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Regis University
School for Professional Studies Graduate Programs
Final Project/Thesis

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AN INVESTIGATION OF DEVELOPMENTALLY
APPROPRIATE METHODS IN
TEACHING DRAWING

by

Mark Esguerra

A Research Project Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Education

REGIS UNIVERSITY

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ABSTRACT

An Investigation of Developmentally Appropriate Methods in Teaching Drawing

This is an investigation sought to identify developmentally appropriate teaching methods in drawing instruction. This study assessed the different methods in teaching the fundamentals of drawing to two groups of 5th grade classes at Our Lady of Las Vegas School in Las Vegas, Nevada. The “control” group was taught by the drawing methods presented by Edwards (1979), while the “experimental” group was taught employing standard methods. Their drawing skills were assessed using a rubric that measured their success in the following four dimensions of drawing: perspective, proportion, value and composition.

The study utilized the pretest-posttest control group design (Leedy & Ormrod, 2005) with 33 students comprising the control group and 29 students comprising the experimental group. Major recommendations included (a) applying a rubric to assess objectively the drawing samples of fifth grade students, and (b) providing additional time and expertise to validate the outcomes.

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Chapter 1

INTRODUCTION

This chapter will review the background and statement of the problem, the theoretical framework, the purpose of the study, research questions developed to address the research problem, and the research methods employed to answer the research questions. Finally, this chapter will also provide definition of terms relevant to the project.

Background of the Problem

The art of drawing through observation is a learned skill that involves sensory perception, cognitive processes and motor practice (Nash, 1997). For the elementary school art student who is not taught correctly with suitable methods according to his/her developmental stage, drawing may cause anxiety and discouragement which often carries over to adulthood. Developmentally, children differ from adults cognitively, emotionally, physically, and psychologically, and these differences require special knowledge and sensitivity by the teacher (Erdman & Lampe, 1996). Due to the many factors that affect the success of the student in drawing (exposure of the student to the skill, individual talent, student motivation and achievement levels, student ethnicity, or socio-economic status), it is not easy to determine and gauge the suitability of teaching methods in drawing through observation in the particular developmental stage of the art student (Leonard, 2005). Often, because of this uncertainty and fear of student discouragement and failure, teachers do not emphasize drawing skills enough as a fun and fulfilling discipline, thus dismissing this fundamental art skill in their curriculum (Leonard, 2005).

Statement of the Problem

This project sought to investigate the teaching methods of the proponents of the *Drawing on the Right Side of the Brain* (Edwards, 1979) in the elementary grades using Vygotsky's developmental theory as a guide to determine the effectiveness of the instructional approach. Specifically, the research sought to assess the success of the fifth grade students at Our Lady of Las Vegas School by judging their work in drawing according to the following four dimensions: perspective, proportion, value (tints and shades), and overall composition and representation of subject (Edwards, 1979 & Nash, 1997).

Theoretical Framework

Lev Semenovich Vygotsky (1896 – 1934), a Soviet psychologist of the early twentieth century, formulated and introduced the zone of proximal development, a proposal involving psychological development (Bruner, 1985). The terms “zone of proximal development,” “scaffolding,” and “reciprocal teaching” are the key concepts and applications of Vygotsky's theory that have specific application to the teaching of drawing.

The “zone of proximal development” is defined as the distance between a child's actual developmental level with more capable peers as determined by independent problem solving and his/her potential development as determined through problem solving under adult guidance or in collaboration (Punghong, 2004).

This framework was intended to help in obtaining an overall assessment, both of the child's actual abilities, measured through a completed task (individual performance), and the child's potential abilities, which are measured during the ongoing process of development with peer assistance (Punghong, 2004, p. 32).

The concept of the zone of proximal development forms the framework for this project to determine the suitability and the success of various innovative teaching methods as it looks into the interplay between the child's level of development and a particular instructional method. The focus of this framework is achieving "consciousness and control," wherein the process "begins with an adult providing the learner with a vicarious form of consciousness until the learner is able to master his/her own action through his/her own consciousness and control" (Pungthong, 2004, p. 32).

Scaffolding

Vygotsky's concept of scaffolding (as cited by Hausfather, 1996) is the educational process by which the teacher provides the students the opportunity to extend their current skills and knowledge. The teacher must engage students' interest, simplify tasks so they are manageable, and motivate students to pursue the instructional goal (Doster, 2004). In addition, the teacher must look for discrepancies between students' efforts and the solution, control for frustration and risk, and model an idealized version of the act (Hausfather, 1996).

In this research study, scaffolding includes strategies used in instructional procedure, techniques which can be described as various forms of support provided by a teacher or expert. Therefore, scaffolding in this study refers to the innovative approaches to teaching drawing and illustration.

Reciprocal teaching

Reciprocal teaching is simply the teaching practice that opens dialogue between students and teachers (Driscoll, 1994). This two way communication becomes an instructional strategy by encouraging students to go beyond answering questions and

engage in the discourse (Driscoll, 1994; Hausfather, 1996). Reciprocal teaching involves the teacher and students exploring technical problems in drawing and then sharing their different problem solving strategies in an open dialogue.

Vygotsky and Applied Perspective Drawing

Pungthong (2004) used Vygotsky's framework to investigate and assess an instructional strategy to develop skills in perspective drawing to adults enrolled in an architecture and design class. She observed that "drawing instruction using a perspective grid can be seen as a mediation process and device that has been successful in assisting students achieve an advanced level of drawing skill" (Pungthong, 2004, p. 48). She concluded that the advantages offered by the 3-D grid instructional system include students' ability to produce images from thought, the ability to use external representation to explore and manipulate ideas, and the ability to render a representative drawing of concluding ideas (Pungthong, 2004).

By employing Vygotskian concepts of (a) the zone of proximal development, (b) scaffolding, (c) reciprocal teaching, and (d) cognitive apprenticeship (mediation process), this research project sought to connect and implement the methodologies appropriate with developmental issues of fifth grade children who struggle with drawing because of the process of gaining conscious control of the skills.

Purpose of the Study

Art, a natural mode of expression for most children, can be a valuable tool to aid in the growth and development of elementary school students. Teaching drawing according to the developmental stage of students should not depend on "gut feel" or "trial and error." The research detailed below should yield tangible data and a reliable

assessment on when and how to teach the four dimensions of drawing at the appropriate stage of student development. It should also provide educators an evaluation tool that relates to the effectiveness of innovative teaching methods in a non-academic, more informal discipline such as art. Depending on the success of the innovative or the standard methods, it is hoped that this endeavor will produce greater success and encouragement for art students.

Research Questions

The following research questions were developed to address the research problem:

1. How does teaching drawing skills using the “*right side of the brain*” concepts relate to Vygotsky’s theory on cognitive development and learning?
2. Will the techniques illustrated by the proponents of “*Drawing on the Right Side of the Brain*” theory (Edwards, 1979) be effective in teaching drawing at the elementary school level?
3. Which instructional methods and techniques from this drawing school of thought will be most effective to teach perspective, proportion, value and representation to fifth grade students? Among these dimensions, which areas will the fifth grade student be successful in learning using the experimental approach?
4. Will students who employ techniques supported by “*Drawing on the Right Side of the Brain*” be more effective in drawing (based on the four dimensions of drawing) than students who are taught drawing via the standard techniques?

Methods

This research employed the pretest- posttest control group design (Leedy & Ormrod, 2005) to investigate the effectiveness of between teaching methods for drawing.

This design allows the researcher to identify, observe and analyze the variables affecting the treatment group and the control group.

There are two fifth grade classes at Our Lady of Las Vegas School. One class served as the treatment group (they received the innovative drawing methods), the other class served as the control group (they were taught using the standard teaching method in drawing).

