used during teaching students with developmental disabilities.

*Table 2: Instructional adaptations that teachers used in teaching*

Case	Adaptation	Lesson introductions	Language adaptation	Individual instruction	Task analysis	Use of concrete objects	Step by step guidance	Motivation	Content sequencing	Content differentiation	Mediated teaching	Prompts	Class interaction	Total
		One	Jose	x			x	x		x				
	Ethy		x		x	x	x	x						5
Two	Ron								x					1
	Taku		x	x	x	x	x		x	x				7
Three	Rose	x	x	x	x	x	x	x			x	x		9
	Rue	x	x			x		x			x	x		6
	Rach		x					x				x		3
Four	Tadi	x	x	x	x	x	x			x	x		x	9
Total		4	6	3	5	6	4	5	2	2	3	3	1	44

Key

X=adaptation was observed      blank box= no adaptation was seen

The table summarizes the aspects of adaptation of instructions that the teachers were observed in. Twelve different kinds of adaptations were predefined under the Theme instructional adaptations. Findings show that across all the four Cases, some teachers adapted their instructional strategies when they taught pupils with developmental

disabilities while others did not. One interesting finding shows that no teacher was observed teaching the students without making any form of adaptation. So the teachers had the knowledge and considered adaptation of their instruction as important even though implementation was another issue. Analysis of the teacher variable would also entail looking at individual teacher's knowledge; skills as well as predisposition. Even when a teacher possesses the skills and knowledge on the adaptations to make, the mood, predisposition would still affect the manner in which she handles the lesson. Findings also show that the teachers used some common adaptations while at the same time some adaptations were only peculiar in one or two cases.

Table 4 below gives a summary of the adaptations to the learning environment aspects that were observed for individual teachers.

Table 3: Environmental adaptations observed in the classrooms

Case	Adaptation	Furniture arrangement	Sitting arrangement	Class displays	Class size	Class ventilation	Proximity toilets, door	ramps	Maintaining cleanliness	Totals
One	Jose	x	x	x		x				4
	Ethy	x	x	x		x				4
Two	Ron			x						1
	Taku	x	x	x		x	X		x	6
Three	Rose	x	x	x		x	X	x	x	7
	Rue	x	x	x		x	X	x	x	7
Four	Rach	x	x	x		x	X	x	x	7
	Tadi	x	x	x		x				4
Totals		7	7	8	0	7	4	3	4	40

## Key

x = adaptation observed

blank box = no adaptation was observed

Table three summarizes the adaptations that were predefined on improving the learning environments for the students with developmental disabilities. The investigator simply checked using the predefined structure of observation and sought for clarification in follow-up interviews. Findings showed that in all the four Cases, the teachers seemed to concentrate and put more effort on environmental adaptations than instructional adaptation. This can be seen by the frequency tallying of the observed adaptations on the learning environment that is more than in the instructional adaptations. This finding could suppose that the teachers in this study preferred adaptations that call for minimum preparation. This can also be said that the teachers preferred general adaptations than significant individual adaptations.



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#### 4.5.1 Adaptations that cut across three or more cases

**Adapted lesson introductions** were done by three teachers across three cases. The teachers introduced their lessons in different many ways. Looking down the columns of the table of adaptation of instructional strategies gives evidence that five teachers out of eight went straight into teaching the content for the day without an adapted introduction to the lesson. Even though the number of teachers who considered using differentiated introductions was few, across the cases introduction to lessons proved to be vital. On the other hand, findings also showed that the teachers who did not have adapted lesson introductions found it harder to draw the attention of their students and get focussed.

**Language of instruction:** One variable of interest that was commonly used adaptation that the teachers considered was the adaptation of the language of instruction. Seven teachers adapted the language from the official English to vernacular. A closer look into the follow-up interviews showed that the teachers considered that students with developmental disabilities have language acquisition problems so they needed simplified language of instruction that was vernacular.

**Concretization in teaching** was also considered by more teachers and across the four cases. Five teachers used quite varied concrete objects in their teaching, suggesting the importance of concretization in teaching learners with developmental disabilities. The others who did not have the concrete objects kept referring to the objects in absentia, suggesting that probably the teachers had not fully prepared for their lessons. Probably advance preparation and the teacher's sense of readiness can play a part in improved adaptation of the instructional strategies for the learners. Planning and advance preparation remains an important aspect if success has to be achieved.

**Mediated teaching** was done by four teachers across the four cases. This was however done when the teachers did not use the term mediated teaching, their actions in the teaching were linked to the term mediated teaching. Reading across the rows in

the table shows that the teachers who used mediated teaching had additional professional qualifications in special needs education (background information). With additional professional qualification, it would be expected that the teachers display more advanced methods in teaching learners with developmental disabilities. This was proved right since the teachers concerned used mediated teaching and it seemed to benefit the learners as well.

**Class displays:** All the classrooms had class displays that the teachers expected would supplement the students' reading materials. It also appeared as if it was a requirement in all the schools to have class displays. Few pupils were seen to use the media of instruction.

Although there are some similar adaptations across the cases, findings show that the degree to which each instruction was adapted varied with teacher competence and teacher creativity.

#### **4.5.2 Adaptations that cut across one or two cases**

Physical prompts were not commonly considered in three cases but were quite common in one case, all the three teachers in Case Three used prompts. Case Three catered for students with moderate developmental disabilities and was a special school. Students who learnt in Case Three could not do most of the daily functional adaptive skills so the teachers relied on physical and verbal prompts. Probably this could explain why the physical prompts could only be found in case Three. Physical prompts helped the teachers to guide the pupils step by step as they mentioned in a follow-up interview.

One school had organised improved accessibility of students with motor disabilities like the wheelchair users and crutch users. In Case Three, there were ramps that were constructed on all doorways of the school to ease accessibility for their students with physical disabilities. This infrastructure update was only found in one case out of the four cases studied. Data showed that in three Cases, the toilets and door handles were

commonly situated far away from the classrooms, making it difficult for the pupils to travel to the toilet for some period and leave class as the teachers mentioned in the follow-up interviews.

One interesting finding that was noted was the fact that the teachers did not adapt their instructional strategies in similar ways even though they belonged to the same case, suggesting that the teachers operated independent of each other.

None of the four Cases had the correct number of teacher to pupil ratio as was stated in the Secretary's Circular Minute no P36 of 1990. From the teachers' perspective all the teachers indicated that they were overloaded with over enrolment.

### **4.5.3 Main findings of the cross case**

Overall findings showed that even though some teachers are truly adapting and differentiating their instructional strategies and the learning environment for learners with developmental disabilities, others need to be made aware of the need to adapt and the various ways that teachers can adapt their instructions to benefit the learners.

Findings also showed that teachers who had additional qualifications like a bachelor's degree in special needs education (Ethy, Rose, Taku and Tadi) considered more varied instructional adaptations than those teachers who only had basic education training or diploma in education. In their teaching, the teachers mentioned showed their strengths in concretization, offering individualized, guidance to learners, mediated teaching, content differentiation sequential teaching.

Findings showed that even though various adaptations were observed across the cases, teacher strength, creativity and competence differed. The other teachers tended to use teaching methods that they learnt in colleges during training with no adaptations in them.

Findings also showed that some teachers seem to put more effort on general adaptations that call for minimum preparations than the individualized adaptations.

