UNIVERSITY OF EDUCATION, WINNEBA

DEPARTMENT OF SPECIAL EDUCATION

THE USE OF DRAWING AND PAINTING IN DEVELOPING FINE MOTOR SKILLS AMONG LEARNERS WITH MILD INTELLECTUAL DISABILITIES AT DZORWULU SPECIAL SCHOOL IN ACCRA

BY

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STUDENT'S DECLARATION

I, Mabel Naa Amorkor Thompson, hereby declare that except for the references to other people's work which have been cited. This dissertation is the result of my own research and that it has neither in whole nor in parts been presented elsewhere.

Signature……

Date……

SUPERVISOR'S DECLARATION

I hereby declare that the preparation of this dissertation was supervised in accordance with the guidelines and supervision laid down by the School of Research and Graduate Studies of University of Education, Winneba

Supervisor:

Samuel Hayford (Ph.D)

Signature…….

Date…….

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DEDICATION

This work is dedicated to my husband, Ernest Nii Lantei Thompson and lovely children Cecil Harriet, John and James Thompson for their support, understanding and commitment during the study.

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ABSTRACT

The study is focused on using drawing and painting in developing fine motor skills of learners with mild intellectual disabilities at Dzorwulu Special School in Accra. The total population for the study was one hundred and seventy seven (177). However, a purposive sampling technique was used to sample four (4) teachers each having four (4) learners with mild intellectual disabilities. The study used semi-structured interviews and observations as methods for data collection.

Analysis of the data revealed that painting and drawing enabled the development of fine motor skills of learners with mild intellectual disabilities. Also, acquisition of fine motor skills affords learners with mild intellectual disabilities the opportunity to live independent lives as well as making them mobile, flexible and building of joints and muscles.

Demonstrations, role play, and participatory exercise are some of the strategies teachers adopted in developing fine motor skills of learners with mild intellectual disabilities using drawing and painting. Teachers complained of non availability of tools and materials for teaching drawing and painting in developing of fine motor skills of learners with mild intellectual disabilities at school.

It was recommended that teachers intensify the use of drawing and painting to develop the fine motor skills of learners with intellectual disabilities. The government and other

stakeholders of special education should provide the school with tools and materials needed for drawing and painting.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The ability of learners with mild intellectual disabilities to live independently is one issue that poses critical challenge to educators, parents and society as a whole. Such concern has become essential because of the realization that people with mild intellectual disabilities were, after all, capable of some of learning and training that could make them independent (Avoke 2001).

The Ghana Education Service (GES) under the special education unit of the University of Education Winneba has designed a learning process that guides special education teachers on possible ways of developing the fine motor skills of learners with intellectual disabilities including those whose conditions are mild. Fine Motor Skills is an Art which basically teaches students how to use their upper extremities to operate simple appliances and accessories for pre-vocational activities (example of such activities involves pointing and touching, mouldling and shaping, drawing and painting grasping and releasing etc) and communication.

Ghana Education Service (GES) has pointed out that development of fine motor skills as fundamental because the skills enable learners with mild intellectual disabilities the urge to perform daily living activities. Developing fine motor skills is considered essential for different situations in the life of learners with mild intellectual disabilities. Learners with mild intellectual disabilities require some kind of exposure and practice to develop dexterity in performing many fine motor tasks. Mauro (2002)

confirms this by stating that a learner who is or not exposed to the development of fine motor skills will have deficits in tasks such as cutting with scissors, colouring, drawing, scribbling, writing and many others. According to Woodword and Swinth (2002) learners with mild intellectual disabilities whose hands do not seem to work together in the way that they should become frustrated and may resist activities that require them to coordinate all the muscles and joints in their hands and fingers. Early interventions therefore develop learners' interest, their self-esteem and reduced stigmatization

Moreover, it has also been observed by Shand (2004) that weaknesses in fine motor skills can affect a child's ability to eat and write legibly; Avoke (2005) has indicated that "writing requires the efficient development of fine-motor skills" (p.139). It has also been proven that learners who are welled grasped with fine-motor skills have the ability to hold pencil and other objects firmly. Avoke (2005) further suggested that, activities like clay work, drawing and painting and bead making are very useful activities for fine-motor skill development. Notwithstanding the mechanisms and the importance of this programme in the school curriculum adequate provisions have not been made to use painting and drawing to improve the fine-motor skills for learners with mild intellectual disabilities.

1.2 Statement of the problem

Many learners with mild intellectual disabilities remain in special schools for a very long period, usually over ten years without acquiring functional fine motor skills to enable them to live independently.

From the researcher's experience as a special educator at Dzorwulu Special School over the years, many learners have difficulty participating in manipulative skills. Most learners with mild intellectual disabilities have difficulty holding objects and writing. Also, some learners with mild intellectual disabilities do not have the ability to live independent lives by carrying on simple activities such as dressing and playing games that involves catching and throwing and many others. This is as a result of less attention been given by teachers to the training of the students in activities involving their hands. Painting and drawing has the potential of enhancing the fine motor skills of learners with mild intellectual disabilities (Avoke 2005). Although the curriculum of special education makes provision for the teaching of fine motor skills using drawing and painting, most teachers still do not engage students in these activities because of inadequate teaching and learning materials.

1.3 Purpose of the study

The purpose of this study was to determine the use of drawing and painting for the development of fine motor skills of learners with mild intellectual disabilities. It was also the purpose of the study to identify the strategies teachers use in drawing and painting for developing fine motor skills of learners with mild intellectual disabilities. Furthermore, the study uncovered the challenges teachers face using drawing and painting for developing fine motor skills of learners with mild intellectual disabilities.

1.4 Research questions

The study was guided by instructive questions that guide the researcher to understand and achieve the objectives of the study. The following are the questions stated:

- How do teachers use drawing and painting to develop the fine motor skills of learners with mild intellectual disabilities?
- What strategies would teachers use in drawing and painting for the development of fine motor skills of learners with mild intellectual disabilities?
- What are some of the challenges teachers face in using drawing and painting to develop the fine motor skills of learners with mild intellectual disabilities
- How are learners with mild intellectual disabilities benefiting from the use of drawing and painting for the development of fine motor skills?

1.5 Significance of the study

Findings of the study would enable teachers appreciate the importance of using drawing and painting for development of fine motor skills of learners with mild intellectual disabilities. The study would expose the challenges special educators face in using drawing and painting as a means of developing fine motor skills of learners with mild intellectual disabilities, which would remind educational authorities and the

government the need to make enough provisions in the supply of logistics for special educational purposes.

1.6 Delimitation of the study

The study was limited to only teachers and learners with mild intellectual disabilities at Dzorwulu Special School. The school was purposively chosen because the researcher has been a teacher in this school for eight years till date and hence has become familiar with teaching and learning environment of the school.

1.7 Limitations

The researcher was constraint with getting the time and attention of teachers for the study due to their busy schedules at the school. This resulted in delays in data collection. Also, the researcher was faced with challenges in assessing relevant documents and literature for the study.

1.8 Definition of terms

For the purpose of this study, the following terms are operationally defined as follows:

Fine-motor-skills: - Generally refer to the small movements of the hands, wrists, fingers, feet, toes, lips and tongue. Shand (2004) defines fine motor skills as small muscle movement in the hands and fingers.

Intellectual Disability: - One who has a mental impairment that substantially limits his/her participation in one or more life activities. It also means a significant sub-average in general intellectual functioning existing concurrently with deficits in adaptive behaviour and manifested during the developmental period (Intellectually Disabled Persons Services Act, 1986). A person's intellectual functioning can be assessed by formal intelligence tests which will give an Intelligence Quotient or IQ. There are "levels" of intelligence which are also based on these assessment results. People who are at or below 70 are labeled as having a "borderline or mild' intellectual disability. The next level is "moderate", then "severe" and "profound". These labels are "clinical" definitions which define an IQ level and corresponding level of intellectual functioning. People who have any level of intelligence malfunctioning is likely to have limitation in social life, personal care, self-governance, work, health and safety Gregorlo Katz, Eduardo-Pronce (2008).