“In the pretest-posttest control group design, the experimental group and the control group are carefully selected through appropriate randomization procedures” (Leedy & Ormrod, p. 25). In this case, the random selection had been done by school administration whereby the 5th grade student population, having diverse academic and artistic aptitude and performance, was divided into two sections, Section A (5A) and Section B (5B). Section A (5A) served as the experimental group and Section B (5B) served as the control group. Both sections were tested on a preliminary drawing activity (pretest) and were then observed and assessed. After the pretest, the experimental group (5A) was subjected to the experimental treatment (using instructional methods based on concepts in “*Drawing Using the Right Side of the Brain*” by Edwards, 1979), then observed once again. The control group, 5B, was isolated from any influences of the experimental treatment. The control group was subjected to standard drawing instructional methods only and was observed both at the beginning and at the end of the research period.

Informed consent to guardians or students was not deemed applicable as the data gathering process was simply the application of an innovative teaching method but not a change in content, instructional outcomes or curriculum standards. The data gathering

process was part of standard practice in the art class because both 5th grade classes received the same lesson but taught with different techniques. Student names or other forms of student information were not disclosed in any report or oral presentation related to the proposed research.

Definition of Terms

Specific terms related to this research are defined as follows:

Drawing. Drawing is the act of defining (or delineating) the outlines of a figure against a background, using any of a wide variety of tools and techniques (<http://en.wikipedia.org/wiki/Drawing>).

Right- Left Side of the Brain. This concept of the structure and functions of the brain suggests that the two different sides of the brain control two different "modes" of thinking. (http://www.funderstanding.com/right_left_brain.cfm)

Summary

Art classes are challenged to elevate the level of drawing skill in a diverse and complex elementary school population. Art teachers are in a position to respond to this opportunity through the application of developmentally appropriate teaching methods and innovative programs. To address this issue, Vygotsky's development concepts provided the study's theoretical framework. This study investigated the teaching methods advocated by proponents of *Drawing on the Right Side of the Brain* (Edwards, 1979) as related to drawing instruction.

This research project sought to assess the success of fifth grade students at Our Lady of Las Vegas School by judging their works according to the following four

different dimensions of drawing: perspective, proportion, value (tints and shades), and overall composition of subject. The study adopted the pretest-posttest control group design to identify any relationships between different teaching methods in drawing.

Chapter 2

REVIEW OF LITERATURE

This study sought to determine the most effective method of teaching drawing (based on the four dimensions of drawing) to fifth grade students at Our Lady of Las Vegas School. The related literature reviewed provided a framework for assessment of the four dimensions of drawing (perspective, proportion, value and representation) using the methods advocated by the proponents of the “drawing on right side of the brain” theory. Research and literature related to the following areas is included in this chapter: (a) history of drawing, (b) current trends in drawing, (c) right side and left side of the brain constructs.

History of Drawing

People have made drawings since prehistoric times (<http://en.wikipedia.org>). Yet, it was during the 1400’s that this art form first gained widespread popularity among European artists. Since that time, each century has produced artists who have created great drawings.

Apprenticeship

Historically, the artist's instruction and discoveries were done by the master observing and training his apprentice who was learning the trade. Drawing practices included the copying of master studies from nature, followed by studies of plaster casts, and culminating in observation of live models. Under apprenticeship drawing was

considered an intellectual tool in the formulation of an artistic idea and separate from the craft of execution which was only a manual skill (Nash, 1997).

The masters of the high Renaissance era further increased the status of drawing from technique to intellectual tool, as reinforced by Leonardo Da Vinci, who considered drawing a recording instrument by which to investigate nature and therefore a tool for science as well as art (Nash, 1997).

Renaissance art and science were considered related disciplines exemplified by the genius of Leonardo, and art theories and rules were developed from his discoveries and those of other masters. These rules *evolved from art itself* rather than from nature and they provided a basis for all subsequent systems of academic art education, and accordingly art became its own discipline with established methods of inquiry and teaching. (Nash, 1997, pp. 9-10)

Academic Drawing

After the turn of that century, European governments institutionalized sponsored art to oversee patronage, censorship and education. This was the birth of the “art academy” and because the main purpose of the arts was to assert the absolute power and prestige of the state, the academy became the guardian of true tradition in the arts and the art school prototype throughout Europe (Nash, 1997). Subsequently, it is now through educational institutions that theories and drawing techniques are acquired and augmented by texts.

The academy demanded strict adherence to rules and they oversaw the teaching of architecture, geometry, perspective, math, anatomy, astronomy, history and dictated aesthetic canons. Drawing was taught from copying master works and plaster casts, and the academy even secured a monopoly on life drawing classes which were forbidden to be taught in the studios of non-member artists. Because academic art adhered stylistically to neoclassic ideals, drawings were impersonal, technically perfected, and brought to a high finish. (Nash, 1997, p. 10)

Impressionist and Observation Drawing

Since the 1800's, the academies and institutions of higher learning governed art instruction in the classical fashion until the dawn of the Impressionist Movement as spearheaded by Monet and Renoir during the 19th Century. John Ruskin who lived within this movement authored the book, *The Elements of Drawing* (1857), which reflected extreme adherence to a 'truth to nature' doctrine, as he encouraged the close observation of natural objects rather than plaster casts, and honest personal depiction of nature instead of manual dexterity and neatness of execution (Nash, 1997).

Ruskin's dislike of academic 'finish' remains a relevant topic when discussing contemporary drawing; The cool and calculated look of highly finished art is often the product of a conformity to established rules and should not be confused with refinement of perception which can be enacted in the rough (Nash, 1997, p. 10).

In the same spirit of the Impressionists, Ruskin reconciles theoretical positions with practical applications; for example he recommends the beginner not worry about outlines, but rather the gradation of shade - outline is merely the edge of the shade:

No pupil in my class being ever allowed to draw an outline, in the ordinary sense. It is pointed out to him from the first, that Nature relieves one mass. or one tint, against another; but outlines none (Ruskin, 1857, p. 27).

Ruskin (1857) continues:

Everything that you can see in the world around you, presents itself to your eyes only as an arrangement of patches of different colors variously shaded... the whole technical power of painting depends on our recovery of what may be called the innocence of the eye; that is to say, of a sort of childish perception of these flat stains of color, merely as such, without consciousness of what they signify, as a blind man would see them if suddenly gifted with sight (p. 27).

Ruskin understood that beginners initially draw what they know conceptually, rather than 'see' the raw unelaborated information before their eyes. According to Ruskin (1857), artists painted... "The truths around them as they appeared to each man's own mind" (Nash, 1997, p. 11). Thus, he found copying the master unfavorable. Moreover, he related artistic perception to a capacity for moral beauty, and therefore art education functioned to help students perceive the beauty of God's work in the universe (Nash, 1997).

Current Drawing Methods

Three renowned drawing methods and models of the 20th century were selected for investigation in this literature review. First, the drawing method introduced in Nicolaides' *The Natural Way to Draw* (1941), which utilizes contour and gesture drawing. Secondly, Edwards (1976) introduced in neurological theories with acquisition of artistic perception and drawing skills. Kaupelis (1983) combined the intellectual and the intuitive. These theories and techniques have been widely accepted and approved in the art field because of the efficacy of application and practice as to how to make well-rendered realistic drawings in a short amount of time.

These techniques have proved to be very successful in establishing conscious control of the learners' eye-hand coordination and enabling them to produce freehand realistic perspective images. These drawing methods are able to help the novice who cannot draw a straight line produce hand drawn realistic images successfully for the first time. (Pungthong, 2004, p. 48)

Contour and Gesture Drawing

Nicolaides (1941) provided the most influential text for teachers. Nicolaides does not describe his drawing instruction in terms of techniques, aesthetics, or concepts. Instead, he compares drawing and the natural impulse to draw with the natural impulse to

talk, and emphasizes a natural way of observation through physical contact with an object using all the human senses (Nash, 1997). Nicolaides utilizes his experience as an artist and teacher to recommend the following:

The job of the teacher, as I see it, is to teach students, not how to draw but how to learn to draw. They must acquire some real method of finding out facts for themselves test they be limited for the rest of their lives to facts the instructor relates. They must discover something of the true nature of artistic creation - of the hidden processes by which inspiration works...My whole method consists of enabling students to have an experience...*Art* should be concerned more with life than with art...to understand theories is not enough. Much practice is necessary, and the exercises in this book have been designed to give that practice. (Nicolaides, 1941, pp. XIII- XIV)

Nicolaides (1941) recognized that different drawing styles could coexist in one artist. A “studied contemplative approach” could alternate with an “emotional and spontaneous manner” of graphic expression. His unique contribution was in distinguishing between 'contour' and 'gesture' drawing and formulating a methodology for teaching both (Nash, 1997). In contour exercises students are encouraged to concentrate deeply on the slow representation of the detailed tactile qualities of a subject, and in gesture drawings students are expected to react quickly and spontaneously to reveal the essence of what something is *doing* rather than what it *looks* like.