Time aspect could have deterred the opportunity for the teachers to show their competence and ability to adjust. Time factor is perhaps the most important variable for the possibility for the teachers to make some adaptations to their instruction.

Findings also showed that advance preparation is necessary if one has to achieve success.

## **5. Discussion, Conclusion and Recommendations**

This study investigated the adaptations that teachers make to their instructional strategies and the learning environment when teaching students with developmental disabilities. A discussion of the findings in relation to chapter 4 is focused on in this chapter, the conclusion, as well as the recommendations. The discussion also tries to draw parallels with previous researches as well as the theory as discussed in chapter 2 above. Gall et al. (2003) postulated that the most important task in writing the discussion chapter is to identify and interpret the most important results. The study generated a variety of findings of which some of the findings have been singled out for discussion.

### **5.1 Discussion**

#### **5.1.1 Possession of a variety of instructional strategies**

From the study, results show that teachers Ethy, Taku, Rose and Tadi made quite feasible adaptations to their instructional strategies while it was also evident that there are some teachers who employed the generally used instructional strategies in regular education classrooms for the learners with developmental disabilities unedited.

Teachers Rach and Ron made very minimal adaptations to their instructions.

Individuals with developmental disabilities are slow in almost all the aspects of their development and learning (Gulliford & Upton 1992). The individuals also possess poorer memory functions and short attention span, problem solving and reasoning skills thus; adaptations may need to be considered fundamental for the purpose of accommodating and/or customizing the teaching strategies and the learning environment to match the needs of each learner with developmental disabilities. If unedited, the generally used instructional strategies might fail to meet the learning needs of students with developmental disabilities. The fact that some teachers in this study included minimal adaptations to their instructional strategies could have

numerous implications. It cannot be denied that failure to make feasible adaptations could be a result of incompetence; lack of preparation, time factor or that they did not possess the varied instructional methods which they could adjust, thus they stuck to the few methods which they knew. Gulliford and Upton (1992) consider the adaptation of the teaching methods for learners with disabilities as important to curb their poorer functional skills in attention, memory, and disorders in thinking as well as in using language. Handleman and Harris (1986) purported that teachers should possess a good repertoire of varied teaching styles and strategies since children's individual needs determine the parameters of the curriculum that they should follow, the teaching strategies that suit the learner and the educational materials which teachers should use. This was however in contradiction with what the investigator found in this study.

While some teachers made some adaptations to their instructional strategies, attention may also need to be drawn to the fact that there is a gap between simply making some adaptations and the effectiveness of the adaptations since the study considered how the adaptations meet the needs of students with developmental disabilities. It was interesting to observe the pupils managing to do the set activities with the assistance of adaptations such as concretization in teaching. The adaptations benefited the students in their learning. Olivier and Williams (2005) discovered that special needs educators have the responsibility to offer not only good, but also highly individualized and goal-directed instruction. This can only be achieved when a teacher possesses varied teaching styles.

### **5.1.2 Aspects of adaptations that teachers considered**

#### *Lesson introductions*

The observations showed that only four teachers across the four cases adapted their introduction to lessons (Teachers Ethy, Tadi and Rue). The other four teachers went straight into introducing the content for the day. This finding shows that the teachers (participants) may have considered some of the adaptations to be less important.

Introductions to lessons have the capacity to help students to focus their attention on particular stimuli as purported by Gregory (1991). For the teachers who adapted their introductions to lessons the investigator viewed the teachers' variations to the introductions of their lessons as efforts in getting the children to concentrate on intended activities. It was observed that these teachers drew the attention of their pupils with adapted introductions for them to get started, for pupils to pay attention, concentrate and to do class activities. This is also in line with findings by Romi and Leyser (2006) that students with developmental disabilities show inability to focus on particular stimuli, thus they need to be directed. In a way teachers who did not adapt their introductions, who went straight into teaching the content for the day probably did not have the knowledge of the importance of focussing the children's attention to particular stimuli. If the teacher has the knowledge about the abilities and circumstances in which the child learns best (Wolfendale 1993), then it becomes important for the teacher to adjust the instruction to suit the learners abilities and needs.

### *Simplification of the content*

Regarding the considerations to simplify the pupils' learning content to their level of operation, findings of this study showed that five teachers (Ethy, Rose, Taku, Jose and Tadi) made this aspect of their teaching a basic consideration. The teachers mentioned simplified the learning tasks for their students. The teachers taught from the very basic level of the concepts and built upon the concepts depending on the understanding and progression of the pupils. The teachers tasked themselves to simplify their teaching for the benefit of pupils with individual needs. Johnsen (2001) recommended the need to ensure that the content for the learners need to be at their level of operation. It was noted that when the teachers simplified the learning content for the pupils, the pupils did not struggle to learn, they could manage to do the tasks assigned. This finding was in line with a previous research done in South Africa on the teaching of students with developmental disabilities. Olivier and Williams (2005) found that special needs education involves additional work and responsibility. The

responses by the teachers who were interviewed included comments like *'I had to prepare different lessons; different activities and it meant a lot of work. I must simplify each little word and explain it.'*

Even though it could be difficult to draw a line or to relate experiments done on animals and aspects in human day-to-day life, the above findings could also be related to Cole's theory of tool use, problem solving and culture. In his theory Cole (1996) explained how chimpanzees learnt the skills of using tools through patterns of their community during infancy, through a mixture of social facilitation, observation, imitation and practice with a good deal of trial and error. According to Cole (1996), there was evidence of active teaching of tool use among the chimpanzees. The intention in training tool use to the chimpanzees was to simplify the tasks for the young chimpanzees. Cole (1996) described a case when a young chimpanzee positioned a nut the wrong way and its mother intervened to position the nut correctly. This could be related to the efforts made by the teachers in this study, to teach the pupils in a class then simplify and adapt the learning concepts, instructional strategies and the learning environment in situations when the tasks proved to be complicated for the learners. Teachers in the present study would be seen to work with individual students from the very basics of a concept and developing upwards depending with the progression of the pupils. The other teachers who did not break down the learning tasks for their pupils to manageable units probably lacked the competence to do that. In such circumstances where teachers do not simplify the learning tasks, the pupils get a raw deal as purported by Handleman and Harris (1986). Pupils with developmental disabilities may find it hard to grasp some of the concepts as they display poorer functional skills than their non-disabled counterparts do.

### *Individualization of instruction*

Across the four cases that were studied, findings showed that, in their teaching, most teachers directed their instruction to groups of pupils and the whole class, not to particular individuals. Teachers Taku, Rose and Tadi individualized their instruction.



They taught their pupils as individuals. It is important to consider that diversity prevails in students, learners are different and thus they display differences in abilities, experiences, learning styles, needs as well as in their interests. In scenarios where a class is composed of students with differentiated disabilities and learning needs as the ones that were in focus in this study, teaching the students as individuals was one consideration that the teachers of this study should have made a priority. Consideration to teach students as individuals could be similar to the findings in the previous research by Adami (2004) who found out that some teachers in their research made differentiations in teacher time. Differentiation of teacher time happens when teachers assist students individually (Dickinson & Wright 1993). When teachers employ individualization in teaching this can also be known as the use of one-to-one teaching. Relating to Cole's theory, individualization of instruction in a class can be in line with the situation when a mother chimpanzee instructed a daughter chimpanzee individually, on how to crack a nut. The mother chimpanzee sat watch a daughter chimpanzee who unsuccessfully cracked a nut, the mother joined to direct and demonstrate on the correct use of the stone to crack the nuts. The daughter understood the lessons perfectly after the individual instruction.

