



Cape Peninsula
University of Technology

**THE DEVELOPMENT OF VISUAL PERCEPTION IN ARTWORK IN THE PRIMARY
SCHOOL**

By

WILLEM MOSTERT

Thesis

Submitted in fulfilment of the requirements for the degree

Magister Educationis

In the

Faculty of Education and Social Sciences

at the

CAPE PENINSULA UNIVERSITY OF TECHNOLOGY

Supervisors: Dr. H. Dippenaar and Dr. G. Westraadt

CPUT copyright information

The dissertation/thesis may not be published either in part (in scholarly, scientific or technical journals), or as a whole (as a monograph), unless permission has been obtained from the University

DECLARATION

I, Willem Mostert, declare that the contents of this thesis represent my own unaided work, and that the thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

Willem Mostert

July 2020

ABSTRACT

Visual perception and observational skills are an essential part of Visual Arts education, through which young learners, in the primary school, acquire important and necessary skills to create artworks during their creative projects. Unfortunately, many children in middle childhood are plagued by a self-imposed criticism to their own artworks, due to their inability to creatively express what they visually perceive. This may halt their creative attempts and lead to a creative slump. As an art educator, I noticed frustration and hesitation amongst my Grade 4 and Grade 5 learners to produce works of art. This research was designed to sharpen their visual perceptual skills and observational abilities, in an attempt to guide them through this challenging phase of their artistic development. A series of observational sharpening exercises were designed and administered as an intervention. A pre-test and post-test were completed to determine the effectiveness of the intervention. The conceptual framework that guided this research was grounded in the theories and concepts developed by Piaget (1952) and Edwards (1999), on the cognitive development and the cognitive –shift model. Textual data and visual data were collected throughout the study. The textual data were analysed in conjunction with the visual data to establish connections and themes. The themes that emerged from the research are creativity and the U-curve, creative and visual problem-solving, intrinsic motivation, and a shift to understanding and knowledge. The findings of this research informed the researcher that the development of visual perception and observational skills in Visual Arts education is critically important for children in the middle childhood.

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to everyone who supported me through every step of this research project:

- Dr. Hanlie Dippenaar and Dr. Georina Westraadt my supervisors, for their constant guidance and motivation.
- My parents, Brett and René Francklin, for their unwavering support, constant motivation and prayers.
- Michiel Barnard, for your constant interest in my research and support.
- Kobie Meiring for her contribution as critical reader.
- Family and friends, for your motivation and understanding.
- The Western Cape Education Department for allowing me to conduct a case study at a primary school.
- The headmaster at the school who accommodated me during my case study.

Thank you all.

DEDICATION

I dedicate this thesis to my late father, Kobus Mostert, who inspired me to complete this project.

TABLE OF CONTENTS

DECLARATION.....	i
ABSTRACT.....	ii
ACKNOWLEDGEMENTS.....	iii
DEDICATION.....	iv
TABLE OF CONTENTS.....	vi
LIST OF FIGURES.....	ix
LIST OF DIAGRAMS AND TABLES.....	x
GLOSSARY.....	xi
CHAPTER 1: INTRODUCTION.....	1
1.1. Introduction and background to the research.....	1
1.2. Overview of the South African educational system and Creative Arts Education.....	2
1.3. Importance of quality Visual Arts education in the primary school.....	5
1.4. Middle childhood.....	8
1.5. Research questions.....	10
1.6. Research objectives.....	11
1.7. Delimitations and limitations.....	11
1.8. Significance of the research.....	11
1.9. Personal trigger.....	12
CHAPTER 2: LITERATURE REVIEW.....	13
2.1. Introduction.....	13
2.2. Development of artistic expression.....	13
2.2.1. The U-curve slump.....	15
2.2.2. Creativity and the U-curve.....	16

2.2.3. Observed role of gender and behaviour in the art room setting.....	20
2.3. Visual perception in art education.....	21
2.3.1. Visual problem-solving.....	23
2.3.2. Intrinsic visual skills.....	23
2.3.3. Perceptual learning.....	23
2.3.4. Visual memory.....	24
2.3.5. Mental imagery.....	25
2.3.6. Varieties in visual perception.....	27
2.4. Art intervention.....	29
2.4.1. Strategies to improve visual perception and observational skills in Creative Arts.....	30
2.5. Conclusion.....	33
CHAPTER 3: METHODOLOGY.....	35
3.1. Introduction.....	35
3.2. Conceptual framework.....	35
3.3. Research design.....	38
3.4. Methodology.....	43
3.4.1. Selection of site.....	43
3.4.2. Participants in the study.....	43
3.4.3. Data collection tools and protocols.....	44
3.4.3.1. The pre-test.....	45
3.4.3.2. Intervention lessons, visual sharpening exercises.....	47
3.4.3.3. The post-test.....	58
3.4.4. Data analysis.....	59
3.5. Ethical considerations.....	60
3.6. Conclusion.....	61

CHAPTER 4: DATA ANALYSIS AND DISCUSSION.....	62
4.1. Introduction.....	62
4.2. Pre-test data.....	62
4.2.1. Pre-test assessment.....	63
4.2.2. Results of the pre-test assessment.....	65
4.2.3. Discussion of the pre-test data.....	67
4.2.3.1. Visual perception and emotion.....	68
4.2.3.2. Development of artistic expression.....	71
4.2.3.2.1. A creative slump.....	71
4.2.3.2.2. Gender differences and similarities in artistic and creative expression.....	73
4.2.4. Summary and discussion of pre-test data.....	79
4.3. Formulating the intervention lessons from pre-test data.....	80
4.4. Post-test data.....	81
4.4.1. Post-test assessment and results.....	82
4.4.2. Discussion of pre-test results.....	84
4.4.3. Identification of themes.....	94
4.5.1. Analysis of pre-test and post-test findings.....	95
4.5.2. Discussion of data according to the themes.....	131
4.5.2.1. Theme one: Creativity and the U-curve.....	131
4.5.2.2. Theme two: Creative and visual problem-solving.....	132
4.5.2.3. Theme three: Intrinsic motivation.....	133
4.5.2.4. Theme four: A shift to understanding and knowledge.....	135

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS.....	137
5.1. Introduction.....	137
5.2. Overview of the study.....	137
5.3. Summary of research findings.....	139
5.4. Implications and recommendations for Creative Arts education.....	140
5.5. Conclusion.....	141
REFERENCE LIST.....	143
APPENDIX A: APPLICATION TO CONDUCT RESEARCH IN PUBLIC SCHOOL	153
APPENDIX B: LETTER TO THE SCHOOL.....	158
APPENDIX C: PRE-TEST OBSERVATION PROTOCOL.....	159
APPENDIX D: INTERVENTION OBSERVATION PROTOCOL.....	160
APPENDIX E: POST-TEST OBSERVATION PROTOCOL.....	162

LIST OF FIGURES

Figure 4.1	'Example of composition'.....	69
Figure 4.2.	'Example of composition'.....	70
Figure 4.3.	'Example of composition'.....	70
Figure 4.4.	'Use of colour'.....	73
Figure 4.5.	'Use of colour'.....	75
Figure 4.6.	'Leaves'.....	76
Figure 4.7.	'Leaves'.....	77
Figure 4.8a	'Examples of details added by the test group'.....	85
Figure 4.8b	'Example of details added by the control group'.....	86
Figure 4.9a	'Example of size and shape by the test group'.....	87
Figure 4.9b	'Example of size and shape by the control group'.....	88
Figure 4.10a	'Example of balance in composition by test group'.....	89
Figure 4.10b	'Example of balance in composition by the control group'.....	90
Figure 4.11a	'Example of space used by the test group'.....	91
Figure 4.11b	'Example of space used by the control group'.....	92
Figure 4.12a	'Example of use of elements of art by test group'.....	93
Figure 4.12b	'Example of use of elements of art by the control group'.....	94

LIST OF DIAGRAMS AND TABLES

Diagram 3.1. Conceptual framework.....	38
Diagram 3.2. Action Research Helix.....	40
Diagram 3.3. Research design.....	42
Table 3.1. Data collection and procedures.....	45
Table 3.2. Summary of intervention lessons.....	49
Table 4.1. Assessment rubric for the pre-test.....	64
Table 4.2. Pre-test percentages achieved by test group and control group.....	65
Diagram 4.1. Compared pre-test results of the test group and control group.....	66
Diagram 4.2. Properties of visual perception addressed during intervention lessons.....	80
Table 4.3. Assessment rubric of the post-test.....	82
Table 4.4. Post-test percentages achieved by test group and control group.....	83
Diagram 4.3. Compared post-test results of the test group and control group.....	84
Table 4.5. Selection of test group participants for further analysis.....	96
Table 4.6. Summary of findings from learner U.....	97
Table 4.7. Summary of findings from learner V.....	103
Table 4.8. Summary of findings from learner W.....	108
Table 4.9. Summary of findings from learner X.....	114
Table 4.10. Summary of findings from learner Y.....	120
Table 4.11. Summary of findings from learner X.....	126

GLOSSARY

ANC – African National Congress, name of the political party presently governing South Africa

C2005 – Curriculum 2005, Outcomes Based Curriculum introduced in schools in South Africa since 2002

CAPS – Curriculum and Assessment Policy Statement, title of current curriculum in schools in South Africa since 2012

Constructivism – Is an approach to learning in education that focuses on learners to construct their own knowledge and skills from experiences.

Creative Arts – In this study refers to Visual Arts as a subject taught under CAPS Creative Arts

Creativity – Can be defined as a ‘specific interplay between imagination, improvisation and innovation’ (Karwowski, 2015:165).

DoE – Department of Education

Haptic perception – When the sense of touch is combined with visual perception

Intervention – A planned action that aims to bring about a positive change and outcome

NCS – National Curriculum Statement, national policy for education in South Africa

OBE – Outcomes Based Education

RNCS – Revised National Curriculum Statement, revised national policy for education in South Africa since 2004

WCED – Western Cape Education Department

THE DEVELOPMENT OF VISUAL PERCEPTION IN ARTWORK IN THE PRIMARY SCHOOL

CHAPTER 1: INTRODUCTION

1.1 Introduction and background to the research

In my practice as an art teacher at a primary school in the Western Cape, I noticed a phenomenon in the art production of my Grade 4 and Grade 5 learners that warranted an investigation. There were small changes in the way the learners in the Grade 5 classes depicted certain objects, such as drawing from reference and objects from life, in their Creative Arts projects. It was as if the learners experienced a sense of frustration, due to the fact that they were sometimes unable to represent these objects the way they visually perceived them.

Grade 5 learners are between 10 and 11 years of age. When children are in this phase, termed middle childhood (Hutchinson, Charlesworth, Wood & Viggiani, 2010:180), they gradually become more aware of reality and the world around them. Piaget (1952) called the phase of children aged 7 - 11 the concrete-operational period for this very reason – their fantasy world is declining, and the true representation of reference objects and things surrounding them become important. With regard to their artwork, the effect is that they gradually become more aware of what things really look like and also that their drawings do not represent the perceived reality. Many children become self-conscious, draw smaller, and often lose confidence in their ability to depict the world around them (Lowenfeld & Brittain, 1975:26).

This decline in the learners' confidence can be linked to the U-curve model developed by educational psychologists. The U-curve model, according to Wachowiak and Clements (2010:180), is the decline in learners' creativity that is caused by their "self-imposed demands to photographic realism". Learners become self-conscious of their ability to depict real-life objects and objects from reference as they perceive them, which results in learners doubting their ability to produce imaginative and creative works of art. Unfortunately, very few learners regain their self-confidence, and as a result, do not resume their creative attempts (Wachowiak & Clements, 2010:180).

CHAPTER 1: INTRODUCTION

A combination of both the developmental stage and external factors were considered when designing this study. The focus of the study was to ascertain whether the enhancement of their visual perceptual skills (Orde, 1997:271) will assist young learners in their observational abilities and skills, helping them to overcome this challenging period in their development, leading to an enhancement in their artwork at school.

In order to understand the current situation of visual perception and art in the primary school, an overview of South African art education is needed, with special focus on what is being taught under Creative Arts in grade 5. The following section provides an overview of the South African curriculum and Creative Arts education.

1.2 Overview of the South African educational system and Creative Arts education

In the past twenty-five years, South African education changed dramatically. A new government, led by the African National Congress (ANC), sought to eradicate the social, political, and educational injustices caused by apartheid. An inclusive education system and curriculum were a priority (De Wet & Wolhuter; 2009:359). The vision the ANC had for the new education system was to integrate education and training into a system that would foster lifelong learning (Adu & Ngibe, 2014:983).

In 1998, Curriculum 2005 (C2005) was rolled out as the new reformed curriculum in South Africa with outcomes-based education (OBE) as its prime philosophy. A new national policy was created, known as the National Curriculum Statement (NCS) (Krishna; 2013:1). The introduction of OBE was seen as a solution to transform and unite societies as an answer to economic growth by promoting democracy and magnifying learner involvement in the education arena (Misila, 2007:151).

In 2000, C2005 and the implementation thereof were reviewed by a Ministerial Committee. The review committee recommended that C2005 needed to be revised by strengthening and streamlining its design features and outcomes. In 2004 the Revised National Curriculum Statement (RNCS) was introduced and implemented in South African schools (DoE, 2011).

The focus of OBE was for learners to achieve prescribed outcomes, as it moved away from content-based education to outcomes-based education. The main objectives of OBE (C2005) were the critical-outcomes the learners had to master. Outcomes were anything in

CHAPTER 1: INTRODUCTION

which the learners could demonstrate knowledge, skills, and problem-solving. The outcomes of OBE did not only pertain to one subject but to all. Subjects were changed and integrated to form eight new learning areas. Teachers were merely seen as content planners, facilitators, and mediators between knowledge and problem-solving. They had to creatively guide learners to arrive at the prescribed outcomes and conclusions (Misila, 2007:151).

One of the new learning areas introduced was Arts and Culture. The focus of this new learning area was to educate learners about the importance of heritage and cultural awareness. The aim was to teach learners how to integrate the knowledge of their own culture with that of others, and how to develop creative, innovative and productive individuals in line with the values of democracy according to the constitution of South Africa (DoE, 2003:19).

Arts and Culture consisted of four integrated disciplines namely Music, Dance, Drama and Visual Arts. The teachers who were expected to teach Arts and Culture were not always subject specialists, but rather general teachers with little to no knowledge of the subject. Depending on the stance and resources of the school, certain disciplines received more focus, leaving others neglected and not properly taught (Westraadt, 2011:160). According to Adu and Nigibe (2014:985), one of the cornerstones of the successful implementation of OBE, was that teachers had to be competent in the practical understanding and participation of their learning area, which was not always the case. Many teachers lacked the skills and knowledge to effectively teach and inspire learners in Visual Arts, resulting in the neglect and under-development of many essential skills and abilities Visual Arts has to offer.

In 2012 the Curriculum and Assessment Policy Statement (CAPS) came into being as an amendment of the NCS of 2005. The reason for the revision was to make the curriculum more user-friendly to both students and teachers. The old NSC (OBE) placed too much focus on teaching styles and outcomes instead of teaching content. The content was too broad and unspecified, leaving most teachers overwhelmed with what to teach and how to teach. The OBE curriculum over-emphasised assessments and the associated administration, leaving teachers overloaded with tasks that were unrelated to their teaching (Independent Education, 2010).

CHAPTER 1: INTRODUCTION

The main change was that the focus shifted from learning outcomes and assessments to strengthen the content being taught. Each grade and subject was provided with a concise curriculum and assessment document that provided teachers with details of what to teach and how to assess. Another change brought about was the downscaling and further integration of the eight learning areas in the intermediate phase (Grade 4 to 6), to 6 subjects namely, Home Language, First Additional Language, Mathematics, Natural Sciences and Technology, Social Sciences and Life Skills (DoE, 2011).

Arts and Culture, as it was known previously, was renamed to Creative Arts and was still an integrated subject of all four disciplines related to the Arts, namely, Music, Dance, Drama, and Visual Arts. Creative Arts, Life Orientation, and Physical Education fall under the subject of Life Skills. According to the CAPS document, only four hours per week had been allocated to Life Skills, which consists of six disciplines. The time allocated for the four disciplines of Creative Arts is only an hour and a half per week. This resulted in a drastic reduction in time allocation to the already endangered subject of Visual Arts (Pretorius, 2016:17).

After the announcement of the curriculum reform, in-service teachers received one week training during the June\July school holiday (Westraadt, 2012:65), which was not sufficient for the implementation of a revised and reformed curriculum. According to Dixon, Janks, Botha, Earle, Poo, Oldacre, Pather, and Schneider (2018:1), in-service teachers in the primary school are predominantly generalist teachers who are expected to teach across all domains of the curriculum. This fact, along with insufficiently trained teachers expected to implement a revised curriculum may result in certain subjects not being adequately taught, due to a lack of experience and knowledge. One such subject that does not receive enough pre-and in-service training for generalist teachers is Creative Arts. Jansen van Vuuren (2018:2) supports this statement by citing that pre-service generalist teachers only receive an overview of the various art forms without any focus on special techniques, skills, or knowledge of how to teach each discipline of Creative Arts effectively.

According to the CAPS document (2011), the three topics to be covered in Grade 5 for Creative Arts are visual literacy, to create in 2D, and to create in 3D. Under each topic, the learners are meant to develop 'a deepened awareness of art elements and design principals, develop techniques, focus on contrast and emphasis and to develop a sense for

the use of personal space' (DoE, 2011:14). The topics mentioned above and skills will only be developed effectively if generalist teachers have the proper knowledge and practical skills to teach quality and meaningful Creative Art lessons.

The following section will focus on the importance of quality and meaningful Creative Arts education in the primary school to develop the critical skills of learners effectively.

1.3 Importance of quality Creative Arts education in the primary school

In the primary school, learners view Creative Arts lessons as an exciting and less restrained form of learning. Although this is true to a certain extent, quality Creative Arts education offers learners the opportunity to learn and develop through a creative approach. Expertly taught and quality Creative Arts education in the primary school pre-amps several interrelated factors that enhance the holistic development of learners.

When learners enter an art room, most of them experience a sense of relief, away from other more structured subjects such as Mathematics and Natural Science that are guided by set formulas and calculations to produce an exact product or result. Creative Arts lessons present learners with an opportunity to freely express themselves through proper learning and guidance from their teacher. Quality Creative Arts education aims to develop an array of perceptual skills that assist them in enhancing and access their cognitive resources that are vital during art -making projects (Kiese-Himmel, Witte, Islam & Von Steinbuchel, 2015:47).

When learners are educated to actively think and reason during art activities and to make use of their senses, it promotes original thought resulting in creative works of art (Van de Kamp, Admiraal, Van Drie & Rijlaarsdam, 2014:47). These learning opportunities has the power to enrich the lives of learners to experience the full range of human emotion made possible through a keen sense of observation and aesthetic awareness (Campbell & Townshend, 1997:8).

Anttila, Williams, Doan, Barrett, Ruthmann, Pavlou and Athanasiou (2014:2) argue that integration between sensory input and cognition is of vital importance when learners are taught skills and techniques during art-making projects. Educators need to reiterate and

CHAPTER 1: INTRODUCTION

reinforce the importance of what is taught for learners to understand that art-making is not only a fun activity but that their perceptual awareness and observation are being refined.

The development of aesthetic awareness and fine-tuned perceptual abilities helps learners to observe and analyse what they visually perceive. According to Hale (2015:7) drawing and art can be used as a tool to enhance the observational skills of young learners and are vital to the development of their minds. By thinking creatively to solve problems, they can consider different possibilities and solutions to a problem. This statement is supported by Mahgoub (2015:100), who states that Creative Arts education allows learners to explore their world through an artistic lens that assists them in expressing their own beliefs, emotions, ideas, and opinions. Creative expression through art-making projects encourages thinking and solving problems creatively. Koliijn (2013:597) cites that art and science share a common source, namely observation, which leads to scrutiny, enquiry and creative problem-solving. When learners are taught, in art, to think and reason creatively, and by making keen observations they are able to apply their newly formed skills in other subjects.

During the art-making process, creative thinking is of the utmost importance. Quality art education requires teachers to educate learners on how to creatively respond to a multitude of problems they may encounter during the art-making process. Van de Kamp et al. (2015:48) suggest that a way to advance creative problem-solving is through divergent thinking. This is a critical way of thinking that allows a person to respond diversely to a problem, which is imperative to the creative process. A way to educate learners in divergent thinking is to sharpen their observational and analytical skills. Divergent thinking allows the learner to switch between what they perceive and their ability to retrieve visual cues, thus making use of different forms of cognition such as reasoning, perception, visual memory, and mental imagery (Van de Kamp et al., 2015:48).

Eisner (2002:26) suggests that when cognition is an active process during the creation of an artwork, knowledge is being constructed from different domains of the brain. While learners create art, newly formed concepts and knowledge are linked to existing knowledge, which allows learners to creatively and systematically solve problems they may encounter. During this process, meta-cognition takes place. Alias, Gray & Black (2002:166) agree by stating that cognition, recognition, and meta-cognition are all processes involved in the making of art.

CHAPTER 1: INTRODUCTION

This supports the idea that skills and abilities attained through well taught and quality art education can transcend all areas of education and enable learners to apply these skills in a multitude of situations, such as in Natural Science and Mathematics.

Although visual perception in art is the primary focus of this study, it is important to note what is required from teachers, to promote quality art. Through quality art education, learners are taught to visually recreate scenes from their day to day lives and imaginary components. For learners to develop to their full potential, McClure, Tarr, Thompson and Eckhoff (2017:155) suggest there are seven principles all Creative Arts educators should follow to ensure quality Creative Arts education is taught. According to them, the following principles are of utmost importance:

- Learners need an organised environment that fosters interaction, discovery, exploration, and imagination.
- Learners need access to an array of art media that can facilitate 2D and 3D expression.
- Learners need ample structured and unstructured time to explore the sensory/ kinaesthetic properties of materials fully.
- Through quality art education, learners need a teacher who can value their diverse abilities, cultural experiences, ideas, and interests.
- Learners need an art teacher who is able and willing to support them to develop necessary skills of how to use and care for art materials.
- Learners need a teacher who can understand and support them in the unique way they represent their thoughts and feelings.
- Learners need a teacher who can understand and support the multiple ways in which they create and incorporate meaning through conversation, thought, exploration, play, and art-making (McClure et al., 2017:156).

Proper instructional teaching is just as important as the Creative Arts curriculum to ensure quality art education. With a combination of these facets of teaching, Creative Arts has the

potential to support and facilitate the holistic development of young learners in art-making projects. Westraadt (2007:5) identified the following aspects of development that can be enhanced by learning through Creative Art:

- Cognitive development
- Social development
- Emotional/spiritual development
- Manipulative/physical development
- Aesthetic development
- Entrepreneurial/vocational preparedness
- Perceptual development

From the literature discussed this far, Creative Arts education can assist learners in various domains and stages of their development. One phase of development, namely middle childhood development, drew the interest of the researcher and formed the basis of this study. The following section will take a closer look at middle childhood as a developmental stage.

1.4 Middle childhood

Middle childhood development has been an area of research for several years. It is the phase between early childhood and adolescence (Knoetze, 2013:43). Middle childhood is an intermediary phase that categorizes children between the ages of 7 to 11. Children in Grade 5 are typically between the ages of 10 to 11 and the focus was on this age group throughout the study.

In this phase of development, children start to navigate their ways through social and cognitive structures. They form their ideas about their abilities and how they view themselves concerning their worlds, especially in social and educational settings (Coll & Szalacha, 2004:81). When children move into and through middle childhood, there is a noticeable change in their intellectual processes, memory functions, and how they retain information.

CHAPTER 1: INTRODUCTION

They become aware of their ability to understand themselves and their environment (Hutchinson et al., 2010:187). When an interaction between the child and their environment takes place, the developmental stage they are in becomes 'modified, combined and reorganized,' and that aids them in forming a more complex "cognitive structure". Through childhood developmental stages, these cognitive structures enable the child to think in a more complex and refined way (Cook & Cook, 2005:5), which is compatible with Piaget's concrete-operational stage (Hutchinson et al., 2010:187).

Piaget's (1952) theory of cognitive development of the middle childhood learner is known as the concrete-operational stage. In this stage of their development, Piaget (1952) theorizes that children no longer see a problem but are 'able to think about two or more dimensions of a problem,' and how to solve it through constructivism (Cook & Cook, 2005:165). In the concrete-operational stage, children hold the ability to appropriately and actively make use of logical thinking. These logical thinking abilities are 'limited to every day or concrete examples.' In this stage, children learn to make use of logic to observe, and they do not only focus on the appearance of objects (Croft & Smith, 2008:2). Thus, perception and cognition start playing a vital role in how the child perceives his environment.

Piaget tested his theory of how children, in the concrete-operational stage, perceive their environment, by using his "conservation of liquid quantity test." In this test, two containers were filled with the same amount of water. Children were asked which container had the most water, a short, wide container, or a thin, tall container. Younger children, not yet in the concrete-operational stage, would point out the thin, tall container as having more water in. The younger children placed more importance on the appearance of the container, instead of being able to work it out (Fein, 1977:330) logically. Based on Piaget's "conservation of liquid quantity test", Flavell (1985) developed his own theory, known as "inferred reality versus perceived appearance" (Kurtines, Gewirtz & Lamb, 2014:188). He reasons that the child in the concrete-operational period relies less on the perceived appearance of an object and more on the results of internalized mental operations that form part of cognition. Children in the concrete-operational stage are more sensitive to the important differences between objects in the space around them (Fein, 1977:330).

CHAPTER 1: INTRODUCTION

According to Anttila et al., (2014:2) art-making projects, specifically observational drawings, can be used to reinforce these differences between real-life objects as well as to teach learners how to better understand images and the visual properties of objects in their environment. When learners are taught to develop keen observational skills during the creative process, critical thinking and problem-solving skills are augmented. Keen observational skills and self-directed learning can instil divergent thinking. When art teachers use the creative process as a catalyst to amplify divergent thinking, middle childhood learners will be able to analyse a creative challenge and contemplate the complexities of the situation in order to develop a creative solution (Khatri & Dutta, 2018:1004).

Blacken-Webb (2014:55) and Eisner (2002) point out that art does not only provide access to the multiple forms of representation, but it also helps learners to establish the importance of self-in-relation-to-environment. When a refinement of self-in-relation-to-environment takes place, the learners discover the “essence of creative living” and thinking (Blacken-Webb, 2014:56).

As mentioned above, middle childhood is a critical developmental phase that plays an unmistakably vital role in how children develop from child to adulthood (Knoetze, 2013:44). In this intermediate phase, significant developmental changes take place, and already existing skills and abilities are reinforced and become more defined.

The literature consulted thus far was used as a background to stress the current state of Creative Art education in the primary school as well as the importance of quality Creative Art education. The literature in this section forms an essential introduction to the literature review of Chapter 2 and in the data analysis of Chapter 4.

1.5 Research question

How can teachers assist in the development of visual perception in Creative Arts in the primary school?

Sub questions:

- a) What is the role of visual perception in the art-making of primary school learners?

CHAPTER 1: INTRODUCTION

- b) Does the Creative Arts CAPS curriculum provide teachers with sufficient guidelines to develop visual perception in art in the primary school?
- c) How can visual perception and awareness training assist children in the middle childhood years (Grade 5 learners) to depict real life objects and three-dimensional shapes in their art?

1.6 Research objective

Although scholars have proved the importance of Creative Arts education for the holistic development of young learners, little attention has been paid to the development of visual perceptual skills and observational abilities in Creative Arts.

The objective of this qualitative case study was to investigate whether enhanced visual perception sharpening exercises would assist Grade 5 learners in their observational skills while completing practical projects set for art education in the primary school. This will provide more insight into how the Creative Arts curriculum can effectively be enhanced to support and assist learners during the developmental slump that occurs during the middle childhood years. This research stresses the importance of including enhanced observational skills and techniques in the CAPS Creative Arts curriculum that is essential during most art-making projects.

1.7 Delimitations and limitations

The study was conducted at a primary school in the Western Cape that was my place of work. This single site was selected due to its convenience and time constraints associated with research in the workplace. These limitations warranted a small sample that consisted of four Grade 5 classes. Time constraints that limited the study were that the study had to be conducted during regular school hours. I had an hour and a half per week to administer, observe, and document the intervention of the study during one school term.

1.8 Significance of the research

South Africa's educational landscape is forever changing. Before another curriculum reform and redesign is upon us, Creative Arts educators, policymakers, and curriculum designers

CHAPTER 1: INTRODUCTION

need to shift their focus to retaining the creativity of learners in middle childhood. Learners from grade 4 to 6 lose their confidence in their ability to create in Creative Arts due to their perceived inability to depict what they visually perceive.

This can lead to a decrease of creativity, also known as the U-curve (Pelowski & Leder, 2017:91). This study aims to provide a framework of how visual sharpening exercises can assist learners in the middle childhood to overcome the slump and decrease in their creativity.

If learners in the middle childhood are to overcome the slump in their creativity through visual sharpening exercises, they will need to be taught specialised skills and techniques by capable teachers. Unfortunately, most generalist pre-and –in-service teachers are not adequately trained to teach Creative Art and the associated skills and techniques required for quality art education (Jansen van Vuuren, 2018:2). This study may enable pre- and in-service generalist teachers to effectively make use of visual sharpening exercises to assist learners during the middle childhood years to overcome the decline in their creativity in Creative Art projects. This research can contribute to a more in-depth understanding of declining creativity of learners in the middle childhood, and support the implementation of visual sharpening exercises to amend and strengthen the Creative Arts curriculum in the primary school.

1.9 Personal trigger

My personal trigger to conduct this research study was to investigate the current Creative Arts CAPS curriculum and the support it offers learners in the middle childhood who might experience the effects of the U-curve as explained by Wachowiak and Clements (2010:180). In order to answer the research questions set out in this study, I aimed to investigate the outcome of an intervention so that I would be able to disclose the shortcomings in the current Creative Arts curriculum.

This concludes the introduction to the study. In the following chapter, the literature consulted in this study will be discussed.

**CHAPTER 2
LITERATURE REVIEW**

2.1 Introduction

The literature consulted in Chapter 1 forms the introduction to the literature review and is an essential part of the background of the study. In this chapter, the different aspects of visual perception and observational skills will be discussed as they pertain to Creative Arts education. The development of artistic expression (2.2) is deemed as a logical point of departure to ascertain when and how young learners develop their sense of artistic expression. Many factors such as the U-curve, creativity, and the observed role of gender and behaviour in the art room setting, can either promote or inhibit artistic expression. In section 2.3, the link between visual perception and art education will be expounded on in terms of how Creative Arts education has the ability to promote, develop, and foster essential visual perceptual skills. In section 2.4 the process of an intervention in Creative Arts will be discussed. When a Creative Arts intervention is purposefully executed, it will aid the further development of critical perceptual skills necessary during art-making projects. This chapter will end with concluding remarks in section 2.5.

2.2 Development of artistic expression

Creative Arts in the primary school has the power to involve the participant (learner) to experience and portray an array of human emotions, experiences, and cultural diversity. Art education is an integral part of learners' general education as it improves their self-esteem and self-respect and nurtures them with aesthetic values (Laal, Aliramaei, Laal, 2013:4114). In this section, the development of artistic expression and the factors that might influence it will be discussed.

The natural unfolding of children's artistic expression plays an essential and valuable part in their overall development. It allows them to articulate themselves artistically by communicating their experiences and their views of the world around them. Many intrinsic and extrinsic influences can help to shape and develop children's artistic expressions. The development of this unique kind of expression has captured the interest of many scholars

CHAPTER 2: LITERATURE REVIEW

and researchers such as Derham (1961), Lowenfeld and Brittain (1975), Eisner (2002), Seefeldt (2002), Wright (2003) and Gardner (2004). They have all devised their own opinions on how and when children develop their individual artistic expression. These scholars and researchers are all in agreement that the development of artistic expression unfolds naturally through children's own experiences and daily influences as well as through quality art education practices (Twigg & Garvis, 2010:196).

A few coherent theories and their differences will be looked at, starting with Lowenfeld's (1934) theory of artistic development that is grounded on the basis that children go through a linear and chronological stage of development. His theory is defined as a progression of creative abilities from uncontrolled scribbles to forms of pictorial representation (Kindler, 2010:3). Lowenfeld identified six different stages of artistic development, namely; the Scribble phase, the Pre-schematic phase, the Schematic phase, the Dawning Realism phase, the Pseudorealistic phase, and Adolescent phase (Lowenfeld & Brittain, 1975:28). During each stage of development, Lowenfeld assigned different characteristics and milestones that the child should master by a certain age before progressing to the next phase. This study has placed a focus on the Dawning Realism phase that falls parallel to the middle childhood stage of development.