Drawing: a picture by means of lines on a surface using any writing objects such as a pencil, crayon and many others. It is also observed that many learners with mild intellectual disabilities do not have strength in their hands to hold small objects, it is therefore expedient to make them use thicker maker or primary crayons.

Painting: - It is the activity of using paint or colours to create a picture. Place a variety of forms (eg. blocks, felt, paper, string, yarn, cereal, cotton) on shapes and color the outlines or spaces to give it a picture.

1.9 Structure of the study

Chapter one introduces the study with background information, problem statement, objectives of the study and the purpose of the study. Additionally, chapter one elaborates on the delimitation and limitations of the study as well the definitions of terminologies for the study area.

The second chapter, offer a comprehensive assessment of the theories and existing literatures about the topic under study. Chapter three considers the research methodology used to undertake the study. It deals with the research instrumentation, approach, research design sampling methods, methods of data collections, access and procedures for data analysis.

Chapter four captures the presentation and discussion of findings of the data gathered, whilst the last chapter (chapter five) outlines the summary, conclusion and recommendations of the research study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the relevant literature related to the study of using drawing and painting in developing fine motor skills of learners with mild intellectual disabilities. The review has been organized under the following:

- Motor skills development
- Fine motor skills development
- Drawing and painting for learners with mild intellectual disabled
- Strategies for developing fine motor skills of learners with mild intellectual disabilities using drawing and painting.
- Benefits of fine motor skills to learners with mild intellectual disability.

2.2 Motor skills development

Motor skill development is a well laid down educational programme for the development of learners with mild intellectual disabilities to build their joints for coordination and the ability to hold objects. According to Amorson (2001), motor skills are actions that involve the movement of muscles in the body. Furthermore, Liddle and Yorke (2003) point out that motor development consist of the ability of

learners to imagine a mental strategy to carry out a movement or an action, for instance, how to get on top of a table, how to move from one point to the other and overcome some obstacles or learning how to skip. These authors explained that most learners develop some preconscious planning in the sequencing of movements, including how the body and limbs coordinate, the amount of strength required and the necessary steps needed to achieve a specific goal.

However, Kurtz (2003) noted that a person with that developmental coordination disorder has a hard time doing things like riding a bike, holding a pencil and throwing a ball. People with developmental coordination disorder may also have a hard time completing tasks that involve movement of muscle groups in sequence. Such persons might be unable to open and close doors, get out a jacket and put it on.

According to Wells (2001), motor skills can be divided into two groups: gross and fine motor skills. The gross motor skill involves larger movement of arms, legs, feet or the entire body(crawling, running and jumping) whilst the fine motor skills involves smaller actions, such as grasping objects between the thumb and a finger or using the lips and tongue to taste objects. Furthermore, both types of motor skills usually develop together, because many activities depend on the coordination of gross and fine motor skills. Again, Edwards, Buckland and McCoy- Powlen (2002) suggested that fine motor skills cannot develop smoothly without the concurrent development of gross motor skills. According to Edwards et al, typically, development proceeds in a cephalo-caudal (head to toe) and proximal-distal (moving from the body parts closet to the trunk to that furthest away) pattern. Likewise, without well developed motor skills which enhance hip and trunk musculature, sitting

upright in a chair becomes quite challenging. Haskell and Barrett (1993) noted that motor skills can be taught of as the real-life everyday motor activities, with examples as independent living skills, recreational activities such as walking, reaching and grasping. Motor abilities are the components of motor skills, and the basic underlying physical attributes that contribute to the performance of motor skills. According to Haskell and Barrett such abilities are directly related to physical attributes such as strength, speed, flexibility or physical fitness. Another class of abilities is those related to attributes such as balance, co-ordination, dexterity, timing and speed of reaction to various stimuli as well as the ability to perform motor skills effectively depends on a combination of these two types of abilities.

In the view of Haskell and Barrett (1993), motor co-ordination is used to refer to two aspects of movement, the intra-limb co-ordination and the inter-limb co-ordination. For example, with intra-limb coordination as in walking, it is important that the lower leg and the thigh maintain the proper relationship to each other throughout the stride cycle whilst the inter-limb co-ordination defines the extent to which different limbs are moved with the correct spatial and temporal relationship to each other.

Moreover, Doman and Delacato(1974) cited in Haskell and Barrett argued that, learners who do not go through stages of motor developments because of damage to their central nervous system might find it very difficult to progress normally in life. Furthermore, Edwards et al (2002) postulate that when teachers properly include and encourage the development of motor skills it will provide a solid base for the development of fine motor skills especially among learners with mild intellectual disabilities.

2.3 Fine motor skills development

Fine motor skills can be defined as small muscle movements: those that occur in the finger, in coordination with the eyes. Fine motor skills are developed through activities that involve cutting, drawing and painting and coloring. For instance, activities which may include cutting off corners of a piece of paper, cutting along curved lines ,cutting lines with a variety of angles ,cut figures with curves and angles and cutting clay with blunt scissors can help build up joints of learners with intellectual disabilities to hold objects firmly. Drawing, coloring and tracing objects could also be use to develop the learners' ability to perform self care activities such as buttoning, lacing, tying, fastening snaps, locking and unlocking doors. Furthermore, fine-motor skills tries to incorporate activities like dress-up to teach zipping and buttons; card creations to practice writing or tracing skills; cutting and pasting to make a creation other than just a plain piece of paper, such role plays serves as stimulus to the children to boost learners with intellectual disabilities the urge to try to do things on their own even without supervision.

According to Mauro (2002) fine motor skills which refer to small muscle movements require a high degree of control and precision over a range of materials and tools. Wilms-Floet (2006) explains fine motor skills as skills consisting of movements of small muscles that act in an organized and subtle fashion, for instance, the hands, feet and muscles of the head as in the tongue, lips, facial muscles to accomplish more different and delicate tasks. Wilms-Floet further explains how fine motor skills can be the basis of coordination, which begins with transferring from hand to hand crossing the midline.

She concluded that many learners who have difficulties with fine-motor skills tend to have difficulties in articulating sounds and words.

For effective development of fine motor skills Head start Information-(2009) indicated that learners must be trained to learn how to grasp, hold, and manipulate small objects and tools and as they gain eye-hand coordination, they learn to direct the movements of their fingers, hands, and wrist to perform more complex tasks. Furthermore, with access to appropriate materials and activities, learners can practice and refine their fine motor skills during a variety of experiences, while performing self-help routines. For examples, learners might draw and write with markers, manipulate computer mouse, put on and take off dress-up clothes, and even use magnifying glass to examine an insect when learners' fine motor skills are well developed.

Fine motor skills activities are the best way to ensure proper development and practice and also promote the most functional use of learners' hands. Normal development demands that learners are able to accurately and effectively use the small muscles in their hands, and these intrinsic muscles will be used for the rest of their lives and for essential functional activities.

Again, Essa, Young, and Lehne (1998) have indicated that fine motor skills when developed help in the domain element of the learner. According to Essa et al., strength, control and coordination of hand, finger and wrist movements are part of fine motor development; strength is needed to cut with scissors, control allows for buttoning and zipping, coordination is used to put together puzzles and thread beads on laces. To these authors development of fine motor skills also relies on sensory

awareness. Learners use their senses to collect information about objects in the environment and use this information to coordinate movements.

According to Essa et al., learners use their fine motor skills in relation to several other domains. For example, they:

- Build their understanding of mathematical concepts by sorting and manipulating objects, including geometric shapes; by making patterns with stringing beads; and by using measuring tools.
- Experiment and make scientific discoveries by handling collections, filling and emptying containers at the sand or water table, exploring a new software program, and holding and looking through magnifying glass;
- Explore language and literacy by handling books and using writing tools; and
- Express creativity while using rhythm instruments, cuttings and gluing paper scraps, doing finger plays, and using dramatic play props and dress-up clothes

Finally, Craig, Kermis and Digdon (2001), show the importance of fine motor abilities as forming the basis for many of the skills that learners will develop and enhance as they move through life. According to Craig et al., fine motor skills facilitate learners' interactions with their world and serve as essential precursor to the development of early literacy, numeracy and self-help skills such as independent dressing and toileting as well as to participate in a range of more complex activity such as art and craft experiences.