There are some circumstances however, where individualization of instruction could be difficult to employ. In circumstances where the teacher is faced with large groups of pupils it can be difficult to individualize the instruction. Probably this explains why most teachers in this study did not individualize their instruction; they had large groups of pupils to attend to. There was one circumstance when a teacher could not give individualized instruction to a class of 28 pupils with developmental disabilities. The teacher was limited by the circumstances of working with an unusually big group of pupils. In such circumstances the teacher may compromise on what they wanted to do and what is possible to do. Adaptations like individualization of the teaching require effort and adjustment in teacher planning. Extra work for the teachers might not be welcome by many teachers and so this could also have contributed to failure to individualize the children's learning. Dickinson and Wright (1993) found similar

results that usually teachers do not get the time to work with students at an individual basis.

### *Step by step guidance and participation of the learners*

It emerged from the study that some teachers considered using the step by step guidance method in teaching their students. Teachers Ethy, Taku, Rose and Tadi used step by step guidance to their pupils when they taught. According to Roggoff (1990), teachers can structure the child's involvement in learning through joint participation. When teacher and child work together on a task the learner may find it easy to understand and builds for him/her positive self- esteem when he/she experiences success in performing tasks. Rogoff (1990) lamented that adult involvement can motivate the learner towards a goal and can focus their attention together. By working together chances of repeated failure are minimized. For young children, participation creates a better mastery of concepts than when they only hear as they easily forget (Westwood 1997). Step by step guidance in teaching can be related to the guidance that was given to a daughter chimpanzee in Cole's theory (1996) by a mother chimpanzee on how to crack a nut step by step from correct positioning of the nut to cracking until the young chimpanzee achieved the task on its own. Teacher Taku guided a pupil to find the area of a rectangle step by step until the pupil could find the area by herself.

### *Adaptation of the language of instruction*

Findings from this study showed that six teachers out of eight adapted their instruction from the official English Language to Vernacular. Berne-Smith et al. (2002) purported that individuals with developmental disabilities display poorer functional skills in language development. It was therefore vital for teachers in this study, who taught all pupils who had diagnosed developmental disabilities and poor language acquisition skills to consider teaching the pupils in a language that pupils understand best, that is their mother tongue. Using a foreign language might make a teacher to teach in an unnatural way, even boring with less practical examples. It

would be futile to teach the students with developmental disabilities in a language that they do not quite fully understand even though it is the official language of instruction, as it would also affect quick mastery of academic concepts. The best way would be to teach the pupils in a language which she/ he understands. Eggleston (1992) supports such an action when he stated that the language of the class should be understood by everybody to help students to acquire extended vocabulary. Switching the language of instruction from English to mother tongue enhanced improved communication between the teachers and the students in a language that they understood and reduced communication breakdown. By learning in vernacular, students can find it easy to express themselves without restriction and with clear meaning. Nobody would deny the fact that pupils taught in this study benefited from the adaptation of simplifying the language of instruction as pupils were seen to participate actively showing full understanding of the instructions through a familiar language. Using a foreign language also poses great challenges and dilemma as students may not be able to express their views extensively since they are limited in the language they use. Vernacular language connects an individual to the content as the student finds it easy to understand all concepts. Such challenges and dilemma were noticed in Teacher Ron's class who taught the full lesson in English. Pupils could be seen that they understood the teacher but it became difficult for the pupils to express their views in English, as a result, they would keep quiet and act as though they did not understand the teacher.

### *Mediation during teaching*

Findings shed light that three teachers in this study used mediation during their teaching. Teachers Tadi, Rose and Ethy used the mediation style in their teaching. They interposed their assistance onto the pupils during learning when pupils showed that they got stuck. Success was noticed when the pupils who were assisted with the method of mediation progressed after they showed understanding of the taught concept. Rogoff (1990) lamented that adult involvement can motivate the learner towards a goal and can focus their attention together. In this research five teachers did

not employ significant mediation in their teaching. There were instances when some of the actions of the teachers could be partly related to mediation but it was not quite significant. Probably the three teachers who used mediation knew the method from their additional qualification of Bachelor's degree, as they were the few who had additional educational qualifications. Similar to the teachers' mediation in teaching in this study was the theory developed by Feuerstein and Feuerstein (1991) on mediation during teaching. The theory focused on the interaction that goes on between human beings and their environment via a mediator. According to Feuerstein and Feuerstein (1991), human mediation is a conscious attempt of an adult to adjust his strategies and modify the environment in a way that will ensure the learner will benefit from it. The teachers who used mediation in their teaching would be seen moving to individual pupils and assisting the pupils with activities that the pupils worked on. Further simplification of the activities and task analysing the concepts characterized the mediated teaching.

### *Concretization of teaching*

Findings showed that teachers preferred to be more concrete in their teaching. There is a probability that the teachers discovered that concretization in teaching would assist them to simplify their instruction for the learners and that use of concrete objects can assist pupils in problem solving techniques. This was seen by the use of concrete objects that the teachers used in their teaching. Teacher Rue brought real maize, groundnuts, millet for the lesson on crops that are grown in Zimbabwe. Students with developmental disabilities have difficulties in mastering abstract concepts (Handleman & Harris 1986). Mercer and Mercer (1998) added that many students with developmental disabilities do not comprehend abstract concepts well. It is the duty of the teacher then to make efforts to concretize all teaching and reduce abstractions, as concretization is beneficial for the students in learning. Teachers of students with developmental disabilities may need to stay concrete and almost tangible with their examples. Teachers who did not use concrete objects in their teaching in this study showed that they had not planned for them but they constantly

referred to the objects in absentia, showing that they also knew the need to concretize the teaching. Lack of advance preparation could therefore be used to describe the reason for the teachers' failure to use concrete teaching aids rather than unwillingness or incompetence. This finding was also in line with a previous research done by Mutasa (1999) in Zimbabwe who found similar results as she emphasized the need to become practical when teaching students with disabilities. Relating concretization of teaching to Cole's theory, he discovered that when individuals solve problems with the help of some tools, the individual finds it easy to do the activity. Cole (1996), had a research with chimpanzees, and discovered that chimpanzees used tools as a significant part of their life. The tools were used for subsistence living for example (fishing out termites with a stick, using chewed leaves to sponge out water, using stones to crack nuts). The use of such tools become part of life for an individual as it assists individuals in their day-to-day living. It then explains the importance of concretisation in teaching if the use of tools has the capacity to improve problem-solving skills in students' learning.

### *Improvement of the physical learning environment*

Findings from this study showed that all the teachers adapted the learning environment of the students in one way or another. Class displays were found in all the classrooms. Some teachers decorated the classrooms with activity charts, some put up pupils' work, some ordered the materials that were often used in particular corners and others arranged the physical layout of the environment in different creative ways. From the follow-up interviews, it was found out that the learning environment was intended to enhance instructional methods. MacAulay (1990) made a note that the physical environment could be considered as "another teacher" for the reason that it can motivate children, enhance learning, and reduce behaviour problems. Caine and Caine (1991) indicated that the environment that could influence learning is that environment that is well appealing and that changes periodically to invite enthusiasm for the learner. Teachers in this study made frantic efforts to improve the leaning environment of the students in many different ways although this

depended on individual teachers' competence. This finding was also in line with the researches by Scott et al. (1998) as well as by Scruggs et al. (1996) which revealed that teachers perceive environmental adaptations as necessary but they experience difficulty in implementing them in inflexible environments. In this study, inflexible environments were also found such as Teacher Ron's classroom that was hollow and the teacher found it difficult to adapt the learning environment. Befring (2001) pointed out that physical frame factors such as school infrastructure (classroom for example) need to be addressed for there cannot be quality education in an inconducive environment. Fuchs et al. (1979) in their research found out that some rigid classroom organizational structures include unedited infrastructure like small classrooms, inaccessible to wheelchair users and those without ramps.