For example, in his instruction of the famous ‘contour’ drawing,’ novices are instructed to draw without looking at their drawing paper, but to focus their eyes at any point on the contour of a model. As learners begin moving the pencil slowly on the paper to draw a replication image of the model, they have to convince themselves that the pencil’s point is touching the contour of the model as they glide their eyes slowly along the contour. Nicolaides’ “contour drawing” instruction, which is the first lesson in the book, appears to be widely recognized among practitioners because it is often cited as an important introductory lesson in today’s drawing manuals (Nash, 1997, p. 12).

Expressive/ Creative Drawing

Kaupelis (1983) emphasized that “expressive” combines artistic, aesthetic, and instructional considerations in learning to draw:

You must understand forms, events, experience and intentions (your own and others) on both an intellectual and an intuitive level. At times, we understand things which are inexplicable in terms of bodily sensations and feelings...the artist's major asset is that his understanding is primarily aesthetic. (Kaupelis, 1983, p. 13)

Kaupelis (1983) encourages students to (a) produce unique and personal work which possesses aesthetic significance in its form and expressive content; and (b) produce drawings that demand responses and forms that are uncommon, unusual and individual. Kaupelis (1980) concluded that "One of the hallmarks of artists is that they begin to see everything in their environment as having a potential use for either their immediate or some future artistic endeavor" (p. 12). Kaupelis noted that exercises directed towards encouraging students to experiment with new forms in their drawings and to go beyond conventional forms which reinterpret, amalgamate, or extend current or past artistic modes and styles:

It is only when an artist breaks out of the current creative/expressive form parameters that the 'shape' or 'direction' or the 'style' of art is changed. And this is a relatively rare event. It happened with Massaccio, Giotto. Cézanne, Pollack, and Calder among others".... Almost all *significant* advances in art have looked strange, ugly. And generally inaccessible, even to the artistic elite, when they were first experienced... Yet in time, new forms which are unfamiliar at first are absorbed into their historical context and most of us begin to take them for granted. (Kaupelis, 1980, p. 15)

Right Side and the Left Side of the Brain

The brain is divided physically into two hemispheres (lobes) and the two lobes of the brain house different processes (Plotnik, 1999). According to Doster (2004, pp. 32-

33) the left hemisphere houses and is responsible for (a) verbal (language-related abilities such as speaking, understanding language, conversing, reading, writing, spelling), (b) mathematical (such as adding, subtracting, multiplying, dividing, solving complex problems in calculus, physics), and (c) analytic skills (processing information by analyzing each separate piece that makes up a whole).

The right hemisphere, according to Doster (2004, pp. 32-33), houses and is responsible for (a) nonverbal skills (a childlike ability to read, write, spell and understand speech), (b) spatial skills (solving spatial problems such as arranging blocks to match a geometric design), and (c) holistic skills (processing information by combining parts into a meaningful whole).

The hemispheres of the brain appear to interact together and pass information back and forth quickly. Occasionally, a hemisphere will work alone. Kasschau (2001) further described the right brain as adept at visual relationships and that perceptual tasks seem to be more suited for the right hemisphere. "The right side is better at recognizing patterns. Thus music and art are better understood by the right hemisphere. Creativity and intuition are also found in the right hemisphere" (Kasschau, 2001, p. 163).

The two hemispheres use contrasting methods for information processing (Edwards, 1986). Even though both specialize and have their own particular capabilities, they are able to work together in a cooperative manner while maintaining their differences. "Both thinking modes are involved in high-level cognitive functioning" (Edwards, 1986, p. 10). However, the right brain is less easily described and understood and is relegated to minor status by the left brain. The left brain has trouble verbalizing the function of the right brain and it remains unnoticed in everyday activities.

Curriculum in schools, in general, favors left brain thinking and academic subjects which focus on logical thinking, analysis, and accuracy. Right-brained academic subjects, such as art and music, focus on aesthetics, feeling, and creativity (Doster, 2004, p. 33).

Drawing on the Right Side of the Brain

Edwards (1979) developed a concept entitled “right brain drawing.” The approach is “intended to help learners pause logical left brain functions to allow the right brain, which is responsible for drawing ability, to function fully” (Pungthong, 2004, p. 10).

The “Right Side of the Brain” drawing concept presents a scientific and physiological proof to support the traditional practice which artists and teachers have applied “intuitively” for centuries (Nash, 1997). Edwards (1979) presents innovative exercises such as drawing an upside down image. This concept aims to make shifts from dominant left brain to sub-dominant right brain modes of perception.

Presumably the left hemisphere, confused and blocked by the unfamiliar image and unable to name or symbolize as usual, is turned off, and the job passed over to the right hemisphere. Perfect! The right brain is the hemisphere appropriate for the task of drawing. Because it is specialized for the task, the right brain fin& drawing easy and enjoyable. (Edwards, 1979, p. 55)

Moreover, Edwards (1979) posits that this theory encourages and motivates students to acquire which skill; that drawing is not an innate capability but a learned skill that involves cognitive process and motor practice.

I have described to you the basic premise of this book - that drawing is a teachable, learnable skill which can provide a two-fold advantage. By gaining access to the part of your mind that works in a style conducive to creative, intuitive thought, you will learn a fundamental skill of the visual arts: how to put down on paper what you see in front of your eyes. Second, through leaning to draw with the method presented in this book you will gain the ability to think more creatively in other areas of your life. (Edwards, 1979, pp. 14-15)

Summary

The purpose of this research project was to investigate the ideal and appropriate teaching method in drawing with perspective, proportion, value and satisfactory composition to fifth grade students at Our Lady of Las Vegas School. This chapter reviewed literature related to the History of Drawing, the Current Trends in Drawing and the concept of the Right Side of the Brain Drawing Theory.

Chapter 3

RESEARCH METHODS

Introduction

This project sought to investigate the teaching methods of the proponents of the *Drawing on the Right Side of the Brain* (Edwards, 1979) in the elementary grades using Vygotsky's developmental theory as a guide to determine the effectiveness of the instructional approach. Specifically, the research sought to assess the success of the fifth grade students at Our Lady of Las Vegas School by judging their work in drawing following the standard and innovative instructional techniques. The student work was assessed according to the following four dimensions: perspective, proportion, value (tints and shades), and overall composition and representation of subject (Edwards, 1979 & Nash, 1997).

The purpose of this study was to determine the most effective method to teaching drawing according to the developmental stage of students in fifth grade at Our Lady of Las Vegas School. Art, a natural mode of expression for most children, can be a valuable tool to aid in the growth and development of elementary school students. Teaching drawing according to the developmental stage of students should not depend on "gut feel" or "trial and error." The research detailed below should yield tangible data and a reliable assessment on when and how to teach the four dimensions of drawing at the appropriate stage of student development. It should also provide educators an evaluation

tool that relates to the effectiveness of innovative teaching methods in a non-academic, more informal discipline such as art.