Efland (1964:7) believes Lowenfeld's theory of artistic development is not accurate enough and does not account for extrinsic attributes that may influence artistic development. He described these inconsistencies of Lowenfeld's theory by stating that he had not considered the different artistic behaviours of young learners (Efland, 1964:8). On the contrary, Ferrara (1999:14) agrees that Lowenfeld's stages of artistic development are still a relevant theory that applies to learners today.

In addition to Efland's statement, a contemporary study on artistic development was done by Darras and Kindler (1994) that contests Lowenfeld's statement that artistic development of learners take place on a linear, chronological plane. They state that different influences depict young children's artistic development, namely pictorial imagery. According to Darras and Kindler (1994), pictorial imagery is influenced by an array of varying aspects including social environments and cultural aspects (Grandstaff, 2012:10).

According to Chaleroy, Frederiksen, Jensen, Mckenna, and Thomas (2012:51), artistic development is a fragment of human development. It is a combination of social – and cultural influences that form a complex structure around which we, as humans, represent our "experiences and understandings" of our everyday life. In the beginning stages of young children's graphic representations, they will often attempt to depict personal ideas and experience. These personal ideas and experiences will include influences from their frame of reference (Chaleroy et al., 2012:54). Only once children get older, will they include different experiences and perspectives of others.

As children get older and move into middle childhood, their artistic expression is characterised by gains in arranging compositions, the inclusion of details and attempting to achieve perspective by making distant objects appear smaller (Cherney, Seiwert, Dickey & Flichtbeil, 2006:130). In the middle childhood, learners do not see art-making as a way of expressing themselves anymore, and this marks the end of their spontaneous creative attempts. In this phase, the learners are interested in achieving realism in their artworks. A lack of cognitive ability and knowledge of techniques can be the cause of learners not being able to achieve realism in their artworks, which in turn can cause self-critical feelings and thoughts of their creative attempts (Charleroy et al., 2012:50).

The self-critical feelings and thoughts learners in the middle childhood foster towards their artistic creations can be influenced by several factors which will be discussed in the following section under the headings of the U-curve, creativity and observed role of gender and behaviour in the art room setting.

2.2.1 The U-curve slump

The U-curve, also known as a creative slump, has been an area of interest and research since the mid 1950's (Darvishi & Pakdaman, 2012:40). Research on this topic identified a problem when children in middle childhood development showed a decline in artistic interest and a slump in their creative attempts. This decline has always been accepted as a natural part of their development. Wachowiak and Clements (2010:217) attribute this decline in learners` creativity as a slump where learners become self-critical towards their art productions.

According to Chaleroy et al. (2012:51), other research on the topic describes that learners in the middle childhood often experience a sense of confusion and exhibit conflicting thoughts about their place in the world and how they fit into the ever-changing “world scheme”. These mixed feelings can be a contributing factor to their declining interest in expressing their creativity (Chaleroy et al., 2012:52). Lowenfeld and Brittain (1975:26) agree by citing that children in middle childhood gradually become more aware of reality and the world around them. During this phase, their fantasy world declines, and the true representation of objects and things surrounding them become important. The effect is that they gradually become more aware of the real appearance of what they perceive and that their drawings do not represent the perceived reality. Many children become self-conscious, draw smaller, and often lose confidence in their ability to depict the world around them. When this happens, the child reaches a creative plateau. This creative plateau the learners encounter can lead to the U-curve decline in their creative attempts and lead learners to self-criticise their creative efforts.

This self-critical view learners experience about their art productions can be attributed to a more complex thought structure about their reality versus their world view (Chaleroy et al., 2015:52). These complex thoughts can be accompanied by learners that do not see art-making as a way to express themselves and "to communicate their personal concerns" (Amorino, 2009: 218).

The decline in learners' creativity and their confidence to create has been discussed thus far. In the following section, the development of creativity will be discussed as well as the correlation between the decline in creativity and the subsequent U-curve.

2.2.2 Creativity and the U-curve

Defining creativity is not a straightforward task. Over the years, many writers and theorists have made their contributions to identify the characteristics and components of creativity. Karwowski (2015:165) defines creativity as “a specific interplay between imagination, improvisation, and innovation”. According to Sharp (2004:5), creativity can be seen as an unique kind of intelligence that extends past being artistic and musical. Creativity is about thinking in a creative manner that transcends all areas of cognitive abilities and intelligence.

CHAPTER 2: LITERATURE REVIEW

Darvishi and Pakdaman (2012:40) cite that creativity forms part of a cognitive process and consists of two critical components, namely problem solving and divergent thinking. When these two components of cognition are employed, a person has the increased potential and ability to adapt to his environment to perceive and solve problems in a more creative manner. Claxton, Pannells, and Rhoads (2005:327) suggest that creativity and divergent thinking share the same cognitive components, namely fluency, flexibility, and originality.

According to Claxton et al. (2005:328) the development of creativity can either be linear or show non-linear patterns. If creativity develops linearly, it is a natural evolution over time as the individual matures. In a discontinuous or non-linear manner, creativity can develop in stages, where the development of creativity goes through slumps and peaks as the individual matures.

Children possess a high level of creativity before entering a formal school structure. They can fantasise and explore their environment through experiments and imaginative playfulness. Unfortunately, not all of them retain this high level of creativity throughout their childhood (Sharp, 2004:8). The difference between learners in the middle childhood phase and younger learners is that younger learners possess natural creativity, and their originality and innocence are brought forth through their naïve and honest graphic representations of their environment. Learners in the middle childhood, however, constrain their creative drawings with representational conventions, supporting Lowenfeld's (1950) theory that creative attempts of learners in the middle childhood decrease due to their need for realistic renderings (Jolley, Barlow, Rotenburg & Cox, 2016:4).

Researchers in the field of creative development are all in agreement that various factors can cause creative slumps and peaks. Gralewski, Gajda, Jankowska, Lebuda, and Wiśniewska (2016:155), Darvishi and Pakdaman (2012:41) and Claxton et al. (2005:328) all postulate that four main factors can influence the slumps and peaks of creativity. They identified the following four factors:

- 'Biological development':

Gralewski et al. (2016:165) suggest that hormonal levels and the secretion of hormones might influence the development of creativity. Zenasni and Lubart (2002:35)

CHAPTER 2: LITERATURE REVIEW

agree with this by citing that mood or emotion might affect creativity. A positive attitude or emotion evoked during a creative process or activity can have a positive effect on the creative attempts of the individual. The positive mood- state a person holds towards being creative is due to the release of the hormone dopamine. This hormone helps to facilitate cognitive flexibility, which is the ability to deploy attention to, and view a problem from multiple perspectives.

- 'Cognition and creativity':

As children mature, so do their intellectual abilities. During the middle childhood stage of development, learners develop logical thinking and sharpened reasoning skills. This is due to the continuing development of the frontal lobe. As the frontal lobe develops, learners find it difficult to restrain certain impulses, and this has an impact on their ability to manage the influx of information they have to process daily in an educational environment. This inundation of information processing may lead to learners experiencing a decline or slump in their creativity (Gralewski et al., 2016:157).

- 'Psychosocial needs':

Gralewski et al., (2016:156) claim that the psychosocial needs and development of learners in the middle childhood phase can have an impact on the development and attainment of their creativity. They postulate that how children develop socially during specific developmental stages; can determine how confident they are in their creative attempts. During the middle childhood stage of development, children seek out and need acceptance from their peers. Claxton et al. (2005:328) point out that this need for approval might lead to peer pressure as learners attempt to conform to a school environment. This peer pressure related conformity results in learners feeling reluctant and ashamed to display any creative abilities.

- 'Environmental factors and stressors':

When considering environmental factors in childhood development, the most prominent environments that come to mind are school- and -social settings.

CHAPTER 2: LITERATURE REVIEW

In school situations, learners are subjected to a more conformed way of thinking about themselves and their world views. Gralewski et al. (2016:155) suggest that school-related conformity results in children becoming more inclined to abide by rules and regulations set out by authoritative figures. As a result, learners are limited to a conformed way of thinking, thus reducing spontaneous and creative play. Darvishi and Pakdaman (2012:42) agree by citing that a learner's response to personal experiences and educational environments can lead to a decline in creativity.

Creativity suggests an open-minded approach to exploring differences and original thoughts (Cullingford, 2007:133). When planning activities in the art room, art educators need to stay mindful not to inhibit the creativity of the learners. Creative activities in the art room should be suitable for learners and must emphasise the creative process, instead of judging the quality of their work (Sharp, 2004:8). Children, on the other hand, when asked to define creativity, will respond by thinking of one of two things. The first is the result of the creative process in the form of the product. The second is an apprehension to create due to their inability to apply themselves (Cullingford, 2007:133).

According to Sheridan-Rabideau (2010:56), a way to counteract the U-curve decline is to teach and assess learners creatively. He states that teaching creatively should not cause apprehension in the learners' creativity but should enable them to express their own individuality and uncapped creativity freely. Teachers should strive to stimulate curiosity among learners and encourage them to become "noticers and questioners – avid and inquisitive observers" (Wachowiak & Clements, 2010:42).

The uninhibited creativity of Grade 5 learners will form an essential part of this study. The learners' freedom to express their creativity will ensure that the proposed visual perception enhancement training does not become a technical exercise that only focuses on a realistic representation of their environment. In the following section, the role of gender and behaviour in the art room setting will be discussed.

2.2.3 Observed role of gender and behaviour in the art room setting

In the previous sections, the development of artistic expression based on developmental stages and various factors influencing creative development were discussed. In this section, the correlation between genders (boys and girls) and artistic output will be expounded.

In an art room situation, many girls are known for their eagerness and willingness to participate in discussions and producing works of art, where some boys tend to show a lack of interest and unwillingness to co-operate. Burkitt, Barrett and Davis (2003:3) cite, the feelings boys and girls foster toward the topic of the artwork they create, may affect their artistic output and involvement. Etherington (2012:4) is of the opinion that boys tend to be more open to and interested in producing works of art when technology such as computers, software programs, and digital cameras are involved. During still life, observational sketching and painting, boys become frustrated and impatient with observing and recreating the same static scene or object. This may lead to them becoming more demotivated during art-making activities. Girls, on the other, hand generally tend to show more focus during art project since they take on more responsibility in self-study and are thus more disciplined to focus on the same object or static scene for longer periods.

Alter-Muri and Vazzano (2014:155), argue that the difference between the way boys and girls create visual representations can also be contributed to behavioural reinforcements from parents, teachers, and society. In the classroom, boys are typically perceived to be active and energetic participants. Their social interactions with other boys are generally rough and tumble action to assert masculinity. This kind of behaviour is often brought into the classroom. Girls, on the other hand, are more inclined to be calm and rather to build friendships and relationships than to be actively exuberant. The way learners develop their artistic expression is influenced by their social interactions with one another and is 'socially constructed' from their interactions with peers.

The difference between the way learners depicts detail, size, shape, and colour in their artworks has to do with their current stage of development. As learners mature and move into the middle childhood stage of development, their artistic renderings, and their ability to create more detailed and realistic works of art become important and more refined. Research has shown that girls tend to be more sensitive towards the detail they create in

their work because the development of their fine-motor skills are more advanced than that of boys of the same age (Alter-Muri & Vazzano, 2014:157). This advanced development of fine-motor skills may lead to girls using more space on a page when asked to create a drawing or painting. Wright and Black (2013:2), explain that because girls add more detail to their art, they use more space on the page. When girls are asked to draw a human figure, their drawings appear larger than that of the boys. This could be related to increased self-esteem (Wright & Black, 2013:3).

The difference in emotional development between boys and girls may influence their artistic output. As boys become older, they use fewer colours in their artwork than girls of the same age. Girls tend to use warmer and brighter colours, where boys tend to use more grey, blue, brown, and black colours (Alter-Muri & Vazzano, 2014:156). According to Wright and Black (2013:2), pre-pubescent and pubescent boys tend to use fewer colours in their art due to the inhibition of emotional responses, where girls use more bright and expressive colours due to their already heightened emotional development and response.

In summary, several factors that may influence and advance the development of the artistic expression of learners in the middle childhood have been discussed. The innate development of artistic output relies on a natural unfolding of artistic abilities. Some external factors, such as social- and environmental factors may influence the natural development and unfolding of young children's artistic abilities. In the following section, visual perception and the role it plays in art education will be discussed.

2.3 Visual perception in art education

Visual perception plays a vital role in how we interpret and understand our environment. According to Cahen & Tacca (2013:2), visual perception is tightly related to cognition. Our primary contact with our environment is what we perceive and how we perceive it. Cognition forms the basis of our understanding of what we visually perceive and is a result of previous and newly formed understandings of the dimensions of objects and images (Payne, 2012:246). Art education allow learners to develop in various ways from cognitive-, emotional-, social- and physical domains. In this section, the importance of visual perception

during the art-making process and how cognition forms an essential basis of these processes, will be discussed.

During art-making projects, learners are exposed to various media and techniques as set out in the CAPS Creative Arts curriculum. This document states that learners in grade 5 should create and produce art in the form of 2D and 3D. The 2D component for Visual Arts is any drawing, painting, and collage the learners create, whereas the 3D component refers to modelling and sculpting, using different materials, such as clay, papier-mâché, or sculptures made from recycled materials. As young learners create art, their visual perceptual abilities play a vital role in how they present and recreate perceived objects and experiences.

According to Gardner (2004:179), there are seven primary forms of intelligence, of which visual perception is one. Visual-spatial intelligence is when the mind relies on the sense of sight to be able to envision objects and images. This ability allows the person to manipulate images and objects in the mind visually and includes mental rotation and the construction and processing of larger images from smaller individual images (Campbell & Townshend, 1997:5). Kindler (2003:292) states, that visual culture forms an important part of art education, as it promotes the development of visual intelligence.

Gardner (2004:179) postulates that the ability to visualise the relationship between objects in the mind is a distinct and unique type of non-verbal intelligence. The right hemisphere of the brain is the centre of non-verbal intelligence, and according to Edwards (1999:167), non-verbal intelligence can be viewed as 'being sensitive to colour, line, shape, form, space and the relationship between them.' Quality and meaningful art education can increase and develop spatial awareness, visual thinking, visual problem solving, and mental imagery formation, as it enhances cognitive orientation and perceptual learning (Haanstra, 1996:179).

2.3.1 Visual problem-solving

Creative visual problem-solving in Creative Arts refers to the ability to visually perceive a problem during the art-making process and to mentally determine how to resolve the

problem through creative and innovative thought (Pitri, 2013:41). Creativity can be seen as the portal through which the mind explores new and different possibilities to solve a problem we visually perceive (Flogieri, Dei Cas & Lucchiari, 2017:1).

During art-making projects, learners have to creatively calculate risks to see if they can resolve the problems they face before they can produce an artwork. Mental imagery is one of the tools learners can use to imagine and calculate the results of an artwork and to figure out how to solve the problems they encounter (Lawing, 2016:5).

2.3.2 Intrinsic visual skills

Art-making projects can be an effective method to improve visual perception as this makes use of pictorial cues, which allows the brain to recognise objects and interpret visual properties of objects (Melcher & Cavanagh, 2011: 359). When learners are asked to create a work of art a parallel process takes place between recognising objects and images and visually comprehending the properties and dimensions of what is perceived. Visual comprehension relies on us seeing the whole image (gestalt), including foreground, background, and smaller details. The process of visually observing an object and recreating it through art is made possible through a series of cognitive processes, including comparison and analysis of the properties of the image (Turkmenoglu, 2012:849).

When learners learn through Visual Arts education, it can give rise to critical intrinsic skills that in return, develop important visual perceptual skills necessary for creating in 2D. The gain of these important intrinsic skills can further expand creativity, imagination, self-expression, spatial awareness, and visual aptitudes like the perception of colour, composition, size, and physical acuity, such as hand-eye coordination. The proposed visual sharpening exercises of this study will focus on the further development of these intrinsic skills.

2.3.3 Perceptual learning

According to Lu, Hua, Huang, Zhae, and Doshier (2012:1), perceptual learning is an essential skill that assists the training and practice of visual perceptual tasks, which can also

improve visual perceptual performance. Perceptual learning can transform previously overlooked visual stimuli into useful information. In Creative Art education, learners need to make use of an array of visual tasks while completing a work of art. Lu et al. (2010:2) postulate that training and practice in perceptual learning not only improves, but also assist learners in these visual tasks such as visual discrimination, the judgement of stimulus orientation, texture discrimination, object recognition, and visual contrast detection.

During art-making projects, learners need to be able to distinguish between relevant information. Perceptual learning allows for the improvement of information extraction from a rich, multidimensional stimulus (Kellman & Garrigan, 2008:63). Art projects assist learners in understanding depth and perspective by making use of visual differentiation and cognition. During the modelling process of 3D art, learners need to be able to either plan a 2D rendering or make use of mental imagery before constructing their project. This process of planning and construction allows for a variety of visual perceptual tasks and cognition.

Visual perception and cognition are valuable tools used by learners in the creation of art-making projects. The intervention exercises of this study are used to gather a better understanding of how these two processes are related. The literature consulted in this section supports the theory that the processing of visual data during the art-making process, takes place in the brain. Because the brain is actively involved during perception, numerous interrelated processes take place to ensure optimal processing of visual data. These processes include visual memory and mental imagery. In the following section, these processes will be discussed as well as how they relate to visual perception as a part of cognition and what may influence varieties in visual perception.

2.3.4 Visual memory

Visual memory can be divided into different memory systems, each with a different nature of how memory representations are stored. Visual short-term memory and visual working memory can be viewed as the same, where both systems have a minimal capacity to store only a few items. The difference between these systems is that visual working memory can manipulate temporarily stored information e.g., mental rotation of objects (Cowan, 2008:330). Visual long-term memory, on the other hand, is a passive system that can store

thousands of images, words, items, and associations of various representations for an extended period (Brady, Konkle & Alvarez, 2011:2).

During visual perception, visual memory allows for object identification. How we understand the dimensions of an object largely relies on previously formed concepts and knowledge. Object recognition is dependent on our visual memory and visual knowledge. Tacca (2011:8) explains this as follows:

The processing of visual data is made up of different stages, namely early vision, intermediate vision, and late vision. During each stage, the visual system processes information differently. In early vision, the basic features of our environment and objects are detected, for example, the distinction between foreground and background and basic shapes and sizes of figures. All these basic components are then combined to form a provisional image of the object during the intermediate stage. During late vision all the information processed thus far is matched with the dimensions of previously perceived objects that are stored in the visual long-term memory. Once the perceived object is matched with an object from the long-term memory, object identification and recognition is achieved.

Visual memory and mental imagery share common structures and will be discussed in the following section.

2.3.5 Mental imagery

Visual perception is an active process of construction that relies on the visual brain and visual intelligence (Kindler, 2003:292). These processes rely on us constantly interpreting our visual environment, and by doing this, we update our visual knowledge by analysing slight changes of our environment and comparing features of objects around us (Leymarie, 2011:3).

An essential part of perception and visualisation is integration between sight and a recognition of our environment. According to Walker, Winner, Heatland, Simmons, and Goldsmith (2011:22) visualisation and perception is a habit of the mind. The way we see and construct images all take place in the “mind's eye”. McManus, Chamberlian, Loo, Riley,

CHAPTER 2: LITERATURE REVIEW

Rankin, and Brunswick (2010:18) suggest that when learners are expected to draw objects from life, they look at the object and dissect it in the mind's eye so that it can be reconstructed again. When drawing from memory, the object is recalled by mental imagery. Mental imagery is the ability to 'see in the mind's eye' and to recall and visualise images and visual representations in the absence of visual stimuli (Walker et al., 2011:23).

Mental imagery is the process of accessing and reactivating perceptual information stored in the visual memory centre of the brain (Tong, 2013:489). Borst and Kosslyn (2008:849) agree by citing that visual representations stored in the visual memory are used to form mental images.

Both visual working memory and mental imagery are essential tools and links between past events and future decision making. Recent studies have shown a relationship between visual working memory and mental imagery, where participants in visual working memory tasks suggest they create a detailed mental image to improve performance (Keogh & Pearson, 2011:1).

Mental imagery is a component of imagination that enables people to imagine objects, sounds, odours, textures, and taste (Brogaard & Gatzia, 2017:2). When visual mental imagery is employed during the art-making process, it allows learners to retrieve certain images from visual memory and to manipulate them while creating a work of art. The manipulation of images from the visual memory allows a person to envision and contemplate different scenarios of either a memory or future events. This unique function of visual imagery is made possible by the overlapping of sensory representation of visual working memory and visual imagery (Keogh & Pearson, 2014:179).

Imagination is an integral part of our day-to-day lives. It is used in situations ranging from solving complex problems to visualising the outcome of situations before they even happen or imagining an event or place that has never been physically visited.

Imagination as a cognitive function is especially important during childhood. As mentioned in 1.3, imagination is an essential component during children's unstructured play, where imagination facilitates an unseen world of possibilities to children. It is important to foster imagination in children, not only for the sake of unstructured play but also as an educational

tool to be used during their school going years. There is a need for imaginative, problem-solving thinking skills in higher grades.

According to Cunningham (2015:22), our ability to use imagination to think does not cause a conflict with rational thought; in fact it can enhance rational thought. This supports the idea that imagination allows learners to explore alternative possibilities and solutions during their everyday interactions with subject material. In the following section, the varieties in visual perception will briefly be discussed.

2.3.6 Varieties in visual perception

As with any of our other senses, certain factors can influence the way we perceive and how our mind interprets stimuli. This section will explore different factors that can either hinder or influence what we visually perceive in the world around us.

Usually, when a person experiences a problem with their vision, one tends to assume it is a problem with the functioning of the eyes. In most cases when people become visually impaired it is due to the weakening of the eyes, glaucoma, or blindness. Every so often, the brain is the culprit. Cognition and behavioural mindsets can influence how and what we visually perceive.

According to Vetter and Albert (2014:3), cognitive penetration can be described as an influence of a higher cognitive state 'on a perceptual experience caused by a given sensory input,' or in other words, our, beliefs, memories, experiences and mental images can influence how and what we perceive. Siegal (2011:4) defines cognitive penetration as the following:

"If visual experience is cognitively penetrable, then it is homologically possible for two subjects (or for one subject in different counterfactual circumstances, or at different times) to have visual experiences with different contents while seeing and attending to the same distal stimuli under the same external conditions, as a result of differences in other cognitive states".

Cahen and Tacca (2013:5) state that other cognitive mechanisms can influence what and how we see. According to them, asymmetry is a property between vision and high-level

CHAPTER 2: LITERATURE REVIEW

cognition where behavioural mindsets and conditioned thinking patterns prioritises particular objects over others. Giving more attention to one object rather than the other is also known as asymmetric encoding. Another way cognition can influence perceptual mechanisms is by extracting distant similarities known as categorical perception. This is when high-level cognition 'directs attention' to modify what is perceived.

According to Peterson and Grant (2003:1), there are “top-down” effects that influence our perception in the same sense as cognitive penetration. She argues that these “top-down” effects are thoughts that originate from high levels of cognition that affect lower levels of perception in early vision.

From the literature consulted thus far, it is clear that visual perception is not only a mechanical recording of our external environment but that cognition forms a significant part of how we visually perceive. Because visual perception and cognition are so interrelated, one can logically assume that visual perception sharpening can be trained. Memory is a cognitive function, and thus visual memory relies on the stored visual images to be retrieved. If the dimensions and properties of an image can be retrieved when the visual memory is employed, then undoubtedly one can train the mind (the cognitive component of visual perception) to retrieve images more clearly from visual memory.

Visual perception as a cognitive process, along with visual memory, mental imagery, and varieties in visual perception, will be further expounded in the data analysis chapter of this thesis. Visual perception as a sensory impulse and cognition are how we interact and interpret the world around us. The process involved during perception and how Grade 5 learners visually perceive the world around them is one of the cornerstones in this study. A thorough understanding of perception will ensure that the visual perception training of the Grade 5 learners will be effective. In the following section art intervention and strategies to improve visual perception will be discussed.

2.4 Art Intervention

An intervention can be described as a planned action that aims to bring about a positive change and outcome. It is a person-centred approach that seeks to change understandings,

CHAPTER 2: LITERATURE REVIEW

knowledge, behaviours, and attitudes of practice or individuals (Pujara, Atkins & McMahon, 2014:4). In this study, the intervention aimed to assist learners in Visual Arts to sharpen their visual perceptual skills during the art-making process. An intervention in art education seeks to improve the practice or abilities of the participants. The skills to be improved in this study were the observational skills of learners during their 2D and 3D art-making projects. As mentioned in 2.2, visual perception is an important skill during art-making and can be sharpened through various techniques. This section will discuss the relevance of the proposed intervention of this study.

As mentioned in section 2.1, children in middle childhood are drawn to life-like and realistic renderings when creating art. Carrol and Tucker (2007:4), postulate that this stage of development signals that learners show a readiness to adopt an array of techniques that will assist them with their representational drawings. When learners are unable to adopt or apply new techniques, their interest and enthusiasm may take a downward slump (U-curve). They suggest that if the crisis is met with a successful and achievable instructional intervention, the learners may be able to overcome this problem and achieve more “creative modes of visual thought and expression” (Carrol & Tucker, 2007:4).

When a successful instructional intervention in Visual Arts is implemented, it promotes learner involvement and allows them to explore different techniques and materials. Through their engagement, learners can enhance their creative abilities, which in return, improve their drawing and constructive abilities as well as their interpretive skills (Letsiou, 2014:14). Machera (2017:733) postulates that learners may benefit from an intervention when it is properly administered. One of the benefits is that it enables learners to self-direct their projects. An intervention in Visual Arts can bring about the following outcomes:

- Learners show enjoyment, pride, and a sense of achievement.
- Learners form important skills, techniques, appreciation, and knowledge
- Learners can develop personally, especially self-esteem and self-confidence.
- Learners develop socially in teamwork and the awareness of other learners.

Zimmerman (2009:394) cites that in the 21st-century, learners need to be prepared for the new age of information that brings along the overstimulation of visual input.

Art education intervention is of critical importance for learners to foster creative thinking, imagination, and innovation. Polat (2009:2567) suggests that perceptual learning can be used in a variety of visual tasks and that visual learning is task and stimulus-specific. The human visual system can adapt according to behavioural demands such as training and practice to improve visual perception. Deveau and Seitz (2014:1) also cite that perceptual learning and training show long lasting improvements in visual tasks, and the benefits can last months and even years.

The literature consulted in this section discussed the benefits and implementation of an intervention in art education. The following section will discuss strategies to improve visual perception and observational skills of learners through an intervention in Creative Arts.

2.4.1 Strategies to improve visual perception and observational skills in Creative Art

An intervention in the form of focused and structured teaching can support the development of good observational skills to shape further creative thinking of learners (Johnston, 2008:3). The latest publication of Edwards (1999): '*The new drawing on the right side of the brain*' (originally published in 1979) will be used as a guideline. This section will discuss various strategies and techniques on how to improve visual perception and observational skills of learners while creating their art-making projects.

According to Edwards (1999:4), good observational skills are fundamental to create representational art. A way to enhance observational skills is to make a cognitive shift, to access the visual perceptual mode of thinking to become more aware of the appearance of the world around. Drawing as a means to express mental images outwardly is a skill that can be taught through properly instructed observation (Ofori-Anyinam, Andrews & Ankrah, 2016:91).

Johnston (2008:5) cites that when learners are taught to observe, they need guidance to limit their 'unsophisticated creative and unimaginative general observations' and to move towards more sophisticated and detailed observations. The quality of the intervention is important when training young learners to use and improve their observational skills and never to undermine imagination.

Techniques suggested by Edwards (1999):

Drawing with the non-dominant hand

The human brain is divided into two halves and respectively, known as the left-hemisphere and the right-hemisphere. Each hemisphere is responsible for processing different sets of information. The left-hemisphere is the analytical side responsible for linguistics and is seen as the “sequential, symbolic, linear, and objective mode of thinking”. The right-hemisphere is responsible for creativity, imagination, and the visual mode of thinking (visual memory and mental imagery). The right-hemisphere mode of thinking is what enables us to create drawings and paintings from what we perceive (Edwards: 1999:38).

In an educational setting, the curriculum is designed to favour left-brain thinking, sometimes resulting in the right-brain being neglected (Edwards, 1999:40). According to Saputra and Subana (2016:3), a way to activate and stimulate the right-hemisphere of the brain during art activities is to draw using your non-dominant hand. When you engaged in drawing exercises that focus on drawing with the non-dominant hand, it slows the drawing process down. When the drawing process is slowed down, the learners have more time to observe the visual properties of an object or scene (Hale, 2015:17). Wigglesworth (2017:296) agrees with this by also citing that when the drawing process is slowed down, it allows for closer observation, and the learners are then able to distinguish between important differences and similarities of objects and their individual features.

Drawing from memory

When young children learn to read, write, and express thoughts and ideas through language, the meanings of words are encoded in symbols that form part of their visual memory.

When they learn how to draw, they rely on the same symbols to represent what they perceive. They do not always pay attention to the physical and visual properties of objects when they create art, but instead rely on symbolic representations stored in their visual memory (Edwards, 1999:82). Symbolic representation is a “recipe” of how to draw certain objects. Young children will have a specific way of drawing, for example, a nose, eyes, and

CHAPTER 2: LITERATURE REVIEW

mouth. This symbolic representation becomes embedded in their memory system, which may lead them to use various symbols to fill in the blank while drawing or painting. If proper observational skills are not taught, learners will glance at an object once or twice and will fill in the rest of the drawing using their symbolic system (Edwards, 1999:81).

Huette, Kello, Rhodes, and Spivey (2013:2), suggest that a way to improve observational skills through memory drawing exercises is to teach learners how to recall and visualise images stored in their memory rather than to rely on images formed from symbolic representations. Teaching learners to observe using their visual perceptual motor skills to “trace” the shape, size and other dimensions of an object, will enable them to recall better and visualise images so that they rely less on the symbolic representation of the visual memory.

Czarnolewski and Eliot (2012:628) agree with this statement and cite that when you focus your attention on a stimulus, you need to focus on all parts of the stimulus and not only on certain areas. Learners need to be taught to focus and observe the whole instead of selected details. When you focus on the whole, you will be able to recall better what was perceived in the absence of stimuli.

Wigglesworth (2017:294) suggests, when making observational drawings or using observational skills to enhance drawing abilities, the viewer needs to compare similarities and differences of objects and their structures (shape, size, and textures). This will lead to the learner (observer) to ask important questions about the subject matter, thus allowing for critical thinking to take place. Through the critical thinking process, the learner has to rely on visual memory, and symbolic representations of the previously observed object and then compare what they visually perceive in front of them and what is stored in their visual memory in the form of symbols. This will make learners more aware of the visual properties of objects, instead of just relying on symbolic representations, particularly important for learners in the age group of the study.

Contour drawing and haptic perception

Edwards (1999:88) postulates that an effective way to sharpen the observational skills of young learners is to teach them how to do contour drawings. This technique is when you

draw the contour lines of an object by continually focussing on the object and allowing your hand to make markings on the paper as your eyes trace the contour lines of the object. Although this method is purely based on visual perception, the integration of other senses may supplement the visual perceptual experience, allowing for a more accurate recording of visual stimuli. When the sense of touch is combined with visual perception, it is known as haptic perception (Lee, 2010:8).

According to Kirby and D'Anguilli (2011:69), our sense of touch plays an imperative role in how we shape the understanding and perception of our environment. Through the sense of touch, we can determine the shape, size, and texture of an object, thus sharpening our understanding of the physical and visual properties of objects around us.

During art-making projects, haptic perception can be employed to assist learners to better grasp the dimensions of objects, as both visual perception and tactile sensation can play a complementary role in visually understanding subject matter (Wijntjes, Volcic, Pont, Koenderink & Klappers, 2009:639). The integration of haptic perception and visual perception during art-making project, related activities have been proven to improve learners' performance and enhance their creativity (Sulaiman, Blandford & Cairns, 2010:193).

From the literature consulted on art interventions and associated techniques to improve visual perception and observational skills, it is clear that a focussed and goal-specific approach has the potential to assist young learners in sharpening their observational skills during art-making projects.

2.5 Conclusion

During art-making projects, middle childhood learners experience a perceived inability to represent what they observe in reality, visually. They are drawn to capturing realistic renderings of what they perceive and subject matter presented during art lessons. Due to their inabilities to visually capture what they perceive, they lose interest in creating art and enter a down-wards slump (U-curve).

CHAPTER 2: LITERATURE REVIEW

The literature consulted in Chapter 2 gave an overview of how young children develop their artistic expression and how other facets of visual perception can enhance or hamper observational skills during the art-making process. The study is framed against the developmental perspective of Piaget's constructivism and how learners can construct their own knowledge of important skills and abilities and will be expounded on in Chapter 3. The strategies mentioned in section 2.4 are tools and techniques learners can use and employ to construct their own knowledge about the visual properties of objects they perceive. The intervention lessons discussed in Chapter 3 were designed so that middle childhood learners would be able to gain an understanding and build knowledge of the observation process during art-making activities.