Inconducive environments were also found in this study. In Case Two, small classrooms were set to accommodate too many pupils, which left the classroom inconducive. In case Three however, ramps were constructed on all the doorways of the classrooms to improve accessibility as the school had wheelchair users and pupils who used crutches.

## 5.2 Barriers to adaptation

### *Class sizes*

Results from observations and follow up interviews for the present study showed evidence that the participants experienced barriers and challenges in trying to adapt their instructional strategies and the learning environment. The class sizes did not follow the stipulated Government teacher to pupil ratio as documented by the Ministry of Education and Culture (1990) in the Secretary's Circular Minute Number 3 which states that special class and resource units must have maximum class enrolments of nineteen and seven respectively. The class sizes were too large and not manageable especially if one had to consider individualization in teaching. Previous research by Cardona (2002) stressed the need for class sizes to be small to allow

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teachers to focus more attention on those who need help. Manageable class sizes allow for more individualized attention for students especially when working with students with disabilities (Walker & Walker 1991). This finding was in tandem with that of Olivier and Williams (2005) in South Africa who found out that many teachers for students with developmental disabilities experienced an inability to handle their occupational situation effectively as they found it hard to cope with the unique demands of their tasks. The teachers discussed a mismatch between individualization of teaching and large teacher pupil ratio of their classes. Similarly, Scott et al. (1998) had a finding that large teacher to pupil ratios can limit teachers to work with students at an individual basis as they find it difficult to meet the workload. In this study, Ethy mentioned that ‘the enrolment is too big and yet they expect us to plan for individual children, you end up failing to meet the work demands and the workload.’ With large teacher to pupil ratios, the teachers in this study seemed to struggle to perform to their best capabilities in adapting the instructional strategies and individualizing the teaching to meet the demands of the learners.

### *Inflexible classroom environments*

Findings also showed that infrastructure update lacked in some of the schools and the teachers were faced with challenges of failing to adjust the learning environments for the benefit of the learners. In a follow-up interview, Teacher Ron made a comment that ‘the environment itself also poses many problems.’ Some of the teachers found challenges to make differentiated arrangements of the furniture that suited the needs of their pupils because of the type of their classrooms or the furniture. Walker and Walker (1991) noted that in scenarios where classrooms are not spacious or poorly organised, this limits freedom in the classroom. This finding was also in line with the findings by Fuchs et al. (1979) that rigid classroom organizational structures that include unedited infrastructure like small classrooms, inaccessible to wheelchair users, without ramps can hinder efforts to adapt the learning environment to meet the

learning needs of individual learners. Such challenges have the capacity to restrict the teachers to make some adaptations even where they see it necessary.

### 5.3 Conclusion

This study investigated into the adaptations that teachers make to their instructional strategies and the learning environment when they taught students with developmental disabilities. Even though tentative conclusions can be drawn from the basis of this single investigation which had its own limitations; findings showed that some teachers truly adapted their instructional strategies and the learning environment before they delivered them to their learners while others rarely did that. Findings also showed that teachers seemed to put more effort on adaptations that called for minimal preparation than significant individual adaptations. It was also found out that the teachers experienced barriers to the adaptation of their instructional strategies that included large class sizes and unedited infrastructure. Advance preparation is of importance in teaching students with developmental disabilities.

### 5.4 Recommendations

In view of the findings from this study, the following recommendations are forwarded. The intention is that the study could possibly raise awareness on the responsible authorities who have the obligation to pay more attention to the needs of the teachers for students with developmental disabilities.

Students with developmental disabilities are diverse; this also implies that there is need to change the absolute teaching patterns, methods for the benefit of the learners.

There is need to reduce the teacher to pupil ratio in classes for students with developmental disabilities for the purpose of enabling individualization and adaptation of the instructional strategies and the learning environment for the teachers and to enhance effective teaching.



There is need to improve on the provision of material resources that enable the teachers to adapt their instructional strategies and the learning environment which could be difficult for the teachers even to improvise.

Teachers need to meet periodically to reflect on their experiences and to share possible adaptations that they find with fellow teacher colleagues, to improve on their teaching. This could be done through staff development workshops.



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## References

- Adami, AF (2004), Enhancing students' learning through differentiated approaches to teaching and learning: a Maltese perspective,' *Journal of Research in Special Educational Needs*, vol. 4, no. 2, pp. 91–97.
- Ainscow, M 1998, 'Would it work in theory? Arguments for practitioner Research and Theorizing in the special Needs Fields,' in *Theorizing Special Education*, Routledge, London, pp. 7-20.
- Befring, E 2001, 'The Enrichment Perspective: A Special Educational Approach to an Inclusive School,' in *Education- Special Needs Education: An Introduction* Unipub Forlag, Oslo, pp. 49-64.
- Bell, J 2003, *Doing Your Research Project: A Guide for First-Time Researchers in Education and Social Science*, 4th edn, Open University Press, Maidenhead.
- Berne-Smith, M, Ittenbach, RF & Patton, JR 2002, *Mental Retardation*, Merrill Prentice Hall, New Jersey.
- Caine, RN & Caine, G (1991), Making Connections: Teaching and the Human Brain, *Journal of Special Needs Education*, vol 2, no. 1, pp. 24-47.
- Cardona, MC 2002, 'Feasibility and effectiveness of teachers' instructional adaptations,' *European Journal of Special Needs Education*, Vol. 18, No. 3, pp. 333-340.
- Chakuchichi, DD, Chmedza, R & Chiinze, T 2000, *Educational Considerations for Children who are Motor and Physically Challenged*, Zimbabwe Open University, Harare.
- Chakuchichi, DD & Magama, LT 2001, *Educational Considerations for Children who are Motor and Physically Challenged*, Zimbabwe Open University, Harare.
- Cohen, L & Manion, L 1994, *Research Methods in Education*, 4th edn, Routledge, London.
- Cole, M 1996, *Cultural Psychology: A Once and Future Discipline*, Harvard University Press, London.
- Collins, W 2002, *Collins Paperback English Thesaurus*, Harper Collins Publishers, Glasgow.
- Dakwa, FE 1993, *A Paper Presented at a Special Education Workshop*, Ministry of Education and Culture, Harare.
- Dickinson, C & Wright, J 1993, *Differentiation: A Practical Handbook of Classroom Strategies: Crown National Clearing House on Education and Training for People with Disabilities*, NCET, Crown.
- Dyson, A 1994, 'Towards a Collaborative, Learning Model for Responding to Student Diversity,' *Support for Learning*, vol. 9, no. 2, pp. 53-59.