This research was directed by the following research questions:

1. How does teaching drawing skills using the “*right side of the brain*” concepts relate to Vygotsky’s theory on cognitive development and learning?
2. Will the techniques illustrated by the proponents of “*Drawing on the Right Side of the Brain*” theory (Edwards, 1979) be effective in teaching drawing at the elementary school level?
3. Which instructional methods and techniques from this drawing school of thought will be most effective to teach perspective, proportion, value and representation to fifth grade students? Among these dimensions, which areas will the fifth grade student be successful in learning using the experimental approach?
4. Will students who employ techniques supported by “*Drawing on the Right Side of the Brain*” be more effective in drawing (based on the four dimensions of drawing) than students who are taught drawing via standard techniques?

Research Design

This research project employed the pretest- posttest control group design (Leedy & Ormrod, 2005) to investigate the effectiveness of different teaching methods for drawing. This design allows the researcher to identify, observe and analyze the variables affecting the treatment group (innovative instructional techniques) and the control group (standard instructional techniques).

There are two fifth grade classes at Our Lady of Las Vegas School. One class served as the treatment group (they received the innovative drawing methods), the other

class served as the control group (they were taught using the standard teaching method in drawing).

“In the pretest-posttest control group design, the experimental group and the control group are carefully selected through appropriate randomization procedures” (Leedy & Ormrod, p. 25). In this case, the random selection has been done by school administration whereby the 5th grade student population, having diverse academic and artistic aptitude and performance, was divided into two sections, Section A (5A) and Section B (5B). Section A (5A) served the experimental group and Section B (5B) served as the control group. Both sections were tested on a preliminary drawing activity (pretest) and were then observed and assessed. After the pretest, the experimental group (5A) was subjected to the experimental treatment (using instructional methods based on concepts in “Drawing Using the Right Side of the Brain” by Edwards, 1979), then observed once again. The control group, 5B, was isolated from any influences of the experimental treatment. The control group was subjected to standard drawing instructional methods only and was assessed using the same criteria and time frame as employed for the experimental group.

Informed consent to guardians or students was not deemed applicable as the data gathering process was simply the application of an innovative teaching method but not a change in content, instructional outcomes or curriculum standards. The data gathering process was part of standard practice in the art class because both 5th grade classes received the same lesson but taught with different techniques. Student names or other forms of student information were not disclosed in any report or oral presentations related to the proposed research.

Procedures

In the pretest-posttest control group design, the experimental group and the control group are “carefully selected through appropriate randomization procedures” (Leedy & Ormrod, p. 225). In this case, the random selection was accomplished by school administration whereby the 5th grade student population, having diverse academic and artistic aptitude and performance, has been divided into two sections, Section A (5A) and Section B (5B). Section A (5A met first period, Thursday, 10:45- 11:35 a.m.) was the experimental group and Section B (5B met second period, Thursday, 11:35- 12:25 p.m.) was the control group.

The first research question sought to determine which concepts and methods of teaching drawing skills advocated by the “*right side of the brain*” concept relate to Vygotsky’s theory on cognitive development and learning. To answer this question, the researcher connected Vygotskian concepts with art lesson plans utilizing Edward’s (1979) methods in teaching drawing. In part, this study sought to illustrate the psychological assistance that the “*right side of the brain*” might provide to effectively teach drawing in an appropriate level.

To address the second research question, “will the techniques illustrated by the proponents of “*Drawing on the Right Side of the Brain*” theory (Edwards, 1979) be effective in teaching drawing at the elementary school level?”, both sections of students were tested on a preliminary drawing activity (pretest). Data collection was done for two (2) days. Each of these days consisted of two classes of instruction for both the 5th grade section A (experimental group) and the 5th grade section B (control group).

The subjects of this research, for both the experimental and control group, had undertaken a pretest of the same content. After the preliminary drawing activity, their outputs were assessed according to the assessment rubric (see Table 1). The pretest for each student was graded numerically (with a range of 1 to 4) to calculate the mean. The first pretest given on day 1 measured the drawing dimensions of perspective and value, while the second pretest given on day 2 measured the dimensions of proportion and composition. The students copied a projected image (see Appendix A) using HB (medium dark) pencils on 11”X18” white construction paper. The image was determined to be complex enough to challenge this population into pushing the limits of their drawing skills yet not overwhelming. The image selected to be drawn by the students was monochromatic showing a great deal of perspective and value, demanding a level of correct proportion and composition. A monochromatic landscape was used to test the students’ ability to show perspective and value in drawing and to assess proportion and composition. A monochromatic copy of Richard Lindner’s “Rock-Rock” was used to test this student ability (see Appendix B).

After the pretest, the 5A class (experimental group) was subjected to the experimental treatment (using the Right Side of the Brain methods), then assessed with a posttest drawing the same image. The control group, 5B, was isolated from any influences of the experimental treatment. The control group was also assessed with a posttest drawing of the same image as in the pretest but were not subjected to “*Right Side of the Brain*” teaching methods (Leedy & Ormrod, p. 225).

To address the third research question, “which instructional methods and techniques from this drawing school of thought will be most effective to teach

Table 1

Rubric for Drawing

Drawing Dimensions	Pretest (Mean)	Post Test (Mean)	Difference
Perspective 1- Does not meet expectations 2- Demonstrates some skills (Average) 3- Above average 4- Exceptional Skills	5A Experimental	5A Experimental	5A Experimental
	2.24	2.52	+0.28
	5B Control	5B Control	5B Control
	2.25	1.88	-0.37
Proportion 1- Does not meet expectations 2- Demonstrates some skills (Average) 3- Above average 4- Exceptional Skills	5A Experimental	5A Experimental	5A Experimental
	1.86	2.42	+0.56
	5B Control	5B Control	5B Control
	1.96	2.67	+0.71
Value 1- Does not meet expectations 2- Demonstrates some skills (Average) 3- Above average 4- Exceptional Skills	5A Experimental	5A Experimental	5A Experimental
	2.04	2.41	+0.37
	5B Control	5B Control	5B Control
	2.38	1.75	-0.63
Composition 1- Does not meet expectations 2- Demonstrates some skills (Average) 3- Above average 4- Exceptional Skills	5A Experimental	5A Experimental	5A Experimental
	2.34	2.66	+0.32
	5B Control	5B Control	5B Control
	1.96	2.63	+0.67

perspective, proportion, value and representation to fifth grade students?”, the drawing outputs were tabulated using the rubric (see Table 1). The results were rank ordered from the least improvement to the highest improvement to determine the least effective to the most effective method based on the improvement scores of the students.

To address the fourth research question, “will students who employ techniques supported by “*Drawing on the Right Side of the Brain*” (Edwards, 1979) be more effective in drawing (based on the four dimensions of drawing) than students who are taught drawing in the standard way?”, the differences in mean scores on each drawing dimension were compared see Table 1).

Population

The population for this research project consisted of fifth grade students (N= 56) at Our Lady Las Vegas Catholic School in Las Vegas, Nevada. The number of the students who underwent the experimental treatment was 29, while the control group consisted of 27 students. Their ages ranged between 9-11 years.

Instrumentation

A rubric was developed to assess student achievement and improvement in drawing based upon the four dimensions of drawing (see Table 1). The drawing dimensions are described more fully in Figure A below.

Data Analysis

Content analysis was selected as the most ideal method to assess data of this sort (Leedy & Ormrod, 2005). Content analysis is typically performed typically on forms of visual, verbal and behavioral human communication, such as literature, art or music. Content analysis was designed to examine systematically “the contents of a particular

Figure A

Drawing Dimensions

Drawing Dimensions	Description
Perspective	<ul style="list-style-type: none">✓ Correct position to show distances✓ Exhibits overlapping✓ Use horizon and vanishing point/s✓ Can manipulate points of view
Proportion	<ul style="list-style-type: none">✓ Shows ability to measure using visual perception✓ Ability to render accurate dimensional (special) relationship✓ Proper placement of objects in relation to other objects of the drawing
Value	<ul style="list-style-type: none">✓ High degree of control with pencil✓ Can show at least 5 tones in the value scale✓ Can blend tones
Composition	<ul style="list-style-type: none">✓ Ability to use of negative and positive space to render accurate drawings✓ Ability to use principles of design✓ Adequate use of drawing space

body of material for the purpose of identifying patterns, themes, or biases” (Leedy & Ormrod, 2005, p. 142).