The following chapter will discuss the research design, conceptual framework, and methodology used in the study.

CHAPTER 3: METHODOLOGY

3.1 Introduction

The main focus of this research project was to ascertain whether observational sharpening exercises would assist learners in their Creative Arts art-making projects. In this chapter, the research methodology used in this study is discussed. The first section of the chapter will discuss the conceptual framework (3.2) of the study that follows the cognitive developmental theory of Piaget (1952) and the cognitive-shift model of Edwards (1999). Section 3.3 explains the research design used in this study. The section that follows (3.4) explains in more detail the methodology that used in the study, with a specific focus on the selection of site, participants of the study, data collection tools and procedures, and data analysis. The ethical considerations are discussed in section 3.5 followed by a brief conclusion to the chapter in 3.6

3.2 Conceptual framework

This site-specific case study aimed to ascertain whether enhanced and developed observation can sharpen learners' visual perception and assist them in their 2D art. The conceptual framework for this study was based on the theories and concepts developed by Piaget (1952) and Edwards (1999) on cognitive development and the cognitive-shift that can occur through visual perception training in the form of an art intervention.

In educational research, the paradigm of constructivism is seen as a theory of knowledge and learning. The knowledge is actively constructed instead of being passively received from an external reality that forms part of an objective world (Lowenthal & Muth, 2008:3). Piaget's (1952) schema theory of developmental, intellectual stages guided this study (Lowenthal & Muth, 2008:2). Constructivism states that learning is of a self-constructed nature that augments knowledge. In this process, learners are the developers of strategies to manipulate information given to them. The learners are meant to go beyond the information they have been given to find meaning in what they experience so that they can add it to their field of knowledge. Ghazi and Ulah (2015:78) point out that cognitive development is the result of biological maturation and environmental experiences through perceptual senses.

Piaget believed that visual perception is of great importance to the way young learners progress through the different stages of cognitive development. Through perception, they understand and analyse their surroundings, thus further developing and enhancing their cognitive growth.

Taber (2011:41) agrees that constructivism is when the learner receives knowledge through recognition of what is represented in his environment. When the attributes of his environment are recognised through perception, knowledge is constructed. "Perception is about recognising the inherent meaning of what is experienced" (Taber, 2011:41).

In the art-making process, learners need to identify problems and take risks in solving them, to build a better understanding of their world and environment. When actively involved in the art-making process, learners are discovering new possibilities and limitations related to their environments (Wachowiak & Clements, 2010:170). Piaget theorized that a boundless interaction between the middle childhood learner and his environment is a crucial component for his cognitive development (Cook & Cook, 2005:6).

For Piaget, one of the milestones the learner of the middle childhood reaches, through cognitive growth, is categorically linked to improved visual perception. The learner is able to perceive objects in the space it takes up in relation to its environment. They are able to judge the size and quantities of objects and materials by relying on their ability to mentally calculate the relationship between different objects (Fein, 1977:331). Another milestone that the learner in the concrete-operational stage reaches is the ability to observe different aspects of the visual field while being given instructions on what to look out for (Fein, 1977:332). Alas, without proper instruction and guidance from a knowledgeable teacher, and regardless of their ability to keenly observe, most learners in the middle childhood reach a creative plateau (Wachowiak & Clements, 2010:217). A knowledgeable teacher can encourage learners' cognitive growth by relying on visual resources that will foster their ability to represent objects in their art on various visual planes, which could combat and prevent the plateau and decline in their creativity (Wachowiak & Clements, 2010:217). The concept of guiding learners through visual perceptual experiences is what formed the basis of this study. The learners were encouraged to carefully observe the objects they were recreating in their art project so that they could develop an understanding of the structure.

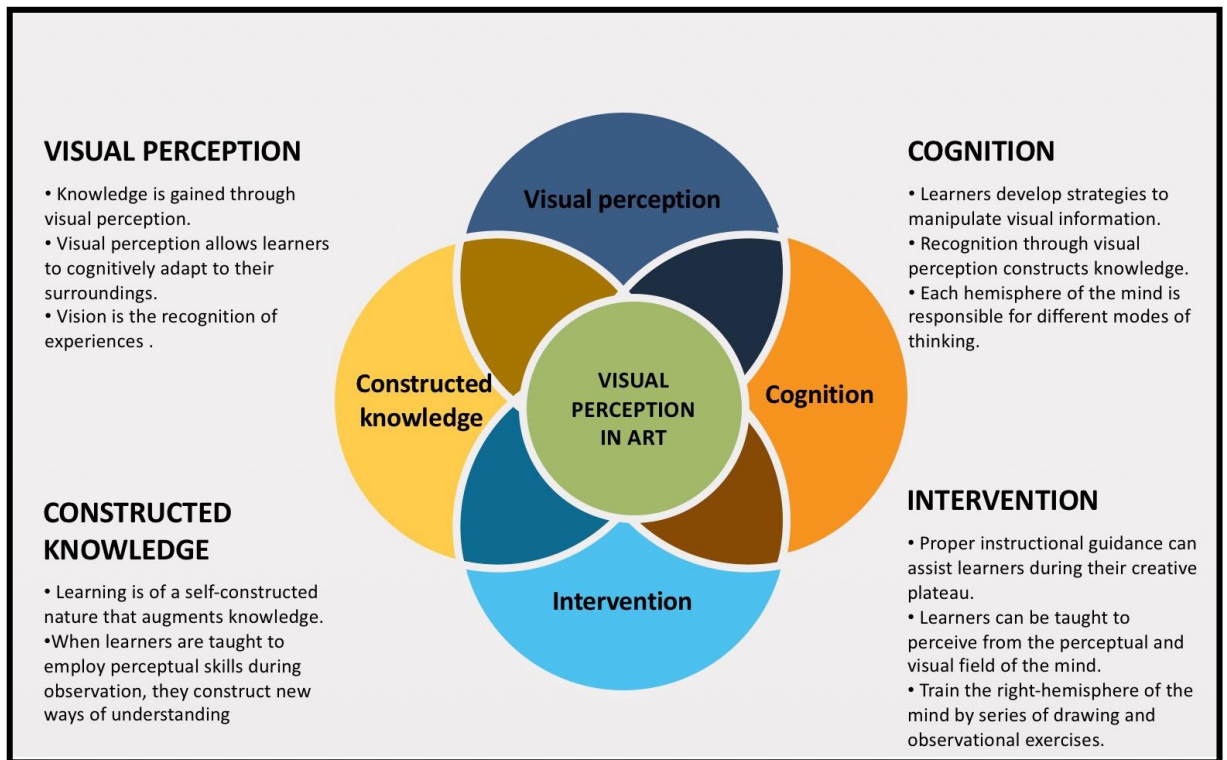
A way to teach learners to perceive the objects they draw in their artworks, is by making a shift in the way they perceive. According to the research of Edwards (1999) on “drawing on the right side of the brain”, learners can be taught to shift their mode of thinking (cognitive- shift model) to enable them to view the object from the perceptual and visual field of the mind.

Edwards` theory of the cognitive-shift model (1999) was informed, by the works of neurobiologist Roger Sperry's (1968) insight into the dual nature of human thinking. Sperry theorised that each hemisphere of the mind is responsible for different modes of thinking. The left hemisphere is associated with verbal, analytical, and sequential thinking, while the right-hemisphere is responsible for visual and perceptual thinking. In Edwards` theory of cognitive-shift model, she states that for learners to record what they perceive visually, a shift from the left-hemisphere to the right-hemisphere needs to take place.

Edwards postulate that to make the shift, the left-hemisphere of the brain needs to be subservient during drawing tasks, to enable to right-hemisphere to process visual information. To train the right side of the brain to process visual information, Edwards suggests a series of drawing and observation exercises that focus on perceptual skills. According to Edwards, there are five universal perceptual skills, which include the perception of edges, space, relationships, light and shadows, and the gestalt (whole). When learners are taught to employ the five perceptual skills during observation, they are constructing a new way of understanding how to access the visual and perceptual mode of thinking.

The theories of Piaget's constructivism and Edwards` cognitive-shift model formed the framework of the intervention to enhance the visual perceptual skills of the learners in this study. Diagram 3.1 is a graphic description of the conceptual framework discussed above.

Diagram 3.1: Conceptual framework



3.3 Research design

A research design is directed by the belief that the research should fit the purpose of the enquiry. It should be "practicable, feasible and capable of being undertaken" (Cohen, Manion & Morrison, 2007:73). The study investigated an intervention program to assist middle childhood learners (Grade 5) in their visual perception during art-making. A qualitative instrumental case study approach with an element of action research was the method of inquiry. Guided by Creswell (2007:73), a case study was used to explore a bounded system of a classroom for two school terms to collect detailed and in-depth data. A case study views the phenomenon in its real-life context, necessitating different types of data to be collected (Cohen et al., 2007:254).

The qualitative data collected took the form of detailed observations of the process and artefacts in the form of works produced and exercises completed during the intervention lessons.

In an educational setting, a case study allows the researcher (teacher) to observe the characteristics of the case to do an in-depth analysis of the phenomenon under investigation (Bassey, 1999:24). A case study allows for various ways of analysing and interpreting data; in this case, a direct analysis approach was adopted as a means of analysing the data. This method of data analysis draws meaning from data by coding units of data, establishing patterns, and creating themes that are analysed and interpreted logically and systematically (Creswell, 2007:163).

A case study approach is rooted in the paradigm of constructivism. The ontological and epistemological significance of this paradigm states that there is no single reality and that the individual subjectively creates it, and therefore reality needs to be interpreted (Baxter & Jack, 2008:545). The paradigm selected is in direct relation with the conceptual framework based on constructivism, where the participants in the study were actively involved in constructing their own knowledge and involved in the acquisition of essential skills required for observation during art-making projects.

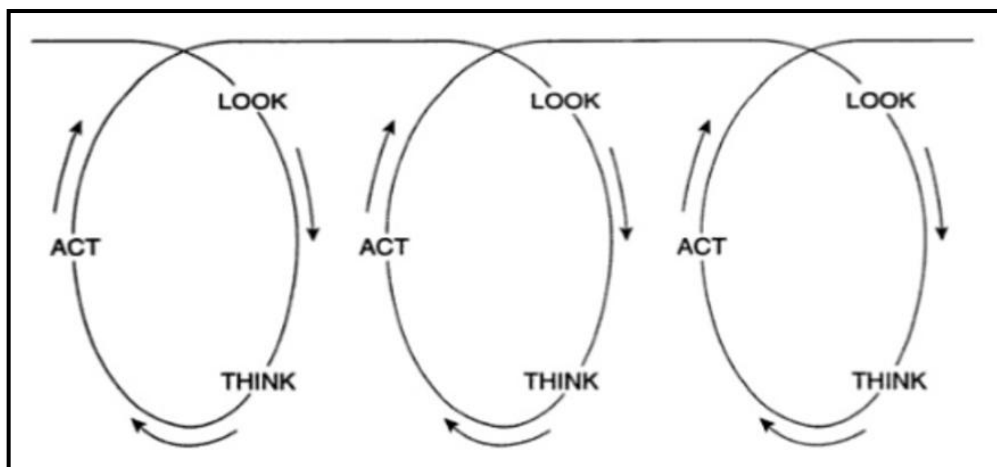
While investigating a phenomenon, it is vital to be mindful of the situation being probed. As mentioned by Stake (2006:140) an instrumental case study allows the researcher to examine, investigate and come to a general understanding of a phenomenon, in this case, of learners in the middle childhood who experienced a perceived inability to artistically render what they visually perceived. I conducted a case study in my own practice, which offered me the opportunity to work closely with the participants in a specific context of the phenomenon being investigated (Baxter & Jack, 2008:545). While conducting the study, I had unlimited access to the site, enabling me to work with the participants closely. I had the opportunity to observe their progress throughout the study carefully.

The instrumental case study as a method of inquiry is more flexible than restricted traditional methodologies, as it makes use of various methods to collect data (Pearson, Albon & Hubball, 2015:3). The instrumental case study made it possible to use an intervention plan to gain a better understanding and improve the practice of an educational setting in an art classroom (Baxter & Jack, 2008:544). The intervention set out to help improve the visual perception of the four Grade 5 classes at the urban primary school. The study was designed around a pre-test (2D artwork); intervention of visual sharpening exercises and post-test (2D artwork) as a method to collect the data and to test the research question of the study.

To test and compare the results of the pre-test and post-test, and the effectiveness of the intervention, the four Grade 5 classes were divided into two groups, namely the test group and control group. The test group was made up of two of the four classes and selected because they received Creative Arts on the same day on the school's time table. The control group was made up of the remaining two classes who also received Creative Arts on the same day.

I administered a pre-test to both the test group and control group to establish the 'needs' addressed during the intervention lessons. The administration of the intervention through visual sharpening exercises introduced an element of action research. Koshy, Koshy and Waterman (2011:2) describe action research as "a period of inquiry, which describes, interprets, and explains social situations while executing an intervention aimed at improvement and involvement". The element of action research used in this study is known as the "Look, Act, Think" model (Stinger, 2004) that forms a cycle or a spiral (Selwood & Twining, 2005:2) and is also known as the Action Research Helix (Hine, 2013:153). During the 'Look' stage, I recorded information about the phenomenon as the study unfolded. In the 'Think' stage, all the information collected was studied to 'identify significant features and elements of the phenomenon'. In the 'Act' stage, after a period of reflection, new strategies were formulated on how to address the 'needs' of the participants (Hine, 2013:154). The following diagram (Diagram 3.2) illustrates the 'Look, Think and Act' model.

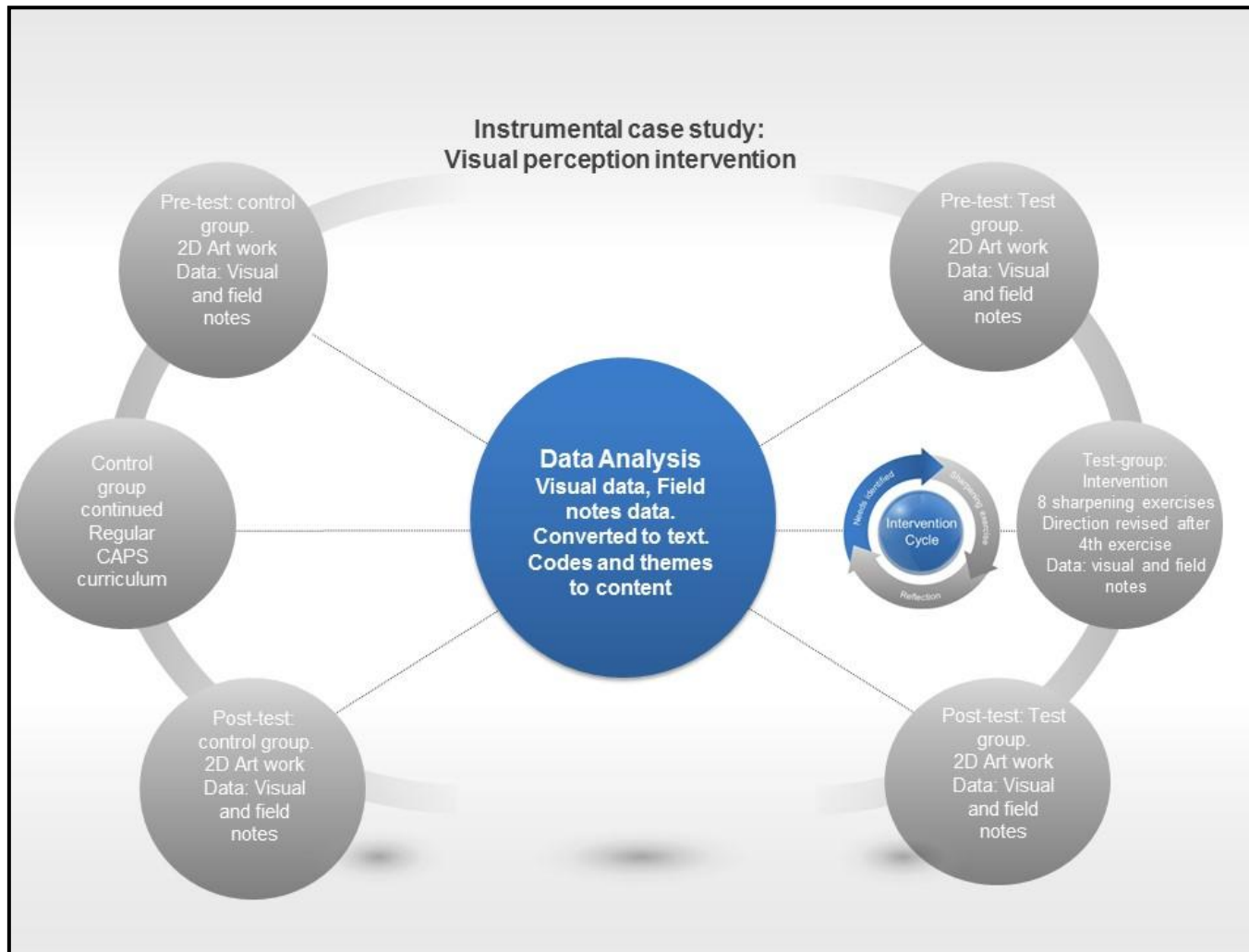
Diagram 3.2: Action research Helix as adapted from Stinger (2004) (Hine, 2013:154)



Typically the action research helix makes use of several spirals of observing, evaluation and acting. During the intervention period, only two spirals were completed, during which the direction of the intervention was changed. The first spiral was completed after the fourth intervention lesson. During the first four intervention lessons, I focused on specific 'needs' that were identified after the pre-test was analysed. After the fourth intervention lesson, I studied the four exercises and was able to deduce that there was an improvement in the observational skills of the learners, evident in the work they produced.

Subsequently, the direction of the intervention was changed to address the final two 'needs', namely the use of space and size, as identified from the pre-test. During the study, only the test group received intervention lessons. To be ethically fair, the control group received identical intervention lessons after the study was complete. After the intervention lessons, a post-test was administered to both the test group and the control group. I used the data collected from observations during all three stages (pre-test, intervention lessons & post-test) and the physical artefacts to analyse and to compare the results from the pre-test and the post-test of both the test group and control- group. The research design can be viewed in Diagram 3.3.

Diagram 3.3: Research design



3.4 Methodology

3.4.1 Selection of site

As an art educator in a primary school in the Western Cape, I identified a phenomenon with my grade 5 learners (middle childhood) that warranted further investigation. There were small changes in the way the learners in the Grade 5 classes depicted certain objects in their art-making projects. It was as if the learners experienced a sense of frustration since they were sometimes unable to represent objects the way they visually perceived them. After identifying the phenomenon, it was decided to conduct a study in my own practice in the form of an intervention.

The site was selected due to its convenience. Conducting research in one's own practice in an educational setting makes it possible for the researcher to gain access to the site, while also allowing unlimited access and close observation while working with the participants. Conducting a case study in one's own practice can raise questions about the quality of data being collected due to a power imbalance between researcher and participants (Creswell, 2007:122). The researcher overcame this power imbalance (Creswell (2007) cautions about by making sure that the study was part of their arts education program. The design of the intervention was closely linked to regular CAPS curriculum content. Due to the participants being unaware of the study, the researcher was able to observe them in their natural everyday environment.

The site was a dual -medium primary school in the northern suburbs of Cape Town. After the site was selected, all necessary permissions were obtained to conduct the study in my own practice. Permission was obtained from the school principal, WCED ethics committee for research, and from the research ethics committee of the Cape Peninsula University of Technology. The intervention was part of their daily school routine; therefore, permission from parents was not required.

3.4.2 Participants in the study

In this qualitative case study, the participants and site were purposefully selected, and I conveniently conducted a study in my own practice. The participants were able to inform

me with an understanding of the phenomenon under investigation (Creswell, 2007:125). At the site, there were only four Grade 5 classes that made up the sample of the study.

Before the onset of the study the four classes were divided into two equal groups to form a test group and control group. The test group and control group were made up of one English class and one Afrikaans class with an average of 25 learners per class. The method of selecting the test and control groups was based on their weekly art class timetable. The four classes each had Creative Arts as a subject on the timetable once a week. On Mondays, one Afrikaans class and one English class had Creative Arts, and on Wednesdays, the other Afrikaans and English class had Creative Arts. The Wednesday classes were selected as the test group based on the average contact time during the school term, with the Wednesday class losing the least amount of lessons due to public holidays and other extra-curricular activities hosted by the school. This decision meant that I was able to undertake the study with a test group without any interruptions during the intervention period.

The research commenced at the beginning of the third term of the year and concluded after the second week of the fourth term of the same year. Learners in Grade 5 are between the ages of 10 and 11, depending on their date of birth. The reason for not starting the research at the beginning of the new school year, but rather in the third term, was to ensure that all the participants of the research would all be closer to the age of 11.

The control group was not subjected to the sharpening exercises during the study. They continued with their regular Creative Arts curriculum as set out by CAPS. For ethical reasons, the control group completed the sharpening exercises in the 4th term, after the data collection period had been completed.

3.4.3 Data collection tools and procedures

During the data collection period, four main instruments were used, namely a pre-test, eight intervention lessons, post-test, and observations in the form of field notes as discussed in table 3.1. The instruments mentioned above were used to collect data to ensure triangulation, as suggested by Rowley (2002:23). The data collected were the 2D artworks the participants produced during the pre-test and the post-test and the

drawings from the eight intervention lessons. The following section will describe the data collection tools and procedures followed in this study.

Table 3.1 Data collection tools and procedures as adapted from Pretorius (2016:52)

Instrument	Purpose
Pre-test (3.4.3.1)	<ol style="list-style-type: none"> 1. The starting point of the study to determine that the participants' observational skills and abilities were on par with their developmental stage of artistic expression, as described by Lowenfeld and Brittain (1975). 2. The pre-test was compared with the post-test to determine the effectiveness of the intervention lessons.
Observational field notes	<ol style="list-style-type: none"> 1. To capture the 'voice' of the participants' experience during the study. 2. To supplement the visual data collected.
Intervention lessons (3.4.3.2)	<ol style="list-style-type: none"> 1. To sharpen the observational skills and abilities of participants. Each intervention lesson was designed to assist the participants in their observational skills during the art-making process.
Post-test (3.4.3.3)	<ol style="list-style-type: none"> 1. To track and compare the progress of participants from the pre-test to the post-test. 2. To evaluate the effectiveness of the intervention lessons on the observational skills and abilities of the participants.

3.4.3.1 The Pre-Test

The pre-test consisted of a 2D art project that was complete by both the test and control group. The pre-test was designed and used as the starting point of the study to determine whether the learners' observational skills and their ability to create in 2D are on par with their artistic stage of development.

During the pre-test, the learners created a 2D mix-media painting of a chameleon in a tree that was assessed according to Creative Arts requirements and assessment rubrics as set out in CAPS. The following section will describe the pre-test topic, media, lesson presentation, and assessment.

Topic: Chameleon in a tree

Media: A3 brown paper, grey HB pencil, oil pastels: various colours, and black koki pen.

The lesson was introduced by a discussion on chameleons, between the learners and me. I led the discussion and asked the learners to participate. Common characteristics of chameleons were discussed and, in particular, their ability to camouflage themselves

to blend into their surroundings. During the discussion, I displayed different pictures of chameleons and branches of trees on the data projector. We discussed various visual components of the chameleon and the branches, such as texture, shape colour and form. After the introduction, the learners were asked to create an artwork of a chameleon in a tree, perched on a branch. The media were handed out, and the learners were asked to start with their project.

The paper was placed in landscape. Making use of a ruler and HB pencil, the learners drew a 3cm block frame around their artwork. The chameleon and branches were drawn in the centre of the picture. The composition was full and around the central focal point, the learners were asked to fill the composition with leaves and branches. Once the composition was planned, the learners were asked to make use of oil pastels to create unique patterns and tints and shades of colour on the chameleon. Oil pastels were used to fill in the leaves and branches in the background. The final step of the project was to fill the block frame around the artwork with a circular pattern using a black koki pen. Once the artworks were completed, the learners handed it in to be assessed. The artworks were assessed according to the CAPS requirements and the use of the assessment rubric.

The pre-test took place in the first three weeks of the third term. In the three-week period, both the test and control group completed the pre-test. The data collected from the pre-test took the form of visual data (artworks produced) and observations made during the process in the form of field notes. Observational protocols (Appendix C) that Creswell (2007:135) suggests were used to capture and document important features of the process as it unfolded.

Pain (2012:307) explains that collecting data in visual form is a common and accepted tool used in qualitative research. Visual data can facilitate the expression of the subconscious and tacit knowledge. The visual data collected was used to give 'voice' and to gain insight into the experience and decision-making processes of the participants during their art-making process. Visual data enables the researcher to collect a more detailed description of events but cannot be interpreted on its own and thus needs to be supported and supplemented through text (Pain, 2012:309).

I gained a more in-depth and articulated understanding of accounts, through observational field notes made throughout the study. I observed the participants for a substantial period to be able to record the events and activities during the research to give accurate accounts as the activities unfolded (Cohen et al., 2007:404). I made use of observational protocols (Appendix D), to supplement the visual data. The observational protocols were designed to capture specifically noticeable incidences, while the participants created their 2D projects (Creswell, 2007:135). The protocol was designed from the literature consulted in Chapter 2 and focused on the use of elements of art, time spent on observation of objects, use of art materials, and the difference between gender and their observational skills.

Once the data from the pre-test were collected, an initial analysis was done to plan and design the next phase, namely the intervention's visual sharpening exercises. I studied the artworks produced along with the field notes by comparing what was documented and what was visibly noticeable in the artworks. After these two forms of data were analysed I was able to identify several 'needs' that showed the frustration of learners as they portrayed the objects in their artwork (Diagram 4.2). The learners experienced a sense of frustration due to the phase in their development, where they wanted to render realistic work, but could not. The purpose of the study is not to make them adult drawers, but it is to help them overcome the U-curve and retain confidence in their drawing ability. The intervention lessons were designed to address these needs and to assist the participants in sharpening their visual perceptual skills.

3.4.3.2 Intervention lessons: visual sharpening exercises

The intervention was done with the test group, which consisted of two grade 5 classes, an English class of 24 learners, and an Afrikaans class of 28 learners. During the intervention period, the English class was named 'test group 1', and the Afrikaans class was 'test group 2'. For ethical reasons, the same exercises were done with both test group classes. The first intervention lesson was conducted a week after the learners completed the pre-test. Each intervention session lasted approximately 10-15 minutes and was conducted in the first period of each week. The duration of the intervention was eight weeks.

The visual sharpening exercises were designed using the literature consulted in Chapter 2 on interventions in art education, along with revised observational exercises from Edwards (1999:39) in the form of "pre-instructional drawing exercises", "drawing from

memory”, “drawing upside-down” and “contour drawings”. The first two sharpening exercises were designed and planned before the intervention took place, and the other six were designed and planned as the intervention unfolded. This was done to ensure that specific 'needs' were addressed as they arose from the data.

The data collected during the intervention took the form of visual data (as explained in 3.4.3.1.) and observations made in the form of field notes. The visual data were the drawings made by the participants following the sharpening exercise intervention. The observational protocol (Appendix D) was designed for the sharpening exercise to allow the researcher to document the specific features of each exercise. As described by Pain (2012:307), I was able to track the progression and insights made by the participants, based on the visual data collected and from the field notes made during each exercise. The following table (3.2) is a summary of the intervention lessons and is followed by a more in-depth discussion of the procedures followed during each intervention lesson.

CHAPTER 3: METHODOLOGY

Table 3.2: Summary of intervention lessons

Intervention lesson topic	Media used	Brief description of the lesson	Purpose of the lesson
Intervention lesson 1: Look, feel and memory	<ul style="list-style-type: none"> - Black A4 paper in portrait. - White wax crayon 	<ul style="list-style-type: none"> - Look: The learners visually studied the object and recorded as much information about its physical features. - Feel: The learners placed the object under the table and out of sight to study it by engaging their tactile senses. - Memory: The learners drew the object from memory, relying on visual and tactile information they gathered during the look and feel stage of the lesson. 	<ul style="list-style-type: none"> - To sharpen the learner's ability to recall previously perceived details by engaging their memory and tactile senses.
Intervention lesson 2: Blind drawing, contour drawing, and blind contour drawing	<ul style="list-style-type: none"> - A4 paper divided into three equal blocks - HB pencil 	<ul style="list-style-type: none"> - Blind drawing: The learners selected an object from their pencil bag and drew it in the first block of the paper. They created a blind drawing by focussing on the object and not the drawing. They added details such as contour lines and internal lines. - Contour drawing: The learners created a contour (outline) drawing of the same object they used in the first part of the exercise. They were allowed to switch their gaze between their drawing and the object. - Blind contour drawing: The learners combined the first and second part of the exercise. They created a blind contour drawing of the object 	<ul style="list-style-type: none"> - The lesson was designed to focus on the perception of shape and size. - Blind drawing: hand-eye coordination. The learners had to cognitively work out how big or small the drawing was based on the movement of their hand. - Contour drawing allowed the learners to visually and mentally determine the size and shape of the object. - Blind contour drawing determined if the learners were able to utilize previous knowledge of the shape and size of the object and combine it with the movement of their hand.
Intervention lesson 3: Draw from memory vs. reality	<ul style="list-style-type: none"> - A4 white paper - HB pencil 	<ul style="list-style-type: none"> - Draw from memory: The learner took off one of their shoes and visually studied it for three minutes. The learners were asked to sketch the shoe from memory. - Draw from reality: The learners repeated the drawing of the shoe and were allowed to look at the shoe while they completed the drawing. - At the end of the lesson, the two drawings were compared. 	<ul style="list-style-type: none"> - The lesson was designed to compare the difference between drawing from memory and drawing from life. - Details created in each drawing were compared to establish how much detail is stored in memory while drawing.

CHAPTER 3: METHODOLOGY

Intervention lesson topic	Media used	Brief description of the lesson	Purpose of the lesson
Intervention lesson 4: Draw from memory with the non-dominant hand	<ul style="list-style-type: none"> - A4 white paper - HB pencil 	<ul style="list-style-type: none"> - The learners repeated the first part of lesson 3, drawing from memory, with their non-dominant hand. - They visually studied their shoe for three minutes and created a drawing from memory, using their non-dominant hand. 	<ul style="list-style-type: none"> - Intervention lesson 3 indicated that the learners omitted details when they drew from memory. The observations showed that the learners drew faster in an attempt to add as much detail as they could. - The drawing from memory with the non-dominant hand was designed to slow the drawing process down to allow the learners more time to recall previously observed details from memory.
Intervention lesson 5: Positive and negative space	<ul style="list-style-type: none"> - A4 white paper - HB pencil 	<ul style="list-style-type: none"> - The learners folded an A4 paper in half to form two A5 blocks and made two drawings of a pair of scissors. - In each block the learners made a drawing of the pair of scissors. - Instead of drawing the outlines of the scissor, they created the shape of the pair of scissors by shading in the background. The shading of the drawing shaped the pair of scissors. 	<ul style="list-style-type: none"> - The lesson was designed to enable the learners to utilise the space of the picture plane and to focus on the size of the objects they drew.
Intervention lesson 6: Blind contour drawing of a friend's hand	<ul style="list-style-type: none"> - A4 white paper - HB pencil 	<ul style="list-style-type: none"> - The learners worked in pairs and took turns to create a blind contour drawing of their friend's hand. - One learner drew while the other placed his/her hand in an interesting pose such as a fist, open fist with bent fingers. - The learner posing for the drawing exercise kept his/her hand at a distance from the learner who created the blind contour drawing. - The learners who created the drawing were asked to enlarge what they saw by filling the entire space of the paper. - Once the first learner in the pair completed the drawing, they swapped and repeated the exercise. 	<ul style="list-style-type: none"> - The aim of the lesson was to assist the learners with the filling of space in their artworks as well as the size of objects they created.

CHAPTER 3: METHODOLOGY

Intervention lesson topic	Media used	Brief description of the lesson	Purpose of the lesson
Intervention lesson 7: Drawing upside-down	<ul style="list-style-type: none"> - A4 white paper - HB pencil 	<ul style="list-style-type: none"> - The learners worked in pairs and sat across from one another. - One learner posed for a portrait sketch while the other learner made a quick upside-down sketch of the head, neck and shoulders. - Once the first learner completed the sketch, they swapped and repeated the exercise. 	<ul style="list-style-type: none"> - Referring to Edwards' (1999) Upside-down drawings, when you view and draw a picture or a face upside-down, the dominant left-hemisphere is forced to make a cognitive shift to the subdominant right-hemisphere. - The shift enables the drawer to fill the space with ease.
Intervention lesson 8: Real size versus perceived size	<ul style="list-style-type: none"> - A4 white paper - HB pencil 	<ul style="list-style-type: none"> - The learners folded the A4 paper in half to form two A5 blocks. - Each learner made two sketches of their hand in each A5 block. - The first drawing was of their hand; they placed next to the page (real size). They made an actual size drawing of their hand. - The second drawing was of their hand at arm's length (perceived size). 	<ul style="list-style-type: none"> - The purpose of the exercise was to focus on how to judge the size of an object you draw. (perceived size versus the real size)

Intervention session 1: Look, feel and memory

The first exercise was the look, feel and memory exercise that was revised from Perdreau and Cavanagh (2015:2), drawing from memory. I noticed in the pre-test that the learners had a problem with recalling previously observed details of objects that they were required to recreate in their artwork. The look, feel and memory exercise was designed to address this issue.