- Eggleston, J 1992, *The Challenge For teachers: Introduction to Education*, Cassel, New York.
- Fecho, B 1994, *Language Enquiry and Critical Pedagogy in Chartering Urban School Reform Reflecting Public High Schools in the Midst of Change*, Teachers, New York.
- Feuerstein, R & Feuerstein, S 1991, 'Mediated Learning Experience: A Theoretical Review,' in *Mediated Learning Experience (MLE) Theoretical Psychological and Learning Implecations*, Freund, London.
- Fuchs, D, Fuchs, LS, Mathses, PG & Simmons, DC 1997, 'Peer-assisted Learning Strategies: Making Classrooms more Responsive to Diversity,' *American Educational Research Journal*, vol. 34, no. 1, pp. 174–206.
- Gall, MD, Gall, JP & Borg, WR 2003, *Educational Research: An Introduction*, 7th edn, Pearson Educational Incl., Boston.
- Gall, MD, Gall, JP & Borg, WR 2007, *Educational Research: An Introduction*, 8th edn, Pearson Education Incl., Boston.
- Gregory, RL 1991, 'Seeing by Exploring,' in *Virtual and Real Environments*, Tailor and Fancil, London, pp. 328-337.
- Grøtan, T 2005, 'Language-A Democratic Right,' in *Global Knowledge: Research Across Academic Boundaries*, no. 4, pp. 2.
- Gulliford, R & Upton, G 1992, *Special Educational Needs*, Routledge, London.
- Hadebe, JM 1985, 'Special Education in Zimbabwe: Policy, Legislation Curriculum and Implementation,' in *Specialist Teachers Conference*, Ministry of Education, Sport and Culture, Harare, pp. 3-8.
- Handleman, JS & Harris, SL 1986, *Educating the Developmentally Disabled: Meeting the Needs of Children and Families*, Tailor and Francis Ltd, London.
- Hoepfl, MC 1997, 'Choosing Qualitative Research: A Premier for Technology Educational Researchers', *Journal of Technology Education*, vol. 9, no.1, pp. 1-17.
- Johnsen, BJ 2001, 'Curricula for the Plurality of Individual Learning Needs: Some Thoughts Concerning Practical Innovation Towards an Inclusive Class and School', in *Education – Special Needs Education: An Introduction*, Unipub Forlag, Oslo, pp 255-300.
- Kincheloe, J 1995, 'Meet Me Behind the Curtain: The struggle for Postmodern Action Research,' in *Critical Theory and Educational Research*, State University of New York Press, New York, pp.67-74.
- Kirk, SA, Gallagher, JJ & Anastasiow, NJ 1997, *Educating Exceptional Children*, 8th edn, Houghton Mifflin Company, Boston.

- 
- Klein, PS 2001, *Seeds of Hope: Twelve Years of Early Intervention in Africa*, Unipub Forlag, Oslo.
- Knight, BA 1999, 'Inclusion: Towards Inclusion of Students with Special Educational Needs in the Regular Classroom', *Support for Learning*, vol. 14, no.1, pp. 3-7.
- Kozulin, A. 1995, *Mediated Learning Experience and Psychological Tools: Vygotsky and Feuerstien`s Pespective in a Study of Student Learning Volume 3*, viewed 28 November 2007, <[www.questia.com](http://www.questia.com)>.
- Kvale, S 1996, *Interviews: An introduction to Qualitative Research Interviewing*, Sage Publications, London.
- Lofland, J & Lofland, LH 1984, *Analyzing Social Settings*, Wadsworth Publishing Company, Belmont, CA.
- MacAulay, DJ 1990, 'Classroom environment: A literature review,' *Educational Psychology*, vol. 10, no. 3, pp. 239-253.
- Manwere, A 2008, 'Zimbabwe Inflation Hits 165000%', *The Zimbabwe Independent*, 15 April, p. 6.
- Mavundukure, G & Themhani, N 2000, *Comparative Special Needs Education*, Zimbabwe Open University, Harare.
- Maxwell, JA 1992, 'Understanding and Validity in Qualitative Research,' *Harvard Educational Review*, vol. 32, no. 3, pp. 279-300.
- McCoy, KM 1995, *Teaching Special Learners in the General Classroom*, 2nd edn, Love, Denver.
- Ments, M 1986, *The Effective Use of Role Play: A Handbook for Teachers and Trainers*, Billing and Sons Ltd, New York.
- Mercer, CD & Mercer, AR 1998, *Teaching Students with Learning Problems*, Prentice Hall, London.
- Miles, M B & Huberman, AM 1985, *Qualitative Data Analysis: A Sourcebook of New Methods*, Sage, New Dehli.
- Ministry of Education and Culture 1990, *Secretary's Circular Number P36 of 1990: Special Education- Placement for Special Classes, Resource Rooms and Special Education*, Ministry of Education and Culture, Harare.
- Ministry of Education and Culture 1999, *Schools Psychological Services Report on Special Classes and Resource Units in Chitungwiza District: Harare Region*, Ministry of Education, Harare.
- Ministry of Education Sport and Culture 2003, *Circular Minute P3/1 of 2003: Payment of Tuition and Boarding Fees*, Ministry of Education, Harare.

- Ministries of Higher Education, Sport and Culture and Higher and Tertiary Education 2004, *The Development of Education: National Report of Zimbabwe*, Zimbabwe Government Printers, Harare.
- Mpofu, E 2002, *Educational Considerations for Students with Mental Retardation*, Zimbabwe Open University, Harare.
- Mutasa, J 1999, 'Challenges that Educators Meet when Teaching Students Hearing Impairment at Resource Units in Harare, Zimbabwe,' Master Thesis, University of Oslo.
- Olivier, MAJ & Williams, EE 2005, 'Teaching the Mentally Handicapped Child: Challenges Teachers Are Facing', *The International Journal of Special Education*, vol. 20, no. 2, pp. 19-24.
- Patton, MQ 2001, *Qualitative Evaluation and Research Methods*, 2nd edn, Sage Publications, Newbury Park, CA.
- Peresuh, M & Buchanan, T 1998, *Foundations for Education for Africa*, College Press, Harare.
- Robson, C 1993, *Real World Research: A Resource for Social Scientist and Practitioner Researchers*, Blackwell, Oxford.
- Rogoff, B 1990, *Apprenticeship in Thinking Cognitive Development in Social Context*, Oxford University Press, New York.
- Romi, S & Leyser, Y 2006, 'Exploring inclusion pre-service training needs: a study of variables associated with attitudes and self efficacy beliefs', *European Journal of Special Needs Education*, vol. 21, no.1, p. 85.
- Rye, H 2001, 'Helping Children and Families with Special Needs: A Resource Oriented Approach Article', in *Education Special Education: An Introduction*, Unipub Forlag, Oslo, pp. 65-130.
- Savage, TV 1999, *Teaching Self-Control Through Management and Discipline*, Allyn and Bacon, Boston.
- Scott, BJ, Vitale, MR & Masten, WG 1998, 'Implementing Instructional Adaptations for Students with Disabilities in Inclusive Classrooms: A Literature Review,' *Remedial and Special Education*, vol. 19, pp.106-119.
- Scruggs, TE & Mastropieri, MA 1996, 'Teacher Perceptions of Mainstreaming/ Inclusion, 1958-1995: A Research Synthesis,' *Exceptional Children*, vol. 63, pp. 59-74.
- Silverman, D 2004, *Qualitative Research: Theory, Method and Practice*, SAGE Publications, London.
- Stakes, R & Hornby, G 1997, *Change In Special Education: What Brings It About?* Cassel, London.