2.4 The use of drawing and painting for developing fine motor skills learners with mild intellectual disabilities

Drawing and Painting is one key exercise that is used to the development of fine motor skills of learners with mild intellectual disabilities. Drawing is about capturing a picture by means of lines on a surface using any writing object such as a pencil, crayon and many others. Painting on the other hand is an activity of using paint or colours to create a picture. As noted earlier, although there are many other ways of developing the fine motor skills of learners with intellectual disabilities, drawing and painting has stood to the test of time proven as one of the best ways of fine-tuning the level of coordination among learners with mild intellectual disabilities. According to Hurlock (1978), the method the learner uses to develop his/her fine motor skill is critically important to the kind of skill the teacher intends to impart. Hurlock notes that while any method may in time, enable the learner to develop a skill, some methods are far more efficient and result in better, quality skills than other methods. He stressed that strategies used in developing learners fine motor skills must be varied for better results. In support, Mayesky (2002) points out that drawing and painting provides an environment which nurtures the development of a positive sense of self and good self-concept in the learner. Further, Mayesky states that drawing and painting needs to be learned in such a way that, it will give the learner a chance to grow and develop fine motor skills. In line with this, drawing and painting should be planned around the developmental needs of the learner.

To draw and paint, one require tools and materials and the basic ones available included pencils , pens, crayons, paper and many others. Raines and Isbell (2003) has

helped in listing hosts of teaching tools and materials that may be required for drawing and painting; crayons, paint knife and paper . Wolf, (1994) also listed some basic tools for drawing and painting as:

- Crayons, felt pens, pastels, water-colour
- Paint knife
- Brushes and brush washer
- Painting surfaces
- Palette
- Razor blade scrapper
- Coloured sticks
- Erasers and sharpeners and many others

The following tools and materials were also stated by Hobart and Frankel (2002) old newspapers, a floor mop and bucket, facilities for drying paintings, paints, acrylic and oils, paper, dried materials and clean water.

Another critical consideration to be adhered to during drawing and painting is the precaution that teachers would have to ensure on their learners. Learners can cause damage to the bodies for instance when using sharp- pointed pencils if not guided, learners can smear paints and can even chew erasers which can cause illness. Raines and Isbell explained that, the best way to use tools and materials for drawing and painting is to consider the learner's safety. For example, considering the nature and

inability of the learner, learners need to be watched closely to make sure they do not eat the paint since most paints are colorings with sweet fragrance.

Again, it is advised that all paints, pencils and colours should be lead free and non-toxic. Raines and Isbell noted further that:

- Learners should be discouraged from walking around with pencils or brushes in their mouths.
- Remove pencil tops when being used by learners to avoid the possibility of choking
- Major spills should be mopped up quickly to avoid the possibility of falls
- Finally hand washing after painting should be supervised

Finally, Hobart and Frankel (2002) are of the view that learners should be encouraged to use varied tools and materials that will make them think of additional items to be used in their drawing and painting activities

Nevertheless, Gilbert (1995) stressed that though learners need constant care and control during drawing and painting yet they should be allowed to do things on their own. For instance some learners may smear paints and colours in their aprons and mess up learning environment, they should just be given the space, this is because at the end of the lesson, learners will clean up the mess, and possibly wash their clothing and this will still improve their fine motor development.

2.5 Strategies for developing fine motor skills of learners using drawing and painting. Fine motor skills will not develop over-night, but with time and practice. Developing skills for drawing and painting require that the teacher engages the learner in series of exercise, role play and demonstration or sometimes it must be done through singing and playing. By so doing the learner catches the concept with ease. Also, according to Brereton and Broadbent (2007) learners' fine motor skills are typically developed when the learner participate in activities such as drawing and painting, cutting and pasting, threading beads, construction just to name a few.

Furthermore, presenting these activities in interesting and different ways can increase the likelihood of the learner with intellectual disabilities choosing to participate and develop their skill. Once their skills are more developed, the more traditional activities will be easier for them to do and the learner is far more likely to participate. They stressed the need to always consider the learners developmental levels when choosing drawing and painting activities; keeping the activities short, simple and fun.

Hobert and Frankel (2002) explain the process that can be used to improve learners' fine motor-skills in three steps using drawing and painting:

- Supplying learners with paper or sketchpad, coloured pencils, markers, paint brushes
- Encourage learners to experiment and play with colours, shapes and designs they can create
- They should continue practice their drawing and painting on things they are interested in, and learners must be appreciated for that as to urge them on.

Gilbert (1995) agrees to the phenomenon of allowing learners to experiment and play with their colours, shapes, lines and designs that they can create. He believes that as it improves in their skills development, more sophisticated water colour activities or oil painting activities should be used to guide and enhance their manipulations.

Hummingbird Educational Resources (2009) also suggested the following method of drawing and painting. According to them, learners should be given the chance to make paints on their own, using the necessary tools and materials. And in the process of making paints, learners can combine powdered colours with some amount of cold water in small bowl, adding starch or glue with water colour, stirring colours and starch to mix up, thickened and smooth. Also, brushes and sponges can be use to make foams. After such process, learners can be given enough space to bring out their own designs, imaginative paintings.

Another activity put forward by Hummingbird Educational Resource allows learners to put a puddle of liquid starch or glue on a paper directly on the table or any smooth surface, learners can put a tablespoon of powdered tempera, or a squirt of liquid tempera directly on starch, there should not be exact measurements, but learners should be aware that with less paint, they get a transparent look and a little difficult with paintings. Afterwards, learners can use brushes, pens, pencils, felt pens, foam net, and other tools and materials to paint on surfaces.

A third activity put forward by the Hummingbird Educational Resource, concentrates on skills in drawing. The first assignment is to ask learners to sort both tools and

materials for drawing and painting (example of such tools and materials included brushes, pencils, crayons, paper etc). The next step is that learners can draw lines, shapes, and patterns using their pencils, use brushes to dip into paints and paint in-between lines, shapes and patterns. A second activity is called 'Finger Painting Fun'. In this activity, learners who may be frustrated using drawing and painting tools can be helped to use their fingers paint directly on serving trays using any of paints and colours provided. Learners should be asked to press a sheet of finger-paint paper onto the painted design on the tray and carefully lift up the paper.

Furthermore, Brereton and Broadbent (2007) suggested the following drawing and painting activities for mildly intellectually disabled learners in developing their fine motor skills as:

- Providing learners with spray bottle (with different coloured liquids) to make a picture.
- Give out drawing tools and materials
- Learners should be instructed and guided to draw and paint vertical surfaces to increase wrist extension and arm strength.
- Learners to use the spray bottle provided to spray vertical surfaces of drawing and painting done to bring out interesting picture.

Additionally, Brereton and Broadbent have identified other activities which are stated in the following steps:

- Provide learners with trays
- Ask learners to put sand, salt or shaving cream provided.
- Learners should spread their sand, salt or shaving cream to cover the tray.
- Learners should finger draw any interesting pattern or design.
- These authors advised that there should always be a demonstration lesson before learners are given the free range.
- Lesson can be repeated by each learner using the items provided (salt, sand, shaving cream).

Brereton and Broadbent (2007) proposed a third activity which is the step by step drawing booklets. According to them, learners with mild intellectual disabilities can have difficulty understanding how to represent something in three-dimensional or in a two dimensional format. They lack imagination, which can make it difficult to envisage how a circle, some dots and a line might be able to make a face. Consequently, learners with mild intellectual disabilities should be provided with a small booklet with the steps for creating a simple picture. For example "I can draw a face" booklet. The booklets would be laid before them whiles the teacher guides them to:

- draw a circle for the face (with just a circle depicted).
- show two dots for eyes (with a circle and now two dots added).
- draw a long line for the nose (with a circle and now two dots and a line added).

- brush some squiggles for the hair using the pencil (with a circle, two dots, a long and a curvy line and squiggles added).
- paint the whole face drawn with a finished symbol on the page).