Since this research dealt with collecting drawing samples to be analyzed, Content Analysis allowed for the coding of the drawing samples in terms of predetermined and precisely defined characteristics or dimensions found in a rubric (2005, p. 144).

The method of analyzing such data was the tabulation of the mean of the drawing scores of the whole class for each of the drawing dimensions. The rubric comprised a range of a grading system from one to four where “1” meant that the drawing did not meet the drawing expectations of a fifth grader; “2” meant that the student demonstrated average skills; “3” meant that the student exhibited above average skills, and “4” meant that the student showed evidence of exceptional skill. Data were recorded for each

student and mean scores were calculated for both the pretest and posttest. Finally, the differences, if any, in mean scores were displayed.

Summary

This study investigated the effectiveness of the teaching methods espoused by Edwards (1979) based upon Vygotsky's developmental theory as a theoretical framework. The research employed the pretest- posttest control group design (Leedy & Ormrod, 2005) to identify relationships between different instructional methods. The population of this study (N= 56) was divided into two fifth grade classes at Our Lady of Las Vegas School. One class (n= 29) was the treatment group (they received the instruction in innovative drawing methods), the other class (n= 27) was the control group (they were taught using the standard teaching method in drawing). A drawing rubric was used as an assessment tool to measure objectively the effectiveness of the drawing methods. The results were tallied to identify the degree of success related to the differing teaching methods employed.

Chapter 4

RESULTS

Introduction

This project sought to investigate the teaching methods of the proponents of the *Drawing on the Right Side of the Brain* (Edwards, 1979) in the elementary grades using Vygotsky's developmental theory as a guide to determine the effectiveness of the instructional approach. Specifically, the research sought to assess the success of the fifth grade students (N= 56) at Our Lady of Las Vegas School by judging their work in drawing according to the following four dimensions: perspective, proportion, value (tints and shades), and overall composition and representation of subject (Edwards, 1979 & Nash, 1997). The proposed research sought to yield tangible data and a reliable assessment on when and how to teach the four areas of drawing at the appropriate stage of student development.

The study employed the pretest-posttest control group design to identify any relationships between different teaching methods in drawing. This design allowed the researcher to identify, observe and analyze the variables affecting the treatment group (n= 29) and the control group (n= 27).

Results by Research Question

This chapter will report the results of the research project by research question:

How does teaching drawing skills using the “right side of the brain” concepts relate to Vygotsky’s theory on cognitive development and learning?

The first research question sought to determine which concepts and methods of teaching drawing skills advocated by the “*right side of the brain*” concept relate to Vygotsky’s theory on cognitive development and learning. To answer this question, a review of related literature was conducted to connect Vygotskian concepts with art lesson plans utilizing Edward’s (1979) methods in teaching drawing. This review revealed the psychological assistance that the “*right side of the brain*” provided to teach drawing effectively at an appropriate level. The terms “zone of proximal development,” “scaffolding,” and “reciprocal teaching” are the key concepts and applications of Vygotsky’s theory that have specific application to the teaching of drawing.

Since this study sought to examine the application of innovative teaching methods in terms of its appropriateness to the developmental level of fifth grade students, the innovative methods (Figure B) were compared with standard methods (see Figure C).

Research Question #2

“Will the techniques illustrated by the proponents of “Drawing on the Right Side of the Brain” theory (Edwards, 1979) be effective in teaching drawing at the elementary school level?”

To address the second research question, both the control and the experimental groups undertook the same pretest. After the preliminary drawing activity, their outputs were assessed according to the assessment rubric (see Table 1). The pretest for each student was graded numerically (a range of 1 to 4), from which means were calculated (see Table 1).

Figure B

Innovative Methods

<p style="text-align: center;"><u>Contour Drawing</u></p> <p><u>Objective:</u> Students should be able to perceive lines of an image and develop eye and hand coordination as they practice drawing.</p> <p><u>Drawing Ritual: Magic Pencil</u> This technique aimed to teach art students the “art of seeing” by having them move their eyes along the outline of the object. This activity was introduced by having them “draw in the air”; this means that they followed the movement of my finger that was moving along the outline of a particular object (guitar, music stands, etc.) with their fingers up in the air.</p> <p><u>Description of the Activity:</u> After this drawing ritual (warm-up exercise), they saw an image which looked like a chalice if you looked at the positive space, but would look like two faces if the viewer focused on the negative space (see Appendix C). The teacher then demonstrated how to draw this image using the contour drawing methodology. With the same mode as the magic pencil activity, students were made to look at the image and have their pencils move on paper along with the same direction of their eyes.</p>
<p style="text-align: center;"><u>Inverted Image</u></p> <p><u>Objective:</u> Students are able to draw an inverted image. This makes the artist suspend and disorient the logical, analytical, “left-brain” mode of their mind and allows the artistic, imaginative, “right-brain” mode to dominate. This method enables the artist to make that cognitive shift and thus see the lines and shapes clearer.</p> <p><u>Drawing Ritual: Magic Pencil and Looking at the Lines of the Inverted Image</u></p> <p><u>Description of the Activity:</u> Students are made to draw an inverted image of Richard Lindner’s “Rock-Rock” (see Appendix B). The students are allowed a practice sketch of the upside down image, then proceed to draw the image with an upturned orientation. They are not allowed to look at their works in the upright position until they finish the drawing.</p>

After the pretest, the experimental group (5A) was subjected to the experimental treatment (using the *Right Side of the Brain* methods), then assessed with a posttest of drawing the same image (see Table 2). The greater numerical value meant a higher degree of improvement exhibited by the whole class.

Figure C

Standard Methods

<p style="text-align: center;"><u>Geometric Simplification</u></p> <p><u>Objective:</u> Students should be able to interpret objects into simple geometrical shapes. All objects can be simplified among these basic shapes: Square, Triangle, Rectangle, and Circle.</p> <p><u>Drawing Ritual:</u> Breaking Down into Shapes This technique aimed to teach art students the “art of seeing” by having them simplify objects into basic geometrical shapes. Example, a guitar can be broken down into a series of circles, squares, rectangles and triangles in different sizes. They are to draw the image by dividing and decoding the graphic information into shapes. The teacher will demonstrate drawing a guitar using this concept. Students practice on their notebooks.</p> <p><u>Description of the Activity:</u> After this drawing ritual (warm-up exercise), they saw an image which looked like a chalice if you looked at the positive space, but would look like two faces if the viewer focused on the negative space (see Appendix C). The teacher then demonstrated how to draw this image using the geometric simplification methodology. With the same method as the ritual, students were made to look at the image and divide it into basic shapes.</p>
<p style="text-align: center;"><u>Box Reference</u></p> <p><u>Objective:</u> Students are able to draw an upright image by looking how lines and shapes come in and out of the paper which serves as the frame of the image. This makes the artist This method enables the artist to make the reference points on their paper corresponding to the points on the image and thus sees the lines and shapes clearer.</p> <p><u>Drawing Ritual:</u> Breaking Down into Shapes and Finding where lines enter and exit the page</p> <p><u>Description of the Activity:</u> Students are made to draw Richard Lindner’s “Rock-Rock” (see Appendix B) by breaking the image down into basic shapes. Since some of the shapes are not within the image wholly, they are taught to look at how the different lines of the image enter and leave the page. The students are allowed a practice sketch of the image, then proceed to draw the image along the orientation of the paper (namely upright).</p>

The pretest mean results were subtracted from the posttest mean results. The difference between the means reflected the degree of improvement that the whole

Table 2

Results of Pretest and Posttest

Drawing Dimensions	Pretest (Mean)	Post Test (Mean)	Difference
Perspective	2.24	2.52	+0.28
Proportion	1.86	2.42	+0.56
Value	2.04	2.41	+0.37
Composition	2.34	2.66	+0.32

experimental group garnered on each drawing dimension.