Look:

During the 'look' part of the exercise, the learners were asked to study and observe an object for 2 minutes to retain as much detail of the object as possible, mentally. The object was an old water bottle they were familiar with and used during their painting projects. An everyday object was used to determine whether long-term memory and short-term memory would be able to fill in the blanks when drawing an object from memory. After studying the object for 2 minutes, the learners placed it under the table for the next part of the exercise.

Feel:

In this part of the exercise, the learners placed the water bottle under the table and out of sight. Holding the bottle with both their hands, they received another 2 minutes to study the object. They were instructed to record as much detail about the size and shape of the object, using their tactile senses.

Memory:

After the learners had completed the look and feel part of the exercise, the bottles were placed out of sight. The learners were instructed to draw the bottle on a black piece of paper with a white wax crayon. They had to make use of the visual and tactile details recorded earlier in the exercise. They relied solely on their visual and tactile memory to complete the drawing.

Intervention session 2: Blind drawing, contour drawing, and blind contour drawing

During the first session, I noticed the learners experienced difficulty recalling details of an object they observed, particularly shape, size and smaller details on the object.

The second intervention exercise focused on line, shape and size. The difficulty experienced with recalling detail was planned for the next intervention exercise. During this exercise, the learners selected an object from their pencil bags, e.g., a pair of scissors or a calculator. They received a blank A4 paper and had to divide the page into three equal blocks. In each block, the learners made three separate drawings of the same object. The drawings they made were a blind drawing, contour drawing, and a blind contour drawing (Edwards, 1999:20).

Blind drawing:

During this part of the exercise, the learners made a drawing of the object they selected from their pencil bags. They held the object in their non-dominant hand while drawing it. They were instructed to only focus on the object and not the drawing, thus creating a blind drawing of the object. They were instructed to focus on the shape and size of the object while creating the blind drawing.

Contour drawing:

The learners created a contour drawing of the same object. They were allowed to look at the object and the page while drawing. The aim of this part of the exercise was for the learners to pay close attention to the shape and the size of the object.

Blind contour drawing:

Like in the first part of the exercise, the learners created a blind drawing again. Instead of adding all the detail to the drawing, they focussed on the shape and size of the drawing. They held the object with their non-dominant hands and drew with their dominant hands. They were not allowed to look at the page or drawing as they completed the exercise. They only focussed on the object they drew. At the end of the exercise, the three drawings were compared.

Intervention session 3: Drawing from memory vs. Reality

The first two intervention lessons focussed on shape, size and creating details in the drawings. It was noticed that the learners were able to draw the shape and size of the objects, but omitted finer details on the drawings. The third lesson was designed to focus on creating details in the drawing while addressing shape and size. In the exercise, drawing from memory vs. reality, the learners created two drawings of the same object. This exercise was revised from Perdreau and Cavanagh's (2015:2), drawing from memory.

Draw from memory:

The aim of this part of the exercise was for the learners to observe their shoes. They removed one of their shoes and placed it on the table and received three minutes to visually and mentally record as much detail about the shoe as possible. They were instructed to pay close attention to the details on the shoe as well as the size and the shape of the shoe. The learners were asked to use their index finger to “trace” the outline of the shoe and then to take the same finger and trace the outline of the shoe on paper. After the observation period of the exercise, the learners placed their shoes under the table and drew the shoe. They were reminded them to pay close attention to detail such as lines, patterns, shapes and different textures.

Draw from reality:

In this part of the exercise, the learners turned the page around to use the back of the page. The teacher instructed them to place the same shoe they used before, on the table in front of them. The learners had to draw the shoe again; only this time they were allowed to look at the shoe while they drew it.

At the end of the third exercise, it was noticed that the learners could rely on visually recorded information while drawing from memory. During the first part of the exercise, drawing from memory, the researcher noticed the learners drew faster than normal to record as much detail as they could graphically. Due to the haste of the learners rushing to complete the drawing, it was noticed that some details in the drawings were omitted.

Intervention session 4: Drawing from memory with the non-dominant hand

In the fourth intervention session, the same exercise was repeated as in the third intervention session, but in this instance, the learners drew with their non-dominant hand. The learners were asked to make a drawing of their shoes. They were allowed to study the shoe for three minutes, after which they were asked to place it under the table. This exercise was a combined exercise from Perdreau and Cavanagh's drawing from memory (2015:2) and Saputra and Sanana's (2016) drawing with non-dominant hand. The reason for the drawing with their non-dominant hands was to slow down the drawing process, allowing them more time to rely on their visual memory. I wanted to determine how long the visual memory of the learners would last from this exercise and the exercise from the previous week.

The learners received an A4 white paper and a pencil. Once they studied their shoe for three minutes, they placed it under the table. They were instructed to draw the shoe from memory using their non-dominant hand. Using their non-dominant hand, slowed the drawing process down, which allow them more time to rely on the mental image stored in their memory.

Both the third and fourth exercises were analysed. From the analysis, it was evident found that the learners were able to record information such as shape and detail, but the size and space of their drawings needed more focus. To assist the learners with utilizing all the space in their drawings, I designed the next intervention session to focus on positive and negative space during art-making.

Intervention session 5: Positive and negative space

In the fifth session, the direction of the intervention changed. This part of the study made use of the elements of action research, as mentioned in 3.3 in the research design. Intervention lessons one to four aimed to improve the learners' abilities to portray shape and detail in their drawings. At the end of the fourth exercise, it was noticed that the learners were still working very small and had trouble utilising the full picture plane and thus interestingly filling the composition.

In the fifth exercise, the learners were taught about positive and negative space in art. I explained to the learners that, in an artwork, the positive space is the area that makes up most of the artwork e.g., the shoe they drew in the previous two exercises. The

negative space is the open space around the shoe where, in this case, nothing was filled, in/ nothing was happening.

In this exercise, the learners made two simple drawings of a pair of scissors using positive and negative space. This exercise was revised from Edwards' (1999:127) exercise, 'perceiving the shape of a space and the positive aspects of a negative space.'

The learners received an A4 piece of paper and folded in half to create two A5 blocks. In the first block the learner drew an 'open' (the two blades apart) pair of scissors. In the other block they drew a 'closed' (blades together) pair of scissors. I explained to the learners that this would not be like one of the previous drawings. In this drawing, the learners were asked not to draw the outlines of the pair of scissors. They would usually first draw the contour lines of an object and then fill in the details.

Instead, the learners created the drawing by filling in the background of the drawing only. (negative space). They used a HB pencil to fill in the background of the drawing, thus creating the 'outline' of the pair of scissors. The white open space of the drawing shaped the outline (contour) of the pair of scissors. The learners were instructed to pay close attention to the size of the scissor and that they should try to use all the space they could in the A5 block.

Intervention session 6: Blind contour drawing of a friend's hand

After the learners had completed the fifth intervention exercise, it was noticed that they still had difficulty filling the space given to them and that the size of the objects they were drawing was still a bit small. This stage of their artistic development is supported by Lowenfeld and Brittan (1975:26), who state that learners in the middle childhood draw smaller and often lose confidence in their ability to depict the world around them. The sixth intervention exercise was designed to assist the learners with space and the size of objects they create in their artworks.

In the sixth intervention exercise, the learners had to do a blind contour drawing of a friend's hand. This exercise was revised from Edwards' (1999:89) pure contour drawing exercise. The learners were paired up into groups of two. The first learner made a blind contour drawing of his friend's hand. The friend was asked to place his hand in an interesting pose e.g., an open-handed claw or fist. The learners were asked to enlarge

what they saw by filling the entire space of the paper. After the first drawing was completed, the learners swapped and repeated the exercise.

Intervention session 7: Drawing upside-down

In the seventh intervention exercise, I wanted to ascertain whether the reinforcement of space and size would assist the learners in their drawing abilities.

As in the sixth exercise, the learners worked in pairs. Each learner received an A4 blank piece of paper and an HB pencil to complete the exercise. The learners were asked to position themselves so that they would sit opposite one another. The learners took turns to sketch the person across from them. Each learner received 6 minutes to make a quick upside-down sketch of the head and the shoulders of the learner opposite to them.

The teacher explained to the learners that an upside-down sketch (Edwards, 1999:55) would be like a “mirror reflection on paper” of the person posing for the sketch. In the 6 minutes, the learners had to fill in as much space on the paper and add as many facial details as they possibly could. After the first 6 minutes, the learners changed and repeated the exercise.

The aim of the exercise was not for the learners to make a super realistic sketch, but rather for them to focus on the use of space and size in their drawings. As explained by Edwards (1999:55), when you draw a picture upside-down, the dominant left-hemisphere of the brain is forced to make a cognitive shift to the subdominant right-hemisphere. Making this cognitive shift can allow the drawer to fill the space on the picture plane with ease.

Intervention session 8: Real size vs. perceived size

The final intervention exercise was designed to focus on actual size vs. perceived size. In this exercise the learners made quick sketches of their hands at different distances from their bodies. The exercise aimed to teach learners about different sizes at different distances and perspectives (Edwards, 1999:144).

I handed out a white A4 piece of paper to each learner. The learners turned the page to landscape and folded it down the middle to create two A5 blocks. In each of the blocks, the learners created a sketch of their hands, palm down with their fingers spread out.

The learners closed the A4 paper on the fold so that only one A5 block was visible. When they turned, the A5 block around another A5 block was visible at the back. The reason for this was so that the learners would be able to make the second drawing, without being able to view the first one.

On the first A5 block, the learners were asked to make a quick sketch of their non-dominant hand. They placed their hand next to the piece of paper, and sketched the actual size of their hand. Once the learners were done with the first sketch, they continued to the second part of the exercise.

In the second part of the exercise, the learners made use of the second A5 block. They placed their hands out in front of them, keeping the hands away from their bodies at arm's length. They were asked to judge the size of their hands and draw them the same size as they perceived them to be. At the end of the exercise, the first sketch of the hand should show the hand bigger than in the second sketch.

After the intervention, the data collected were logged and prepared for analysis. The following section will discuss the post-test.

3.4.3.3 Post-test

Once the intervention period for the test group was over, both the test group and the control group completed the post-test. The post-test also consisted of a 2D art-making project, as set out in the Creative Arts CAPS curriculum. The post-test artwork was similar to the pre-test artwork the participants completed at the beginning of the study. The reason for them completing similar projects was to compare the outcomes of the projects and to ascertain whether the intervention with the test group assisted the learners in their observational skills.

The time frame for the completion of the post-test was the same as for the pre-test. The post-test took place in the first three weeks of the 4th term. In the three weeks, both the test and control groups completed the post-test. The following section will discuss the post-test lesson.

Topic: Parrots in the jungle

Media: A3 white paper, yellow wax crayon, pastels: various colours, liquid tempera paint: primary colours, plus white.

The lesson was introduced by a discussion between the learners and me about jungles, and in particular the Amazon jungle. I displayed pictures of different types of trees found in a jungle on the data projector, and the discussion was lead to wildlife and birds found in a jungle. I displayed pictures of parrots on the data projector as a visual aid during the discussion. After the introduction, the learners created an artwork of one or two parrots in a tree in the jungle. The media were handed out, and the learners were asked to start with their project.

The parrots were drawn in a tree in the jungle, using the paper in landscape, with the use of the yellow wax crayon. The composition was full, and the parrots were placed in the center of the picture. Around the central focal point of the picture, the learners were asked to fill the composition with leaves and branches. Once the learners planned their composition, they were asked to use liquid tempera paint to paint the leaves in the background. They used their primary colours and white to mix a variety of secondary colours to create lush green foliage for the background. For the parrots and the branch, the learners used pastels in a variety of colours to create tints, shade and texture. Once the projects were completed, it was handed in to be assessed. The artworks were assessed according to the CAPS requirements and the use of the assessment rubric.

The data collected from the post-test took the form of visual data (artworks produced from the 2D project) as well as field notes made during the projects. Observational protocols (Appendix E) that Creswell (2007:135) suggests were used to capture and document important features of the process as it unfolded. After the post-test, the researcher logged the data and prepared it to be analysed. In the following section, the data analysis process will be explained.

3.4.4 Data analysis

The data for the study were collected, making use of the instrument discussed in the section above. In this study, the data collected were analysed at two different stages of the project. The first stage of analysis was during the study. After the pre-test I analysed the projects the learners produced based on the criteria developed

from the literature consulted in chapter 2. The initial analysis of the pre-test was done by comparing the field notes and studying the visual data collected. Once coherent features from the text and visual data were identified, I was able to ascertain the 'needs' of the learners regarding their visual perceptual abilities. The 'needs' that were identified were used to design the intervention sharpening exercises discussed in 3.4.3.2.

The primary data analysis came from the data collected during the study. The data from the pre-test, intervention lessons, and the post-test were analysed. The field notes were transcribed and converted to full text, and the visual data was studied and scrutinised to identify codes and patterns.

The textual data and visual data from the pre-test were studied and scrutinised to identify the level of perceptual and observational awareness of the test – and control group. Once the pre-test was completed, the artworks were assessed and the results of the test group and control group were compared to ascertain whether both groups' observational skills were on par with one another. After the pre-test data were studied, the field notes and visual data from the eight intervention lessons were studied and scrutinised to identify codes and patterns. The pre-test field notes and visual data were examined to identify codes and patterns. The post-test was assessed, and the results were compared between the test group and the control group.

Finally, the post-test visual- and field note data were coded, and themes were identified to describe visual perception at a post-test level. Following the suggestions of Cohen et al. (2007: 477), the data were broken up into units of analysis, and codes were assigned to the data. Categories were formed by grouping the units of data into groups, patterns and themes. At the end of the analysis process, the data from the pre-test, intervention lessons, and the post-test were compared and discussed in tabular form (tables 4.4 – 4.10) to ascertain whether the intervention lessons yielded significant changes in the artwork created by grade 5 learners.

3.5 Ethical considerations

Gathering data in research poses certain ethical issues. Hitchcock and Hughes (1989:52) explain that "the degree of openness or closure of the nature of the research and its aims is one that directly faces the teacher-researcher" (Cohen *et al.*, 2006:66).

Before the study was conducted, permission and ethical clearance was obtained from the principal of the school where the research was conducted, the Western Cape Education Department and the Cape Peninsula University of Technology. After permission and ethical clearance were obtained, the study was conducted systematically to ensure close observation and an opportunity for an in-depth understanding of the phenomenon.

I considered that all the participants of the four Grade 5 classes in the study had the right to anonymity and that their privacy was regarded as highly important. The nature of the perception sharpening exercises had no harmful effects on the participants of the study. All the exercises done with the test groups were done with the control groups after the research was completed.

3.6 Conclusion

As described in the research design and methodology in this chapter, an intervention was conducted aimed at improving the observational skills of Grade 5 learners while producing artworks in the curriculum for Creative Arts. The intervention consisted of a pre-test which led to the design of the observational sharpening exercises completed by the test group. After the test group completed the observational sharpening exercises, both the test and control groups completed the post-test. The data collected during the study were analysed after the completion of the study. In the following chapter, the data that were collected will be analysed and discussed.

CHAPTER 4

DATA ANALYSIS AND DISCUSSION

4.1 Introduction

In chapter 4 the data collected from the pre-test, intervention lessons, and the post-test will be analysed and discussed. In section 4.2, the pre-test is assessed, and the results are compared, followed by a discussion of the pre-test data. In 4.3, the pre-test assessment and the results from the analysis are used to formulate the intervention lessons. After the intervention period, the post-test (4.4) is assessed, and the results between the pre-test and the post-test are compared. The post-test data is discussed in 4.4. In section 4.5 the findings of pre-test and post-test are analysed according to the themes identified from the literature and the data.

4.2 Pre-test data

The data collection was introduced with a pre-test, consisting of a 2D art-making project. As stated in chapter 3, the sample consisted of four grade 5 classes that were divided into two groups to form a test group and control group. The pre-test data consisted of visual data (photographs of 2D artwork), and textual data collected by the researchers in the form of field notes.

The visual data and the textual data from the field notes were studied and scrutinized to identify the level of visual perceptual and observational skills of the sample before administrating the intervention. I was interested in identifying factors that might influence visual perception of middle childhood learners in the primary school while completing visual art projects.

The results from the pre-test assessment and the visual- and textual data were used as a guide to design the intervention lessons. The following section will discuss the assessment of the pre-test.

4.2.1 Pre-test assessment

When assessing artworks, the focus should be on the process that leads up to the result, and not the final product itself (Melo, 2016:11). Goodwin (2015:14) echoes this by stating that the assessment of skills and knowledge is important by focusing on perceptual skills and not the end result. During the making and assessment stages of the pre-test, I focused on the skills the participants exhibited in their artwork. This formed the basis of the analysis and assessment of the pre-test. The artworks produced during the pre-test were carefully studied to identify how the participants portrayed subject matter when asked to rely on visual perceptual and observational skills.

Melo (2016:14) suggests that when assessing artworks, you should clearly state the criteria in an assessment rubric to ensure consistency, validity, and limit subjectivity. Another way to avoid bias, generalization, and snap judgments is for the assessor, to continually be aware of subjective bias and to not allow it to influence judgment.

The assessment rubric was designed in advance, and the criteria used were developed from literature consulted on visual perception in art in section 1.3 in chapter 1 and section 2.3 in chapter 2. The criteria were selected to test and identify the level of skills and knowledge as it pertains to visual perception in art. Each criterion was selected for its descriptive purpose of how the participants engaged with the subject matter and to identify their level of perceptual skills and knowledge of subject matter portrayed in their artworks.

The pre-test assessment began by looking at the whole/gestalt of the artwork to form a visual understanding and to locate all the visual elements captured in the artwork, such as; the use of space, the achievement of balance, the shape, and size of the subject matter portrayed. The next step was to use the assessment rubric (table 4.1) to assess each criterion one by one. The first criterion was the use of detail such as texture on the chameleon and branch and how the learner was able to create finer detail of the subject matter such as veins on the leaves. Secondly, the shape and size of objects were evaluated, by focusing on whether the form of a chameleon was drawn and if the size was in relation to the background. The third criterion assessed the use of balance, proportion and the compositional relationship between object in the artwork.

CHAPTER 4: DATA ANALYSIS AND DISCUSSION

The space used in the artwork was assessed based on the learner's ability to fill the space in the composition of the artwork visually. Finally, the use of the elements of art was evaluated based on the use of line, colour, and textures present in the artwork. The following table 4.1 represents the assessment rubric used to assess the pre-test artworks.

Table 4.1: Assessment rubric for pre-test

Criteria	Mastered – 3 marks	Partially mastered – 2 marks	Not mastered – 1 mark
1. Details such as texture on chameleon and branch. Finer details on leaves.	The learner was able to create detail to show characteristics of a chameleon as well as details on the leaves and branch.	The learner added a few details and focused on minor characteristics and omitted finer detail on the chameleon and leaves.	Minimal detail was added. The learner only made use of contour lines and omitted internal lines to create detail on the body of the chameleon, branch, and leaves.
2. Shape and size of objects in the artwork	The shape and size of the objects were in relation to one another and the background.	The shape and size of the objects were not in relation to one another and the background.	No attention was given to the shape and size of the objects created.
3. Balance and proportion of objects. Composition and visual relationship to objects	Great attention was given to portray a balanced composition. The balance of the elements of art and other objects were taken into account.	The learner made an effort to portray a balanced composition. Proportion needs more attention.	Minor attention was given to ensure the balance and proportion of objects in the artwork.
4. Utilization of space in the artwork.	The learner was able to utilize space well by drawing objects larger enough. The composition was well planned out.	The learner did not utilize all the space in the composition of the picture and left open space between objects.	The learner did not utilize all the space in the artwork. The objects in the artwork were small and grouped together. Leaving huge open space in the composition.
5. Application of elements of art. Use of line, colour, texture	The learner was able to make use of line, colour and texture to portray observed objects in the artwork.	Limited line, colour, and texture was used to portray observed objects in the artwork.	Little use of lines, colour and texture to portray observed objects in the artwork.

The following section will discuss and compare the results of the pre-test assessment of the test and control group.

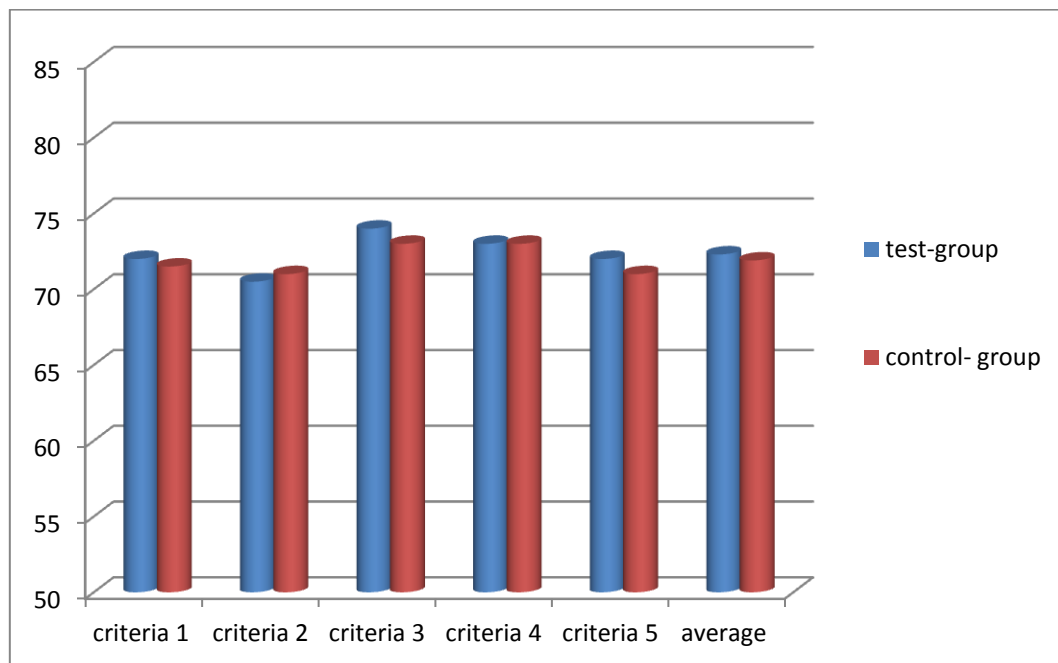
4.2.2 Results of the pre-test assessment

Once the pre-test artworks were assessed individually, the results of the test group and the control group, respectively, were combined to generate an average of each criterion used in the assessment rubric. Table 4.2 and diagram 4.1 will illustrate and compare the results the test group and control group achieved during the pre-test.

Table 4.2: Pre-test percentages achieved by test group and control group

Criteria	Test group	Control group
1. Details such as texture on chameleon and branch. Finer details on leaves.	72%	71.5%
2. Shape and size of objects in the artwork	70.5%	71%
3. Balance and proportions of objects. Composition and visual relationship to objects	74%	73%
4. Utilization of space in the artwork	73%	73%
5. Application of elements of art. Use of line, colour, texture	72%	71%
Average	72.3%	71.9%

Diagram 4.1: Compared pre-test results of the test group and control group



The following discussion will use the results from table 4.2 and diagram 4.1 to discuss the pre-test data. The combined average of the test group was 72.3%, and the average of the control group was 71.9%. The difference between the test group and the control group averages was 0.4%.

The first criterion evaluated the detail the learners were able to create in their artwork. The results indicated there was a 0.5% difference between the results of the test group and the control group. In the test group, 72% of the participants were able to create interesting detail such as texture on the chameleon and branch, original patterns on the body of the chameleon, and finer detail on the leaves by adding veins and different tints and shades of colour. Of the participants in the control group, 71,5% were able to master and incorporate detail in their artwork by creating different textures, shades and tints of colour and finer detail on the leaves.

The second criterion indicated that 70.5% of the test group mastered a visually pleasing depiction of the shape and size of objects in the artwork. The control group fared slightly better by capturing the shape and size of objects. The results showed that 71% of the control group mastered size and shape.

Criterion 3 tested the learners' ability to achieve balance and proportion in their artwork. The results indicated a 1% difference between the test group and the control group. Of the participants in the test group, 74% were able to proportionally balance their compositions by making use of line, shape, space, and size. From the control group, 73% of the participants were able to master the proportion of the objects in relation to the composition. Both the test group and control group scored 73% for criterion 4, which was the use of space in the artwork. 73% of the participants from both groups were able to plan and complete a well thought out and balanced composition by spreading out the objects in their painting and visually filling the space in their artwork.

Criterion 5 tested the participants' ability to portray the observed objects through their use of the elements of art. Particular interest was given to the use of line, colour, texture, shape, and size. From the test group, 72% of the participants were able to master the use of the elements of art, and from the control group, only 71% mastered criterion 5.

The comparison of the pre-test assessment results indicated that the two groups' level of visual perception and visual understanding of the subject matter was on par with one another. The following section will discuss the pre-test data.

4.2.3 Discussion of the pre-test data

After the pre-test was assessed, I studied the visual and textual data along with the literature consulted in chapter 2 on visual perception and art. I identified two factors that might have an influence on the visual perceptual and observational skills of learners in middle childhood, namely visual perception and emotion and the development of artistic expression. The following section will discuss these factors along with extracts from the field notes taken during the pre-test.

4.2.3.1 Visual perception and emotion:

Brieber, Nadal, Leder and Rosenberg (2014:1) suggest that our viewing time of objects and stimuli is greatly influenced by subjective experiences such as novelty and individual interests. The more interesting and emotionally exciting the visual stimulus, the longer a person will spend on viewing the object. This statement was evident during the drawing and planning process of the project, where a group of the learners seemed disinterested and did not take the size or proportions of the objects they were drawing into consideration:

It was noticed that there was a group of learners who rushed through the planning and drawing process and were thus unable to balance the size of the chameleon in relation to the branch. They were able to fill the spaces between the branches and chameleon but had difficulty with the size and proportion of the leaves and twigs (Researcher's field notes, 20160818).

Zadra and Clore (2011:5) claim that motivation and emotion influence visual perception. During the drawing process, it was evident that a few of the learners displayed and verbalized their unhappiness towards the project and placed more focus on their unwillingness to participate than to complete the task:

A group of both boys and girls stopped during the project and raised their concerns about the outcome of their projects. They were unsure about their ability to fill the composition and displayed doubts about the size and proportion of their chameleon in relation to the branch of the tree it was perched on (Researcher's field notes, 20160818).

I noticed their apprehension about sketching the reptiles and vegetation and encouraged them where possible. In no way did I assist the learners by drawing on their artwork. The assistance was purely verbal. I encouraged the learners to pay close attention to the size and shape of their chameleon.

When learners encounter a problem or a perceived inability to complete a task, the teacher needs to encourage and motivate the learners. Encouragement and instruction should always be verbal. In this instance, the verbal instructions were for the learners to go back

and observe the relationship between the different objects in their drawing. As North, Hope and Williams (2017:3) explain, proper and precise verbal instruction has the power to assist and improve visual perception and observation. I verbally instructed learners who had difficulty with the size and proportion to observe more closely what they were drawing:

A small group of boys had difficulty with the proportion and size of their chameleons in relation to the branch, leaves, and twigs in their composition. This group received verbal instructions to observe and to note the difference in size between the different elements and objects they were drawing. After I intervened, the learners coped better in balancing the objects in their composition (Researcher`s field notes, 20160818).



Figure 4.1: Example of composition

Figure 4.1 is an example of the composition that was created by a small group of learners. There were photographs of chameleons on the data projector in the front of the class. The learners were instructed to study and observe the photos carefully, then plan and place their composition and finally draw the reptiles. This group of learners was able to make use of different shapes and sizes of leaves in the background to fill their composition. The size of the chameleon was big enough to balance the leaves and twigs in the background. During the completion of the project, this group of learners did not express any negative emotion towards the project or their own artwork.



Figure 4.2: Example of composition

Figure 4.2 is an example of the composition of a larger group of learners. In this group, the learners were able to fill their compositions without assistance from the teacher. Although the learners tried to fill the background with leaves and twigs, it still seemed unbalanced. The size of the chameleon seemed too small to fill the composition of the artwork.



Figure 4.3: Example of composition

Figure 4.3 is an example of the composition created by a small group of learners. This group was mostly made up of boys. In this group, the learners had difficulty filling the whole composition. They drew very few leaves and twigs in the background, and there was a lot of open space between the objects in the background.

During the pre-test, it was noticed that a small group of learners experienced challenges in their visual perception and continued to portray difficulty with the perception of size, space, and proportion.

4.2.3.2 Development of artistic expression

The artistic development of children is a complicated stage of development that is categorised by many different factors. How children in middle childhood create art is dependent on these factors. The following section deals with the analysis of these factors.

4.2.3.2.1 A creative slump

During the completion of their 2D pre-test project, I noticed the learners were experiencing some difficulty with their ability to artistically express themselves, which according to Darvishi & Pakdaman (2012:40), can be expected in their developmental stage. The following extract from the researcher's field notes show this clearly:

While completing the 2D project, the I noticed a small group of learners who seemed hesitant to continue. They expressed frustration that their chameleon did not resemble the one on the data projector. I reminded the learners that their chameleon did not have to be the same as the one on the photo and that it is only there as a reference to the size and shape (Researcher's field notes, 20160825).

During the planning and painting of the artwork, many learners become very self-critical about their ability to create a work of art. Wachowiak and Clements (2010:217) remind us that in the middle childhood phase of development, learners' pursuit of realistic renderings of their experiences and environments is what limits them to express themselves in a creative manner freely.

Learners feel unsure about themselves, their place in the world, and how to express themselves:

A group of learners seemed apathetic towards their projects. They seemed very disinterested in what they were creating. They did not comment or raise any concerns about their ability or inability to create and carry on with their projects (Researcher's field notes, 20160825).

As learners mature and enter middle childhood, their thought structure and self-identity become more complex and modified. As Chalerooy et al. (2012:51) describe it, during this phase of development; learners become more aware of their place in relation to the world. The mixed feelings they have about their view of the world and themselves can contribute to them not feeling the need to express themselves creatively. Barbot, Lubart and Besancon (2016:35) argue that a learner's creative expression depends on the profile of resources and the learner's personal interest of the task at hand. What might seem like a creative slump might in fact be a personal preference or dislike of the subject and resources used during the creative process. The same was found in a second smaller group of learners:

A second group rushed through the project and did not take any care to present a carefully planned work of art. They seemed almost unimpressed with what they created and rushed through the project just to complete it. Throughout the project, I noted that they showed very little interest in their projects, and verbally communicated this to their classmates and me. (Researcher's field notes, 20160825).

Amorino (2009:218) cite that during this challenging time of development, children in the middle childhood phase do not see art-making as a way to express their individuality anymore. They are more task-driven and view creating in the form of art projects, as just another task or project to be completed.

The influence of the creative slump has been discussed thus far. In the following section, the gender differences and similarities will be analysed.

4.2.3.2.2 Gender differences and similarities in artistic and creative expression:

Although the U-curve is not a gender-specific stage of artistic development, certain gender related phenomena were experienced during the 2D pre-test project in how learners created their 2D project and how they depicted particular objects in the project. The following section will discuss the experiences of both boys and girls.

Girls use more colour in their artworks:

Like in the beginning stages of the project, there was a group of girls who were able to make use of a variety of different tints and shades using oil pastels. They were able to use different shades of the same colour to indicate where it was light and dark on the chameleon. The direction of the patterns they created earlier was taken into consideration when they used different shades and tints of colour. They created contrast as they made use of light and bright colour on their chameleons. They were able to take the shape of the body and the direction of the patterns into consideration while using shades to colour the chameleon (Researcher`s field notes, 20160818).