- 
- Steenkamp, E & Steenkamp, W 1992, *The Intellectually Handicapped Child: A Manual for Parents Teachers and Related Professions*, Butterworth, Durban.
- Stewart, SC & Evans, WH 1997, 'Setting the Stage for Success: Assessing the Instructional Environment,' *Preventing School Failure*, vol. 41, no. 2, pp. 53-56.
- Strauss, A & Corbin, J 1990, *Basics of Qualitative Research Grounded Theory, Procedures and Techniques*, SAGE Publications Newbury Park, London.
- UNESCO 1994, *The Salamanca Statement and Framework for Action on Special Needs Education*, UNESCO, Paris.
- UNESCO International Bureau of Education 2001, *The Developments in Education: The Education System at the End of 20th Century 1990 to 2000-National Report of the Republic of Zimbabwe*, UNESCO, Harare.
- UNESCO 2005, *Open File on Inclusive Education Support Material for Managers and Administrators*, UNESCO, Paris.
- Vygotsky, LS 1978, *Mind in Society: The Development of Higher Psychological Processes*, Harvard University Press, Cambridge.
- Walker, HM, Colvin, G & Ramsey, E 1995, *Antisocial Behavior in School: Strategies and Best Practices*, Brooks/Cole Publishing Company, Pacific Grove, CA.
- Walker, HM & Walker, JE 1991, *Coping with Non-Compliance in the Classroom: A Positive Approach for Teachers*, Pro-Ed, Austin, TX.
- Westwood, P 1997, *Commonsense Methods For Children with Special Needs*, Routledge, London.
- Wikipedia 2008, Developmental Disability, viewed 14 March 2008, <[http://en.wikipedia.org/wiki/Developmental\\_disabilities](http://en.wikipedia.org/wiki/Developmental_disabilities)>.
- Wittrock, MC 1986, *Handbook of Research on Teaching: A Project of the American Educational Research Association*, 3rd edn, Macmillan Publishing Company, New York.
- Wolfendale, S 1993, *Primary Schools and Special Needs*, 2<sup>nd</sup> edn, Cassel Educational Limited, London.
- Yin, RK 2003, *Case Study Research: Designs and Methods*, 3<sup>rd</sup> edn, Sage Publications, California.
- Zimbabwe Government 1987, *The Education Act*, Government Printers, Harare.
- Zimbabwe Government 1996, *Constitution of Zimbabwe*, Government Printers, Harare.
- Zimbabwe Government 1996, *The Disabled Persons Act*, Government Printers, Harare.





## Appendix 1: Letter from the University of Oslo to carry out research



**UNIVERSITY  
OF OSLO**

**Department of Special Needs Education**

P.O.Box 1140, Blindern  
N-0318 Oslo  
NORWAY

Your ref:  
Our ref: 16/07 ST/db  
Contact person: Denese Brittain [d.a.brittain@isp.uio.no](mailto:d.a.brittain@isp.uio.no)

*Visiting address:*  
Helga Eng's Building  
3rd and 4th floor

Date: June 5. 2007

Telephone: + 47 22 85 80 59  
Telefax: + 47 22 85 80 21

**FACULTY OF EDUCATION**

### TO WHOM IT MAY CONCERN:

This is to certify that **CHIDINDI, Ethilda**, date of birth 01.07.1967, is a full-time student pursuing a course of study at the Department of Special Needs Education at the University of Oslo, Norway, leading to the degree of Master of Philosophy in Special Needs Education (M. Phil. SNE).

This is a continuous two-year programme run on the "sandwich" principle, which involves periods of study and field work/research in both Norway and the home country. The student has concluded the initial 11-month period in Norway and will be returning to the home country in July 2007 to continue full-time studies/research until 1 January 2008 when s/he returns to Norway for the final part of the degree. The period of study will be completed at the end of May 2008.

The main responsibility for supervising the research, developmental work and thesis remains with the Department of Special Needs Education, University of Oslo, Norway. However, we would kindly request that the relevant authorities give the student the access required to the schools and educational establishments necessary in order to undertake field work and research. We would also be most grateful for any assistance that is afforded to the student which enables her/him to carry out this work, particularly the use of facilities such as access to telephone, fax, e-mail, computer services and libraries at the various educational establishments.

Yours sincerely

Ass. Professor Steinar Theie  
Academic Head of International Master's Programme  
Department of Special Needs Education

Department of Special Needs Education  
Faculty of Education  
University of Oslo, Norway

Institutt for spesialpedagogikk  
Det utdanningsvitenskapelige fakultet  
Universitetet i Oslo  
Norge



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**Appendix 2: Application letter to Ministry of Education to carry out research**

House Number 4801  
Manyame Park  
Post Office Zengeza  
Chitungwiza

5 June 2007

The Permanent Secretary  
Ministry of Education Sport and Culture  
P. O Box CY 121  
Causeway  
Harare

Dear Sir/ Madam

**RE: APPLICATION FOR PERMISSION TO CARRY OUT A RESEARCH IN  
YOUR PROVINCE**

I am writing to seek permission to carry out a research in Harare Province and particularly in Chitungwiza District. My topic is: INDIVIDUAL ADAPTATION OF INSTRUCTIONAL STRATEGIES AND THE LEARNING ENVIRONMENT FOR STUDENTS WITH DEVELOPMENTAL DISABILITIES: CHALLENGES FACED BY TEACHERS.

I intend to carry out my pilot study in Glen Norah District and the main research in Chitungwiza District. My research will focus on Special Classes and Resource Units.

I am a student at the University of Oslo, studying for a Master of Philosophy Degree in Special Needs Education (See Letter attached from The University of Oslo).

Yours Faithfully

Ethilda Chidindi



### Appendix 3: Permission to carry out research from the Ministry of Education

all communications should be addressed to  
 "The Secretary for Education Sport and Culture"  
 Telephone: 734051/59 and 734071  
 Telegraphic address: "EDUCATION"  
 Fax: 734075



ZIMBABWE

Ministry of Education, Sport and Culture  
 P.O Box CY 121  
 Causeway  
 Zimbabwe

MRS ETHILDA CHIDINDI

26 Kubvumbi Drive

Zengeza 3

Zengeza

**RE: PERMISSION TO CARRY OUT RESEARCH**

Reference is made to your application to carry out research in the Ministry of Education, Sport and Culture institutions on:

Individual Adaptations of instructional strategies and Learning Environment for students with developmental disabilities: Challenges faced by teachers.

Permission is hereby granted. However, you are required to liaise with the Provincial Education Director responsible for the schools from which you want to research.

You are also required to provide the Ministry of Education, Sport and Culture with the final copy of your research since it is instrumental to the development of Education in Zimbabwe.



**FOR: SECRETARY FOR EDUCATION, SPORT AND CULTURE**



### Appendix 4: Permission to carry out research from Harare Provincial and Chitungwiza District Offices

All communications should be addressed to  
**"THE PROVINCIAL EDUCATION DIRECTOR"**

Telephone : 792671-9  
Fax : 796125/792548  
E-mail : [moeschre@yahoo.com](mailto:moeschre@yahoo.com)



ZIMBABWE

Ref:

Ministry of Education,  
Sport and Culture  
Harare Provincial Education Office  
P. O. Box CY 1343  
Causeway  
Zimbabwe

5109/07.....