Research Question #3

Which instructional methods and techniques from this drawing school of thought will be most effective to teach perspective, proportion, value and representation to fifth grade students?

To address the third research question, “which instructional methods and techniques from this drawing school of thought will be most effective to teach perspective, proportion, value and representation to fifth grade students”?, the drawing outputs were tabulated using the rubric (see Table 1). The results were rank ordered from the least improvement to the highest improvement to determine the least effective to the most effective method based on the improvement scores of the students (see Table 3).

The record showed that perspective had the least improvement grade, of 0.28. Then, the composition dimension earned a 0.32 mark. The dimension, value, came next with a 0.37 score. Lastly, proportion had the highest status with a 0.56 ranking.

Table 3

Innovative Techniques with Improvement Scores

Innovative Techniques	Improvement Mark
Perspective “Contour Drawing” (see Figure B)	+0.28
Composition “Inverted Image” (see Figure B)	+0.32
Value “Contour Drawing”	+0.37
Proportion “Inverted Image”	+0.56

Research Question #4

Will students who employ techniques supported by Drawing on the Right Side of the Brain be more effective in drawing (based on the four dimensions of drawing) than students who are taught drawing in the standard way?

To address the fourth research question, “will students who employ techniques supported by “*Drawing on the Right Side of the Brain*” (Edwards, 1979) be more effective in drawing (based on the four dimensions of drawing) than students who are taught drawing in the standard way?” the differences in mean scores on each drawing dimension were composed. From this, conclusions on the effectiveness of the method were derived; the greater numerical value meant a higher degree of improvement exhibited by the whole class.

The results for the fourth research question are displayed (see Tables 1, 2, & 3) for both the experimental and the control groups by the drawing dimensions (perspective, proportion, value, and composition).

Perspective

A monochromatic landscape was used to test the student's ability to show perspective in drawing (see Appendix A). After the pretest was administered for 15 minutes, different drawing methods were introduced to teach this concept. For the posttest, students were then instructed to draw the same image on a larger scale for 15 minutes. All works were collected and assessed with the rubric. The judgment of the drawing outputs was based on perception and expectations of the art teacher.

The students' work was graded on a scale of 1-4 where "4" is the exceptional skill to render perspective and "1" is the lack of ability to show perspective. After all scores for the pretest was obtained, the researcher computed for the mean to present the overall achievement level of the classes. The mean of the pretest scores was subtracted from the mean of the posttest to show the general improvement score of the both the treatment and control classes. Table 1 shows the results for the pretest and posttest of the experimental and control group.

The scores of the pretest yielded a 2.24 mean score for the experimental group while the posttest mean score for this group was 2.52. The difference between the posttest and the pretest scores was a +0.28. There was not a significant improvement of the general drawing ability of the students after the alternative method was introduced.

The pretest mean score for the control group was 2.25 while the posttest score declined to a 1.88. Thus the difference the scores yielded a -0.37 which shows this decline in ability according to the rubric.

Proportion

To assess proportion, a monochromatic copy of Richard Lindner's "Rock-Rock" was used to test this ability (see Appendix B). As with the previous skill, the pretest was administered for 15 minutes to the experimental group. The different drawing methods were introduced to teach the concept of proportion. The students were then given the same time to draw the same image on a larger scale. After all works were collected and assessed with the rubric, they were computed in the same way as the previous tabulation. Table 1 shows the results for the pretest and posttest of the experimental and control group.

The scores of the pretest yielded a 1.86 mean score for the experimental group which increased to 2.42 for the posttest mean score. The difference between the posttest and the pretest scores was a .56. Again, there was not a significant improvement of the general drawing ability of the students after the alternative method was introduced.

The pretest mean score for the control group was 1.96 and their scores increased to 2.71. The difference in scores yielded a .71 improvement...an ability increase greater than the experimental group.

Value

For the skill in rendering value in the drawing, the same monochromatic landscape image was given, but this time assessed not for perspective but for rendering shades and tints. Results are displayed in Table 1.

The scores of the pretest yielded a 2.04 mean score for the experimental group which increased to 2.41 for the posttest mean score. The difference between the posttest

and the pretest scores was a .37 showing that there was not a significant improvement of the general drawing ability of the students after the alternative method was introduced.

The pretest mean score for the control group was 2.38. This shows an initial drawing level higher than the initial drawing level of the experimental group. After instruction was given for the control group, the score declined to a 1.75. Thus the difference the scores yielded a -.63 which shows an ability decrease for the control group.

Composition

Lastly, the same “Rock-Rock” picture was used to test for composition. More than looking for an accurate rendering of the image, students of both classes were asked to pay close attention to the placement of lines, shapes and tones in their drawings to achieve balance and unity in their works. Table 1 displays the results.

The scores for this pretest generated a 2.34 mean score for the experimental group which increased to 2.66 for the posttest mean score. The difference between the posttest and the pretest scores was a modest .32.

The pretest mean score for the control group was 1.96, an overall achievement level lower than the experimental group. The posttest scores slightly went up to a 2.63. Thus the difference the scores yielded a .67 which shows an ability increase greater than the experimental group.

Summary

This research was aimed to assess objectively the improvement in the drawing abilities of the fifth grade students at Our Lady of Las Vegas School used the content analysis methodology. By employing Vygotskian concepts of (a) the zone of proximal development, (b) scaffolding, (c) reciprocal teaching, and (d) cognitive apprenticeship,

this research project sought to connect and implement the methodologies appropriate with developmental issues of fifth grade children who struggle with drawing because of the process of gaining conscious control of the skills.

To assess the dimensions of drawing (perspective, proportion, value and composition), a monochromatic landscape and Richard Lindner's "Rock-Rock" was used to test for student ability. After a pretest was administered for 15 minutes, differing drawing methods were introduced to the experimental group and the control group teach these concepts. A post drawing test was then administered. All works were collected and assessed with the rubric. The judgment of the drawing outputs was based on perception and expectations of the art teacher.

The students' work was grade on a scale of 1-4 where "4" was the exceptional skill to render perspective and "1" was the lack of ability to show perspective. After all scores for the pretest was obtained, the researcher computed for the mean to present the overall achievement level of the classes. The mean of the pretest scores was subtracted from the mean of the posttest to show the general improvement score of the both the treatment and control classes.

The research yielded the following results: for perspective, the experimental group garnered a 0.28 increase in ability while the control group diminished performance by 0.37. For proportion, both experimental and control groups fostered an increase in scores, 0.56 for the former and 0.71 for the latter. For value, the treatment group earned a 0.37 increase while the control group scores declined with a 0.63 difference. Lastly, for composition, both classes gained an increase in scores, a 0.32 increase for the experimental group and a 0.67 increase for the control group.

Chapter 5

DISCUSSION AND RECOMMENDATIONS

Introduction

This project sought to investigate the teaching methods of the proponents of the *Drawing on the Right Side of the Brain* (Edwards, 1979) in the elementary grades using Vygotsky's developmental theory as a guide to determine the effectiveness of the instructional approach. Specifically, the research sought to assess the success of the fifth grade students at Our Lady of Las Vegas School by judging their work in drawing according to the following four dimensions: perspective, proportion, value (tints and shades), and overall composition and representation of subject (Edwards, 1979 & Nash, 1997).

Summary of the Project

Art classes are challenged to elevate the level of drawing skill in a diverse and complex elementary school population. Art teachers are in a position to respond to this opportunity through the application of developmentally appropriate teaching methods and innovative programs. To address this issue, Vygotsky's development concepts provided the study's theoretical framework. This study investigated the teaching methods advocated by proponents of *Drawing on the Right Side of the Brain* (Edwards, 1979) as related to drawing instruction.