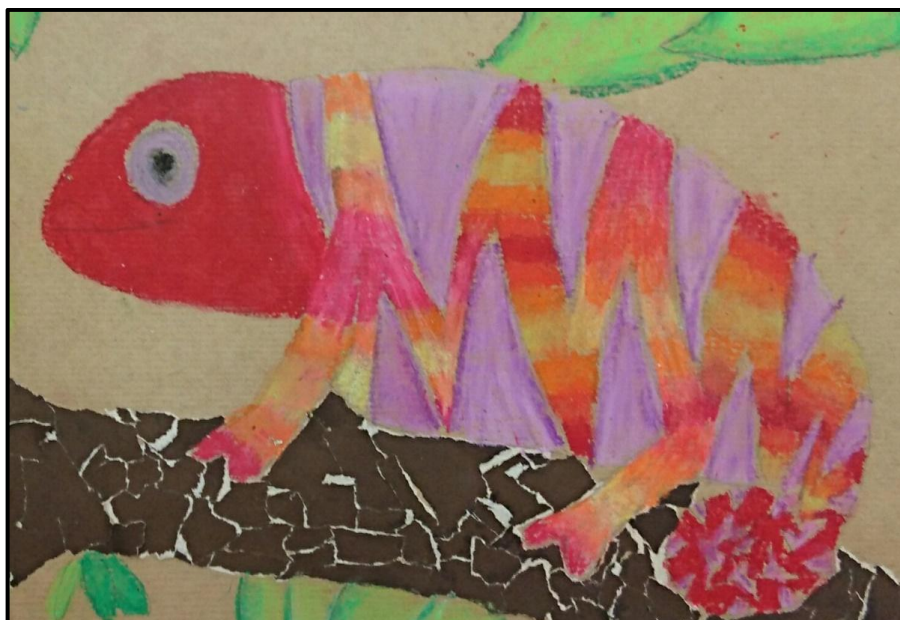


Figure 4.4: 'Use of colour'

Most of the girls were very particular when selecting the colours for their chameleon. They chose bright colours that complimented each other. As Wright and Black (2013:2) explain, girls are more likely to use expressive and bright colours in their art because they can more freely communicate their emotions in social situations. This openness to freely express themselves is evident in their creative attempts and can be linked to their social and emotional stage of development.

Boys use fewer colour in their artworks:

The remaining learners were a group of boys that had great difficulty creating and applying colours. They made use of limited colours which did not match or complement each other. They were not able to follow the instructions of the teacher to observe how the colours merge to create an effect. Some, not all, of the learners in the group, worked rushed, uncontrolled, and ignored the drawing lines. Their colours appeared rushed and messy. These learners also experienced great difficulty in creating different shades and tints on their chameleons and added the colour directly. The colours they chose were mostly darker and cooler tones, and only a few boys made use of bright colours. They had no concept of shading with lighter and darker colours. The overall effect they created was rough, scratchy, and rushed. (Researcher`s field notes, 20160818).



Figure 4.5: 'Use of colour'

During the stage of applying colour to the chameleon, most boys selected a limited scheme of colours. They mainly choose darker and cooler tones of colours. Wright and Black (2013:3) postulate that boys feel more comfortable with using darker colours in the art because it is less expressive and shows a restricted emotional response.

Girls can seem more focused and driven while completing an artwork:

It was noticed that after the learners were instructed to start work on the leaves, only a small group of girls took an extra few minutes to observe the leaves in front of them. This small group constantly switched between the colouring in and observing of the leaf. They were able to create interesting details on the leaves, and they also made use of different shades and tints (Researcher`s field notes, 20160824).



Figure 4.6: 'leaves'

This group of girls was able to spend time during the observation period to understand and take in as much detail as possible. As Etherington (2012:35) explains, girls tend to be more focused during art projects and are thus able to apply more time to observe details and to add that to their work. This could be due to their ability to apply more self-restraint and self-discipline in a classroom situation and paying attention to instructions.

Boys can become demotivated during art-making projects:

A very small group of boys were unable to create detail in their work despite having the leaves right in front of them. They were not able to apply different shades and tints in their leaves, and the quality of their work was very poor. They drew the leaves very small, and they were rushing to get the work done and made no effort to observe the detail on the leaves such as the veins, different size, and shape (Photograph 4.7, 20160825; Researcher's field notes, 20160824).



Figure 4.7: 'leaves'

It was noticed that a small group of boys lacked interest and focus on the task at hand. Burkitt, Barrett and Davis (2003:3) explain that learners who hold negative feelings towards the topic of an art project can become uninterested in being creative. Boys can also lose focus while completing still life projects since there is no movement, and because it is not technologically enhanced or driven (Etherington 2012:35).

Throughout the project, there was a marked difference between boys and girls and their ability to create detail in their artworks:

There was a small group of learners, the majority of them girls, who were able to continue and create their original patterns without the guidance or assistance of the teacher. These learners were able to create intricate, unique patterns and carried on applying finer details in their work (Researcher's field notes, 20160824).

CHAPTER 4: DATA ANALYSIS AND DISCUSSION

This group of girls set out to create intricate patterns and detail of their work. They quietly focussed on their work and were able to carry on without any complaints or assistance. As Alter-Muri and Vazzano (2014:155) explain, girls are often able to create an array of detail in their work, and this can be attributed to their advanced developed fine motor skills. During the same stage of the project, it was found that a small group of boys had difficulty creating patterns and details. The following extract from the researcher's field notes shows this more clearly:

A small group of boys had difficulty in creating interesting and unique patterns. They did not make use of different lines or shapes, but just created simple patterns not appropriate for their age group. Some of these boys grew frustrated since they were not able to create circular patterns and seemed to lose focus during this part of the project (Researcher's field notes, 20160818).

Girls utilized more space for their art:

A small group of learners, the majority of them girls, were able to fill the composition with no difficulty. They were able to see the difference in size between the chameleon and the branch. They were able to fill in the spaces between the chameleon with smaller leaves and twigs (Researcher's field notes, 20160824).

It was noticed that a group of girls were able to fill the space of their composition. They carefully planned their composition and drew a big branch and chameleon and filled the rest of the space with thick foliage. According to Wright and Black (2013:2), girls tend to fill more of the page in their drawings because of increased self-awareness and self-esteem. The opposite was found with the boys:

The remainder of the learners was a small group of boys who experienced difficulties, requiring further verbal instructions from the teacher. Even though they received verbal instructions, they were unable to balance the proportions of the branch, chameleon, leaves, and twigs. Their compositions were unbalanced due to the branch, twigs, and leaves being very small (Researcher's field notes, 20160818).

This concludes the analysis of the pre-test. What follows is a reflective summary and discussion of the pre-test.

4.2.4 Summary and discussion of pre-test data

It was evident from the pre-test data that various factors influenced the ability of the participants to portray subject matter they visually perceived and observed during the art-making process.

From the analysis, I was able to deduce that the participants lacked specific skills and abilities associated with visual perception and observation. These skills and abilities included limited abilities to portray shape, size, and finer details in their work. It was also noticed that a number of participants had a lackadaisical attitude to their creative attempts, displayed by their short viewing time of subject matter and the verbalisation of their apathy and frustration towards the creative process. This lack of interest in their creative attempts was also displayed by the participants' lack of intrinsic motivation, which halted their creative attempts during the pre-test. I was able to deduce that the absence of intrinsic motivation and lack of self-confidence led to the participants' apprehension to create in 2D.

As described by Wachowiak and Clements (2010:217), the developmental stage of the participants limited them to engage in the creative process fully. Their inability to render size, shape, and details they visually perceived, caused many participants to stop during the pre-test. Only once I intervened and reassured them were they able to continue with their artwork.

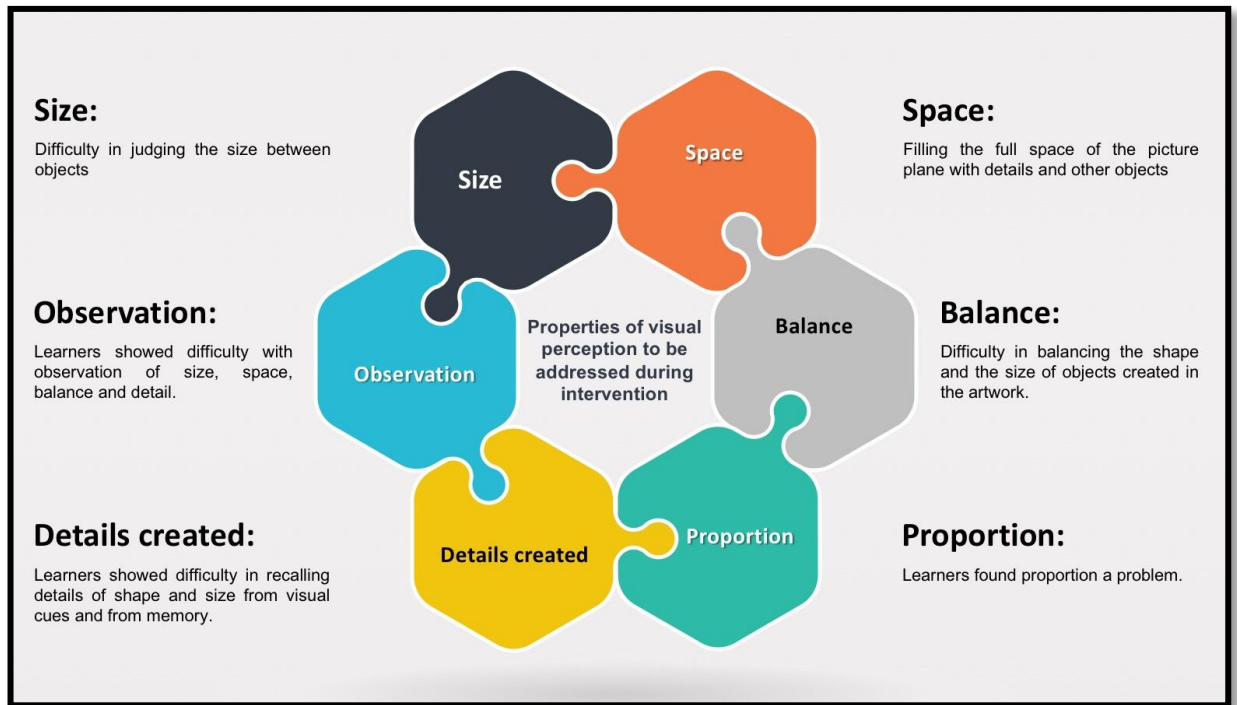
I noticed that gender played a role in what the participants included and omitted in their artworks. The study did not aim to improve the perceptual and observational skills of one specific gender, but rather to empower and enable all participants to observe better subject matter, assisted by various new techniques. The new techniques were specifically designed to allow all the participants to portray what they visually perceived.

After the results of the pre-test were compared between the test group and the control group and the findings from the pre-test analysis were studied, was I able to identify six aspects of visual perception to be addressed during the intervention lessons. The following section will discuss the formulation of the intervention lessons.

4.3 Formulating the intervention lessons from pre-test data

The eight intervention lessons were designed and based on the analysis and the results of the pre-test, as mentioned in chapter 3, section 3.3. The following diagram illustrates the properties of visual perception that were addressed during the intervention period.

Diagram 4.2: Properties of visual perception addressed during intervention lessons



The assessment and the analysis of the pre-test revealed that the participants of both the test group and control group had difficulty in judging the relational size of objects in their artwork. It was clear that most of the participants drew the objects too small or too big, leading to an imbalanced composition of their artworks. The depiction of size was included as a property of visual perception to be addressed in the intervention to assist the learners in their 2D renderings.

The results of the pre-test also indicated that attention was needed in the way the participants filled the visual space and dealt with the composition of the artwork. Most of the

participants were able to fill the space in their artwork, but some learners could not fill the space with details and objects in the composition. It was noticed that the participants exhibited some difficulty in balancing the shape and size of the objects they created in their artwork.

Further analysis of the pre-test results indicated that the participants experienced difficulty portraying the shape and proportion of the objects they created in their 2D artwork. The details the participants created were stereotype and not on par with the stage of artistic development of Grade 5 learners, as mentioned by Lowenfeld and Brittan (1975:28).

The final aspect of visual perception addressed during the intervention lessons was the overall observational skills of the participants. This included the combination of size, shape, balance, proportion, detail, and how the participants were able to create the whole/gestalt of the artwork.

This concludes the analysis and assessment of the pre-test and the identification of visual properties addressed during the intervention period. The following section will discuss the post-test data

4.4 Post-test

Once the intervention lessons, as stated in section 3.4.3.2 in chapter 3, were administered to the test group, the post-test was introduced and administered to both the test group and the control group. The post-test consisted of a 2D picture-making project of a parrot in the jungle. It was conducted during the first three weeks of the 4th term.

In the following section, the assessment, results, and the findings of the post-test will be discussed. The data from the post-test were analysed according to the methods discussed in chapter 3, where the data were coded and linked to the themes (section 4.4.3) for analysis.

4.4.1 Post-test assessment and results

Once the post-test was administered it was assessed the based on the same rubric used to assess the pre-test artworks. This was done to determine whether the intervention lessons had any impact or effect on the visual perceptual skills of the test group. The post-test data were assessed in the same manner, and the same process was followed, as mentioned in section 4.2.1 of this chapter. Table 4.3 shows the assessment rubric used to assess the post-test.

Table 4.3: Assessment rubric for post-test

Criteria	Mastered – 3 marks	Partially mastered – 2 marks	Not mastered – 1 mark
1. Details such as texture on the branch. Finer details on the parrot and leaves.	The learner was able to create detail to show characteristics of the parrot as well as details on the leaves and branch.	The learner added a few details and focused on minor characteristics and omitted finer details on the leaves and branch.	Minimal details were added to the parrots, branch, and leaves. The learner only made use of contour lines and omitted internal lines to create features on the leaves, such as veins and texture on the branch.
2. Shape and size of objects in the artwork	The shape and size of the objects were in relation to one another and the background.	The shape and size of the objects were not in relation to one another and the background.	No attention was given to the shape and size of the objects created.
3. Balance and proportions of objects. Composition and visual relationship to objects	Great attention was given to ensure a balanced composition. The balance of the elements of art and other objects were taken into account.	The learner made an effort to create a balanced composition. The proportional balance needs work.	Minor attention was given to ensure balance and proportional correctness of objects in the artwork.
4. Utilization of space in the artwork.	The learner was able to utilize space well by drawing objects larger enough. The composition was well planned out.	The learner did not utilize all the space in the composition of the picture and left open space between objects.	The learner did not utilize all the space in the artwork. The objects in the artwork were small and grouped together. Leaving huge open space in the composition.
5. Application of elements of art. Use of line, colour, texture	The learner was able to make use of line, colour and texture to portray observed objects in the artwork.	Limited line, colour and texture were used to portray observed objects in the artwork.	Little use of lines, colour and texture to portray observed objects in the artwork.

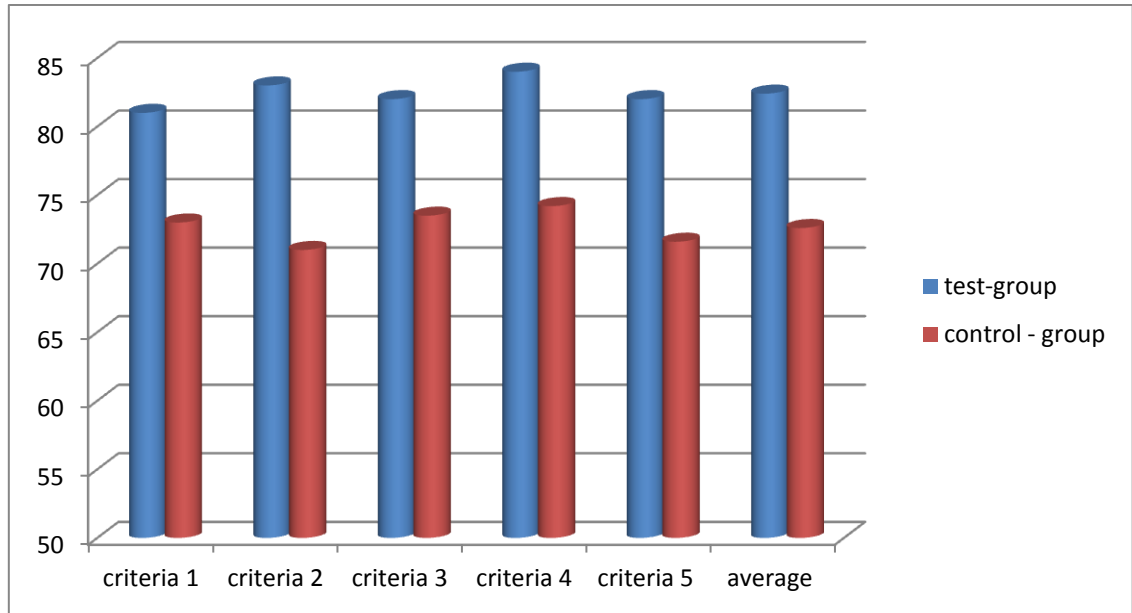
CHAPTER 4: DATA ANALYSIS AND DISCUSSION

Subsequent to the assessment of the post-test, the respective percentages of the test groups and the control groups were combined to form the average of each criterion on the assessment rubric. Table 4.4 and diagram 4.3 will graphically represent the results of the post-test assessment.

Table 4.4 Post-test percentages achieved by test group and control group

Criteria	Test group	Control group
1. Details such as texture on the branch. Finer details on the parrot and leaves	81%	73%
2. Shape and size of objects in the artwork	83%	71%
3. Balance and proportions of objects. Composition and visual relationship to objects	82%	73.5%
4. Utilization of space in the artwork	84%	74.2%
5. Application of elements of art. Use of line, colour, texture	82%	71.6%
Average	82.4%	72.6%

Diagram 4.3: Compared post-test results of the test group and control group



4.4.2 Discussion of post-test results

The results from the post-test indicated that the test group's average increased by 10.1% in comparison to the pre-test results, and the control group's average increased by 0.7%. The small increase in results from the control group may be due to the natural maturation of artistic development over the 4 months between the pre-test and the post-test, as described by Twigg and Garvis (2010:196).

There was a 9.8% difference between the averages of the test group and the control group. Due to this large increase, I was able to deduce that the intervention lessons the test group received, had a marked effect on their visual perceptual skills while creating in 2D.

Under the first criterion of the post-test, the test group scored 81%, for the details they created and added to their artwork, which was a 9% increase from the pre-test.

The following extract for the researcher`s field notes, support the fact that the test group was able to capture more detail in their artwork:

Most of the learners made use of the full 5 minutes to observe and study the leaves in front of them. They were able to mix a variety of tints and shades of colour to apply on the leaves in their pictures. The background and foreground were filled with interesting leaves, displaying a full range of detail such as veins and tints and shades (Figure 4.8a, 20161026; Researcher`s field notes, 20161010).

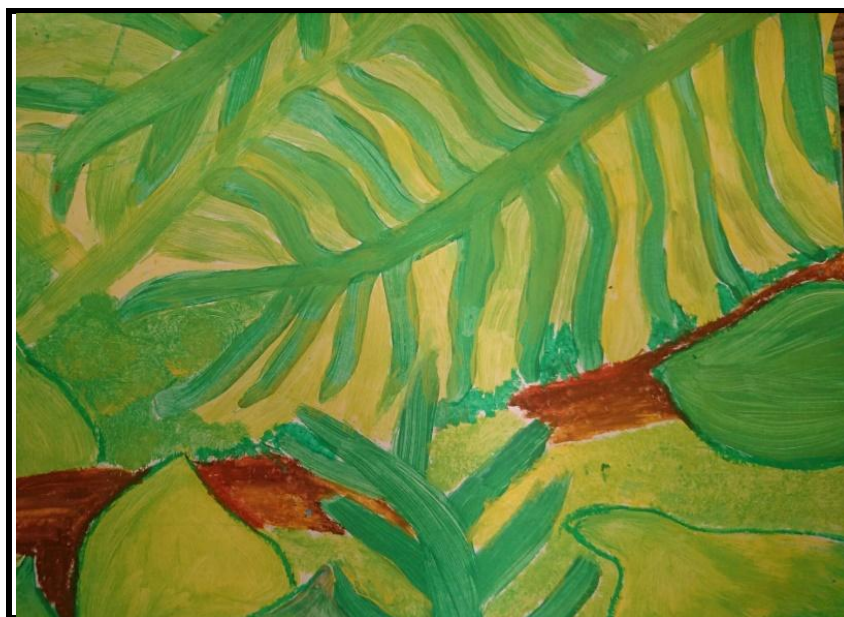


Figure 4.8a: Example of detail added by test group

The results of the control group indicated that there was only a 1.5% increase in the way the participants created and added detail to their artwork. The following extract from the researcher`s field notes supplement the findings from the pos-test:

It was noticed that only a few learners used the whole 5 minutes to study the leaves they were about to draw in their artwork. Most of the learners tried to mix a variety of colours to create interesting detail to the leaves in the background and foreground, but

the colours they mixed and applied were murky and muddy. The detail they applied were not clearly visible (Figure 4.8b, 20161024; Researcher`s field note, 20161012).



Figure 4.8b: Example of detail added by the control group

The second criteria indicated that 83% of the test group participants mastered the technique to accurately judge and record the shape and size of objects in their artwork. There was a 12.5% increase in their ability to depict the relational size and shape of objects and to ensure that the objects in their artwork were in proportion to one another. The following extract from the researcher`s field notes, explain how the test group was able to master the shape and size of the objects in their artwork:

A large number of the learners studied the image of the parrot on the data projector. After they studied the shape of the parrot and the sizes of the different body parts, they carefully drew what they observed. It was noticed that most of the learners took great care to ensure that the various body parts of the parrot were in proportion to the rest of the body (Figure 4.9a, Researcher`s field notes 20161024, 20161010).



Figure 4.9a: Example of size and shape by test group

The results from the control group indicated that there was no marked difference in the way they portrayed shape and size between the pre-test and the post-test. In both tests, only 73% of the participants were able to depict the different shapes in relation to the sizes of objects. The following extract from the researcher's field notes support the results for the post-test:

During the planning of the composition, I noticed there were a large number of learners who started sketching their composition without planning. Some of the learners took their time to ensure that they recorded the shape in relation to the size of the parrot and the leaves in the background and foreground.

The rest of the group continued to sketch their compositions and parrots without referring to the image on the data projector. The size and shape of the parrots and leaves were, therefore, not relational. In most cases, these learners made the parrots

and the leaves very small (Figure 4.9b, 20161024 Researcher's field notes, 20161012).



Photograph 4.9b: Example of size and shape by control group

Criterion 3 indicated that there was an 8% increase in the way the test group was able to balance the composition of their artwork. During the post-test, the participants were able to increase the size of the objects in their composition and paid close attention to proportion and the relationship between the objects in their artwork. The following extract from the researcher's field notes support the results of the post-test:

Most of the learners were able to complete their composition with little effort. They were able to plot and plan all the elements of the picture and ensured that the shape and size of the parrots, leaves, and branches were in proportion to one another. A few of the learners found it difficult to proportionately sketch their parrots in relation to the leaves in the background and foreground (Figure 4.10a, 20161024, Researcher's field notes, 20161010).



Figure 4.10a: Example of balance in composition by test group

There was an increase of 0.5% in the average of the control group in the third criterion. Of the participants in the control group, 73.5% of them were able to balance the composition of their artwork by ensuring that there was a visual relationship between objects.

The researcher noticed that most of the learners were able to achieve a balanced composition. They took the size of the parrot and the leaves in the background and foreground into account, but they still made some of the objects small. The proportion of the parrots was not relational. The learners made the bodies either too thin or too large, and the heads were too small or too big. The learners who were able to achieve balance in their compositions did so by drawing the size and shape of their parrots in relation to the rest of the composition (Figure 4.10b, 20161024 , Researcher`s field notes, 20161012).



Figure 4.10b: Example of balance in composition by the control group

The rest of the results from the post-test indicated that the test group was able to utilize space in their artwork and composition. The increase they showed was 11% higher than during the pre-test. They were able to visually fill more space in the composition by enlarging the parrots, leaves, and branches. What follows is an extract from the researcher`s field notes to support the results found during the post-test:

Most of the learners took their time to ensure that there was a relational balance between the two parrots and the rest of the composition. The learners were able to fill out the space on their paper to ensure a full and balanced composition. I noticed that there was a smaller group of learners who had difficulty spreading out the objects in the composition (Figure 4.11a, 20161024Researcher`s field notes, 20161010).



Figure 4.11a: Example of space used by test group

The control group's average for criterion four increased by 1.2%. This small increase indicated that the control group's use of space in the composition did not improve remarkably. The following extract from the researcher's field notes is what was noticed during the post-test:

It noticed that there were still a large number of learners who left big open spaces between the leaves in their background. The learners focused most of the objects in their composition to the centre of the page (Figure 4.11b, 20161024Researcher's field notes, 20161012).



Figure 4.11b: Example of space used by the control group

The test group was able to increase their overall percentage by 10%, for the final criterion. The assessment of criterion 5 indicated that they were able to make use of more colour, line, and texture to record the observed objects in their artwork. The following extract from the researcher`s field notes, support the results from the post-test:

A number of the learners were able to depict texture on the branch by making use of different shades of colour. They created interesting shades and used a variety of different qualities of line to simulate the texture that would be found on a branch. It was noticed that this group of learners were able to carefully observe the images on the data projector while adding texture to their artwork (Photograph 4.12a, 20161024, Researcher`s field notes, 20161017).



Figure 4.12a: Example of elements of art used by test group

The post-test results indicated no increase in the control group`s ability to make use of the elements of art in their artwork. 71.6% of the participants were able to make use of different colours, line and texture in their artwork. The following extract from the researcher`s field note support the findings from the post-test:

A small group of learners was able to create texture on the branch by making use of different shades. They were able to use different shades and tints of colour to indicate texture through light and dark spots on the branch. About half of the group went on to create texture on the branch, but it was noticed that they had some difficulty in shading and creating visual texture.

Another group of learners was unable to create texture on the branch. They did not make use of the techniques demonstrated by the teacher. When they applied the colour, they `scratched` the colour onto the paper, and their work appeared very rushed and messy (Figure 4.12b, 20161024, Researcher`s field notes, 20161019).



Figure 4.12b: Example of elements of art used by control group

This concludes the discussion of the post-test results. In the following section, the themes that were identified from the data will briefly be discussed.

4.4.3 Identification of themes

The artworks, intervention exercise drawings, and the field notes were studied to identify and formulate themes once the post-test artworks were assessed and the results were compared. The visual data (2D artworks) and the textual data (field notes) were analysed and scrutinized to find codes in the data. The codes were used to form categories and eventually to form themes, as discussed in Chapter 3, section 3.4.4. The following themes were identified and will briefly be discussed below:

Theme one: Creativity and the U-curve

As stated in chapter 2, section 2.2.2, the U-curve refers to the creative slump middle childhood learners' experience. This study was aimed at improving and equipping learners with proper visual perceptual skills to reduce the effects of the U-curve and to prompt and increase their creativity, confidence and attitude towards art.

Theme two: Creative and visual problem solving

During the creative and art-making process, learners are faced with problems they have to solve. Through increased confidence in creativity and the acquisition of new skills and

knowledge, learners are able to solve problems they encounter during art-making activities in an innovative manner.

Theme three: Intrinsic motivation

When learners are able to utilise creative thoughts, skills, and knowledge of how to solve problems during the art-making process, they become intrinsically motivated. Their intrinsic motivation allows them to complete tasks and projects by relying on newly formed skills and knowledge they acquired.

Theme four: a shift to understanding and knowledge

Based on Piaget's theory of cognitive development, learners are able to build on their existing knowledge through a conceptual understanding of what they are taught and through their own experiences.

The themes identified will be linked to the data and will be expounded on in section 4.5.2.

4.5.1 Analysis of pre- and post-test findings


In this section, the pre-test, intervention lessons, and post-test of six participants will be discussed according to the visual data, field notes of the researcher, and the themes identified. Due to the volume of participants of the test group, six of the 58 participants were purposefully selected for further analysis in this chapter. The purposeful selection of the six participants was based on the results they achieved during the post-test. Three participants from each of the two test groups were selected. The following table will display how the six learners were selected:


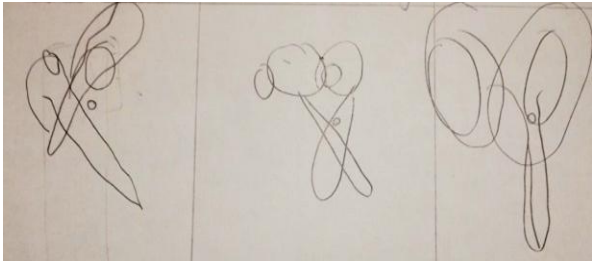
Table 4.5 selection of test group participants for further analysis

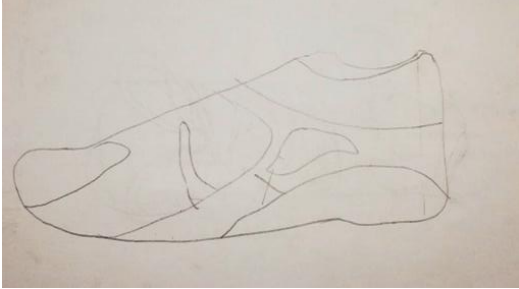
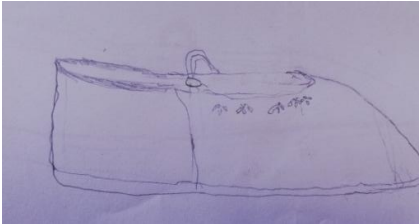
Percentages achieved during the post-test	Participants from test group 1	Participants from test group 2
Above 80%	Learner U	Learner V
Above 70%	Learner W	Learner X
Above 60%	Learner Y	Learner Z


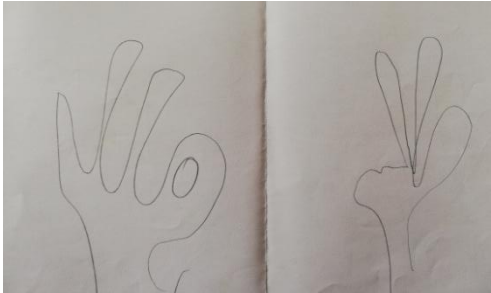
The following tables will discuss the pre-test, intervention lessons, and post-test of learners U, V, W, X, Y, and Z. The discussion will be conducted in narrative discourse from the observations made after studying the artworks produced by the learners, and the field notes of the researcher. Each discussion will be linked to the theme(s) identified in section 4.4.3, expounding on how the learners were able to complete their artworks and intervention exercises. The discussion in tables 3.1 and 3.2, and the conceptual framework in chapter 3, will be linked to the discussions in the following tables (4.6 -4.12). The first discussion will commence with the data of learner U from test group 1.