ETHILDA CHIDINDI  
26 KUBUKUMBI DRIVE  
ZENGEZA 3  
ZENGEZA

**RE: PERMISSION TO CARRY OUT RESEARCH IN SOME SELECTED SCHOOLS**

Individual adaptation of instructional strategies and the learning environment for students with developmental disabilities challenges faced by teachers.

Reference is made to your letter dated 5 June 2007.....

Please be advised that the Provincial Education Director grants you authority to carry out your research on the above topic. You are required to supply Provincial Office with a copy of your research findings.

*[Signature]*  
FOR: PROVINCIAL EDUCATION DIRECTOR  
HARARE PROVINCE



- The Heads of:
1. Sharon Cohen
  2. St Mary's CPS
  3. Zengeza 1 High
  4. Budirirai Pt
  5. St. Diocesan
- 2006 Dec 17/23
- 

Be advised that bearer has permission to carry out her research in your schools. It is hoped that you will render her all the assistance she needs in her project.

*[Signature]*  
1. asaramaruto  
16/10/07





**Appendix 5: Geographical position Zimbabwe**



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## Appendix 6: Structure of Observation

### For the Special Class and Resource Unit teacher

School..... Case No..... Teacher's No.....

Teacher's Pseudonym..... Date and time.....

### Instructional Strategies

Item of instruction	Done/ not done	With / without adaptation	Comments if any
Individualization of instruction			
Concretization in teaching			
Step by step guidance			
Mediated teaching			
Task analysis of content			
Content sequencing			
Content differentiation			
Motivation			
Language of instruction			
Lesson introduction			
Mediated teaching			
Class interaction			

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## Environmental Adaptations

Aspect of the learning environment	Observed/ not observed	Adapted /not adapted
Furniture arrangement		
Sitting arrangement		
Class Displays		
Class ventilation		
Class: teacher/pupil ratio		
Proximity of toilets and door handles		
Ramps for wheelchair users		
Maintaining cleanliness and order		

### Key

The investigator will observe and mark the appropriate box whether the aspect of instruction **is present**, is **adapted** or **not seen**.

The **absence** of any aspect of instruction and or adaptation would mean the lesson was impaired.

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## Appendix 7: Transcription of data from one selected teacher

### Key for the transcription of data

! High pitched voice

Words in *Italics*: Description of event

Unbracketed words Direct speech

Question ?

School= s

Special Class=SC

Teacher=Tr

Resource unit=RU

Mathematics=M

Shona=Sh

English=E

Line Ln

Time=Tm

<b>Sign/Abbreviation</b>	<b>Meaning in the transcription</b>
.....	Unfinished\inaudible sentence/speech
( )	Translated speech in brackets
!	High pitched voice
?	Question
S	School
SC	Special School
Tr	Teacher
RU	Resource Unit
M	Mathematics
E	English
Ln	Line
Tm	Time
Ppl	Pupil
§	Pause

**School 1****Case One****Teacher's given Number...2****Teacher's Pseudonym .... Ethy****Subject: Mathematics****Time: 14.30-15.20****Topic and Concept: Varied according to the children's operational levels****Class Special Class**

**Tr:** We can read while we wait for the books and counters. *Teacher distributes books to the pupils as she gives the instruction.*

**Tr:** Oliver's group please can you come nearer? Where are your counters? Take your counters with you we want to use them. *Teacher goes to the storeroom to pick up more books.* Right! We want... we want some...eh -h, please sit down we want to start right away. *Teacher saw that the children were not settled and tries to get them settled and start working.* We start working on our sums; each one of you should be counting. Bring your counters here, &.. I said bring your counters. When you all have your counters please tell me so that we can begin together. Now we can start counting! Take one counter... another one! I mean one!!! Eidel! Take one more counter. Linda did you put two counters? *Teacher is continuously encouraging the pupils to use their counters as they work.* Eidel lets count. *Teacher is taking the children step by step. She is ensuring that all the children are working and don't get lost. They are taking counters one by one. The teacher is also sitting to the level of the children as she guides them.*

**Eidel:** One-e, two-o, three-e, four-r. *Dragging as he counted*

**Tr:** Take 4 counters. *She politely encourages him to add more counters.* Please do not take other peoples counters take from there. I said don't disturb Keith he is busy.

**Tr:** We can now put our counters together, put them together lets see how many they are altogether!

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**Tr:** We hear from Michael, how many did you get, you can count) *Michael counts.*  
*Teacher is repeating the instruction several times to make sure each one in the group gets the instruction.*

**Michael:** One, two, three, four, five, six, seven, eight, nine, ten.

**Tr:** Yes!

**Tr:** How about you, how many do you have? *She moved to another pupil.*

**Ppl:** Ten.

**Tr:** How about you?

**Ppl:** Thirteen.

**Tr:** You did not get the correct answer, why, we start counting together. Some of you have too many counters. Yours are too many, how did you count.

**Tr:** Start counting, don't take from the side take only these. *Then she guides the child in each step to see where the child went wrong.*

Right.... Take 2,.... take 1.... and take 4....., right now you can put them together.

**Ppl:** One, two, three, four.

**Tr:** Now count, Now you can count all of them.

**Ppl:** One, two, three, four, five, six, seven.

**Tr:** Right, I think now you are ok. Who can show us the number 7 on the number line  
*repeats the instruction*

**Ppl:** There it is!

**Tr:** Please come closer; show us the digit 7 on the number line. We can't find the chalkboard ruler, just use this small ruler we do not have a long ruler.

**Tr:** Tha-a –a a t's right! There it is. We have worked with 7, isn't it?

Have you seen that? So now, you can take your books and start writing isn't it.

Class: Yes!

**Tr:** Now I want to work with the group, which is working on addition with carrying.  
Can I have the duster please? *One student brings the duster.*

**Tr:** Lets stand up! Up, up! We are working on addition with carrying. I just want to give you one example then you go and work on your own. Let us start the addition.

Right, four plus seven, Right,  $4+7$ , what do we get?

**Ppl:** Eleven!

**Tr:** Yes! So what do we write here?

**Ppl:** One, carry one.

**Tr:** Yes, we write 1 and carry 1. The 1 that we carried, we put it on top of these numbers so that we don't forget it. Then we add 1+2

**Ppl:** Three!

**Tr:** Three plus three.

**Ppls:** Six!

**Tr:** Yes, then we write six. Please don't forget to write the 1 that you carry so that you don't forget it. You then add it to the numbers in the next column isn't it. So then you can start working on the sums that I put on your cards.

**Ppl:** Teacher, Chiedza is spitting on others! *Teacher response by giving a non verbal communication instructing them to stop what they are doing*

**Tr:** You can start working now. You can have your cards with you.

**Tr:** Right, the next group is the group that is working on multiplication. Right..., Right we also need some counters. *Teacher describes that they want to do the multiplication game*

**Ppl:** Teacher, you have taken our card. *The teacher response by simply giving back the card to the pupils.*

**Tr:** Take many counters. I want you to be able to work by yourselves.

**Ppl:** How many can we take...How many can we take? *Pupils ask the exact number of counters which they need.*

**Tr:** So now what I want you to do is....I want you to work out three times four using your counters. We want to work out these few sums. Just show by using your counters then we can talk about the answer later. Right! I want you to ask me where you do not understand is that not so?

**Ppls:** Ye-e-es! Three times four? *Pupil discovers that she has understood what the teacher expects from her.*

**Tr:** Ok, ok do that as group work. Group work, Ok, I want you to work in your groups. Work on the table of four. Make three sets with four objects in each set.