Another strategy of developing fine motor skills of learners with mild intellectual disabilities explained by Evans (1998) permits the teacher to first of all supply the learner with paper and/or a sketchpad, coloured pencils, marker and drawing books. Secondly, the learner is provided finger-paints and or water colours with appropriate paper and paintbrushes, next, the learner is allowed to experiment and play with colours, shapes and designs that he/she can create. Lastly, learners should be encouraged to move toward more sophisticated water colour activities or oil painting activities whilst learning is done on repeated levels by making lesson fun and interesting.

According to Evans, learners must be keenly observed on which hand he/she uses. They should be stopped whenever there is frustration and another task introduced until fine motor activity is improved.

Also, Benbow (1999) suggested that sitting posture is very important in improving learners' fine motor skills. In drawing and painting, positioning is very important for engagement in fine motor tasks. According to Benbow, learners' seat should allow them to sit comfortably with feet placed firmly on the floor. Learners' hips, knees and ankles should be at 90° angles with the torso slightly forward. The desk height should be approximately two inches above the elbows with his/her arm at rest at his side, if

the learners chair is tall, leaving the feet dangling, a make shift footrest should be made out of old telephone books, bounded together with masking or strong tape should be created to improve added stability for good mobility of the arms, hands and fingers.

Calder (2006) noted that learners often use pencils, crayons and markers before their hands are ready for these items. This can result in the learning of inefficient pencil grasps that may become problematic. To encourage the development of proper grasp patterns, learners should be given:

- Writing tools that promote the development of fine motor skills (short crayons, egg-shaped chalk, charcoal and markers with horizontal and vertical lines.
- Require the learner to use his/her skill side of the hand rather than the entire hand.
- Finally encourage learners to draw and colour on a vertical surface, stressing that learners place their wrist at the correct angle to promote palmer arching.

2.6 Benefits of fine motor skills for learners with mild intellectual disability

Researchers and educationists have recognized that when the fine motor skills of learners with mild intellectual disabilities are developed, they can perform simple daily life activities without resorting to any external assistance. This makes it possible for them to integrate well into the society and reduce the amount of workload they would have emburdened teachers or people around them.

Ford 'in Get Ready For School-(2002)' stated that learners who may develop fine motor skills after a long period of constant practice with drawing and painting may generally demonstrate quite amazing interest in other abilities in hand dominance, pincer grasping and tripod pencil grasping.

According to Megabrands (2009), acquisition of fine motor skills gives the learner the opportunities to benefit from muscle movement and hand-to-eye coordination. They break the benefits as: see, move, notice, cut, paste, tie, snap, carry, open, close, hold, touch, sit, stand, feel, write, choreography, jump, bounce.

According to Megabrands, developing fine motor skills requires patience, practice and determination, however, when well developed, learners with mild intellectual disabilities becomes creativity and imaginative, able to reason and solve problems, focus and attentive. Developing learners with mild intellectual disabilities fine motor skills give them the confidence and self-esteem and develop the skill in writing.

Megabrands (2009) outlined the details of benefits as follows:

Creativity and imagination

When learners become creative and imaginative as a result of development of their fine motor skills, they acquire the ability to see, move, notice, cut, paste, tie, snap, carry, open, close and hold objects. Others are: to touch, sit, stand, feel, write, choreography, jump and bounce.

Reasoning and problem-solving

According to Megabrands (2009), a well developed fine motor skill affords learners with intellectual disabilities the ability to be mentally active and interprets sensory information while playing expands their ability to reason and problem-solving. Also, learners with mild intellectual disabilities gather encouragement to move accurately and combine interpretation with prior knowledge, thereby discovering learning and executing strategies to produce desired effects.

Focus and Attention

Megabrands (2009) have indicated that simple process of play induces learners to become engrossed in sequential tasks, planning an activity at hand. This type of attention builds learners in every challenge they encounter in life, making learners mind to stay focused and attentive although they have short attention span.

Colour and Shapes

In terms of colour and shapes, Megabrands contend that learners with mild intellectual disabilities perceive shapes and colours through observation, touch and taking objects into their hands. This enables them to discover, experiment, build, shout, clap and the ability to express themselves descriptively.

Confidence and Self- Esteem

Confidence and self-esteem according to Megabrands encourages learners with mild intellectual disabilities to engage in activities that bring to light their ability to act independently, assume responsibility and take pride in their accomplishments. The benefits are to be active and curious, grow, search, learn, and triumph over challenge.

Reading and writing

Development of fine motor skills allows learners with mild intellectual disabilities to develop picture reading abilities and stimulates their scribbling and writing skill and the benefits involves the ability to repeat, mimic, listen, mark, print, read, experiment, pay attention, role-play, scratch, question, erase, listen, laugh. In terms of inspiration it includes signs, symbols, fingers, brushes, crayons, pens, papers, colouring books, cardboards.

Powell (1991) affirmed that empowerment of learners with mild intellectual disabilities with skills acquisition, leads to societal benefits through their activities, greater self-sufficiency and is less dependent on government. According to Powell learners with mild intellectual disabilities may have increased freedom to pursue their own activities and finally stressed family will have the opportunity to see their loved ones independence.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter discusses the various methods used in collecting data for the study. It involves the research approach, design, population, sample and sampling technique, description of instruments, access and data analysis.

3.2 The approach

This study is focused on the use of drawing and painting in developing fine-motor skills in learners with mild intellectual disabilities in Dzorwulu Special School. To

determine the direct responses from the teachers, a qualitative approach was used to conduct the study. This is because as indicated by Moustaches (1990) human behavior is principally determined by codes of meaning which are socially negotiated and transmitted, thereby making data collection more functions of interaction with the people directly experiencing the problem. According to Sarantakos (1998) the use of qualitative approach in a study brings the researcher closer to reality thus, there is close interactions between researcher and respondents. Qualitative studies lend themselves to an in-depth verbal description of a phenomenon. Methods in qualitative research are 'open' hence flexibility and the researcher can make adjustment during data collection to suit the emerging trends. Additionally, Macmillan and Schumacher (1997) are of the view that qualitative approach to research is where data collected are in form of narration and figures, the goal of the approach is to capture the richness and complexity of behaviour that occurs in natural setting and analyze inductively the data to generate findings. Moreover, Alhassan (2006) postulates that, qualitative research involves the purposive collection of data that will answer the research question.

In terms of data collection, Frankel and Wallen (2003) state that qualitative researchers use three main techniques to collect and analyze their data: observing people as they go about their daily activities and recording what they do; conducting in-depth interviews about ideas, opinions and experiences and analyzing documents.

3.3 Research design

A research design refers to a plan for selecting subjects, sites, data collection procedures to answer proposed research questions Montgomery, (1991). The researcher used a case study design. A case study was chosen for this study because it

afford the researcher the opportunity of discovering a complete description of the phenomenon under study and provides objectivity and to have an in-depth study within a limited time frame. This is in line with views of McMillan and Schumacher (1997) who posited that case studies can provide a detailed description and analysis or processes or themes voiced by participants in a particular situation

Avoke (2005) citing Robson (2002) and Gall et al. (1996) states that case studies are a strategy for doing research, which involves an empirical investigation of a particular contemporary phenomenon within it real context and from the perspective of the participants involved in the phenomenon. Case study was therefore chosen to enable the researcher investigate the phenomenon, use of painting and drawing to develop fine motor skills in its natural context.

Notwithstanding the above relevance for choosing case study, the weak side of using case study is that the results of the study may not be generalized except where other researchers see their appreciation (Cohen, Manion and Morrison, 2003).

3.4 Population

The population for the study consisted of all special educators and learners of Dzorwulu Special School which was estimated at 177, made up of 150 learners with mild intellectual disabilities and 27 special educators.

3.5 Sample and sampling technique

The study adopted the purposive sampling technique which is also called deliberate sampling or judgment sampling Gupata, (1993). The choice of purposive sampling was necessitated by the fact that there was the need to select specific people who would provide the needed information concerning the study. Purposive sampling

allows the researcher to handpick the sample according to the nature of the research problem and the phenomenon under study (Marlow, 2001). Whilst Shaughnessy and Zechmeiserter (1990) further comment that purposive method is adopted when the respondents are selected or judged to have certain characteristics or more commonly those who are likely to provide the most useful information for the purpose for which the study is being done. Based on the views above, teachers who have stayed in the school for more than eight years were presume to have got an ample knowledge about educating learners with mild intellectual disabilities using drawing and paintings and hence were selected for the study.