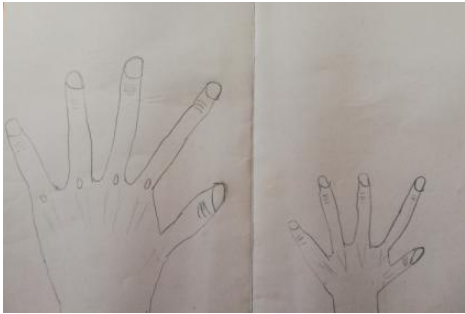
Table 4.6: Summary of finding from learner U

Learner U – Test group 1	Description
<p>Pre-test: Chameleon in a tree. Picture-making in mixed media</p> <p>Media used: A3 brown paper, grey HB pencil, oil pastels, and black koki pen. Refer to table 3.1 in chapter 3 for a more detailed description</p> 	<p>Learner U exhibited a keen sense of visual recognition through her ability to record what she observed during the pre-test. She was able to make use of space and appropriate size of the chameleon by ensuring the proportions of the head and body were in relation to one another.</p> <p>Her use of complementary colours on the body indicates that she was able to understand the visual properties of different colours to create an aesthetically pleasing effect. The learner made use of large and small leaves to create an illusion of depth.</p>
<p>Intervention lesson 1: Look, feel and memory</p> <p>Media used: Black A4 paper and white wax crayon. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p>	<p>During the first intervention lesson, learner U was able to transition from recognizing an object to visual problem solving as described by Pitri (2013:41). She was able to capture as much visual detail as possible to store in her visual memory through her sense of observation.</p> <p>After storing the image in her visual memory, learner U supplemented the visual memory with her tactile sense, thus allowing her to record as much detail as possible, including the shape and size of the object. She was able to solve the problem of graphically</p>

	<p>recording the object in the absence of visual stimuli, through mental imagery and visual memory.</p>
<p>Intervention lesson 2: Blind contour drawing</p> <p>Media used: White A4 paper divided into three equal blocks and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>The second intervention lesson tested learner U's visual problem-solving skills through spatial awareness and hand-eye coordination.</p> <p>She was able to recognize the shape of the pair of scissors and to solve the problem of capturing the shape of the object without looking at the drawing, which could lead to the improvement of hand-eye coordination.</p>
<p>Intervention lesson 3: Drawing from memory</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p>	<p>The third intervention lesson focused on improved visual memory. According to Cowan (2008:330), improved visual memory can assist learners in manipulating temporarily stored information.</p>

	<p>During the lesson, learner U was able to recognize the shape and size of the object, in this case, as her visual memory and mental imagery were employed to record the size, shape, and other details, such as markings on the shoe.</p> <p>The learner was able to exhibit the construction and internalization of intrinsic visual perceptual skills by visually and mentally assimilating information in the absence of visual stimuli and put this down on paper.</p>
<p>Intervention lesson 4: drawing from memory with the non-dominant hand</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>During the fourth intervention lesson, learner U drew the object from memory with her non-dominant hand. She was able to recognize and memorize the shape and size of the object and record it in her sketch. According to Hale (2015:17), drawing with your non-dominant hand, slows the drawing process down, to capture as much detail in a drawing as possible.</p> <p>Learner U was able to solve the problem of space, shape, and size in the absence of visual stimuli while completing the exercise with her non-dominant hand. Making use of perception and visual memory comparison, she was able to internalize and shift focus from drawing with her non-dominant hand while relying on her visual memory to complete the task.</p>
<p>Intervention lesson 5: Positive and negative drawing</p> <p>Media used: White A4 paper and HB pencil. Refer</p>	<p>Learner U demonstrated the ability to overcome problems of size and filling of space on the picture plane, thus sharpening her spatial awareness.</p>

<p>to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>She exhibited improved skills by capturing the accurate size and shape of the observed object. Her drawing displayed attention to detail and the ability to shade only the background, allowing the 'open' space to form the object through the use of positive and negative space.</p>
<p>Intervention lesson 6: Blind contour drawing of a friend's hand</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>During intervention lesson six, the drawing of learner U displayed her ability to visually focus on the exercise and employ the use of hand-eye coordination to solve the issue of not being able to see her drawing, while completing the project. She was able to make use of kinaesthetic manipulation to complete her drawing without looking at the paper.</p>
<p>Intervention lesson 7: drawing upside-down</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p>	<p>Learner U's drawing displayed her ability to visually and mentally resolve the problem of drawing the image upside-down. She demonstrated the ability to capture the size and shape in proportion and fill the space on the picture plane.</p> <p>She mastered the ability to record details she observed during the task. After the</p>

	<p>seventh intervention lesson, it was evident that learner U was able to cognitively construct her way of capturing and recording the image she visually perceived.</p>
<p>Intervention lesson 8: Actual size vs. perceived size</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>During the final intervention lesson, learner U displayed the ability to compare and record the difference between a close up image and an image at a distance. She demonstrated and mastered the internalization and construction of intrinsic visual perceptual skills by capturing the accurate size and finer details by including fingernails and knuckles in her drawing.</p>
<p>Post-test: Parrot in the jungle: Picture- making in mixed media.</p>	<p>After completing the post-test, learner U showed great strides in her ability to record</p>

CHAPTER 4: DATA ANALYSIS AND DISCUSSION

Media used: A3 white paper, yellow wax crayon, oil pastels and liquid tempera paint. Refer to table 3.1 in chapter 3 for more detailed description

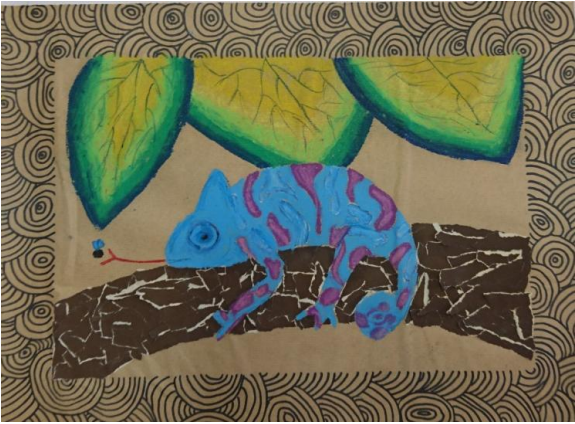





observed objects and subject matter. She mastered visual recognition of the elements of art, displayed by the way she captured true and honest representation of subject matter and objects.

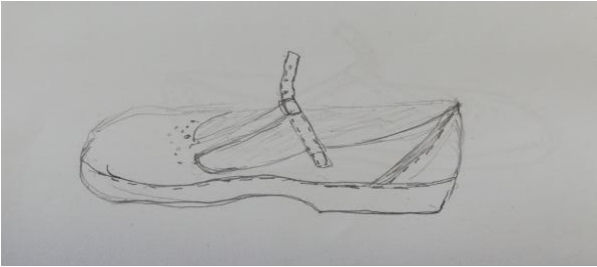

She recorded a variety of colours and was able to fill the background with more detailed and larger leaves than during the pre-test. Although her composition was visually unbalanced, she was able to master constructional skill and displayed the ability to create the gestalt of the artwork.

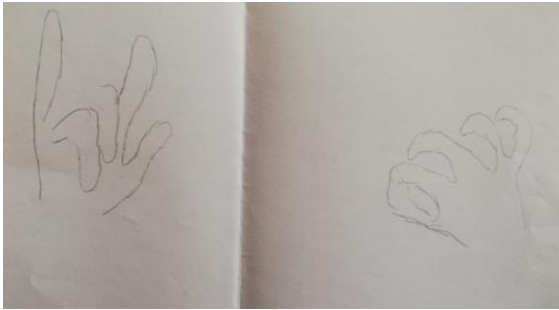

Learner U visually communicated the knowledge and skills she constructed and attained through the intervention lessons.

Table 4.7: Summary of findings from learner V

Learner V – Test group 2	Description
<p>Pre-test: Chameleon in a tree: Picture-making in mixed media.</p> <p>Media used: A3 brown paper, grey HB pencil, oil pastels, and black koki pen. Refer to table 3.1 in chapter 3 for a more detailed description.</p> 	<p>The pre-test of learner V displayed her ability to recognise and apply shapes, tones of colour, and details in her work.</p> <p>She was able to capture visual details on the leaves, chameleon as well as the branch. The detail she captured was the veins on the leaves, different tones, and shades on the chameleon and texture on the branch. She displayed artistic techniques to her artwork before the intervention lessons.</p>
<p>Intervention lesson 1: Look, feel and memory</p> <p>Media used: Black A4 paper and white wax crayon. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>Learner V demonstrated visual recognition evident in her recoding of shape, size, and detail on the container, such as marks and the screw top of the container. She also displayed the ability of problem-solving by relying on visual and tactile memory to record the details of the object from memory.</p> <p>As mentioned by Lee (2010:8), when tactile senses are included in the drawing process, visual memory is supplemented and integrated by the sense of touch, allowing for a more accurate recording.</p>

<p>Intervention lesson 2: Blind contour drawings</p> <p>Media used: White A4 paper divided into three equal blocks and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>During the second intervention lesson, learner V demonstrated improved hand-eye coordination from the first to the last drawing in the exercise.</p> <p>She was able to mentally and visually overcome the problem of drawing without looking at the object she was drawing. She was able to fill more space, correct the shape of the highlighter she drew, and added detail to her blind contour drawing.</p> <p>Edwards (1999:91) mentions, when you rely on observational skills during a blind contour drawing; deep perception takes place, which allows you to see the complexity of the object you are drawing. This will enable you to record more detail and improve the shape and size of the subject matter.</p>
<p>Intervention lesson 3: Drawing from memory</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>Learner V demonstrated the skill to employ visual memory to complete the exercise. As explained by Czarnolewski and Eliot (2012:628), she was able to focus and pay attention to all parts of the stimulus and observed the whole, instead of individual components.</p> <p>This was displayed by her ability to recognize and recall details such as markings on the shoe and patterns, shape and size of the object.</p> <p>She displayed the ability to interpret what</p>

	<p>she observed and to recall stored information from memory during the drawing exercise.</p>
<p>Intervention lesson 4: Drawing from memory with the non-dominant hand</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>The fourth intervention lesson tested learner V's visual memory and hand-eye coordination, and the results show she was able to visually recognize the shape and size of the object in her recorded depiction of the shoe.</p> <p>She was able to exercise control of hand-eye coordination by completing the drawing with her non-dominant hand. As mentioned by Saputra and Subana (2016:3), when learners draw with their non-dominant hand, it slows the drawing process down. When they rely on their memory to complete a drawing, slowing down the drawing process allows more time to recall previously observed details such as shape, size, and in this case, stitching and the buckle of the shoe.</p>
<p>Intervention lesson 5: Positive and negative drawing</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for more detailed description of the lesson.</p> 	<p>Learner V demonstrated concentration and focus during lesson five. She displayed a sense of spatial awareness and reasoning, through her portrayal of the subject matter by filling the space in her drawing. She judged the size of the object and was able to record the actual size.</p> <p>She displayed the construction and internalization of improved visual perceptual skills through visual and cognitive comparison between subject matter and her drawing. As described by Edwards</p>

	<p>(1999:51), the construction and internalization of visual perceptual skills occur when you shift from the verbal system in the brain to the visual system.</p>
<p>Intervention lesson 6: Blind contour drawing of a friend's hand</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>During the sixth intervention lesson, learner V showed the ability to concentrate and focus while completing the exercise. She shifted focus from observation to the movement and manipulation of her hand to record the blind drawing.</p> <p>She displayed the ability to shift between visual and cognitive comparison of the subject matter.</p>
<p>Intervention lesson 7: Drawing upside-down</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for more detailed description of the lesson.</p> 	<p>Through her upside-down drawing, learner V exhibited a heightened sense of visual constructional ability. She showed great progress by capturing finer details such as hair, eyebrows, and buttons on the shirt and filling the space of the page.</p> <p>She managed to record the proportion through her improved skills and visual understanding of how to record subject matter.</p>

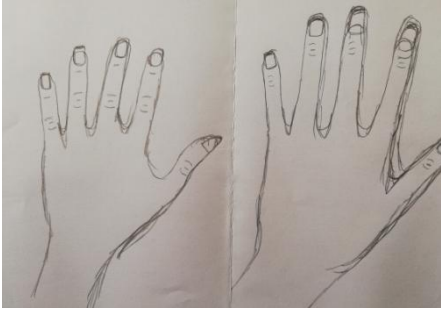




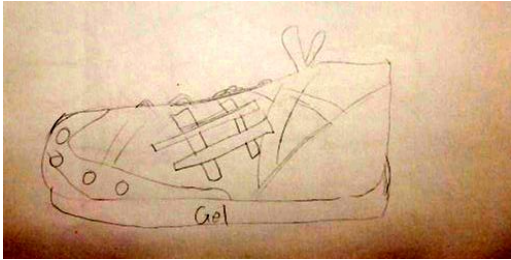
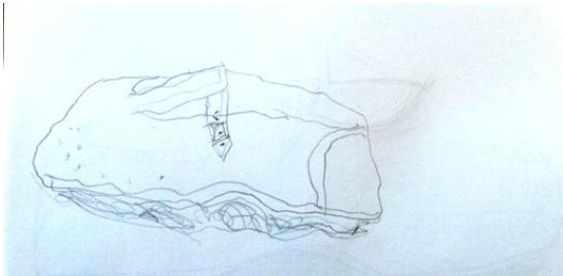

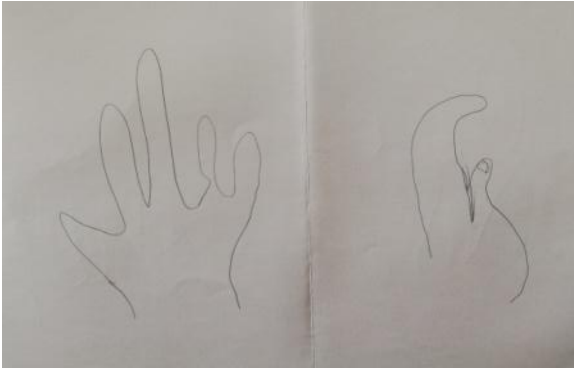
<p>Intervention lesson 8: Accurate size vs. perceived size</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for more detailed description of the lesson.</p> 	<p>During the final intervention lessons, learner V was able to exhibit an array of skills she acquired throughout the intervention process.</p> <p>She was able to display the construction and internalization of visual perceptual skills, through her ability to visually and mentally compare the size and the distance of objects. This improved ability enabled her to compare the size, and shape of the hands and include finer details such as fingernails and knuckles on the fingers.</p>
<p>Post-test: Parrot in the jungle: Picture-making in mixed media</p> <p>Media used: A3 white paper, yellow wax crayon, oil pastels and liquid tempera paint. Refer to table 3.1 in chapter 3 for a more detailed description</p> 	<p>Upon studying learner V's post-test artwork, the researcher was able to deduce that the learner reached full visual constructional ability and awareness.</p> <p>She showed great progress, growth, and an improved ability to observe and record subject matter. She was able to gain and construct new knowledge through improved perception, as described by Taber (2011:41).</p> <p>She made use of a variety of colours, shapes, and sizes to create a rich background full of leaves. The tints and shades of colour on the parrot, leaves, and branch, were and realistically recorded.</p>


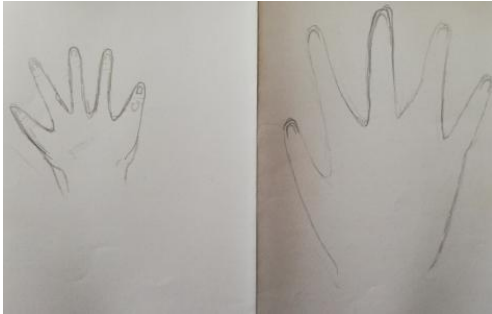
Table 4.8: Summary of findings from Learner W

Learner W – Test group 1	Description
<p>Pre-test: Chameleon in a tree: Picture-making in mixed media.</p> <p>Media used: A3 brown paper, grey HB pencil, oil pastels, and black koki pen. Refer to table 3.1 in chapter 3 for a more detailed description</p> 	<p>During the pre-test, learner W was able to complete the project with little motivation from the teacher. The learner exhibited control over fine-motor skills to add detail such as tints and shades, veins to the leaves, and patterns to the chameleon.</p> <p>The learner was able to assimilate visual cues from the subject matter in order to create light and shadows on the chameleon and the leaves. The learner exhibited some difficulty to fill the visual space of the artwork (background).</p> <p>The learner exhibited the ability to recognise and portray the shapes of the leaves and the chameleon. He creatively expressed himself through his use of colour and depiction of the shape and size of the chameleon, and the foliage.</p>
<p>Intervention lesson 1: Look, feel and memory</p> <p>Media used: Black A4 paper and white wax crayon. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p>	<p>The first intervention exercise tested learner W's creative and visual problem-solving skills by creating a drawing in the absence of the object, relying solely on his memory of sensory stimuli.</p> <p>Sensory integration of haptic perception, accompanied by visual memory, enabled learner W to record the shape, size, and detail, such as the dimensions of the object and other markings on the bottle. Kirby and D' Anguilli (2011:69), explains that when you include the sense of touch during the</p>

	<p>observation process, you can sharpen the understanding of the visual properties of an object. The sense of touch combined with memory recall can provide a pleasing result when represented in a drawing.</p>
<p>Intervention lesson 2: Blind contour drawing</p> <p>Media used: White A4 paper divided into three equal blocks and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>The second intervention lesson aimed at improving learner W's hand-eye-coordination, spatial reasoning, and visual problem-solving skills. The problem of creating the drawing without looking at paper created a shift to the visual mode of thinking that enabled him to rely on the actual perception of lines, shape, and size (Edwards, 1999:91).</p> <p>The shift to the visual mode of thinking made it possible for learner W to rely on mental imagery and hand-eye coordination during the exercise. He honed in on his observational skills to create a link between what he visually perceived and what he recorded in his drawing.</p>

<p>Intervention lesson 3: Drawing from memory</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>Intervention lesson 3 was designed to encourage learners to employ visual memory and mental imagery during the drawing process.</p> <p>Learner W was able to recall details such as shape, size, patterns, and other markings on the shoe. Before he completed the drawing, it is evident that he observed and stored detail of the shoe in his visual memory.</p>
<p>Intervention lesson 4: Drawing from memory with the non-dominant hand</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>Learner W's creative and visual problem-solving skills were sharpened in the 4th intervention exercise.</p> <p>Eventually, the learner was able to overcome the obstacle of drawing from memory with his non-dominant hand and relied on his visual memory to complete the exercise. This allowed learner W to shift his focus from relying on visual stimuli, to tap into his visual memory. The results indicated that he was able to make a mental shift to record as much stored details as possible from his visual memory, as suggested by Huettenlocher et al. (2013:2).</p>
<p>Intervention lesson 5: Positive and negative space</p>	<p>During intervention exercise 5 learner W was able to record the size, shape, and fill the space of the drawing plane.</p>

<p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>He exhibited the ability to concentrate and focus on the drawing process while completing the exercise. His shift to spatial awareness and observational skills enabled him to fill the space on the paper and to complete the positive and negatives spaces in this drawing exercise. Edwards (1999:52) suggests when you shift to the visual and spatial mode of thinking, you become more sensitive to the perception of the relationship of sizes, curves, shapes, and angles.</p>
<p>Intervention lesson 6: Blind contour drawing of a friend's hand</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>During the blind contour drawing exercise, learner W was able to use observational skills to record the shape of the hand, while improving his visual focus and his visual and mental comparison of stimuli. Turkmenoglu (2012:849) states that intrinsic visual skills can help further develop skills such as spatial awareness, visual and mental comparison of stimuli, and hand-eye coordination.</p> <p>This was evident by learner W's display of observational skill, focus, and use of hand-eye coordination to complete his exercise.</p>
<p>Intervention lesson 7: Drawing upside-down</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p>	<p>While completing the upside-down drawing, it was clear to see that learner W was able to visually and mentally solve the problem of converting an image into an upside-down drawing of a friend's face.</p>


	<p>Learner W exhibited improved intrinsic visual perceptual skills by capturing facial features and details such as earrings and buttons on the shirt. He filled the space by creating visual balance in his drawing.</p>
<p>Intervention lesson 8: Real size vs. Perceived size</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>During the final intervention exercise, learner W was able to compare the size of a close up (real size) object and an object at a distance (perceived size).</p> <p>He was, however, not able to include finer details and submitted a contour drawing instead of a detailed drawing.</p>
<p>Post-test: Parrots in the jungle: Picture-making in mixed media.</p> <p>Media used: A3 white paper, yellow wax crayon, oil pastels, and liquid tempera paint. Refer to table 3.1 in chapter 3 for a more detailed description.</p>	<p>After studying the post-test of learner W, it was noticed that he exhibited, with varying success, all four themes identified during the study.</p> <p>In comparison to the pre-test, learner W</p>


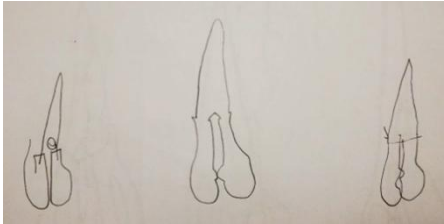




only made small improvements in capturing subject matter. He did not capture a lot of detail in his artwork, and the size of his parrots is smaller than that of the chameleon in the pre-test.


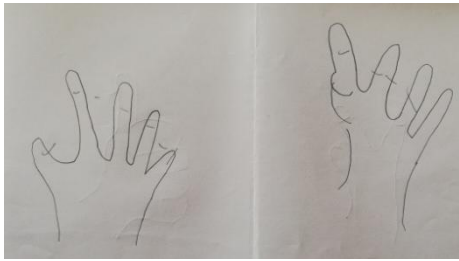
He was able to capture the proportion of the parrots, and he filled the background with big interesting leaves. The result of the intervention lessons proved that his visual problem-solving skills improved. Results show a slight improvement in his visual constructional abilities as he was able to create a more visually cohesive work of art.

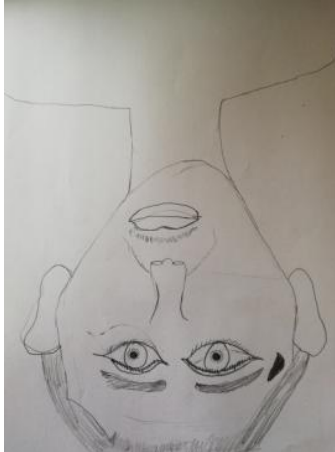
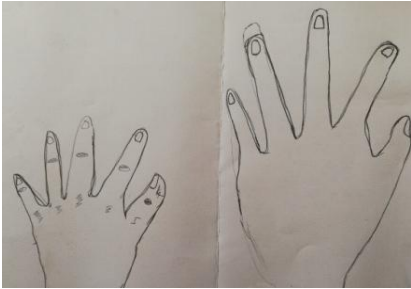
Table 4.9: Summary of findings from learner X

Learner X – Test group 2	Description
<p>Pre-test: Chameleon in a tree: Picture-making in mixed media</p> <p>Media used: A3 brown paper, grey HB pencil, oil pastels, and black koki pen. Refer to table 3.1 in chapter 3 for a more detailed description</p> 	<p>The pre-test of learner X indicated that he was able to recognise the shape, form, size, and details of the chameleon on the branch in the way he incorporated it in his artwork.</p> <p>Learner X omitted details on the chameleon and the leaves in the background but displayed creativity in the way he included unique patterns on the body of the chameleon.</p> <p>His artwork was stereotypical of the development phase of the dawning realism, as described by Lowenfeld and Brittan (1975:28). Learner X drew symbolic representations from stored images and not from direct observation of the subject matter.</p>
<p>Intervention lesson 1: look, feel and memory</p> <p>Media used: Black A4 paper and white wax crayon. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p>	<p>During the first intervention exercise, learner X was able to record the perceptual stimuli he stored in his visual memory during the beginning stage of the exercise.</p> <p>Through the integration of sensory input (tactile and visual), he was able to portray the visual information he observed. His drawing does not indicate that he paid close attention to the size and shape of the container.</p>

	
<p>Intervention lesson 2: Blind contour drawing</p> <p>Media used: White A4 paper divided into three equal blocks and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>For the blind contour drawing, learner X displayed the ability to recognise the shape and size of the pair of scissors he drew. He was able to control the movements he made, indicating hand-eye coordination.</p> <p>Contour drawings can assist learners by teaching them to focus on the basic structure of what is observed by gaining knowledge of line, structure, edges, space, and shape (Edwards, 1999:87). By Focusing on the lines during the blind contour drawing exercise, learner X was able to improve the shape of the pair of scissors in his drawing.</p>
<p>Intervention lesson 3: Drawing from memory</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p>	<p>The third intervention exercise tested whether learner X was able to retain information of an observed object in his visual memory and to recall the information at a later stage.</p> <p>The results of the exercise showed that learner X was able to complete a drawing from memory and to portray as much detail as he could recall. His drawing of the shoe did not indicate the use of symbolic</p>

	<p>representations (Edwards, 1999:82), but rather a true representation of the shoe, evident by the shape and other details add on the sole of the shoe and the laces.</p>
<p>Intervention lesson 4: Drawing from memory with the non-dominant hand</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson</p> 	<p>The aim of the exercise was for the learners to make use of visual memory while drawing with their non-dominant hand.</p> <p>Learner X displayed the ability to recall stored information from his visual memory to render a lot of detail in his drawing. He was able to mentally and visually solve the problem of drawing with his non-dominant hand. Hand-eye coordination was evident in the completion of the drawing indicated by the shape and details he added to the drawing.</p>
<p>Intervention lesson 5: Positive and negative</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p>	<p>During the fifth intervention exercise learner X exhibited keen observational skills and visual recognition, based on the shape and the size of the pair of scissors he drew.</p> <p>This exercise set out to determine his ability to solve problems, and to create an image using positive and negative spaces. Learner X displayed keen problem-solving skills, evident by his ability to portray the</p>

	<p>shape and size of a pair of scissors through the use of positive and negative spaces.</p>
<p>Intervention lesson 6: Blind contour drawing of a friend's hand</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>The blind contour drawing of a friend's hand gauged learner X's hand-eye coordination during the drawing process. Learner X exhibited extreme focus and concentration during the exercise. He made visual and mental comparisons of what he perceived in order to manipulate the movements of his hand.</p> <p>Edwards (1999:178) suggests that by focussing on pure contour lines, you can strengthen your observational skills. When you concentrate on the structure of what you are drawing and trace the outlines with your eyes, you are allowing your hand to move in accordance with what you see.</p>
<p>Intervention lesson 7: Drawing upside-down</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p>	<p>Intervention exercise 7, was administered to improve learner X's ability to fill the space of the picture plane. During the exercise, he had to visually and mentally solve the problem of creating an upside-down drawing of a person he visually perceived in the upright position.</p> <p>Through his skills of recognition, learner X was able to include all the main facial features such as eyes, nose, mouth, and</p>

	<p>ears in his drawing. He succeeded in filling the entire space of the picture plane.</p>
<p>Intervention lesson 8: Real size vs. Perceived size</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>During the final intervention exercise, learner X showed an improved ability to visually and mentally gauge the size and shape of his hand. He was able to rely on essential visual and mental comparison skills to determine similarities and differences, as suggested by Wigglesworth (2017:294). He mastered visual problem-solving and intrinsic visual perceptual skills, evident by his ability to make use of pictorial cues and interpret the visual properties of his hand (Melcher & Cavanagh, 2011:359).</p>
<p>Post-test: Parrots in the jungle: Picture-making in mixed media</p> <p>Media used: A3 white paper, yellow wax crayon, oil pastels, and liquid tempera paint. Refer to table 3.1 in chapter 3 for a more detailed description</p>	<p>After the post-test picture of the parrots was completed, the picture made by learner X, exhibited the construction of new skills and knowledge. This was evident in the way he depicted shape, size, form, and proportions of the leaves, branch, and parrots. He was able to include finer details in his work, such as tints and shades on individual leaves in the background, and the feathers on the parrots.</p> <p>Compared to the pre-test, learner X filled</p>


CHAPTER 4: DATA ANALYSIS AND DISCUSSION


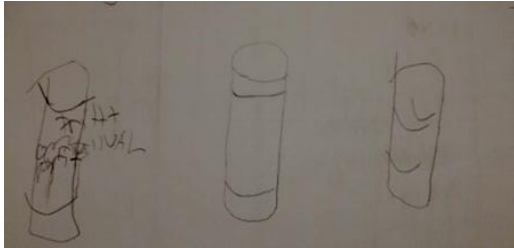



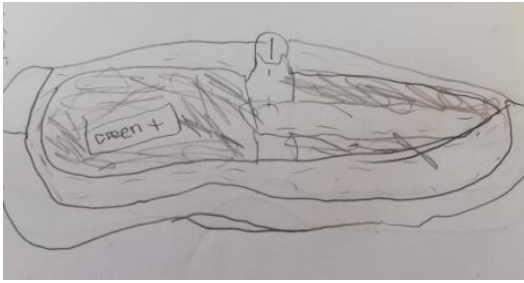
more space in his artwork and showed sensitivity to light and shadows of objects, as seen by the way he shaded the branch, leaves, and bodies of the parrots.

The results of the post-test indicated that learner X improved in his understanding of subject matter by shifting his focus and attention to a more detailed observation of the subject matter, as depicted in his artwork.


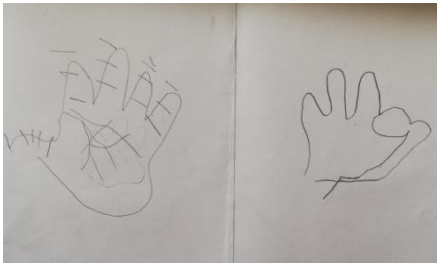
Table 4.10: Summary of findings from learner Y

Learner Y – Test group 1	Description
<p>Pre-test: Chameleon in a tree” Picture-making in mixed media</p> <p>Media used: A3 brown paper, grey HB pencil, oil pastels, and black koki pen. Refer to table 3.1 in chapter 3 for a more detailed description.</p> 	<p>During the pre-test, learner Y displayed difficulty with the proportion, shape, size, and form of subject matter, namely; the chameleon, leaves, and branch. The pre-test indicated that she needed more guidance in picture-making lessons and visual awareness exercises. She omitted details on her chameleon, such as texture on the skin. More focussed attention was needed for the shape and size of the chameleon and leaves.</p> <p>After studying her artwork, it was clear that she needed a more focussed approach to address her visual perceptual skills, such as spatial reasoning and art-making technique. Her recognition of shape and size needed further fine-tuning and development.</p>
<p>Intervention lesson 1: Look, feel and memory</p> <p>Media used: Black A4 paper and white wax crayon. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p>	<p>After the first intervention exercise, it was clear that learner Y improved her graphical recording of shape and size of the subject matter, in comparison to the pre-test, and displayed the ability to portray finer details such as markings on the bottle.</p> <p>The inclusion of different drawing styles, such as drawing from memory and haptic perception, could account for the improvement of how she portrayed shape, size, and detail in her drawing.</p> <p>Wijntjes et al. (2009:639), suggest that haptic perception can assist learners in grasping and</p>


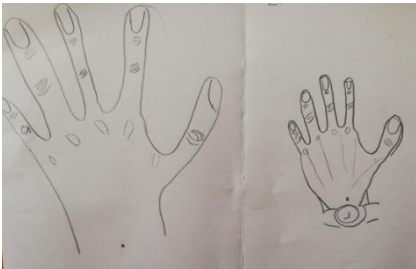
	<p>understanding the visual and tactile dimensions of the object they draw in their artwork.</p> <p>The integration of new techniques, sensory perception, and visual memory, enabled that learner Y to embrace a new style of drawing.</p>
<p>Intervention lesson 2: Blind contour drawing</p> <p>Media used: White A4 paper divided into three equal blocks and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>During the blind contour drawing exercise, learner Y was able to improve the shape of the glue stick she drew. The exercise focused on sharpening her hand-eye coordination and recognition skills.</p> <p>By practicing blind contour drawings, learners' can improve their drawing abilities as it includes both the sense of sight and touch, which promotes hand-eye coordination (Edwards, 1999:88). The results show that during the lesson, learner Y was able to correct the shape of the glue stick she drew, by relying on her hand-eye coordination.</p>
<p>Intervention lesson 3: Drawing from memory</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p>	<p>During the third intervention exercise, learner Y portrayed the shape and size of the shoe she drew from memory.</p> <p>She relied on visual memory for finer details added to her drawing. Employing visual memory and mental imagery, learner Y was able to visually and cognitively solve the problem of drawing in the absence of the shoe earlier observed.</p>

	<p>She was able to recall finer details from memory, such as markings and patterns on the shoe, because of the focussed and intentional observations she made earlier. Edwards (1999:251) suggests that the ability to draw from memory can be trained when you rely on visual memory and mental imagery by reactivating perceptual information stored in the brain (Tong, 2013:489).</p>
<p>Intervention lesson 4: Drawing from memory with non- dominate hand</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>During the fourth lesson, learner Y relied on visual memory to capture finer details, such as the name on the insole and the buckle of the shoe. The drawing process was slowed down by drawing with her non-dominant hand (Saputra & Subaba, 2016:3), which allowed more time to rely on the image stored in her visual memory.</p> <p>By relying on her visual and cognitive problem-solving skills, she was able to find a way to fill the space of her drawing and add finer details while practicing hand-eye coordination.</p>
<p>Intervention lesson 5: Positive and negative space</p>	<p>For the fifth intervention exercise, learner Y had to rely on her observational skills to capture the shape and size of the pair of</p>

CHAPTER 4: DATA ANALYSIS AND DISCUSSION

<p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>scissors.</p> <p>She was able to shift her focus by only shading the background (negative space) to form the contour (positive space) of the pair of scissors. The results showed improved size and shape of the pair of scissors in her second attempt, compared to the first drawing. She was able to visually fill more space in her drawing.</p> <p>Edwards (1999:119) describe negative space to be 'unknown' and 'unrecognisable' to the viewer. By focusing and drawing this 'unknown and unrecognisable' space you can fill more space in your drawing, thus enlarging the object you draw.</p>
<p>Intervention lesson 6: Blind contour drawing of a friend's hand</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for more detailed description of the lesson.</p> 	<p>The sixth intervention exercise was aimed at improving learner Y's hand-eye coordination and shape and size consistency.</p> <p>During the exercise, learner Y was able to visually and cognitively solve the problem of not being able to see what she was drawing. She had to focus on observing her friend's hand while controlling the movements of her own, indicated by her ability to rely on her hand-eye coordination.</p>
<p>Intervention lesson 7: Drawing upside-down</p>	<p>During the seventh intervention exercise, learner Y exhibited the ability to visually solve the problem of creating an upside-down drawing from an upright stimulus. During the</p>

CHAPTER 4: DATA ANALYSIS AND DISCUSSION

<p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>exercise, she was able to make use of her intrinsic and improved observational skills to capture the size, shape, and form of the person she was drawing.</p> <p>The results, however, showed that the head of the person she drew was smaller in relation to the rest of the body. She omitted other details such as ears, eyelashes and wrinkles, and buttons on the shirt.</p>
<p>Intervention lesson 8: Real size vs. Perceived size</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>For the final intervention exercise, learner Y had to capture the real size (up close) and perceive size (at a distance) of her hand.</p> <p>During the exercise, she was able to make a visual and cognitive comparison of the subject matter and recorded elements and details such as skin folds, knuckles, and fingernails. She was able to employ focused and intentional observation to capture what she visually perceived.</p>
<p>Post-test: Parrot in the jungle</p>	<p>After completing the post-test and studying the artwork of learner Y, it was evident that</p>

CHAPTER 4: DATA ANALYSIS AND DISCUSSION

Media used: A3 white paper, yellow wax crayon, oil pastels, and liquid tempera paint. Refer to table 3.1 in chapter 3 for more detailed description.