This research project sought to assess the success of fifth grade students at Our Lady of Las Vegas School by judging their works according to the following four

different dimensions of drawing: perspective, proportion, value (tints and shades), and overall composition of subject. The study adopted the pretest-posttest control group design to identify any relationships between different teaching methods in drawing. It also employed content analysis, which allowed for the coding of the drawing samples in terms of predetermined and precisely defined characteristics or dimensions found in a rubric (Leedy & Ormrod, 2005, p. 144), as the means to assess the data and measure student achievement. The students' work was grade on a scale of 1-4 where "4" was the exceptional skill to render perspective and "1" was the lack of ability to show perspective. After all scores for the pretest was obtained, the researcher computed for the mean to present the overall achievement level of the classes. The mean of the pretest scores was subtracted from the mean of the posttest to show the general improvement score of the both the treatment and control classes. Table 1 shows the results for the pretest and posttest of the experimental and control group.

Discussion

This section will provide highlights, analysis and reflections of the results taken from the previous chapter. This discussion will be arranged by research question

Research Question #1:

How does teaching drawing skills using the "right side of the brain" concepts relate to Vygotsky's theory on cognitive development and learning?

Much of the drawing theory and instructional approaches advocated by Edwards (1979) correlated with Vygotsky's theory on learning and child development. Even though Edwards based her system on neurological premises, she still developed methods which corresponded to the Vygotskian sociological concepts of "zone of proximal

development,” “scaffolding,” and “reciprocal teaching” (although she had not referred her methods in these terms).

The “zone of proximal development” is defined as the distance between a child’s actual developmental level with more capable peers as determined by independent problem solving and his/her potential development as determined through problem solving under adult guidance or in collaboration (Pungthong, 2004). Edwards (1979, p. 54) suggested that that teachers give a preliminary drawing exercise to gauge student drawing ability (a sort of pretest- posttest control group design to identify relationships methods in drawing and level of improvement). Thus, to measure the zone of proximal development using her methodology, the actual research design this study used served as the measured of the student’s actual developmental level in drawing compared with peers, and the posttest served as the determining factor to measure potential development as determined by guidance or collaboration.

This framework was intended to help in obtaining an overall assessment, both of the child’s actual abilities, measured through a completed task (individual performance), and the child’s potential abilities, which are measured during the ongoing process of development with peer assistance (Pungthong, 2004, p. 32).

The concept of the zone of proximal development forms the framework for this project to determine the suitability and the success of various innovative teaching methods as it looks into the interplay between the child’s level of development and a particular instructional method. The focus of this framework is achieving “consciousness and control,” wherein the process “begins with an adult providing the learner with a vicarious form of consciousness until the learner is able to master his/her own action through his/her own consciousness and control” (Pungthong, 2004, p. 32). The

methodology utilized in this research helped determine this zone because it provided the “adult,” in this case the art teacher, with an understanding of the state of “consciousness and control” of the students in drawing.

Furthermore, this research study demonstrated how “scaffolding” was evident in the following strategies used in instructional procedure. These were the techniques which can be described as various forms of support provided by a teacher or expert. The first strategy used to teach drawing was a teaching method called “Contour Drawing” (see Figure B). The second drawing strategy was “drawing an upside-down image” (see Figure B). This form of scaffolding purportedly helps student see an image in a different way which causes the left-hemisphere of the brain (in-charge of logic-analytic mode) to relegate the drawing endeavor to the right-hemisphere of the brain (directing the creative-artistic mode). Thus, the artistic mode took predominance over the analytic to better perceive and draw the image.

Presumably, the left hemisphere, confused and blocked by the unfamiliar image and unable to name or symbolize as usual, is turned off, and the job passed over to the right hemisphere. Perfect! The right brain is the hemisphere appropriate for the task of drawing. Because it is specialized for the task, the right brain fin& drawing easy and enjoyable. (Edwards, 1979, p. 55)

Reciprocal teaching involves the teacher and students exploring technical problems in drawing and then sharing their different problem solving strategies in an open dialogue. Due to the brain research which were available and presented by Edwards (1979) to enhance and enrich drawing instruction, the students in the research were inquisitive on “why do we have to draw without looking at the paper?” or “why do we draw the image upside down?”. The teacher would then lead them to the right side- left

side brain theory which offered insights on how students learn in different modes depending on the activity presented. Edwards applied this theory to her pedagogy to give a scientific, neurological approach to drawing. The innovative strategy paved way for more understanding of one's cognitive and neurological make-up by unconventional practices. These drawing methods produced some discussion among students about the workings of the brain and its different modes, and how knowledge of this may provide guidelines on improving the skill of drawing.

Research Question #2:

Will the techniques illustrated by the proponents of “Drawing on the Right Side of the Brain” theory (Edwards, 1979) be effective in teaching drawing at the elementary school level?

The mean scores for the posttests of the experimental group indicated positive fractional increases in all four dimensions of drawing. The general population of the experimental group had a slight increase in ability when the “right brain” methods were introduced. Yet, it is not a definite reflection of the effectiveness of the methodologies themselves because, first, the analysis was dependent upon using the difference in mean scores. Therefore, group mean scores are an inaccurate picture of improvement rate of individuals. In fact, not all students improved. Most individual students maintained their drawing ability at the same level. Secondly, the results indicated the quality of output (namely, drawing samples) but not the level of engagement. This means that this research only considered the assessment of the products of the teaching methods, but did not measure the effort and working attitudes of the students. Observations on the drawing exercises and practices were indeed made but not measured or assessed.

Research Question #3:

Which instructional methods and techniques from this drawing school of thought will be most effective to teach perspective, proportion, value and representation to fifth grade students? Among these dimensions, which areas will the fifth grade student be successful in learning using the experimental approach?

Among the methods used to teach the different dimensions of drawing, the most effective instructional method was the method used to teach proportion. Drawing an inverted image was truly innovative and uncommon which had drawn out and awakened the artistic and creative mode of the students. As Edwards (1979) had mentioned it, this method suspends and disorients the logical, analytical, “left-brain” mode of the viewer and allows the artistic, imaginative, “right-brain” mode to dominate. This method enables the artist to make that cognitive shift (1979, p. 55). This was effective in drawing with good proportion because the students were not overwhelmed in trying to decode the visual information and attempt to illustrate the image realistically on to paper. They became conscious simply of that lines and shapes that make up that picture. Thus, greater proportion is achieved simplifying the process of interpreting visual information in drawing. Indeed, this shift “enables you to see in the way a trained artist sees, and therefore to draw what you perceive” (Edwards, 1979, p. 56).

Research Question #4:

Will students who employ techniques supported by “Drawing on the Right Side of the Brain” be more effective in drawing (based on the four dimensions of drawing) than students who are taught drawing via the standard techniques?

On all four dimensions, the innovative teaching strategies were more successful in showing greater improvement in drawing than the standard methods. Though the experimental group yielded only a fractional amount of improvement, they have sustained their progress over time. The control group, on the other hand, has provided evidence that they have declined moderately in achievement when some of the standard methods were introduced.

On two counts, the overall achievement mean of the control group decreased in small fractions. The difference of the pretest and posttest mean scores after the methods in teaching perspective and value the standard way obtained negative results (see Table 1). These negative results maybe attributed to two reasons: first, the standard methods (see Figure B) were detrimental to drawing success for this sample because it might be not suited and appropriate for their current developmental level; and secondly, the methods actually might have deviated from the desired objective to have students draw realistically and accurately what they see. Since the standard method was to have students simplify the visual stimuli (see Appendix D) by breaking the image down to simpler geometrical shapes, their lines and shapes tended to be very straight and angular when in fact they had to be curved and rounded because the image was a natural landscape (see Appendix A). They were, in fact, good and obedient art students who followed the instructions, but the teaching methods did not suite the learning objectives.

Limitations of the Study

The following limitations emerged from this project as follows:

1. The research time constraints did not allow for the collection of data over time. Progress in drawing requires practice and more practice. More time opens

- opportunities for Vygotsky's reciprocal teaching to take place. The drawing results collected were immediate products of one drawing session. Most of the other limitations of this study stems from this constraint.
2. There was a limitation in the assessment tool. The rubric and the data analysis were designed to make the evaluation more objective. However, the drawing pretests and posttests were assessed by a single teacher, thus open to bias and subjectivity. Subjectivity is an integral element in making critiques and appraisals in art appreciation. All assessment grades were given by the teacher with personal perception, philosophy, and aesthetic standards.
 3. There was a limitation in data analysis. The levels of student engagement were not assessed. The effectiveness and the success of the method were evaluated solely on drawing outputs. The learning process, student effort and attitudes were not measured in this research.
 4. The study was restricted to the 5th grade population. It could be presented to the 6th, 7th and 8th grade population of the school. The middle school might benefit from this innovation as the developmental stages of middle school students might lend themselves more fully to these innovative instructional practices.
 5. "*Drawing on the Right Side of the Brain*" (Edwards, 1979) championed many other methodologies on teaching these dimensions. Further research investigating these techniques could be helpful.

Implications

Drawing as an art form often times serves not the end in-itself but a means to produce other art forms such as painting, sculpting, printmaking, fashion, advertisement

animation, graphic designing, and even film. But drawing is an indispensable tool in producing these other art forms. Children appreciate exceptional illustrations from the comic books they read, the animated shows they watch, and the popular video games they play. These graphic communication media draw out children's interest in art.

Art educators are encouraged to continue looking for other ways to stimulate students in this discipline and enrich the pool of available drawing instructional systems. Further, art teachers are encouraged to expand their database and stay current with developments in brain research and technologies that enhance and promote the visual arts. Finally, art educators are encouraged to hold fast to the disciplines and traditions inherent in art and to be cognizant of the treasures of art history and precedent theories to develop a deeper appreciation of drawing and its processes.

This research may be a valuable reference in three ways. First, it provided a connection between educational practices espoused by Vygotsky to teach developmentally appropriate lessons and neurological studies that correspond to the artistic and creative aspects of education. Secondly, this project provides preliminary insights on how to evaluate the success of the drawing strategies advocated by Edwards. Finally, this study contributed to available studies and insights made on the development of children in art.

Recommendations

Recommendations to improve this study are as follows:

1. The time frame to conduct such a research should be extended. It would be more beneficial to observe and analyze results of this nature over a period of time that

- measures the progress of the students from fifth grade until they graduate eighth grade.
2. To validate the assessments for the drawing samples, it is suggested that a panel review and evaluate the art works instead of one person. Subjectivity will be minimized when a consensus of opinions and biases is achieved.
 3. The engagement levels and the learning processes of the students should be considered and assessed in future studies. The innovative lessons proved to motivate and draw enthusiasm from the students than the standard methods. Student involvement is truly an important aspect in this discipline because it paves the way for molding lifelong learners. Innovative methods usually produce a “halo effect” on students, wherein new things rouse the curiosity and interest of students. This elicits more student engagement than activities and exercises which are ritualized.
 4. Those who might consider conducting similar research should consider different grade levels to determine the right age at which it is appropriate and effective to start teaching drawing using these methods. It might be possible to introduce the methodologies as early as third grade and move up to the eighth grade.

Chapter Summary

This chapter presented an overview of the this research project, the discussion of the results obtained from the experiment, the limitations of the study, the implications of this research to the field of art education, and the recommendations for further study on the subject. The research evaluated the effectiveness of “*Drawing on Right Side of the Brain*” teaching methods developed by Edwards (1979) employing Vygotsky’s

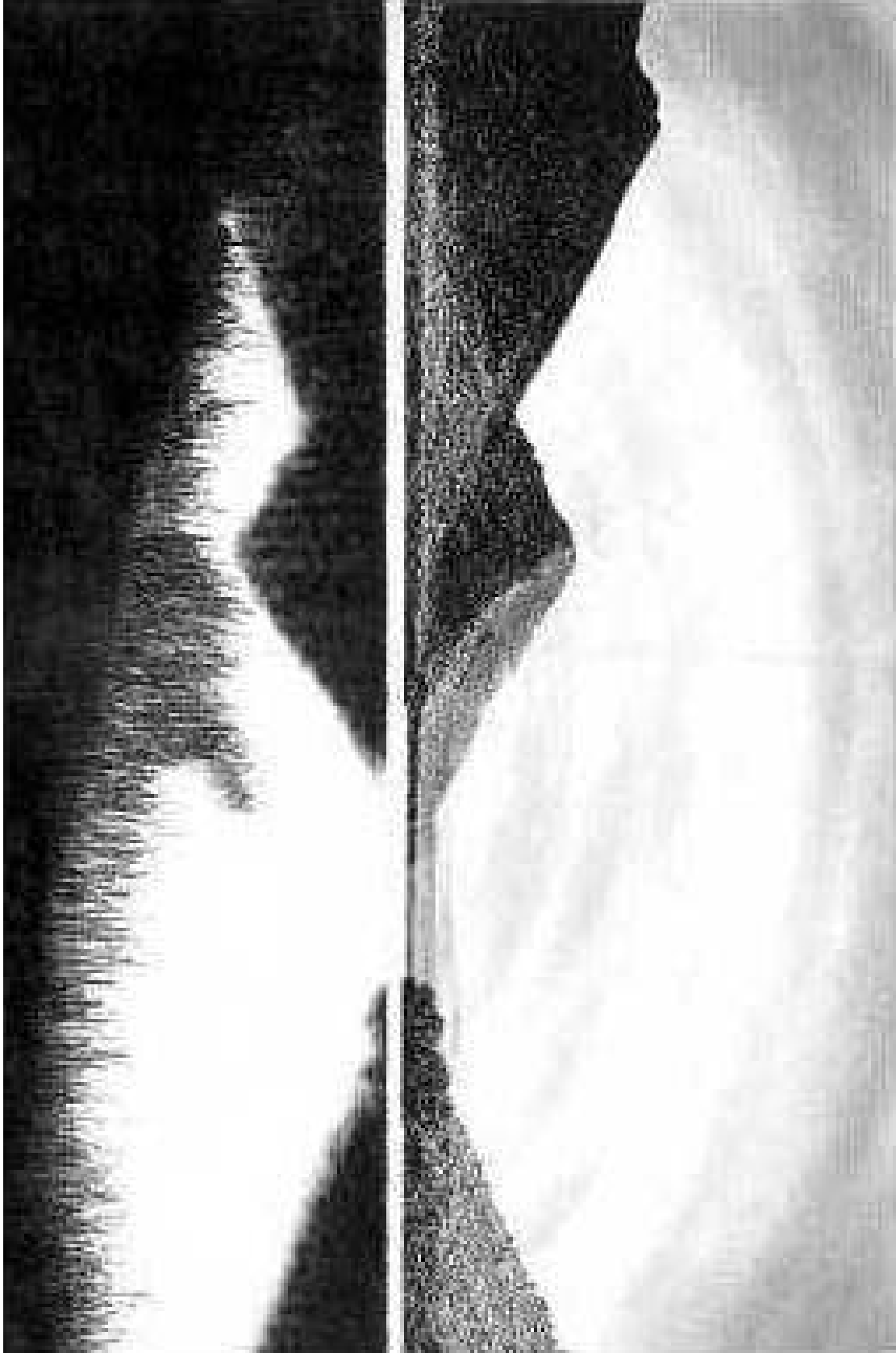
developmental theory as the theoretical framework. The methodology employed was the pretest-posttest control group design. The results presented a small amount of overall progress in the four dimensions of drawing which might have been affected by the time factor and the subjectivity of its assessment. The study ends with recommendations to extend the time frame to validate any conclusions, to form a panel to assess the drawing outputs to minimize biases, and expand the population and consider a wider range of students at different developmental levels.

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APPENDIX A

Monochromatic Landscape



APPENDIX B

“Rock-Rock” by Richard Lindner



APPENDIX C

Cup/ Faces