The sample of the study was twenty (20), made up of four (4) teachers and sixteen (16) learners with mild intellectual disabilities. Four (4) teachers selected were from the four educable classes with four (4) learners in each class which were classified as pre-vocational class and are responsible in teaching all art subjects of which fine motor skills is inclusive.

3.6 Instrumentation

In order to address the objectives of this study, the research adopted both interview and observation as methods for data collection.

3.6.1 Observation

In order to get first hand on the strategies, challenges and how drawing and painting is been organized by teachers, the researcher went round the classrooms during lessons on different days to observe teachers as they engage learners with mild intellectual

disability in drawing and painting. This is consistent with the view of Avoke (2005), who explains that observation is basically an opportunity of looking for what is taking place.

A structured observation guide was used to observe teachers attitude, teaching methods, participation, availability of tools and materials for drawing and painting as a way of developing the fine motor skills of learners with mild intellectual disability. The researcher adopted the observational guide designed by Jorgenson (1989, 2002) and Kennedy's (2006). The following steps were adhered to:

- Primacy effect- having a positive initial impression to participants being observed. Thus participants should not be aware that they are being observed.
- Focusing on the main objectives of the activity
- And repeating action over and over

Additionally, the following steps of observational guide were also developed to aid in the research process:

- Strategies teachers adopt and learners responses
- Skills development and
- Learning environment

OBSERVATIONAL GUIDE FOR SOCIAL RESEARCH

- Personal involvement of the activity

- Primacy effect
- Avoiding personal emotions or perception for judgments
- Focusing on the main objectives of the activity
- And repeating action over and over
- Skills development and
- Learning environment

The observation also enabled the researcher to get the real life in their learning environment, and the opportunity to find out things personally on the ground. McMillan and Schumacher (1997) expressed that observation has an advantage, because the researcher not worrying about the limitation of self reporting bias, social desirability and information not limited to what can be recorded as it occurs naturally.

3.6.2. Interviews

There was the need to seek more clarifications from teachers concerning the activities in which they engaged the learners. In view of the above a semi-structured interview was conducted. As Marlow (2001) commented that in a semi-structured interview, the interviewer has more freedom to pursue hunches and can improvise the questions. Best and Khan (1995), Schalock, (1985) confirmed the use of the interview by stating that it is a face to face questioning of respondents to obtain information. Cresswell

(2005) also maintained that in qualitative interview, the researcher asks open-ended questions without response option, listens to and records the comments of the interviewee. Avoke (2005) further suggests that interviews are a form of conversation between two people in which verbal interaction takes place.

Semi-structured interviews were used, and interview questions were drawn in conformity with the research questions to the four (4) teachers who participated in the research. The questions sought clarification from teachers on how they taught skills, processes they took learners through to enable them to develop their fine motor skills, the form of assistance they provided learners using drawing and painting, and some strategies used in developing learners' fine motor skills using drawing and painting. Lastly, the research inquired from teachers on how fine motor skills benefits learners with mild intellectual disabilities.

3.7 Access

Permission was first sought from the school authorities and objectives of the study were made known to them before the administration of the interviews and observation of teachers. No formal letter was given to the school authorities. This was because the researcher was also a staff member of the school. The researcher explained the purpose of the study to the respondents and assured them of confidentiality. Respondents were interviewed separately and the interviews lasted thirty minutes per participant. Responses of respondents were written down and later analyzed. The researcher moved from class to class observing teachers and learners and their

interactions, the appropriate tools and materials used, strategies teachers adopts, challenges and physical environment. A period of one month was used for data collection involving interviews and observations.

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3.8 Data analysis

Analysis of data was done qualitatively by categorizing responses in relation to research questions raised. Data from interviews were transcribed and analyzed descriptively using thematic approach.

CHAPTER FOUR

PRESENTATION OF FINDINGS AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter deals with two main sections: the first section elaborates on presentation of findings and the second part presents on the discussions of major findings.

4.2 Presentation of findings

The presentation of findings has been outlined under four (4) main themes which are stated below:

4.2.1. Using painting and drawing to develop fine motor skills of learners with mild intellectual disabilities.

4.2.2 Strategies for developing fine motor skills of learners with mild intellectual disabilities using drawing and painting.

4.2.3 Challenges teachers faced in developing fine motor skills of learners with mild intellectual disabilities.

4.4.4 Benefits of fine motor skills to learners with mild intellectual disabilities.

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4.2.1 Using drawing and painting to develop fine motor skills of learners with mild intellectual disabilities

Analysis of the response from teachers indicated that drawing and painting is an important tool for developing the fine motor skills of learners with mild intellectual disabilities**.** Fine motor skills development strengthens joints for the movement of small muscles in a systematic order in performing a range of different and delicate tasks. The following are the comments from teachers concerning fine motor skills development:

Some teachers commented as:

> *Drawings, writing, painting, colouring, cutting of sheets of paper into shapes* are used to develop fine motor skills (Teacher A).

> *The fine motor skills are developed through exercises such as filling bottles with water, washing cups, writing, cutting, threading and painting* (Teacher C).

> *Tracing, threading, sketching, and holding of objects are also used in developing fine motor skills of learners* (Teacher D).

From the comments above, the trend clearly showed that the respondents reportedly felt that fine motor skills of learners with intellectual disabilities were developed through the use of activities such as painting, colouring, drawing, tracing, cutting and pasting, writing coupled with filling bottles with water as well as washing cups.

4.2.2 Types of fine motor skills

Furthermore, teachers mentioned the types of fine motor skills learners developed through participation in painting and drawing activities:

> *These are drawing and painting skills, scribbling skills, colouring skills, sorting out skills and matching of objects skills* (Teacher B).

Two teachers outlined the following:

> *The types of fine motor skills are drawing and painting skills, sorting out of objects skills, matching of objects skills, writing skills, and colouring skills* (Teacher 'C' and 'A').

Another teacher stated:

> *Types like writing skills, colouring skills and matching of objects to develop the fine motor skills of my learners (Teacher 'D')*

4.2.3 Processes of developing fine motor skills

Learners with mild intellectual disabilities who were selected for the study were taken through various processes to develop their fine motor skills. Teachers were to identify how best they can know that learners' fine motor skill have been developed or enhanced through the process. Three of the teachers made the following statements:

> *Some processes used in enhancing learners' fine motor skills are through effective use of hands and fingers and hand to manipulate objects* (Teacher A).

> *I observed how convenient it is for the learner who has developed his/her hands and finger in drawing, writing and tracing objects without my help* (Teacher C).

> *After the process I want to see learners practicing on their own and able to do things for themselves* (Teacher D).

From the study, teachers clearly indicated that the fine motor skills of the learners with mild intellectual disabilities are developed through their involvement in the activities drawn for the learners. Observation also revealed that the processes of development of the fine motor skills of the learners were hands on approach methods in which the learners performed through demonstration from teachers.

4.2.4 Drawing and painting tools

Learners with mild intellectual disabilities required a host of drawing and painting tools in order to develop the necessary fine motor skills which will be of immense help to them in their every day lives. Below are the views of the respondents.

One teacher stated the tools and materials as:

> *The tools and materials I use for drawing and painting tools are paints, brushes, basin, water, pair of scissors, drawing boards, drawing sheets* (Teacher A).

Another teacher mentioned the following tools:

> *The tools I use included plain drawing papers, painting brushes, colour and drawing boards* (Teacher C).

A teacher also agreed and remarked:

> *These tools are poster colours, drawing boards, drawing sheets, pencils, crayons and painting brushes* (Teacher D).

4.2.5 Provision of tools and materials

Tools and materials play a vital role in developing fine motor skills through drawing and painting of learners with mild intellectual disability. How do teachers get the supply of materials and tools used for drawing and painting. The respondents made the following statements:

> *Some of the tools and materials are supplied by the school others are purchased from bookshops with my own resource* (Teacher A, D and C).

Furthermore, the teachers spoke about the measures they adopted to ensure safety with the use of the tools:

> *I make sure tools are not put in their mouth since some would like to chew crayons or pencils*.(Teacher A)

> *Pencils and crayons are not to be too sharp since they can use to harm themselves or other colleagues. I then demonstrate by drawing an object whilst they look on, after that I help them to hold pencils to follow on dotted pictures* (Teacher B)

> *Learners are monitored and are allowed to handle tools that have been permitted. Also I kept tools away from them once the exercise is completed* (Teacher D)

Thus teachers take the necessary precautionary measures to avoid or prevent injuries.

4.2.6 Strategies for developing fine motor skills of learners with mild intellectual disabilities using drawing and painting.

Analysis of the interviews questions revealed that teachers used different strategies in developing the learners' fine motor skills using drawing and painting. An emerging theme is discussed below. Teachers used different strategies in developing the fine motor skills of learners using drawing and painting.

Some of the teachers summarized the strategies use with the following:

> *Award are given out to motivate the learners to work extra hard, excursion are embark upon for the learners to describe what they saw during drawing and painting. Also demonstrations and modeling are employed* (Teacher 'A' and 'D').

> *I first of all draw shapes with dotted lines on the sheet of paper and allow learners draw through the dotted line, paint the shapes and finally learners cut and paste the drawn shapes* (Teacher B).

> *I Provide pictures of objects for learners to draw and paint whilst others are encouraged to thread beads* (Teacher C).

The above comments indicate that teachers use various strategies to developed learners fine motor skills. Generally, most of the strategies involved the use of drawing and painting of objects, threading of beads, cutting and pasting of objects. Again, it was established that learners were taking through activities in bits to facilitate mastery before moving on to the next stage, also teachers used modeling and demonstration as well as using hands on methods.

4.2.7 Challenges teachers faced in developing fine motor skills of learners with mild intellectual disabilities.

On the other hand, teachers discovered some difficulties in developing fine motor skills of learners with mild intellectual disabilities.

A teacher stated the following challenges:

> *Some of the difficulties I encountered are hand-to-eye coordination among the learners, other children also feel reluctant to draw or paint activities assigned them* (Teacher A).

Another teacher commented as follows:

> *Taking them through activities is time consuming and the same activities have to be repeated over and over again* (Teacher C).

And another teacher noted:

> *I have difficulty administering inadequate tools and materials* (Teacher D)

Additionally, both teachers and learners encountered several challenges: ranging from inadequate materials and inappropriate designed of tables in teaching drawing and painting.

One teacher stated:

> *Tables are not design to suite drawing and painting exercise and some learners have week hand joints to handle pencils and other materials for drawings (teacher B)*

Another teacher stated the following challenges:

> *There are inadequate drawing and painting materials for a lot of exercises. Also, learners have difficulty holding objects* (Teacher A)

Additionally, a teacher mentioned that:

> *It took so much time for a learner to grasp the idea and learners most at times forget so early what they have been instructed to do (*Teacher C)

4.2.8 Benefits of fine motor skills to learners with mild intellectual disabilities

Finally, most of the teachers indicated that learners derive benefits from fine motor skills development by acquiring communication skills which enables them to interact with their colleagues freely. It also enables the learners to live independent lives and work on their own without support coupled with enhancing their hand-to-eye coordination. In identifying the benefits derived from developing fine motor skills of learners with mild intellectual disability, a teacher stated the following benefits:

> *Development of fine motor skills helps the learner to live independent life and go about his or her daily activities easily* (Teacher A).

Another teacher commented:

> *It enhances hand-to-eye coordination. This helps learners to use their hands effectively (*Teacher B).

Further more, a teacher noted the following benefits:

> *Learners develop appropriate language skills to communicate with their colleagues* (Teacher C).

Also, one teacher commented on the following benefits:

> *When learners grasp the techniques of fine motor skills their muscles are strengthen for physical activities without support (Teacher D)*

4.2.9 Social benefits

Responses from teachers indicated that fine motor skills help learners adopt social living skills
One teacher responded on the social benefits of social impact of fine motor skills as:

> *Through the process of drawing and painting learners are able to share with friends (*Teacher A)

Another respondent indicated that:

> *Fine motor skills makes learners learn to defend themselves since their joints and coordination are enhanced during drawing and painting exercise. Also, It helps the learners to be mobile, independent, flexible, enhance hand-to-eye coordination and finally they learn to work as a team* (Teacher B)

Other teachers noted the following social benefits:

> *Drawing and painting gives learners the urge to try on very hard task even if they faced initial difficulties, they always want to model what the teacher has shown or demonstrated to them*. (Teacher C and D)

4.3 Discussion of findings

This study has explored the use of drawing and paintings to develop the fine motor skills of learners with mild intellectual disability at Dzorwulu Special School in Accra. This section discus the findings of the study in relation with the research questions:

4.3.1 How do teachers develop the fine motor skills of learners with mild intellectual disabilities using drawing and paintings?

4.3.2 What strategies would teachers use in drawing and painting for the development of fine motor skills of learners with mild intellectual disabilities?

4.3.3 What are some of the challenges teachers face in using drawing and painting to develop the fine motor skills of learners with mild intellectual disabilities

4.3.4 How are learners with mild intellectual disabilities benefiting from the use of drawing and painting?

4.3.1 How do teachers develop the fine motor skills of learners with mild intellectual disabilities using drawing and paintings?

The study revealed that teachers used drawing and painting to develop the fine motor skills of students with mild intellectual disabilities. The learners were engaged in activities such as drawing and painting, colouring of objects, tracing objects, cutting and pasting. Teachers asserted that by constant practice in the above activities, learners begun to develop their movement skills and the ability to hold objects and eventually become more independent in other simple life activities. Also, teachers confirmed that developing fine motor skills of learners with mild intellectual disabilities is best done through series of activities and illustrations. In support, the 'Get Ready For School-(2009)' outlines the following activities by indicating that drawing and painting can be organized for learners with mild intellectual disabilities and development of their fine motor skills:

- Grasping- e.g. using a crayon, pencil, brush, glue stick, beater, and blocks.
- Manipulating- e.g. playdough, clay, unifix, centicubes, paper, sewing, scissors and fingertips.
- Hand-eye-coordination- e.g. writing, cutting, threading, moving a cursor, using a brush, glue-gun and many more.

From the study most of the teachers clearly indicated that the fine motor skills of learners with mild intellectual disabilities are identified through their involvement in the activities drawn or mounted for the learners. Observation also revealed that the processes of identification of the fine motor skills of the learners were hands on approach methods and learners performed better when the teacher demonstrate the activity. The findings showed that the learners developed fine motor skills through activities such as drawing and painting skills, tracing skills, cutting and pasting skills, writing skills and also through sorting out skills. In addition, learners' fine motor skills were identified through their involvement in the activities.

The results from the study reflects on the work exposed by 'Head Start', it's stated that learners use their fine motor skills through writing, cutting and weaving in relation to several other Domains. For example, they:

- Build their understanding of mathematic concepts by sorting and manipulating objects, including geometric shapes; by making patterns with stringing beads; and by using measuring tools.

- Experiment and make scientific discoveries by handling collections, filling and emptying containers at the sand or water table, exploring a new software program, and holding and looking through magnifying glass;

- Explore language and literacy by handling books and using writing tools; and

- Express creativity while using rhythm instruments, cuttings and gluing paper scraps, doing finger plays, and using dramatic play props and dress-up clothes

4.3.2 What strategies would teachers use in drawing and painting for the development of fine motor skills of learners with mild intellectual disabilities?

From the study teachers indicated that the strategies used in developing the fine motor skills of the learners were achieved in different forms. Some of these strategies involved coaching learners during drawing and painting, this is done by providing shapes with dotted lines and letting the learners fill in the dotted lines as well as cutting and pasting these shapes. On occasion where learners are unwilling to participate in the exercise, teachers motivate learners by giving them prizes, singing for them or creating any kind of fun that will excite their interest in the exercise.

In pursuance of this, Brereton and Broadbent (2007) comment that in developing a skill using drawing and painting the teacher needed to present activities in interesting and different ways. This can increase the likelihood of the learner with mild intellectual disabilities choosing to participate in the exercise. Once their skills are more developed, the more traditional activities will be easier for them to do and the learner is far more likely to participate. They stressed the need to always consider the learners developmental levels when choosing drawing and painting activities, keeping the activities short, simple and fun to draw and paint.

Another strategy used by teachers involved role play and demonstrations of variety of drawing. Learners observe and begin to practice on their own. This kind of activity is what Gilbert (1995) showed as a phenomenon of allowing learners to experiment and play with their colours, shapes, lines and designs that they can create. He believes that with demonstration by teachers learners can perform more sophisticated activities such as water colour activities or oil painting activities which can be used to guide and enhance their manipulations. Furthermore, Hobert and Frankel suggested the following useful the strategies that can be used to improve learners' fine motor-skills using drawing and painting as:

- Supplying learners with paper or sketch pad, coloured pencils, markers, paint brushes
- Encourage learners to experiment and play with colours, shapes and designs they can create
- They should continue practice their drawing and painting on things they are interested in, and learners must be appreciated for that as to urge them on.

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Another different strategy put forward by Hummingbird (2009) which agrees with the result of this study was that, some times learners must be allowed experiment activities by themselves. This according to Hummingbird would make learners to perfect and be independents in their daily living skills. Also, learners should be given the chance to make paints on their own, using the necessary tools and materials. They extent their outcome with the following additional activities required for drawing and painting and development of fine motor skills of learners with intellectual disabilities:

- Combining powdered colours with some amount of cold water in small bowl.
- Combine starch or glue with water colour.
- Learners to stir till colours and starch are mixed up, thickened and smooth.
- Divide the smoothed mixture among jars using only the primary colours.

It also became obvious from the study that teachers use different approaches during drawing and painting exercise which according to Hurlock, (1978), the method the learner uses to learn a motor skill is important to the skills eventually learned during drawing and painting lessons. while any method may in time, enable the learner to develop a skill, some methods are far more efficient and result in better, quality skills than other methods. He stressed that strategies used in developing learners fine motor skills must be varied for better results.

In the nutshell, though there might be difference in approach using drawing and painting the basic steps deduced from the study included modeling and using demonstration and hands on method.

4.3.3 What are some of the challenges teachers face in using drawing and painting to develop the fine motor skills of learners with mild intellectual disabilities

There were several challenges teachers encounter using drawing and painting to develop the fine motor skills of learners with mild intellectual disabilities. Some of the teachers encounter problems in developing hand-to-eye coordination among the learners. Teaching becomes difficult because most tools and materials needed are inadequate and tables are also not designed to meet the teaching requirements of using drawing and paintings for the development of fine motor skills.

Other learners feel reluctant for drawing and painting exercise and need constant coaching and motivation, this can be time consuming and affect the quality of training needed. Another challenge faced by teachers using drawing and painting is that extra caution needed to protect learners from harming themselves with drawing tools. In Concerning the tools and materials needed for drawing and painting, an emerging views deduced from the study indicates that learners with mild intellectual disabilities required a host of drawing and painting tools in order to develop the necessary fine

motor skills which will be of immense help to them in their every day lives. The general consensus among the respondents clearly showed that drawing and painting tools needed to develop the fine motor skills of learners with mild intellectual disabilities were drawing boards, poster colours, crayons, drawing sheets, paint brushes and pencils. It was also revealed from observation that some of the aforementioned materials were hardly supplied to the teachers. Raines, and Isbell, (2003) comments that tools and materials needed for drawing and paintings in

development of fine motor skills must be easy to come by and in different varieties. Additionally, Hobart, and Frankel,(2002) are of the view that learners should be encouraged to use varied tools and materials that will make them think of additional items to be used in their drawing and painting activities. Hobart and Frankel listed some essential materials needed for paintings as:

- Protection for clothing
- Old newspapers for protecting the floor, easel and table top.
- A floor mop and bucket
- Facilities for drying paintings
- Paints, acrylic and oils
- Paper, dried materials
- Clean water

So in a situation where these tools and materials are non existent, teaching learners with mild intellectual disabilities using drawing and painting could only be cumbersome and ineffective.

Moreover, the study has shown that, not only must teachers be interested in using varied tools and materials for drawing and painting but most importantly the precaution that is needed to protect the safety of learners. Learners can be vulnerable in chewing pencils or any other drawing material or might try to swallow objects. Teachers must constantly observe and control learners on tools they are exposed to. In furtherance, Raines and Isbell (2003) commented that, the best way to use tools and materials for drawing and painting is to consider the learner's safety. For example Raines and Isbell are of the view that considering the nature and ability of learners with intellectual disabilities, they need to be watched closely to make sure they do not eat the paint since most paints with colourings have sweet fragrance.

They also insisted that all paints, pencils and colours should be lead free and non-toxic. Raines and Isbell noted further that:

- Learners should be discouraged from walking around with pencils or brushes in their mouths.
- Remove pencil tops when being used by learners to avoid the possibility of choking
- Major spills should be mopped up quickly to avoid the possibility of falls
- Finally hand washing after painting should be supervised

4.4. How are learners with mild intellectual disabilities benefiting from the use of drawing and painting?

Furthermore, there were enormous benefits outlined by teachers with the use of drawing and painting: These host of benefits derived from the development of fine motor skills included the fact that learners develop the ability to live independent lives, coupled with development of appropriate language skills which facilitate their interactions with their colleagues. The study also demonstrates that acquisition of fine motor skills gives the learner the opportunities to benefit from muscle movement and hand-to-eye coordination. Teachers indicated that using drawing and painting enables learners to perform activities such as cutting, dressing, snap, carrying objects, writing and jumping.

In support to the research outcome the "Get Ready for School-(2009)" indicated that learners who may develop fine motor skills after a long period of constant practice with drawing and painting may generally demonstrate quite amazing interest in other abilities which include:

- Hand dominance
- Pincer grasp
- Tripod pencil grasp
- Cut around reasonable complex designs such as a combination of straight and curved lines and corners.
- Put puzzles together(getreadyforschool.com)

Again 'Kids Puzzles'- (2009) presented support for more adequate explanation of the benefits and listed in this manner. They assert that individuals with developed fine motor would have the ability for creativity and imagination, Reasoning and problem solving, and focus and attention to tasks, planning and attentive to instructions. Also they are able to perceive colour and shapes through observation, ability to put reasoning into thought (maths and science application), they develop their self confidence and self esteem which make them act independently. Other skills developed include reading and writing, improved language expressions in the form of role play, questioning, laughing, listening and mimicking.

The study further showed that using drawing and painting for the development of fine motor skills enhances the ability of learners to engage in outdoor games which according Powell (1991) learners with mild intellectual disabilities with skills acquisition, leads to societal benefits through their activities, greater self-sufficiency and are less dependent on other people for assistance. Additionally, teachers have shown that fine motor skills facilitate learner's interactions with their world which are essential precursors to the development of early literacy, numeracy and self-help skills such as independent dressing and toileting as well as to participate in a range of more complex activity such as art and craft experiences.

In summary, the study can conclude that drawing and painting activities are the best way to ensure proper development and practice and also promote the most functional use of the learners' hands. Also, normal development demands that learners are able to accurately and effectively use the small muscles in their hands, and these intrinsic muscles will be used for the rest of their lives and for essential functional activities.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter deals with the summary, conclusion and recommendations based on the findings from the study on using drawing and painting to enhance the fine motor skills of learners with mild intellectual disabilities at Dzorwulu Special School.

5.2 Summary of findings

The study involved only Dzorwulu Special School in Accra. Four (4) teachers each controlling four (4) learners with intellectual disabilities were involved in the exercise.

Purposive sampling technique was used for selection of teachers and learners. The researcher personally arranged for separate days for interviews, research activities and observation of teachers and learners. The following is a summary of the findings based on the themes emerged from the study

The findings revealed that developing the fine motor skills of learners of mild intellectual disabilities afford them the opportunity to live independent lives as well as making them mobile by building their joint coordination for daily living skills.

Teachers reportedly stated that using drawing and painting is an important exercise that can tremendously improve the development of fine motor skills of learners with mild intellectual disabilities. In addition, the findings showed that learners' motor skills were identified through their involvement in activities and through hands on approach methods whilst presenting activities in steps by breaking down of activities

into bits for learners to master. Also, learners can adopt skills of drawing and paintings through modeling and demonstration of activities as well as using hands on approach methods.

Moreover, the findings indicated that tools and materials needed to develop the fine motor skills through drawing and painting were short in supply hence impeding on the learning process in the school were poster colours, crayons, drawing sheets, drawing boards, brushes, paint and pencils. Additionally, the findings also revealed that the difficulties teachers encounter in developing fine motor skills of the learners were poor hand-to-eye coordination among the learners and also taken them through activities was time consuming coupled with lack of interest of learners in some of the activities.

5.3 Conclusion

The effective use of drawing and paintings can facilitate development of fine motor skills of learners with mild intellectual disabilities. Effective use of drawing and painting can help learners with mild intellectual disabilities become mobile, flexible and building of muscle which together improves their living.

Also, it was discovered that, during the class sessions of using drawing and painting in developing the fine motor skills, learners interacted more freely by observing others, asking questions and sharing tools and materials for the activities. This process promoted the communication skills and social relationship among learners with intellectual disabilities.

However, the lack of tools and materials needed for drawing and painting is making it difficult for teachers to engage learners in drawing and painting exercises. This makes teachers more frustrated and reluctant to help learners with mild intellectual disabilities to develop their fine motor skills.

5.3 Recommendations

Based on the findings of the study the following are suggested for policy direction

- The government and stakeholders of special education should provide all special schools with tools and materials needed for teaching drawing and painting.
- Teachers in Dzorwulu special school should be committed to the teaching of drawing and paintings and development of fine motor skills of learners with mild intellectual disabilities.
- Resource rooms should be made available for learners and teachers in the school.
- Teachers should be made to undergo training in Art education to sharpen their professional skills

5.5 Suggestions for further studies

A further study is needed to be conducted on the evaluation of using drawing and painting in developing the fine motor skills of learners with mild intellectual disabilities in Ghana.

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APPENDIX 'A'

OBSERVATIONAL GUIDE FOR SOCIAL RESEARCH

- Personal involvement of the activity
- Primacy effect
- Avoiding personal emotions or perception for judgments
- Focusing on the main objectives of the activity
- And repeating action over and over
- Skills development and
- Learning environment

APPENDIX 'B'

SEMI-STRUCTURED INTERVIEW QUESTIONS FOR TEACHERS AT DZORWULU SPECIAL SCHOOL

Interview Questions

School:

Class:

Date:

Time:

Duration:

Development of fine motor skills

How fine motor skills are developed?

a. What are some examples of fine motor skills?

b. How are these fine motor skills identified?

c. What are some of the preventive safety measures needed using drawing and paint nig and development of fine motor skills of learners with mild intellectual disabilities.

d. What are some the tools and materials needed for the drawing and painting and development of fine motor skills

Strategies used in drawing and painting.

Challenges teachers face in using drawing and painting

How are learners with mild intellectual disabilities benefiting from the use of drawing and painting?

APPENDIX 'C'

Research Question 1: How do teachers use drawing and painting to develop the fine motor skills of learners with mild intellectual disabilities?

1. How are fine motor skills developed?

…. They are developed through, drawings, writing, painting, colouring, cutting of sheets of paper into shapes

…. The fine motor skills are developed through exercises such as filling bottles with water, washing cups, writing, cutting, threading and painting

…. Fine motor skills are developed through painting, drawing, tracing, cutting, threading, sketching, and holding of objects

2. What are some of examples of fine motor skills

…….These are drawing and painting skills, scribbling skills, colouring skills, sorting out skills and matching of objects skills.

….. The types of fine motor skills are drawing and painting skills, sorting out of objects skills, matching of objects skills, writing skills, and colouring skills

….. I use writing skills, colouring skills and matching of objects to develop the fine motor skills of my learners

3. How are these fine motor skills identified?

… The fine motor skills are identified through effective use of hands and fingers and hand to manipulate objects

… I observed how convenient is it for the learner to use his/her hands and finger in drawing, writing and tracing objects without my help

... After the process I want to see learners practicing on their own and able to do things for themselves

4. What are some of the preventive safety measures needed using drawing and paint nig and development of fine motor skills of learners with intellectual disabilities.

…… I make sure tools are not put in their mouth since some would like to chew crayons or pencils

……. I sharpen pencils and crayons not to be too sharp since they can use to harm themselves or other colleagues. I then demonstrate by drawing an object whilst they look on, after that I help them to hold pencils to follow on dotted pictures

…. Learners are monitored and handle tools that have permitted. Also I kept tools away from them once the exercise is completed.

Research Question 2: What strategies would teachers use in drawing and painting for the development of fine motor skills for learners with mild intellectual disabilities?

Research Question 3: What are some of the challenges teachers face in using drawing and painting to develop the fine motor skills of learners with mild intellectual disabilities?

Research Question 4: How are learners with mild intellectual disabilities benefiting through the use of drawing and painting for the development of fine motor?

1. Barriers to drawing and painting session

... Tables are not design to suite drawing and painting exercise and some learners have week hand joints to handle pencils and other materials for drawings

….. There were inadequate drawing and painting materials for a lot of exercises. Also, learners have difficulty holding objects

…. It took so much time for a learner to grasp the idea and learners sometimes soon forget what they have been instructed to do

Tools and materials are needed for the drawing and painting session

1. What are some tools needed for the drawing and painting?

... The tools and materials I use for drawing and painting tools are paints, brushes, basin, water, and pair of scissors, drawing boards, and drawing sheets

. ... The tools I use included plain drawing papers, painting brushes, colour and drawing boards

….. These tools are poster colours, drawing boards, drawing sheets, pencils, crayons and painting brushes

…. Some of the tools and materials are supplied by the school, purchased from bookshops by myself

... The school provides few of the materials to teachers and some materials are also obtain from my own resource

... Some *of the tools and materials are supplied by the school and others are obtained through improvisation by the teacher*

…. I make sure tools are not put in their mouth since some would like to chew crayons or pencils.

……I sharpen pencils and crayons not to be too sharp since they can use to harm themselves or other colleagues. I then demonstrate by drawing an object whilst they look on, after that I help them to hold pencils to follow on dotted pictures

....Learners are monitored and handle tools that have been permitted. Also I kept tools away from them once the exercise is completed

…… The tools and materials I use for drawing and painting tools are paints, brushes, basin, water, pair of scissors, drawing boards, drawing sheets

…… The tools I use included plain drawing papers, painting brushes, colour and drawing boards

….. These tools are poster colours, drawing boards, drawing sheets, pencils, crayons and painting brushes.

…..Award are given out to motivate the learners to work extra hard, excursion are embark upon for the learners to describe what they saw by drawing and painting.

Also demonstrations and modeling are employed

….. I first of all draw shapes with dotted lines on the sheet of paper and letting learners fill in the dotted line and painting the shapes and finally cutting and pasting the drawn shapes

….. I Provide pictures of objects to learners to draw and paint and also letting learners to thread beads

……. Some of the difficulties I encountered are hand-to-eye coordination among the learners, other children also feel reluctant to draw or paint activities assigned them

…. Taking them through activities is time consuming and the same activities have to be repeated over and over again

…..I face challenge administering inadequate tools and materials

……Development of fine motor skills helps the learner to live independent life and go about his or her daily activities easily

….. It also helps the learners to work on their own without assistance, acquiring communication skills that enable them to interact with their peers

.....Learners are able to do simple things they need correctly

….. Learners are able to hold writing objectives and wear their own dresses

…. It enables the learners to live independent lives and develop appropriate language skills to communicate with their colleagues

….I noticed that when learners grasp the techniques of fine motor skills they are able to do things without needing so much support

….. Through the process of drawing and painting learners are able to share with friends

…….Fine motor skills makes learners learn to defend themselves since they joints and coordination are enhanced during drawing and painting exercise.

….. Drawing and painting gives the urge to try and try t something even if they faced initial difficulties, they always want to model what the teacher has shown them.