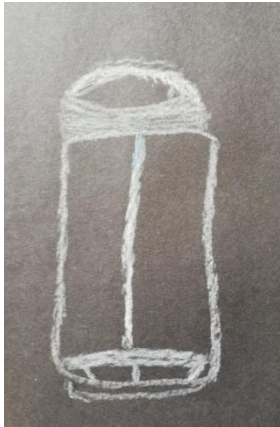


her perceptual skills improved in comparison to the pre-test.

Her picture-making ability improved in her ability to capture more detail in her artwork. She filled more space in her artwork and was able to depict the proportion of the parrot she drew and painted. She created a more authentic and honest representation of shape, form, and size by integrating the perceptual skills taught throughout the intervention process.

This was evident in the way she filled the space in the background with foliage and the finer details she created on the leaves by adding different tints and shades and veins. She created an illusion of depth by using light and dark colours in the background as well as on the body of the parrot.

Table 4.11: Summary of findings from Learner Z

Learner Z – Test group 2	Description
<p>Pre-test: Chameleon in a tree” Picture-making in mixed media</p> <p>Media used: A3 brown paper, grey HB pencil, Oil pastels, and black koki pen. Refer to table 3.1 in chapter 3 for a more detailed description</p> 	<p>After studying the pre-test results produced by learner Z, it was clear he was able to use a variety of colours to create a pattern on his chameleon. He showed interesting shading techniques in the leaves on his artwork. He did not fill the entire space (background) of the artwork and made some of his leaves small. The shape, size, form, and proportions were not drawn from direct observation. After studying the artwork of learner Z, it was evident that he needed to focus on techniques of how to observe and record perceived subject matter.</p>
<p>Intervention lesson 1: Look, feel and memory</p> <p>Media used: Black A4 paper and white wax crayon. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>During the first intervention exercise, learner Z was able to accurately capture the shape and size of previously perceived objects, in this case, a water container, by assimilating information he derived from his tactile and visual perception.</p> <p>The assimilated information was stored in his visual memory, and he was able to retrieve most of the details regarding the shape and size of the object. Learner Z omitted surface details, like texture and other markings on the container.</p>

Intervention lesson 2: Blind contour drawing

Media used: White A4 paper divided into three equal blocks and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.



During the second intervention exercise, learner Z recognised the shape and form of the pair of scissors he drew. He applied focussed observation to study the contours of the object before the blind contour drawing.

It was evident that he was able to rely on his hand-eye coordination and focus during the exercise. This resulted in improved shape and size consistency throughout the exercise, as seen in the way he portrayed the subject matter.

As stated by Edwards (1999:93), during contour drawings, the learner can engage with the subject matter by focussing on how the different parts of the object, fit together. This can assist in fine-tuning their ability to portray shape, size, and detail in their drawings.

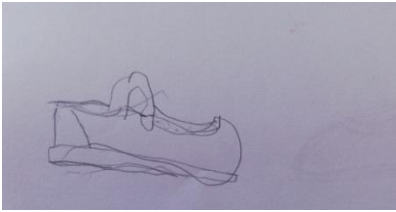

Intervention lesson 3: Drawing from memory

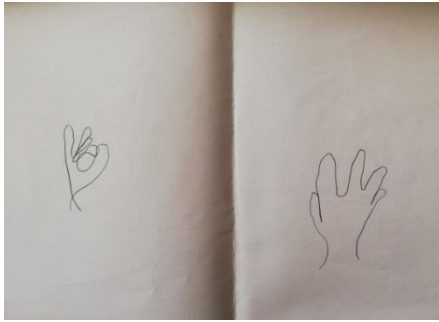

Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.



The third intervention exercise tested learner Z's ability to assimilate previously perceived and studied information mentally. The researcher wanted to gauge whether he was able to recall information stored in his visual memory.

The result proved that learner Z was able to visually record the shape and size of the object from memory. He was able to include smaller details in his drawing and exhibited an improvement in his ability to portray the subject matter he observed earlier.

<p>Intervention lesson 4: Drawing from memory with the non-dominant hand</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>During intervention exercise four, learner Z was able to complete the drawing by relying upon and recalling the information stored in his visual memory. He was able to record the shape while resolving the visual and cognitive problem of drawing with his non-dominant hand. He omitted finer details in his drawing, such as texture and stitching lines of the shoe.</p>
<p>Intervention lesson 5: Positive and negative space</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>The fifth intervention exercise was designed to guide learner Z's to improve the shape and size of the object he observed.</p> <p>He recorded the shape and size of the object. Hand-eye- coordination skills are evident in the way he created the shape and size of the object by focussing on the negative space of the drawing. This is supported by Edwards (1999:118), who states that when you focus on the negative spaces in your drawing, you can correct the shape and size of the object you draw because there are no pre-existing symbols of the negative spaces stored in your memory.</p>
<p>Intervention lesson 6: Blind contour drawing of a friend's hand</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p>	<p>During the sixth intervention exercise learner Z was required to study and focus on his friend's hand while completing the blind drawing.</p> <p>During the exercise, learner Z was able to make a visual and cognitive comparison of what he observed and how to move his hand.</p>

	<p>This kinaesthetic manipulation of the movement helped to develop his hand-eye coordination.</p>
<p>Intervention lesson 7: Upside-down drawing</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p> 	<p>The seventh intervention exercise relied on learner Z's ability to recognise the elements and features of the subject matter. He was able to make use of visual and mental problem-solving skills to create an upside-down drawing of a friend, which he observed in the upright position.</p> <p>By shifting his focus, he was able to record the shape and size of the face and could capture smaller details such as hair and buttons on the shirt. His spatial awareness enabled him to fill the space with his drawing.</p>
<p>Intervention lesson 8: Real size vs. Perceived size</p> <p>Media used: White A4 paper and HB pencil. Refer to table 3.2 in chapter 3 for a more detailed description of the lesson.</p>	<p>The final intervention exercise focussed on learner Z's observation in distinguishing between a smaller and larger object by relying on a shift from mental imagery to direct observation.</p> <p>During the exercise, learner Z was unable to indicate the difference in size between a close up object and one at a distance.</p>



Post-test: Parrot in the jungle: Picture-making in mixed media

Media used: A3 white paper, yellow wax crayon, oil pastels, and liquid tempera paint. Refer to table 3.1 in chapter 3 for a more detailed description



After learner Z completed the pre-test, his artwork was studied. It was evident his drawing abilities improved, in comparison to the artwork he completed during the pre-test.

His visual perceptual skills and visual constructional abilities improved. He was able to make use of the observational skills taught throughout the intervention process, evident in the way he filled the background of the artwork and the increase of shape and size of the parrot.

4.5.2 Discussion of data according to themes

In this section, the data will be discussed according to the themes identified in section 4.3.2. Each theme will consider how the participants in the study were able to benefit from the intervention exercises executed during this study, and it will be linked to the literature under each theme and heading.

4.5.2.1 Theme one: Creativity and the U-curve

Creativity is a unique form of intelligence that allows learners to creatively and logically respond to a multitude of problems they may encounter during the art-making process (Sharp, 2004:5). As stated in Chapter two, the creative attempts of middle childhood learners may be subject to a self-imposed demand to achieve realism in their artworks. Due to their inability to draw and create from the natural world (realistic artworks), their creativity and artistic interest may take a down-wards slump or also known as the U-curve slump.

Cohn (2012:178) suggests a cause for a decline in the creativity of learners in middle childhood, could be due to growing frustration and hesitation to draw or create. This frustration grows from an inability to draw from observations and mental imagery. During the pre-test of the study, it was noticed that a large group of learners were hesitant to create or draw subject matter. They grew frustrated with the drawing process and verbalised their concerns about their inability to capture realistic images of what they observed. Cohn (2012:168) postulates that to articulate what is visually perceived through drawing and art activities, it is necessary to teach learners how to organise their creative thoughts and how to apply specific skills. These skills can be seen as different modes of observation and an understanding of what is being taught. Proper observational skills and visual perceptual skills are essential to present what is perceived graphically. The challenges of the creative slump identified during the pre-test were addressed in the intervention period of the study. The learners were taught to critically and creatively reason and think about what they visually perceived, and were taught how to apply different modes of observation during the drawing process.

Alter (2010:1) reflects the views of Cohn (2012) and suggests that it is vital to teach young learners how to balance artistic techniques, skills, abilities, and how to make critical

judgements about their own works for creative growth to take place. During the intervention period, the learners were taught to make use of their observational skills by including cognition and creative reasoning. Throughout the intervention process, the test group proved that they were able to adapt and incorporate new observational skills and abilities through visual and mental reasoning and comparison of the subject matter. Alter (2010:1) further states that young learners will not be able to engage in creative thinking - and problem-solving if they do not see art-making as an expressive outlet due to disinterest and inability to apply skills. Drawing on the conceptual framework of Piaget's (1952) theory of constructivism and Edwards' (1999) cognitive shift model, the learners were introduced to a new way of thinking and reasoning creatively and they had to construct their own knowledge of how to observe and recreate subject matter. This was evident during the intervention period and from the results of the post-test. The post-test indicated that the learners were able to apply the skills and newly constructed knowledge through the way they presented subject matter in their artwork.

The comparison between the pre-test and the post-test suggests the learners improved their ability to visually portray what they perceived through creative reasoning skills and creative problem-solving abilities related to the visual perception of subject matter.

4.5.2.2 Theme two: Creative and visual problem-solving

According to Stavridi (2015:2278), creativity is the gateway to creative problem-solving. During art activities, learners have to rely on creative and original methods of thinking and reasoning about subject matter and how to solve problems creatively. This study aimed to enable learners to render what they visually perceive by enhancing their perceptual skills and abilities and critical reasoning skills. Chishti and Jehangir (2014:83), suggest that learning through Creative Arts can help to develop creative thinking and the attainment of important cognitive abilities such as creative visual problem-solving. During the study, and especially the intervention period, the learners had to find a way to draw and record subject matter creatively. They had to visually and mentally resolve problems related to the drawing process to complete the exercises.

Ugler (2018) states that to creatively solve problems during the art-making process, one has to acquire 'structural knowledge and a deeper understanding of the characteristics of subject matter. In this study, learners were taught to observe the structural elements of

objects, such as size, shape, edges, and lines, to gain knowledge and an understanding of the object so that they could best come up with solutions of how to represent what they visually perceived graphically. The exercises that included haptic perception, long periods of observing subject matter and contour drawings, were all designed to allow them to gain a better understanding of the structural elements of the objects.

Rosier (2010:14) states that visual memory, along with the prefrontal cortex, work together to enhance and creatively solve problems during the art-making process. If creative problem solving is to be employed, a strong visual component (perception/ observation) is needed. Visual memory is enhanced through visual imagery and an understanding of what is perceived by mentally and visually comparing differences and similarities of the subject matter. The participants were able to creatively solve problems they encountered during the intervention period and the post-test by relying on visual memory, observational skills, and haptic perception. Through their understanding and knowledge of the structural elements stored in their memory, they were able to resolve the issue of portraying subject matter in the absence of visual input.

Eisner (2002:26) postulate that when learners encounter problems during art-making activities, they can creatively and systematically resolve them through the process of meta-cognition. During this process, newly formed concepts and knowledge are linked to existing knowledge. Rosier (2010:17) states that meta-cognition is a person`s awareness of their own thoughts and what might influence their thinking. The participants were able to form links between newly formed knowledge and their understanding of observational techniques demonstrated by their ability to recall images from memory and to use tactile sensation to recreate subject matter in their artworks. Rosier (2010:17) adds that through meta-cognitive thinking, learners` problem-solving strategies are further developed by their ability to strategise solutions to problems through the knowledge they previously constructed during art activities.

4.5.2.3 Theme three: Intrinsic motivation

According to Jaquith (2011:15), intrinsic motivation stems from a positive and productive reaction to the task or project being undertaken. This reaction can be seen as “interest, involvement, curiosity, satisfaction, or positive challenges”. Stanko-Kaczmarek (2012:304)

states that learners' emotions influence their motivation to complete a task. Positive emotions or feelings towards the task or project can affect the intrinsic motivation of learners. This was evident during the post-test of the test group, where a larger number of the participants shared their surprise and disbelief at their improved ability to portray subject matter more life-like in their artwork. This positive reaction to their artwork motivated them to continue and complete their artwork without any assistance or motivation from the teacher. This is echoed by Chad-Friedman, Lee, Liu, and Watson (2018:2) who state that when learners foster a positive attitude or sense of accomplishment towards their creations, they are more motivated to continue with their creative projects. In her study Stanko-Kaczmarek (2012), claim that the opposite is true about the effect of negative emotions on the motivation of learners. When learners foster negative emotions towards the creative process or task, they may require extrinsic motivation. During the pre-test, a group of learners verbalised and expressed their frustration and unease to complete the project, and had to be motivated to continue with the project.

According to Larson and Rusk (2011:94), intrinsic motivation during the creative process is introduced by a challenge or problem that seeks a solution. When learners are willing to solve the problem they may encounter, their intrinsic motivation takes effect. When intrinsically motivated, learners tend to retain more of the knowledge constructed through their art experiences and lessons. Through a heightened conceptual understanding of processes and techniques of observation, learners can excel in their creative endeavours (Chad-Friedman et al., 2018:1). The study aimed to empower learners with observational skills, which would assist them in continuing with their creative attempts and in reducing the frustration associated with the U-curve slump. At the end of the study, I was able to deduce that a large number of test group participants experience and maintained their intrinsic motivation throughout the creative process of the post-test. They exhibited a readiness to solve the problems they encountered during the creative process by solving visual and mentally challenging problems without any extrinsic motivation.

As stated by Larson and Rusk (2011:93) intrinsic motivation allows the learner to mentally process information that facilitates attention and cognitive abilities to complete projects and artworks. The skills and abilities the participants attained during the intervention process were amplified through intrinsic motivation. I was able to see that the participants were more engaged in the activities and procedures during the intervention period leading up to and during the post-test. Intrinsic motivation also improves attention and focus on the task at

hand and the learning process. When learners are intrinsically motivated, they can learn faster and retain newly formed knowledge for longer. The participants were able to apply new sets of knowledge and an understanding of how to render real-life subject matter through the observational skills they attained during the intervention lessons. When learners are better equipped with visual perceptual – and observational skills, their intrinsic motivation might sustain their creative attempts.

Through intrinsic motivation, learners are able to make use of different strategies, such as meta-cognitive strategies, to complete their tasks. These strategies include planning and integrating previously learned skills to achieve and complete the task at hand (Larson & Rusk, 2011:96). The participants were able to plan and make use of new observational skills and techniques during the post-test by building on the skills and knowledge they attained during the intervention period.

4.5.2.4 Theme four: A shift to understanding and knowledge

To ascertain whether the participants were able to make a shift to a deeper understanding of various visual perceptual and observational skills, and to construct their own knowledge of how to observe and portray subject matter, I referred to the conceptual framework of this study as it relates to Piaget`s theory of cognitive development in visual arts education.

As described by Efland (2002:27), cognitive development and the construction of new knowledge is not a passive process, but instead, put forth through the actions of the learner. When the learner is actively involved in the acquisition of new skills and abilities, they are actively constructing an understanding of the processes, thus leading to new knowledge. This view is echoed by Olusegun (2015:66), who states that learners should be “active agents in the process of knowledge acquisition”. During the intervention period of the study, the participants were able to display their understanding of different skills and techniques of how to observe and portray real-life subject matter in their drawings. They were actively engaged during the intervention exercises to construct an understanding of various observation techniques that they were able to employ later during the post-test.

Heard (2007:14), states that the construction of knowledge occurs through various modes of instruction and the experience of the participants. Through the participants` experience of different methods of observation and perceptual sharpening exercises, they were able to

CHAPTER 4: DATA ANALYSIS AND DISCUSSION

construct new knowledge of how to observe and depict subject matter in their artwork. Olusegun (2015:66) suggests that learners construct knowledge and meaning through their experiences of active techniques they are taught. The active techniques the participants were shown during the intervention period assisted them in forming an understanding of the processes involved during the thorough observation of real-life subject matter in the art-making process.

Jenson (2018:75) suggests that learners can develop holistically through the acquisition of new skills and abilities promoted through Creative Arts. Their artistic abilities are refined, and new knowledge is constructed during the process. Pritchard and Woollard (2010:45) cite that constructivist learning is associated with critical thinking, motivation, and problem-solving. As stated in sections 4.5.2.2 and 4.5.2.3, the participants were able to improve their intrinsic motivation and sharpen their problem-solving skills during the study. They were able to think critically about the techniques they were taught and how to make use of them during the post-test artwork. Hansen (2000:24) reiterates the importance of intrinsic motivation during the learning process. When learners are intrinsically motivated to learn and understand, they can build on their experiences and construct new knowledge. Heard (2007:14) explains that intrinsic motivation will lead learners to make mistakes and to learn from it so that they can build a better understanding of how to employ different strategies during the creative process.

In conclusion to the discussion of the themes, it is clear to see how visual perceptual sharpening exercises can benefit learners during their art-making projects. The acquisition and refinement of creativity, innovative visual problem-solving, and increased intrinsic motivation, all work together to enable learners to form a better understanding and to construct new knowledge and skills in visual arts education. In the following chapter, the summary of the research findings will be discussed, followed by recommendations and the conclusion to the study.

CHAPTER 5
CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The research examined the development of visual perception of middle childhood learners while completing art-making projects. The main focus of this study was to ascertain what effect a visual perceptual training intervention would have on the visual perception and observational skills of middle childhood learners. The research study set out to determine whether the new skills and abilities the learners acquired would help them to achieve the desired results they pursued in their creative attempts. This chapter will summarise the findings from the data analysis and discussed the conclusions derived from the findings. The implications and recommendations that were informed by the data and the findings are discussed, followed by a conclusion.

5.2 Overview of the study

In this section, the layout of the study, and a summary of each chapter will be discussed. Chapter 1 introduced the research problem, as stated in the background of the study. The review of current and relevant literature was introduced in chapter 1 and linked to the comprehensive literature reviewed in chapter 2. The literature consulted in chapter 1 reviewed the South African Creative Arts curriculum from post-apartheid to present to highlight the current state of Creative Arts education under the new and revised CAPS document. The following section reiterates the importance of quality Visual Arts education as a means to develop essential skills and abilities to young learners. The literature in chapter 1 concluded with a brief overview of middle childhood as a stage of development and followed by the research question that guided this study. The research objectives, limitations, and delimitations of the study were discussed, and the significance of the study concluded chapter 1. Chapter 2 reviewed the current and relevant literature that relates to the artistic development of young learners and the development of their visual perceptual skills during observation of subject matter in visual arts education. The first section of the literature consulted, reviewed the development of artistic expression, and linked it to the U-curve slump of creative development young learners experience during middle childhood.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

The intrinsic and extrinsic factors that potentially influence young learners' creative attempts were discussed. The following section reviewed visual perception in art education and mentioned various intrinsic and extrinsic factors that might influence their visual perceptual and observational skills and abilities. The final section of the literature review focused on the potential of interventions in Visual Arts education and the strategies that can improve visual perception and observational skills during art projects, and in so doing, alleviate the adverse effects the creative slump could bring about.

In chapter 3 the conceptual framework of the study is discussed. It was designed around Piaget's theory of cognitive development as a means to teach young learners to construct their own knowledge of observational – and visual perceptual skills and abilities during art-making projects. The following section is the research design and methodology used in the study. The qualitative case study was designed around a pre-test, intervention period, and a post-test to ascertain whether visual perceptual training can assist young learners in their art-making projects. The chapter includes the data collection processes of the pre-test, a description of the eight intervention lessons and the post-test. After the discussion of the data collection, the data analysis strategies were discussed as well as the ethical considerations of the study.

Chapter 4 analysed and discussed the data that were collected from the pre-test, intervention lessons, and the post-test. The pre-test and post-test artworks were assessed using the assessment rubric designed from the literature on visual perception in Creative Arts. The same rubric and assessment procedures were used to determine whether the intervention lessons had any impact or effect on the visual perceptual and observational skills of the participants to portray subject matter in their artworks. Once the artworks were assessed, the visual data were analysed according to the themes that were identified. The themes that emerged from the data were creativity and the U-curve, creative and visual problem solving, intrinsic motivation, and a shift from understanding to knowledge. The themes were used to discuss the data to establish whether the intervention was able to enhance the visual perceptual and observational skills of the participants.

Chapter 5 concludes the study by giving a brief overview of each chapter. The data from chapter 4 is linked to the research findings and is used to discuss and expound on the implications and recommendations of the study.

5.3 Summary of research findings

In this section, the research findings are summarised and discussed according to the research question and sub-questions that guided the research study. The main research question sought to identify **how teachers could assist in the development of visual perception in Creative Arts in the primary school.**

From the results of the data, the effectiveness of the visual perceptual and observational training on the participants' ability to record visually perceived subject matter in their artworks was clear. Through engaged methods and strategies of observational training, the visual perceptual skills of the participants were sharpened. Multi-sensory techniques proved to be an effective way of engaging most participants during the intervention exercises. Teaching learners to think and reason in non-conventional ways helped them to understand and try different methods that proved to enhance their ability to record and draw subject matter.

A deeper understanding and knowledge of children in middle childhood and factors that might influence their visual perceptual and observational abilities proved to be imperative to assist them. Another important and valuable tool in assisting the participants was the quality of meaningful instructions during the Visual Art lessons that focussed on and fostered their creative and innovative skills and abilities, which was indispensable for the development of their perceptual and cognitive skills. When Visual Arts educators teach young learners new skills and techniques, the focus should not be on creating photo realistic art, but rather techniques and skills they can understand and interpret to create age appropriate art.

The sub-questions supplemented the main research question, and the first sub-question stated: **What is the role of visual perception in the art-making of primary school learners?** After consulting the literature and during the study, the researcher was able to identify various intrinsic and extrinsic factors that might influence the visual perceptual skills of middle childhood learners. The factors that were identified ranged from biological maturation, lack of intrinsic motivation, untrained visual perceptual and observational skills and abilities, and lack of understanding of various techniques required during visual arts lessons and projects. Through the training and development of visual perceptual skills, their observational skills were sharpened. The improvement of their perceptual and observational skills enabled learners to overcome the factors that inhibited their observational abilities.

The second sub-question stated: **Does the Creative Art CAPS curriculum provide teachers with sufficient guidelines to develop visual perception in art in the primary school?** The results from the pre-test and post-test indicated that the visual sharpening exercises during the intervention period were able to improve the learners' abilities to portray subject matter in their artworks visually. The CAPS curriculum was followed by and supplemented in the form of the intervention. It was clear that there were no specific skills or techniques on how to improve visual perception present in the CAPS curriculum. If teachers want to improve their learners' visual perceptual and observational skills, they will need to supplement the CAPS curriculum.

The final sub-question set out to ascertain **how visual perception and awareness training could assist children in the middle childhood years (Grade 5 learners) to depict real life objects and three-dimensional shapes in their art?** From the data that were collected and analysed it was clear that the visual perceptual training in the form of the intervention lessons was able to assist the learners in their Creative Arts projects. The various techniques and skills covered during the intervention period enabled the learners to construct a new understanding and knowledge of how to present what they visually perceived. Through the attainment of new skills and knowledge, the learners gained more confidence in their ability to create in during art-making projects. Their improved confidence sparked their intrinsic motivation and allowed them to excel in their creative attempts. The intervention lessons sharpened their visual problem-solving skills, and it was evident that they were able to visually and mentally compare differences and similarities of the subject matter they observed.

5.4 Implications and recommendations for Creative Arts education

The development of visual perception and observational skills in middle childhood learners in Creative Arts is an understudied field of research. The implications for policy changes that were identified from the data revealed that the CAPS curriculum for Creative Arts in the intermediate phase does not include sufficient content for the development of visual perceptual skills.

It would be recommended that the Department of Basic Education (DBE) revise and supplement the CAPS curriculum for Creative Arts by including a visual perceptual

development methodology to allow learners to fully develop the necessary skills and abilities required for keener observation during their Creative Arts projects. The CAPS curriculum should be supplemented, and more time should be allocated for the teaching and development of important skills and abilities. More emphasis should be given to the learning opportunities offered through meaningful and quality Creative Arts education. At the moment, the importance of Creative Arts is hidden as it is already integrated under other subject headings such as Life Skills and Creative Arts (Chapter 1 section 1.2), which results in learners and educators deeming Creative Arts as a less important subject.

The research indicated that specific skills and knowledge required through Creative Arts education are important facets and tools which develop visual perceptual skills. Generalist trained teachers responsible for Creative Arts are, in most cases, not sufficiently trained to identify problems and challenges faced by learners regarding visual perception and observation skills required when completing Creative Art projects. Teacher training should include the development of visual perception skills in training programmes not only to benefit in Creative Arts, but also other subject areas such as Mathematics, Natural Sciences, Geography, and Technology.

As stated in Chapter 1 of this thesis, when curriculum reform is implemented, in-service educators do not receive sufficient training to inform them of the curriculum changes. The DBE, along with other governing bodies, should consult qualified veteran Creative Arts educators on how to design and include a visual perceptual development methodology into the Creative Arts curriculum. If a policy change is implemented the Creative Arts curriculum should be supplemented with a visual perceptual development methodology. In-service Visual Arts educators and generalist trained educators, responsible for teaching Creative Arts, should receive comprehensive training by the governing bodies.

5.5 Conclusion

The outcome and findings of this study suggest that through a focussed intervention the visual perceptual skills of the participants improved while completing their Creative Art projects. They were able to construct new knowledge and strategies associated with visual perception and observation of subject matter, which they drew creatively in their artworks. Creative Art as a subject has the ability to offer learners a multitude of skills and abilities to

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

assist their holistic development. This was evident by the cognitive and intrinsic benefits the participants experienced during the intervention period.

The study highlights some shortcomings in the visual literacy skills contained in the CAPS curriculum in Creative Arts. Educators teaching Creative Arts should be made aware of the importance of visual perceptual development and should include such strategies during art lessons. It is hoped that this research will inform policy makers and curriculum designers of the importance of including visual perceptual development in a document similar to the Practical Assessment Task (PAT) document to supplement the observational skills of learners in middle childhood and strengthen the current Creative Arts curriculum.

REFERENCE LIST

- Adu, E. A., & Ngibe, N.C.P. 2014. Continuous Change in Curriculum: South African Teacher's Perceptions. *Mediterranean Journal of Socail Sciences* 5(23).
<https://www.mcser.org/journal/index.php/mjss/article/viewFile/4617/4482> [14 April 2019].
- Alias, M., Gray, D.E. & Black, T.R. 2002. Attitudes towards Sketching and Drawing and the relationship with spatial visualization ability in Engineering students. *International Education Journal*, 3(3). <http://researchgate.net/publications/242201045> [24 April 2017].
- Alter, F. 2010. Using the visual arts to harness creativity. *Unesco E-Journal*, 1(5).
<https://pdfs.semanticscholar.org/319a/592fc933573c004cb987f5e3da445a11feb3.pdf> [25 may 2018].
- Alter-Muri, S. B. & Vazzano, S. 2014. Gender Typicality in Children's Art Development: A Cross-Cultural Study. *The Arts in Psychotherapy*, 41. <http://dx.doi.org/10.1016/j.aip.2014.01.003> [16 March 2016].
- Amorino, J. S. 2009. The artistic impetus model: A resource for reworking artistic expression in adolescents. *Studies in art education*, 50(3):214-231, Spring.
- Anttila, E., William, H., Doan J., Barrett, T., Ruthmann, A. S., Pavlou, V. & Athanasiou, G. 2014. An Interdisciplinary Approach for Understanding Artworks: The Role of Music in Visual Art Education. *International Journal of Education & the Arts*, 15(11). <http://www.ijea.org/v15n11/> [3 March 2015].
- Barbot, B., Lubart, T. & Besancon, M. 2016. Peaks, slumps and Bumps: Individual differences in the development of creativity in children and adolescents. *Perspectives on creativity development. New directions for child and adolescent development*. 151, 33-45.
<https://www.researchgate.net/publication/299253568>. [18 July 2020].
- Bassey, M. 1999. *Case study research in educational setting*. Great Britain, Oxford: Marston Book Services Limited.
- Baxter, P. & Jack, S. 2008. Qualitative Case Study Methodology: Study Design and Implementation for Novice Researcher. *The Qualitative Report*, 13(4), 544 – 559.
<http://nsuworks.nova.edu/tqr/vol13iss4/2> [22 October 2016].
- Blacken-Webb, J. 2014. The Difference Differentiation Makes: Extending Eisner's Account. *Educational Theory*, 64(1). <http://onlinelibrary.wiley.com/doi/10.1111/edth.12050/abstract> [28 March 2015].
- Borst, G. & Kosslyn, S. M. 2008. Visual mental imagery and visual perception: Structural equivalence revealed by scanning processes. *Memory and Cognition*, 36(4).
<http://link.springer.com/article/10.3758/MC.36.4.849> [18 May 2016].
- Brady, T. F., Konkle, T. & Alvarez, G. A. 2011. A review of visual memory capacity: Beyond individual items and towards structural representation. *Journal of vision*, 11(5).
<http://doi.org/10.1167/11.5.4> [15 April 2016].

- Brieber, D., Nadal, M., Leder, H. & Rosenberg, R. 2014. Art in time and space: Context modulates the relation between art experience and viewing time. *PLoS ONE*, 9(6). <https://www.doi.org/10.1371/journal.pone.0099019>.eCollection2014 [12 March 2017].
- Brogaard, B. & Gatzia, D. 2017. Unconscious imagination and the mental imagery debate. *Frontiers in Psychology*, 8. <http://www.researchgate.net/publication/317389374> [18 March 2016].
- Burkitt, E. Barrett, M. & Davis, A. 2003. Children's Color Choices for Completing Drawings of Affectively Characterized Topics. *Journal of Child Psychology and Psychiatry*, 44. <http://www.ncbi.nlm.nih.gov/pubmed/12635973> [28 March 2016].
- Cahen, A. & Tacca, M. C. 2013. Linking perception and cognition. *Frontiers in Psychology*. 4(144). <https://www.doi.org/10.3389/fpsyg.2013.00144> [10 June 2018].
- Campbell, S. & Townshend, K. 1997. *Making the Case for Arts Education*. Toronto: Ontario.
- Carrol, K. L. & Tucker, J. L. 2007. *Better Practice in Visual Arts Education*. Baltimore: Maryland State Department of Education.
- Chad-Friedman, E., Lee, Y., Liu, X. & Watson M. W. 2018. The Effects of Visual Arts Pedagogies on Children's Intrinsic Motivation, Creativity, Artistic Skill, and Realistic Drawing Ability. *Journal of Creative Behaviour*. <http://www.doi.org/10.1002/jocb.228> [24 January 2019].
- Charleroy, A. Frederiksen, J. A. G., Jensen, A., Mckenna, S. & Thomas, A. 2012. *The College Board, Child Development and Arts Education: A Review of Recent Research and Best Practices*. New York.
- Cherney, I. D., Seiwert, C. S., Dickey, T. M. & Flichtbeil, J. D. 2006. Children's drawings: A mirror to their minds. *Educational Psychology*, 26(1), 127-142. <http://doi.org/10.1080/01443410500344167> [25 April 2016].
- Chishti, R. & Jehangir, F. 2014. Positive Effects of Elementary Visual Art on Problem Solving Ability in Later Years of Life. *FWU Journal of Social Sciences*, 8(1). <https://pdfs.semanticscholar.org/6165/07534845b63f9ac336e72a39a66ad4c2317d.pdf> [18 November 2018].
- Claxton, A. F., Pannells, T. C. & Rhodes, P. A. 2005. Developmental Trends in the Creativity of School-aged Children. *Creativity Research Journal*, 17(4). <http://www.tandonline.com/loi/harjzo> [7 March 2018].
- Cohan, L., Manion, L. & Morrison, K. 2007. *Research Methods in Education*. New York: Routledge.
- Cohn, N. 2012. Explaining 'I can't Draw': Parallels between the structure and development of language and drawing. *Human Development*, 55. <http://www.doi.org/10.1159/000341842> [18 October 2018].
- Coll, C. G. & Szalacha, L. 2004. The Multiple Context of Middle Childhood. *The Future of children*, 14(2). 10.2307/1602795. [19 May 2016].
- Cook, J. L. & Cook G. 2005. *Child Development*. London: Pearson education: Allyn & Bacon.

Cowan, N. 2008. What are the differences between long-term, short-term and working memory? *Prog Brain Res.*, 169. [http://doi:10.1016/s0079-6123\(07\)000020-9](http://doi:10.1016/s0079-6123(07)000020-9). [19 March 2016].