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Three sets! Then put four objects in each set. *Teacher is following up the children in each step and guides them to the next step*

**Tr:** Right very good. Now we can join the sets.

*Tr: finds two children who did not get it right and encourages them to start all over again. Start again! Start again! Start counting again!*

**Ppls:** One, two, three, four, five, six, seven, eight, nine, ten, eleven, twelve. *Children count the counters again and got 12 counters.*

**Tr:** We count together, yes that's right. Three times four? Three times four? It gives what? Three groups four. It is equal to what? Three multiplied by four. Is equal to what? *Teacher has a tendency to repeat the question several times before the children respond*

**Ppls:** Twelve!

**Tr:** Right I want you to take your cards and start writing. You can take your cards and start working on your sums and write.

**Tr:** *Teacher moves to another group.* Right, this group I want you to take away the books that you have been using. *Teacher talks in a way that gives the children and the teacher togetherness.* Take care, your book is not properly held.

**Ppl:** *A pupil reports to the teacher a pupil who has taken the teachers book.*

**Tr:** This group, have you written the work that I had given you earlier on?

**Ppl:** Teacher, we have finished working on this card.

**Tr:** Can you take your working boards, can Joy also take her board. *One pupil asks teacher about the date.* Don't worry. We use the date that we wrote before. For the moment, we can stop the additions isn't it? I would like you to write on those boards. What I will do to you is that I will call out a number, and then you write that number for me on the board that you have. After writing the number, I would like you to write the equivalent number of the objects in the set).

**Ppls:** Yes!

**Tr:** Right, can you write the numeral 2? Do you remember the number?) Yes, you remembered very well, now can you write the two objects in the set. Put two eggs in that set please. Put two objects like eggs in the set. And You! And you too! *She goes*

*round the group, giving the same instruction to individual children, showing by hand and the place where the child is supposed to write.*

**Ppl:** Do I write in this set?

**Tr:** Yes, lets do it together. Draw a circle. Draw two eggs in the set! Yes, let's try another set again. Draw another set! Make another circle! Make another set! I want you to put three sweets in that set. Make sure there are three sweets in each set. *The slower group has been given less challenging work, and teacher is guiding them slowly and so closely.*

**Ppl:** Three.

**Tr:** I want each one to talk aloud as you work so that I also hear what you say.

**Ppls:** On-e-e two-o-o three-e-e-e.

**Tr:** Right. Very good! Very good! Mary has drawn sweets with some holders, they can be sweet isn't? *Trying to encourage her to put more effort and crack some joke.* You can write the 3 on the side of the set.

**Tr:** Can you write your own three and let me see. This number is 2, it is similar to this one isn't, so write another one. Remove one object from the set Remove it completely. *Pupil had just covered the object and left inside the set*

**Ppl:** Remove the sticks completely.

**Tr:** How many sweets do we want in this set?

**Ppl:** Three.

**Tr:** You put 3 sweets, in this set. *Teacher further illustrates how the pupil can see that there are only three, does it in a jocular manner*

**Ppl:** Please sit down. Can't you see that you are disturbing the video camera?

**Tr:** Now I put your work on the board for you to do. You just write in the set. How many eggs in the set, we count together.

**Ppl:** One.

**Tr:** Yes, One! If they are 2, then you write 2. Come and show me.

**Ppl:** They are 2.

**Tr:** How many objects are there, there is nothing isn't it.

**Ppl:** Zero. Zero, Zero, there it is.

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**Tr:** Then you can write the digit zero for me...zero. ...How about in this set, how many objects are there?

**Ppls:** Three.

**Tr:** We count together, you show me the numeral three and then you write the number here.

**Child:** Here!

**Tr:** So that's exactly what you do.

**Ppls:** Ok-k-k now I understand. *Another pupil bursts into laughter there is a friendly learning atmosphere*

**Ppls:** *working as a group.* Three sweets... three Can I put the sweets at the centre of the circle?

**Ppl:** Precious! There is no harm  
Here is your book.

### **Follow up interview Teacher Ethy**

**Interviewee :**.....( inaudible) Lack of resources....our major challenges are the lack of resources. Some of the disabilities.....we also have problems with the type of disabilities for the children that we have. The environment also poses a lot of problems. You find that when it comes to going to the toilets, with the disabilities that the children have... ahahh! There is need for some adjustments on the doors because some children cannot reach for the door handles. We have another child with such a problem, but today he is absent, but you could have seen that our toilets they don't accommodate children with disabilities. And the toilets are even far away, they are distant. That's another challenge you see.

**Interviewer:** What's the major challenge with the toilets?

**Interviewee:** Right, you find that the pupil with a disability walks about 100metres to get to the toilet whereas in group 'A' schools the toilets are within the classrooms. The major problem lies with the distance of the toilet from the class; you find that the children have to travel a distance of about a 100 meters to go to the toilet. That means the pupil wastes time going to the toilet. It means the pupil needs time, especially

these children if you leave them to go the toilet on their own, they don't even understand the importance of coming back to class early. The children take too long to come back from the toilet. I sometimes end up leaving the rest of the group to accompany one pupil to the toilet. I mean them. You end up leaving the other group, to follow one pupil; he is already playing outside with something. He is easily attracted. They are easily attracted by some other things and they forget about the class, I the teacher end up leaving the rest of the class following the one pupil.

**Interviewer:** What do you say about the type of disabilities your children?

**Interviewee:** Oh yes, I think placement criteria is not properly considered. I think that the problem lies with the placement itself, the schools psychological service sometimes place children with severe mental retardation here. We do not have the facilities for these children here. That child needs specialized provision; you end up just occupying the child with inappropriate work, just to assist the child, the parent because you can't just have to assist. We sometimes end just doing what is not suitable for the child just to occupy the child. And another challenge is that enrolment itself, the classes are too big, e.g. class we have 21 when you are supposed to plan and teach individual children. The enrolment is too big and yet they expect us to plan for individual children. You end up failing to meet the workload. It becomes so very difficult to beat the workload.

**Interviewer:** So how do you manage with such a big class like that?

**Interviewee:** the major problem is that we work with a prescribed syllabus because the children are supposed to sit for an examination at the end of their grade seven. You end up rushing the children to cover some chapters of the prescribed syllabus. Individualization is never practical with such a big workload. It will then be difficult to do any adaptation and individualization.

**Interviewer:** Do you have anything to add to this madam?

**Interviewee:** Ya-a, we have another problem... these children when it comes to afternoon session they easily tire, or become tired. It is because we have a shortage of classrooms we have to session, so it affects our children. Sectioning affects the

learning of our children, they cannot concentrate in the afternoon, and we have a shortage of classes so we have no other option.

And another thing is the quality of the provision that we get. Like, as you can see the floors are worn out, they are chapped off, they are dusty; we don't get floor polish to smear. If we have activities that we need to do on the floor, its difficulty because the floor is dirty and some children have allergies which is not suitable for this. The learning environment is not good enough, the floors are dusty, and they have potholes so much that we can't adapt the environment, we can't do other activities which may need us to use the floor.

...In terms of the provision of books they do not consider us, they give us torn books, and we have to put the pages together so that children can be able to use them. I mean its extra work which hinders individualization in teaching. These are some of the challenges, we can't meet the needs of the individual learners if we have such big workloads, big class where we may need to individualize.