Creswell, J. W. 2007. *Qualitative Inquiry and Research Design: Choosing among Five Approaches*. Los Angeles: Sage Publications, Inc.

Croft, C. & Smith, J. 2008. *Middle Childhood: Cognitive & Language Development*. Chicago: Magna.

Cullingford, C. 2007. Creativity and Pupils' Experience of School. *International Journal of Primary, Elementary and Early Years Education*, 35(2). <https://dx.doi.org/10.1080/03004270701311960> [23 February 2015].

Cunningham, C. 2015. Imagination: Active in teaching and learning. Unpublished master's thesis, University of Nebraska, Lincoln.

Czarnolewski, M. Y. & Eliot, J. 2012. Exploratory Study of the Relations Between Spatial Ability and Drawing from Memory. *Perceptual and Motor Skills*, 114(2), 627 – 640.

Darras, B. & Kindler, A. M. 1994. Artistic development in context: Emergence and development of pictorial imagery in early childhood. *Visual Arts Research*, 20(30): 1-13, Fall.

Darvishi, Z., & Pakdaman, S. 2012. "Fourth Grade Slump in Creativity": Development of creativity in primary school children. *Journal of Law and Social Sciences*, 1(2), 40-48. http://www.doi:10.5176/2251-2853_1.2.34 [30 September 2016].

Department of Education. 2003. *Revised National Curriculum Statement, Grades R-9: Arts and Culture*. Pretoria: Department Basic Education.

Department of Education. 2011. *Curriculum and Assessment Policy Statement, Grades 4-6: Life skills*. Department Basic Education.

Derham, F. 1961. *Art for the child under seven*. 7th ed. Watson, ACT: Australian Early Childhood Association.

De Wet, C. & Wolhuter, C. 2009. A transitiological study of some South African educational issues. *South African Journal of Education*, 29:359-379.

Deveau, J. & Seitz, A. R. 2014. Applying perceptual learning to achieve practical changes in vision. *Frontiers in Psychology*. <https://doi.org/10.3389/89/fpsyg.2014.01166> [19 April 2016].

Dixon, K., Janks, H., Botha, D., Earle, K., Poo, M., Oldacre, F., Pather, K. & Schneider, K. 2018. A Critical Analysis of CAPS for Life Skills in the Foundation Phase (Grade R-3). *Journal of Education*, 71, <http://journals.ukzn.ac.za./index.php/joe> [25 April 2019].

Edwards, B. 1999. *The new drawing on the right side of the brain*. New York: Penguin Putnam Inc.

Efland, A. D. 1964. Theory and Research in Art Education. *Studies in Art Education*, 6(1). <http://www.jstor.org/stable/1319654> [18 April 2016].

Efland, A. D. 2002. *Art and Cognition*. New York: Teachers College Press.

- Eisner, E.W. 2002. *The Art and the Creation of Mind*. Virginia: R.R Donnelley & Sons.
- Etherington, M. A. 2012. The gendered uptake of post-compulsory school art: a case study. Paper presented at the British Educational Research Association Annual Conference, University of Manchester, Manchester, 4 – 6 September 2012.
- Fein, G. G. 1977. *Childhood Development*. New Jersey: Prentice-Hall, Inc.
- Ferrara, N. 1999. Art as a Reflection of Child Development. *American Journal of Art Therapy*, 30(2), 44-66.
- Flavell, J. H. 1985. *Cognitive Development*. 2nd ed. Englewood Cliffs: Prentice-Hall, Inc.
- Flogieri, R., Dei Cas, L. & Lucchiari, C. 2017. Creativity in Art and in Problem Solving Task: a Comparative Analysis. Paper presented at Electronic Imaging and the Visual Arts EVA conference, 2017, Florence, 10-11 May 2017.
- Gardner, H. 2004. *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.
- Ghazi, S. R. & Ulah, K. 2015. Concrete Operational Stage of Piaget's Cognitive Development Theory: An Implication in Learning General Science. *Gomal University Journal of Research*, 31(1), 78 – 89.
- Goodwin, D. J. 2015. Visual arts assessment in the age of educational accountability. Unpublished Phd thesis. University of Denver, Denver.
- Gralewski, J., Gajda, A., Wisniewska, E., Lebuda, I. & Jankowska, D. M. 2016. Slumps and Jumps: Another Look at Developmental Changes in Creative Abilities. *Creativity. Theories-Research- Applications*, 3(1). <https://doi.org/10.1515/ctra-2016-0011> [7 June 2018].
- Grandstaff, L. 2012. Children's Artistic Development and the Influence of Visual Culture. Unpublished Masters of Art thesis, University of Kansas, Lawrence, Kansas.
- Haanstra, F. 1996. Effects of Art Education on Visual-Spatial Ability and Aesthetic Perception: A Quantitative Review. *Studies in Art Education*, 37(4). <http://www.jstor.oeg/stable> [12 June 2017].
- Hale, A. K. 2015. Impacting Science Observation Skills Through Drawing Training. Unpublished M. Arts thesis, Hamline University, Saint Paul, Minnesota.
- Hansen, R. E. 2000. The role of experience in learning: Giving meaning and authenticity to the learning process in schools. *Journal of Technology Education*, 11(2). <http://scholar.lib.vt.edu/ejournals/JTE/v11n2/pdf/hansen.pdf> [12 February 2019].
- Heard, J. M. 2007. My Experiences Incorporating Constructivist Teaching Strategies with an Art Education Classroom. Unpublished Masters thesis, Georgia State University: Georgia.
- Hine, G. 2014. The importance of Action Research in Teacher Education. *Educational Research*. <https://www.researchgate.net/publication/269406979> [12 April 2017].
- Hitchcock, G. & Hughes, D. 1989. *Research and the teacher*. London: Routledge.

Huette, S., Kello, C. T., Rhodes, T. & Spivey, M. J. 2013. Drawing from Memory: Hand-eye Coordination at Multiple Scales. *PLoS ONE*, 8(3). <http://www.doi:10.1371/journal.pone.0058464> [13 December 2018].

Hutchinson, B. D., Charlesworth, L., Wood, J., Viggiani, P. 2010. *Dimensions of Human Behaviour: The Changing Life Course*. California: SAGE.

Independent Education. 2010. *Is this a new curriculum I see before me?* <https://www.ieducation.co.za/is-this-a-new-curriculum-i-see-before-me/> [18 April 2019].

Jansen van Vuuren, E. N. 2018. Arts across the curriculum as a pedagogic ally for primary school teachers', *South African Journal of Childhood Education* 8(1), a477. <https://doi.org/10.4102/sajce.V8i1.477>. [18 April 2019].

Jaquith, D. B. 2011. Creativity? Intrinsic Motivation and Autonomy in Children's Artmaking. *Art Education*: 14-19, January.

Jenson, K. 2018. Early childhood: Learning through visual Arts. *He Kapu*, 5(3). <https://www.hekupu.ac.nz/article/early-childhood-learning-through-visual-art> [28 May 2019].

Johnston, J. 2008. What Does the Skill of Observation Look Like in Young Children? Paper presented at the British Educational Research Association annual conference, Heriot-Watt University, Edinburgh, 3 – 6 September 2008.

Jolley, R.P., Barlow, C. M., Rotenberg, K. J. & Cox, M. V. 2016. Linear and U-shape trends in the development of expressive drawing from preschoolers to normative and artistic adults. *Psychology of Aesthetics, Creativity, and the Arts*, 10(3), 309- 324. <http://doi.org/10.1037/a0040294> [25 April 2016].

Karwowski, M. 2015. Development of Creative Self-Concept. *Creativity. Theories- Research- Applications* 2(2). <https://www.researchgate.net/publications/285200642> [6 June 2018].

Kellman, P. J. & Garrigan, P. 2008. Perceptual Learning and Human Expertise. *Physics of life reviews*, 6. <http://doi:10.1016/j.plrev.2008.12.001>. [4 August 2018].

Keogh, R. & Pearson, J. 2011. Mental imagery and visual working memory. *PLoS ONE*, 6(12). <https://doi.org/10.1371/journal.pone.0029221> [18 April 2016].

Keogh, R. & Pearson, J. 2014. The sensory strength of voluntary visual imagery predicts visual working memory capacity. *Journal of Vision*, 14(7). <http://doi.org/10.1167/14.12.7> [18 April 2016].

Khatri, P. & Dutta, S. 2018. Divergent thinking – It's time to change the box. *Research Review Journals*. 03(10). <https://www.researchgate.net/publication/329483880>. [16 July 2020].

Kiese-Himmel, C., Witte, C., Islam, S. & Von Steinbuchel, N. 2015. Art-Based Education in Pre-School Children- An Exploratory Study. *International Journal of Education and Social Sciences*, 2(4). www.ijessnet.com [30 March 2016].

Kindler, A. M. 2003. Commentary: Visual Culture, Visual Brain and (Art) Education. *Studies in Art Education*, 44(3). <http://jstor.org/stable/1321015?seq=1> [12 September 2015].

Kindler, A. M. 2010. Art and art in Early Childhood: What can you children learn from "a/Art activities?" *International Art in Early Childhood Research Journal*, 2(1), 1-14.

- Kirby, M. & D'Anguilli, A. 2011. From Inclusion to Creativity Through Haptic Drawing: Unleashing the "Untouched" in Educational Context. *The Open Educational Journal*, 4. <http://www.doi:10.2174/1874920801104010067> [11 November 2018].
- Knoetze, J. S. 2013. An Emotional Awareness Program for Children in Middle Childhood, for Utilization in Educational System. Unpublished DPhil thesis. University of Pretoria, Pretoria.
- Kolijn, E. 2013. Observation and visualization: Reflections on the relationship between science visual arts, and the evolution of the scientific image. *Antonie van Leeuwenhoek, Journal of microbiology*. 104(4). <https://www.researchgate.net/publication/237098079>. [16 July 2020].
- Koshy, E., Koshy, V. & Waterman, H. 2011. *Action research in healthcare*. Londen: Sage publications Inc.
- Krishna, A. R. 2013. From OBE to CAPS: Educator's Experiences of the New Life Skills Curriculum in the Foundation Phase. Unpublished M.Ed thesis, University of Kwazulu-Natal.
- Kurtines, W. M., Gewritz, J. & Lamb, J. L. 2014. *Handbook of Moral Behaviour and Development: Volume 1: Theory*. New York: Psychology Press.
- Laal, M., Aliramaei, A. & Laal, A. 2013. Lifelong Learning and Art. *Social and Behavioral Sciences*, 116. <http://www.researchgate.net/publications/261144852> [30 September 2016].
- Larson, R. W. & Rusk, N. 2011. Intrinsic development and positive development. In Lerner, J., Lerner, R. & Benson, J. (eds). *Advances in Child Development and Behaviour*. Burlington: Academic Press: 89 -130.
- Lawing, B. 2016. The Art of Problem Solving. *Perspectives: Charlotte Country Day School Magazine*, 5, Winter.
- Lee, Y. J. 2010. The Roles of Haptic Perception in Visual Arts. Unpublished M. Arts thesis, University of Illinois, Urbana, Illinois.
- Letsiou, M. 2014. Art intervention and social reconstruction in education. *Art education and culture*: 1-9, January.
- Leymarie, F. F. 2011. On the Visual Perception of Shape-Analysis and Genesis through Information Models. Paper presented at annual Shapes conference, in Karlsruhe Germany 11-14 June 2011.
- Lowenfeld, V., Brittain, W. L. 1975. *Creative and Mental Growth*, 6th Ed. New York: Macmillan.
- Lowenthal, P. Muth, R. 2008. *Encyclopedia of the Social and Cultural Foundations of Education*. California: SAGE, Thousand Oaks.
- Lu, Z. L., Hua, T., Huang, C. B., Zhae, Y. & Doshier, B. A. 2012. Visual Perceptual Learning. *Neurobiol Learn Mem.*, 95(2). <http://doi:10.1016/j.nlm.2010.09.010>. [12 October 2018].
- Machera, R. P. 2017. Teaching Intervention Strategies that Enhance Learning in Higher Education. *Universal Journal of Educational Research*, 5(5). <http://www.doi:10.13189/ujer.2017.050505> [30 November 2018].

- Mahgoub, Y.M. 2015. The importance of the Development of Art Education Curriculum in the Sudanese Educational Institutions. *International Journal of Humanities and Social Sciences*, 8(1). www.ijhssnet.com [24 April 2017].
- McClure, M., Tarr, P., Thompson, C. & Eckhoff, A. 2017. Defining quality in visual art education for young children: Building on the position statement of the Early Childhood Art Educators. *Arts Education Policy Review*, 118(3). <http://doi.org/10.1080/10632913.2016.1245167> [19 September 2018].
- McManus, I. C., Chamberlian, R., Loo, P. W., Riley, H., Rankin, Q. & Brunswick, N. 2010. Art Students Who Cannot Draw: Exploring the Relationship Between Drawing Ability, Visual Memory, Accuracy of Copying and Dyslexia. *Psychology of Aesthetics, Creativity and the Arts*, 4(1). <http://www.doi:10.1037/ac017335> [25 October 2018].
- Melcher, D. & Cavanagh, P. 2011. Pictorial Cues in Art and in Visual Perception. In Bacci, F. & Melcher, D. (eds). *Art and the Senses*. Great Britain: CPI Antony Rowe, Chipperham, Wiltshire: 359-394.
- Melo, C. T. 2016. Developing Assessment Methods to Benefit Middle School Art Students. Unpublished M.Ed thesis, Salem State University: Massachusetts.
- Misila, V. 2007. From Apartheid Education to the Revised National Curriculum Statement: Pedagogy for Identity Formation and Nation Building in South Africa. *Nordic Journal of African Studies*, 16(2):146-160.
- North, J. S., Hope, E. & Williams, M. 2017. The role of verbal instruction and visual guidance in training pattern recognition. *Frontiers in Psychology*, 8(1473). <http://www.doi.10.3389/fpsyg.2017.01473>. [20 March 2017].
- Ofori-Anyinam, S., Andrews, A. T. & Ankrah, O. A. 2016. An Evaluation of Teaching – Learning of Drawing at School of Applied Arts, Takoradi Polytechnic. *Journal of Education and Practise*, 7(21). <http://www/eric.ed.gov/?id=EJ1109384> [12 December 2018].
- Olusegun, S. 2015. Constructivism Learning Theory: A Paradigm for Teaching and Learning. *IOSR Journal of Research and Methods in Education*, 5(6). <http://www.doi:10.9790/7388-05616670> [15 March 2019].
- Orde, B.J. 1997. Drawing as Visual – Perceptual and Spatial Ability Training. *Presentations at the 1997 National Convention of the Association for Educational Communications, Albuquerque, 14- 18 February 1997*. New Mexico: The Institute: 271-276.
- Pain, H. 2012. A Literature Review to Evaluate the Choices and use of Visual Qualitative Methods. *International Journal of Qualitative Methods*, 11(4). <https://doi.org/10.1177/160940691201100401> [25 March 2016].
- Payne, R. 2012. *Seen, Unseen or Overlooked? How can Visual Perception Develop through a Multimodal Enquiry?* Oxford: Blackwell Publishing Ltd.
- Pearson, M., Albon, S. P. & Hubball, H. 2015. Case Study Methodology: Flexibility, Rigour and Ethical Considerations for the Scholarship of Teaching and Learning. *The Canadian Journal for the Scholarship of Teaching and Learning*, 6(3). http://ir.lib.uwo.ca/ajsorl_rcacea/vol6/iss3/12 [2 October 2018].

- Pelowski, M., Leder, H. & Tinio, P. P. L. 2017. Creativity in the Visual Arts. In Kaufman, J.C., Glaveanu, V.P. & Baer, J. (eds). *The Cambridge Handbook of Creativity Across Domains*. England: Cambridge University Press: 80-109.
- Perdreau, F. & Cavanagh, P. 2015. Drawing experts have better visual memory while drawing. *Journal of Vision*, 15(5). <http://psycnet.apa.org/record/2015-55632-001> [15 March 2016].
- Peterson, M. A. & Grant, E. S. 2003. Memory and learning in figure ground perception. *Cognitive Vision: Psychology of learning and motivation*, 42:1-34.
- Pitri, E. 2013. Skills and Dispositions for Creative Problem Solving During the Artmaking Process. *Art Education*, <http://www.researchgate.net/publication/325186417> [16 July 2019].
- Polat, U. 2009. Making perceptual learning practical to improve visual functions. *Visual Research*. <http://www.doi:10.1016/j.vsres.2009.06.005> [18 April 2016].
- Pretorius, L. 2016. A Methodological Framework for Observation drawing: Empowering Middle Childhood Visual Art Learners with Visual Literacy Skills. Unpublished M.Ed thesis, University of Pretoria. Pretoria.
- Pritchard, A. & Woollard, J. 2010. *Psychology for the classroom: Constructivism and social learning*. London: Routledge.
- Pujara, S., Atkins, M. & McMahon, S. 2014. *Art-based Projects for Children and Young People*. London: Metropolitan University.
- Rosier, J. T. 2010. Art and Memory: An Examination of the Learning Benefits of Visual – Art Exposure. Unpublished Masters thesis, Georgia Southern University: Georgia.
- Rowley, J. 2002. Using Case Studies in Research. *Management Research News*, 25(1), 16 – 27. <https://doi.org/10.1108/01409070210782990> [15 March 2016].
- Saputra, Y. H. & Sabana, S. 2016. Building creativity training: Drawing with left hand to stimulate left brain children age 5-7 years old. *Journal of Education*, 7(2). <http://www.eric.ed.gov/?id=EJ1089749> [18 October 2017].
- Seefeldt, C. 2002. *Creating rooms of wonder: Valuing and displaying children's work to enhance the learning process*. Beltsville: Gryphon House.
- Selwood, I. & Twining, P. 2005. Action Research. *Becta*. <https://www.researchgate.net/publication/33323750> [18 April 2016].
- Sharp, C. 2004. Developing young children's creativity: what can we learn from research? *Readership, Primary*, 8(32). <https://www.nfer.ac.uk/publications/44420/44420.pdf> [06 June 2015].
- Sheridan-Rabideau, M. 2010. Creativity Repositioned. *Arts Education Policy Review*, 3(6). <https://www.tandfonline.com/doi/abs/> [16 June 2015].
- Siegal, S. 2011. Cognitive Penetrability and Perceptual Justification. *Noûs*, <http://www.doi:10.1111/j.1468-0068.20.2010.00786.x> [21 April 2016].

- Sperry, R. W. 1968. *Hemisphere disconnection and unity in conscious awareness*. *American Psychology*, 23(10): 723-733.
- Stake, R. E. 2006. *Multiple case study analysis*. New York: The Guilford Press.
- Stanko-Kaczmarek, M. 2012. The Effect of Intrinsic Motivation on the Affect and Evaluation of the Creative Process Among Fine Arts Students. *Creativity Research Journal* : 24(4). <http://www.researchgate.net/publication/258218780> [20 January 2019].
- Stavridi, S. 2015. The role of interactive visual art learning in development of young children's creativity. *Creative Education*, 6: 2274-2282. <http://dx.doi.org/10.4236/ce.2015.621235> [20 November 2019].
- Stinger, E. T. 2008. *Action research in education*. New Jersey: Pearson.
- Sulaiman, S. Blandford, A. & Cairns, P. 2010. Haptic Experience and Design of Drawing Interfaces. *Interacting with Computers*, 22(3), 193 – 205.
- Taber, K.S. 2011. *Constructivism as Educational Theory: Contingency In Learning, and Optimally Guided Instruction*. New York: Nova Science Publishers, Inc.
- Tacca, M. C. 2011. Commonalities between perception and cognition. *Frontiers in Psychology*, 2. <http://www.doi:10.3389/fpsyg.2011.00358> [25 April 2016].
- Tong, F. 2013. Imaging and visual working memory: one and the same? *Trends in Cognitive Sciences*, 17(10). http://www.psy.vanderbilt.edu/tonglab/web/publications/tong_trends_2013.pdf [15 April 2016].
- Turkmenoglu, D. 2012. Visual perception and drawing relationship in art education. *Procedia-Social and Behavioral Sciences*, 51. <http://pdf.sciencedirectassets.com/277811/1> [24 October 2018].
- Twigg, D. & Garvis, S. 2010. Exploring Art in Early Childhood Education. *The International Journal of the Arts and Society*, 5(2). <http://www.arts-journal.com> [26 September 2016].
- Ulger, K. 2018. Effects of Problem-Based Learning on the Creative Thinking and Critical Thinking Disposition of Students in Visual Arts Education. *Interdisciplinary Journal of Problem-Based Learning*, 12(1). <http://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1649&context=ijpbl> [3 January 2019].
- Van der Kamp, M., Admiraal, W., Van Drie, J. & Rijlaarsdam, G. 2014. Enhancing Divergent Thinking in Visual Arts Education: Effects of Explicit Instruction of Meta-cognition. *The British Psychological Society*, 85:47-58. www.wileyonlinelibrary.com [22 April 2019].
- Vetter, P. & Albert, N. 2014. Varieties of cognitive penetration in visual perception. *Consciousness and Cognition*. <http://www.doi:10.1016/j.concog.2014.04.007> [18 May 2017].
- Wachowiak, F. & Clements, R.D. 2010. *Emphasis Art A qualitative program for Elementary and Middle Schools*. USA: Allyn & Bacon.
- Walker, C. M., Winner, E., Heatland, L., Simmons, S., Goldsmith, L. 2011. Visual Thinking: Art Students Have Advantage in Geometric Reasoning. *Creative Educational Journal*, 2(1):22-26. <http://www.scirp.org/journal/> [16 March 2015].

- Westraadt, G. 2007. The potential for facilitating a rich variety of learning opportunities through the learning area arts and culture (visual art). Unpublished M.Ed thesis, Cape Peninsula University of Technology, Cape Town.
- Westraadt, G. 2011. The endangered subject of quality Visual Art education. *South African Journal of Childhood Education*, 1(2):158-192.
- Westraadt, G. 2012. Mentoring Educators to Facilitate Quality and Meaningful Art Education. Unpublished Phd thesis, Cape Peninsula University of Technology, Cape Town.
- Wigglesworth, R. 2017. Drawing on Curiosity: Between Two Worlds. *The International Journal of Arts and Design Education*, 36(3). <http://www.doi:10.1111/jade.12159> [12 December 2018].
- Wijntjes, M. W. A., Volcic, R., Pont, S. C., Koenderink, J. J. & Klappers, A. M. L. 2009. Haptic perception disambiguates visual perception of 3D shapes. *Experimental Brain Research*, 193. <http://www.doi:10.1007/500221-009-1713-9> [12 November 2018].
- Wright, L. & Black, F. 2013. Monochrome Males and Colorful Females: Do gender and age influence the color and content of drawings? *SAGE Journals*. <http://doi.org/10.1177/2158244013509254> [16 March 2016].
- Wright, S. 2003. *Children, meaning-making and the art*. Frenchs Forest: Pearson.
- Zadra, J. R. & Clore, G. 2011. Emotion and Perception: The role of affective information. *Wiley interdisciplinary reviews. Cognitive Science*, 2(6). <http://www.researchgate.net/publication/51754134> [18 March 2017].
- Zenasni, F. & Lubart, T. 2002. Effects of Mood States on Creativity. *Current Psychology Letters: Behaviour, Brain and Cognition*, 8. <https://www.researchgate.net/publications/30428186> [7 February 2018].
- Zimmerman, E. 2009. Reconceptualizing the Role of Creativity in Art Education Theory and Practice. *Studies in Art Education*, 50(4). <http://www.jstor.org/stable/40650349> [21 April 2016].

Appendix A

28 John Vorster Ave
Platteklouf
Parow
7530

Dr Audrey Wyngaard
Directorate: Research
Private Bag x9114
Cape Town
8000

Dear Dr Wyngaard

PERMISSION TO CONDUCT RESEARCH

I hereby request permission to conduct research in the primary school on learners' visual perception. This research is being conducted in fulfilment of the requirements for the degree Magister Educationis in the Faculty of Education and Social Sciences at the Cape Peninsula University of Technology: Mowbray Campus.

This research will focus on the visual perception of Grade 5 learners while making art in the Primary school. I will be using my own practice to conduct my research. The learners of the sites will be observed for two school terms, while following the Creative Arts curriculum as set out by CAPS. The learners will undergo visual perception sharpening exercises to help them with creating in 2D. The data collection instrument will consist of revised and adapted perception sharpening exercises to target identified problem areas. To track the learners' progress, photographs of their artworks, will form part of my data collection. Anonymity of the participants will be ascertained by not disclosing their names or personal information in the research.

Dr. Georina Westraadt, Lecturer in Art Education at the Faculty of Education and Social Sciences of the Cape Peninsula University of Technology, Wellington Campus, is the Supervisor of this study, with co-supervisor Dr Hanlie Dippenaar, Senior Lecturer: Research at the Faculty of Education and Social Sciences of the Cape Peninsula University of Technology, Wellington Campus. If you have any queries concerning the research being conducted, please feel free to make contact to the following e-mail address westraadtg@cput.ac.za.

The completed application form is attached.

Yours faithfully



Willem Mostert
207125457



Audrey.wynngaard@westerncape.gov.za

tel: +27 021 467 9272

Fax: 0865902282

Private Bag x9114, Cape Town, 8000

wced.wcape.gov.za

APPLICATION TO CONDUCT RESEARCH IN PUBLIC SCHOOLS WITHIN THE WESTERN CAPE

Note

- This application has been designed with students in mind.
- If a question does not apply to you indicate with a N/A
- The information is stored in our database to keep track of all studies that have been conducted on the WCED. It is therefore important to provide as much information as is possible

1 APPLICANT INFORMATION

1.1 Personal Details		
1.1.1	Title (Prof / Dr / Mr/ Mrs/Ms)	Mr
1.1.2	Surname	Mostert
1.1.3	Name (s)	Willem Adolf
1.1.4	Student Number (If applicable)	207125457

1.2 Contact Details		
1.2.1	Postal Address	28 John Vorster Avenue Platteklouf 1 Parow 7550
1.2.2	Telephone number	021 913 2104
1.2.3	Cell number	082 858 5567
1.2.4	Fax number	
1.2.5	E-mail Address	mostert.willem999@gmail.com
1.2.6	Year of registration	2015
1.2.7	Year of completion	2019

2 DETAILS OF THE STUDY

2.1 Details of the degree or project		
2.1.1	Name of the institution	Cape Peninsula University of Technology
2.1.2	Degree / Qualification registered for	Magister Educationis
2.1.3	Faculty and Discipline / Area of study	Education
2.1.4	Name of Supervisor / Promoter	Dr. Georina Westraadt

	/ Project leader	
2.1.5	Telephone number of Supervisor / Promoter	0218645212
2.1.6	E-mail address of Supervisor / Promoter	westraadtg@cput.ac.za .

2.1.7	Title of the study
The development of visual perception in artwork in the primary school.	

2.1.8	What is the research question, aim and objectives of the study
<p>Research Question:</p> <p>To what extent does visual perception and awareness training assist children in the middle childhood years (Grade 5 learners) to overcome the problems that they encounter when they experience a perceived inability to achieve satisfactory results when practical art projects require of them to depict real life things and three-dimensional shapes?</p> <p>Aim/ purpose of the study:</p> <p>The purpose of this qualitative case study is to investigate whether enhanced visual perception sharpening exercises will assist Grade 5 learners in their observational skills while completing practical projects set for Art Education in the primary school.</p>	

2.1.9	Name (s) of education institutions (schools)
XXXXXX Primary School	

2.1.10	Research period in education institutions (Schools)	
2.1.11	Start date	February 2016
2.1.12	End date	August 2016

EFEC1-8/2015



Dr Audrey Wyngaard
Directorate: Research
Private Bag x9114
Cape Town
8000

Dear Dr Wyngaard

PERMISSION TO CONDUCT RESEARCH

My Master of Education student, Mr Willem Mostert, student number 207125457 will shortly submit his application for your permission to do research in two schools in the Western Cape under the following title:
The development of visual perception in artwork in the primary school.

I will be his supervisor, with co-supervisor Dr Hanlie Dippenaar, senior lecturer at CPUT, Wellington campus.

The candidate has obtained ethical clearance for the research from the CPUT Education Faculty's Ethics Committee.

Thank you very much



G. Westraadt

Dr Georina Westraadt, senior lecturer in Art Education
CPUT
Wellington campus



REFERENCE: 20160317-8889

ENQUIRIES: Dr A T Wyngaard

Mr Willem Mostert
28 John Vorster Avenue
Platteklouf 1
Parow
7550

Dear Mr Willem Mostert

RESEARCH PROPOSAL: THE DEVELOPMENT OF VISUAL PERCEPTION IN ARTWORK IN THE PRIMARY SCHOOL

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **18 July 2016 till 30 September 2016**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

**The Director: Research Services
Western Cape Education Department
Private Bag X9114
CAPE TOWN
8000**

We wish you success in your research.

Kind regards.

Signed: Dr Audrey T Wyngaard

Directorate: Research

DATE: 17 March 2016

Appendix B



For the attention of the school principal:

30 July 2015

Dear Sir/Mrs

I wish to carry out a research project in my classroom as part of my Masters Degree in Education, being completed at the Cape Peninsula University of Technology. I aim to investigate 'the development of visual perception in artworks in the primary school'. I intend to do perception sharpening exercises with the learners. The nature of the perception sharpening exercises will have no harmful effects on the participants of the proposed study.

My method for collecting data will comprise the artworks of the learners, as well as photographs of their work and observations done by the researcher. I will take into account that all participants in the research have the right to anonymity and that their privacy should be regarded as highly important. I guarantee the confidentiality of all participants and both schools. I will not reveal anything of a comprising or personal nature.

Your permission and support would be greatly appreciated.

Kind regards

A handwritten signature in black ink, appearing to read 'W. Mostert', written in a cursive style.

Willem Mostert

Appendix C

OBSERVATIONAL CHECKLIST:

Pre-test:

Participant:

Date:

Test group/ control group:

Observer: W. Mostert

Observation	Comment
<p>Engagement with the subject matter: How did the learner portray the visual dimensions of subject matter based on the shape, the size and the inclusion of details?</p>	
<p>Observation of subject matter: Did the learner observe the subject matter before he/she drew it, or did the learner draw from symbolic representation?</p>	
<p>Confidence to create in 2D: Did the learner raise any concerns regarding his/her creative attempts demonstrated by frustration, hesitation or a lack of interest?</p>	
<p>Use of media: Was the learner confident to use the media and the techniques demonstrated?</p>	
<p>Creativity: Did the learner exhibit the freedom to creatively express himself/herself? Did he/she inhibit his/her creativity/ creative attempt by comparing what other learners were creating?</p>	

Final comments:

Appendix D

OBSERVATIONAL CHECKLIST:

Intervention lesson:

Participant:

Date:

Test group:

Observer: W. Mostert

Observation	Comment
<p>Engagement with the subject matter: How did the learner portray the visual dimensions of subject matter based on the shape, the size and the inclusion of details?</p>	
<p>Observation of subject matter: Did the learner observe the subject matter before he/she drew it, or did the learner draw from symbolic representation? Did the learner make use of the time to study and observe the subject matter?</p>	
<p>Ability to include and apply new technique: Was the learner able to grasp the concept of the new technique demonstrated? Did the learner make use of new technique during the exercise?</p>	
<p>Confidence during and after the exercise: Did the learner exhibit confidence during and after the exercise? Did the learner still experience a sense of frustration or hesitation to demonstrate the new technique?</p>	
<p>Inclusion of previous knowledge of technique: Did the learner exhibit the ability to link previous knowledge of techniques demonstrated during the exercise?</p>	

Final comments:

Appendix E

OBSERVATIONAL CHECKLIST:

Post-test:

Participant:

Date:

Test group/ Control group:

Observer: W. Mostert

Observation	Comment
<p>Engagement with the subject matter: How did the learner portray the visual dimensions of subject matter based on the shape, the size and the inclusion of details?</p>	
<p>Observation of subject matter: Did the learner observe the subject matter before he/she drew it, or did the learner draw from symbolic representation?</p>	
<p>Confidence to create in 2D: Did the learner raise any concerns regarding his/her creative attempts demonstrated by frustration, hesitation or a lack of interest?</p>	
<p>Use of media: Was the learner confident to use the media and the techniques demonstrated?</p>	
<p>Creativity: Did the learner exhibit the freedom to creatively express himself/herself? Did he/she inhibit his/her creativity/ creative attempt by comparing what other learners were creating?</p>	
<p>Observed growth and inclusion of previous knowledge and techniques: Was the learner able to include and utilize a new way of observing and portraying subject matter in his/her artwork?</p>	

Did the learner exhibit the ability to link previous knowledge of techniques demonstrated during the intervention and included it in his/her artwork?	
---	--

Final comments:
