

EFFECTIVENESS OF THE DISCOVERY METHOD USING
INDIGENOUS MATERIALS IN TEACHING ART
EDUCATION AMONG GRADE VI PUPILS

A Thesis

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the Faculty of Graduate School
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In Partial Fulfillment

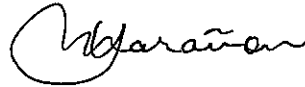
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Master of Arts in Physical Education

ROSABELLA Q. MARAÑON

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APPROVAL SHEET

This thesis entitled "EFFECTIVENESS OF THE DISCOVERY METHOD USING INDIGENOUS MATERIALS IN TEACHING ART EDUCATION AMONG GRADE VI PUPILS," has been prepared and submitted by ROSABELLA Q. MARAÑON, who having passed the comprehensive examination is hereby recommended for Oral Examination.



YOLANDA M. MARAÑON, Ph.D.
Adviser

Approved by the Committee on Oral Examination with a rating of PASSED.



EUSEBIO T. PACOLOR, Ph.D.
Chairman



SIMON P. BABALCON, JR., Ph.D.
Member



JOSE S. LABRO, Ph.D.
Member



Prof. MIRIAM M. CASURAO
Member

Accepted and approved in partial fulfillment of the requirements for the degree
MASTER OF ARTS IN PHYSICAL EDUCATION.



EUSEBIO T. PACOLOR, Ph.D.
Dean of Graduate Studies

March 19, 2003
Date

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D E D I C A T I O N

This academic achievement is heartily

dedicated to my beloved parents,

ANTONIO R. MARAÑON and

EDUVIGES Q. MARAÑON;

to sister, Iday, to my brothers, Arnel,

Bombom, Jose, Ariel, Anthony,

to my newphews, Camille, Joseph,

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BELLA

ABSTRACT

This study aimed to determine the effectiveness of discovery/exploratory methods in teaching Art Education using indigenous materials in the elementary level for District II Alangalang, Leyte. This is an experimental type of research with the use of Pretest and Posttest Written and Practical/application type of test. The art education academic achievement of the control group significantly differed when they are classified according to sex. However, when grouped according to age and grade, the academic achievement of the two groups of subjects did not differ significantly. The mean ratings of the experimental group in the effectiveness of discovery/exploratory method ranged from 3.90 to 4.73 with a grand mean of 4.40. This results implied that the pupils “agree” with how the discovery method was used in teaching art education using indigenous materials by the experimental group. The experimental and control groups had more or less the same level of entry behavior on the basis of their sex, age, and grades in art education and pretest mean scores. This meant that the experimental was free from bias on the basis of the results arrive at. At the end of the experiment, the two groups had the same level of performance. Discovery/exploratory method and the use of lecture-discussion method resulted in a better academic performance in art education as attested by the gains from pretest to the posttest results. Hence, the use of any of the teaching methods in teaching art education was effective. Discovery/exploratory method as an effective tool in improving their performance in art education using indigenous materials.

TABLE OF CONTENTS

Title Page	i
Approval Sheet	ii
Acknowledgment	iii
Dedication	vi
Thesis Abstract	vii
Table of Contents	xv

<u>Chapter</u>		<u>Page</u>
1	THE PROBLEM AND ITS BACKGROUND . . .	1
	Introduction	1
	Statement of the Problem	5
	Hypotheses	6
	Theoretical Framework	7
	Conceptual Framework	9
	Significance of the Study	11
	Scope and Delimitation	13
	Definition of Terms	16
2	REVIEW OF RELATED LITERATURE AND STUDIES .	21
	Related Literature	21

<u>Chapter</u>		<u>Page</u>
	Related Studies	29
3	METHODOLOGY	40
	Research Design	40
	Instrumentation	43
	Validation of the Instrument	45
	Sampling Procedure	49
	Data Gathering Procedure	50
	Statistical Treatment	52
4	PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA	54
	Profile of the Subjects	54
	Pretest Results of the Experi- mental Group and the Control Group	56
	Pretest and Posttest Results of the Experimental Group	59
	Pretest and Posttest Results of the Control Group	59
	Posttest Results of the Experi- mental and Control Group	62
	Posttest Results of the Experi- mental Group According to Age	65
	Academic Achievement of the Experimental Group According to Age	65

<u>Chapter</u>	<u>Page</u>
Academic Achievement of the Experimental Group According to Grades	68
Academic Achievement of the Control Group According to Age	68
Academic Achievement of the Control Group According to Sex	71
Academic Achievement of the Control Group According to Grades	72
Pupils' Evaluation in the Discovery/Exploratory Method at the End of the Experiment	74
5 SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	77
Summary of Findings	77
Conclusions	79
Recommendations	80
Bibliography	82
Appendices	85
A Request for Approval of Research	85
B Application for Assignment of Adviser	86

C	Request for Permission to Conduct Try Out	87
D	Talahanayan ng Ispisipikasyon	90
E	Pre / Posttest sa Sining VI	91
F	Questionnaire	95
G	Computations	97
	Curriculum Vitae	111
	List of Tables	114
	List of Figures	115

Chapter 1

THE PROBLEM AND ITS SETTING

Introduction

Art as a field of study in the elementary school can either be beneficial or harmful to the learners. Learning-wise, what determines in no small measure is the value of art instruction which goes with the teaching method employed. Faulty teaching can create in children a thorough dislike for art that may remain with them for the rest of their lives. The feeling that any artistic activity is wasted effort; the resentment against original thought in all forms of artistic endeavor from architecture to literature; and the sense of insecurity when called on to make choices involving aesthetic judgment or taste - these are but a few of the possible effects of faulty teaching. Added to these yet maybe the risk of a thorough disrespect of the learners for the school that forces a subject in which they can see no value and find no personal challenges, or from which they derive no learning of lasting worth. Likewise, as a result of inappropriate teaching methods, many teachers in the past have experiences regarding "discipline problems" during art

sessions due to their own insensitivity to children's preferences in materials and subject matter.

One of the most obvious characteristics of present day art education is the belief of teachers in the creative ability of all children. While in the past, the ability to create was usually thought to be an attribute of only a few learners, primarily those having artistic talent. Thus, Killpatrick (1983:87), stated that creativeness is no longer considered a special ability reserved for gifted minority nor assigned to a limited number of human activities. In his point of view, creativeness is a characteristic of all learning although it differs in degree from one situation to another. Creativity is present in any novel situations that people continually face in life. Therefore, everyone can and indeed must be creative to live a normal life.

Gardner (1986:271) have produced a wide range of research on how to develop creative ability in children vis-à-vis art program. It was generally felt however that besides their study findings, attempts to apply some of their conclusions for elementary art program should be given more concern. Probably no other phase of the present-day art program has caused more controversy than

the beliefs of teachers concerning the acquisition of skills and the importance of these skills in expressive arts. On the other hand, Gaitskell (1989:25) says that the learners may be enthusiastic upon it because of its influence to the whole atmosphere of the school, and to other fields of study that may seem to benefit by its good effects. Value-wise, their thinking becomes more livelier for them to take greater interest and pride for both their school and in themselves.

Like any other subject, art requires teachers to gain specific knowledge and skills in art design, acquaintance with professional art works and some abilities to use materials such as paint, wood, clay, and use of indigenous materials. However, a competent teacher though must also gain knowledge, skills and broad appreciation of art education as not different from the general school program which involves classroom management and control, discipline, evaluation of lessons, assistance of pupils and general appraisal of the success of education.

It is in this premise, therefore, that the researcher was motivated to conduct an experimental study in teaching art education among intermediate pupils apart from the usual ready-made materials as stipulated in lesson source

book, hence using some indigenous materials for innovative teaching in art education. With the use of indigenous materials, children's expenses may be cut down to minimal for arts' daily activities besides availability of materials in abundance inside/outside the school campus enough to motivate their eagerness to learn and eventually develop their skills in art design.

Specifically, the researcher observed that teachers in District II Alangalang, Leyte met various problems particularly in art teaching. They find difficulty in acquiring thorough knowledge, understanding skills, and abilities in art instruction especially that they are not even major nor minor in this field of specialization.

The establishment of goals is perhaps the most complex task of teachers teaching art education VI because it represents the articulation of their philosophy as it relates to their own knowledge of the children's capacities and desires. In addition to this difficulty, teachers must take into account such consideration as class size, budget for materials and scheduling.

With this observation, an innovation in teaching arts inexpensively and effectively comes into the mind of the researcher for her to be motivated to conduct an

experimental study in teaching arts using the indigenous materials for intermediate pupils in District II Alangalang, Leyte.

Statement of the Problem

This study aimed to determine the effectiveness of discovery/exploratory methods in teaching Art Education using indigenous materials in the elementary level for District II Alangalang, Leyte. Specifically, this study seeks answers to the following questions:

1. What is the profile of the pupils of the control and experimental groups as to the following attributes:

1.1 age;

1.2 sex; and

1.3 grade in Art Education V?

2. Is there a significant difference between the control group and the experimental group with respect to their mean scores in the pretest?

3. Is there a significant difference between the pretest and posttest means score of the experimental group and control group?

4. Are there significant differences among the academic achievements in art education of the experimental and control groups classified as to:

4.1 age; and

4.2 sex?

5. Is teaching art education using indigenous materials appropriate among elementary pupils in District II Alangalang, Leyte?

6. Based on the findings of the study, what instructional redirection can be formulated in teaching art education?

Hypotheses

This study attempted to test the following null hypothesis:

1. There is no significant difference between the control group and the experimental group with respect to their mean scores in the pretest.

2. There is no significant difference between the pretest and posttest mean score of the experimental and control group.

3. There are no significant differences among the academic achievement in art education of the experimental and control group classified as to:

3.1 age; and

3.2 sex.

Theoretical Framework

In order that teaching and learning situation becomes effective Gregorio (1976:8) reminding the famous dictum of Froebel that "all learning comes through self-activity," gave expression to a principle that has predominantly influenced the development of modern schoolroom practice. Self-activity is a great and fundamental principle in all education. This principle underlies all forms of learning, whether the directed outcome be knowledge, ability, habit, skill or attitude. Purposive teaching seeks to control all phases of learning experience in order that outcome may be desirable and as valuable as external direction can make them. Method of teaching must find their psychological principles and must correspond to the normal types of mental and motor responses through which learning is regularly achieved. So that learning may be most productive, the teaching procedure or method must be the best ... the emphasis in all teaching should be upon the learning process and not upon the subject-matter. It is the work of the teacher to stimulate the thinking power of the learner to react effectively to the subject-matter ... (Shein, 1988:122).

Ackermans (1990:154) ideas on the "Discovery Method" of teaching were applied by one of the authors in a research project in art appreciation, whereby this teaching method led the children to discover for themselves a system of criticism. The children were shown four reproductions and were asked to name the differences they could detect among the works. They thus began with an achieved consensus, that the four pictures shown were obviously different in many aspects. As various differences were noted, the teacher wrote them on the blackboard, setting them down in columns according to whether they related to materials, subject, meaning, form or style. During the "discovery" discussion the teacher translated the crude vocabulary of the class into a vocabulary for criticism, adding some important characteristics that had been missed. The discovery discussion laid the groundwork for subsequent lessons. The "materials" columns provided the background for a visiting artist to demonstrate the difference between oil and water colors; the "meaning" classification prepared the class for a lesson in comparison of styles, in which they were shown a variety of paintings, each of which took a different stylistic approach to the same theme.

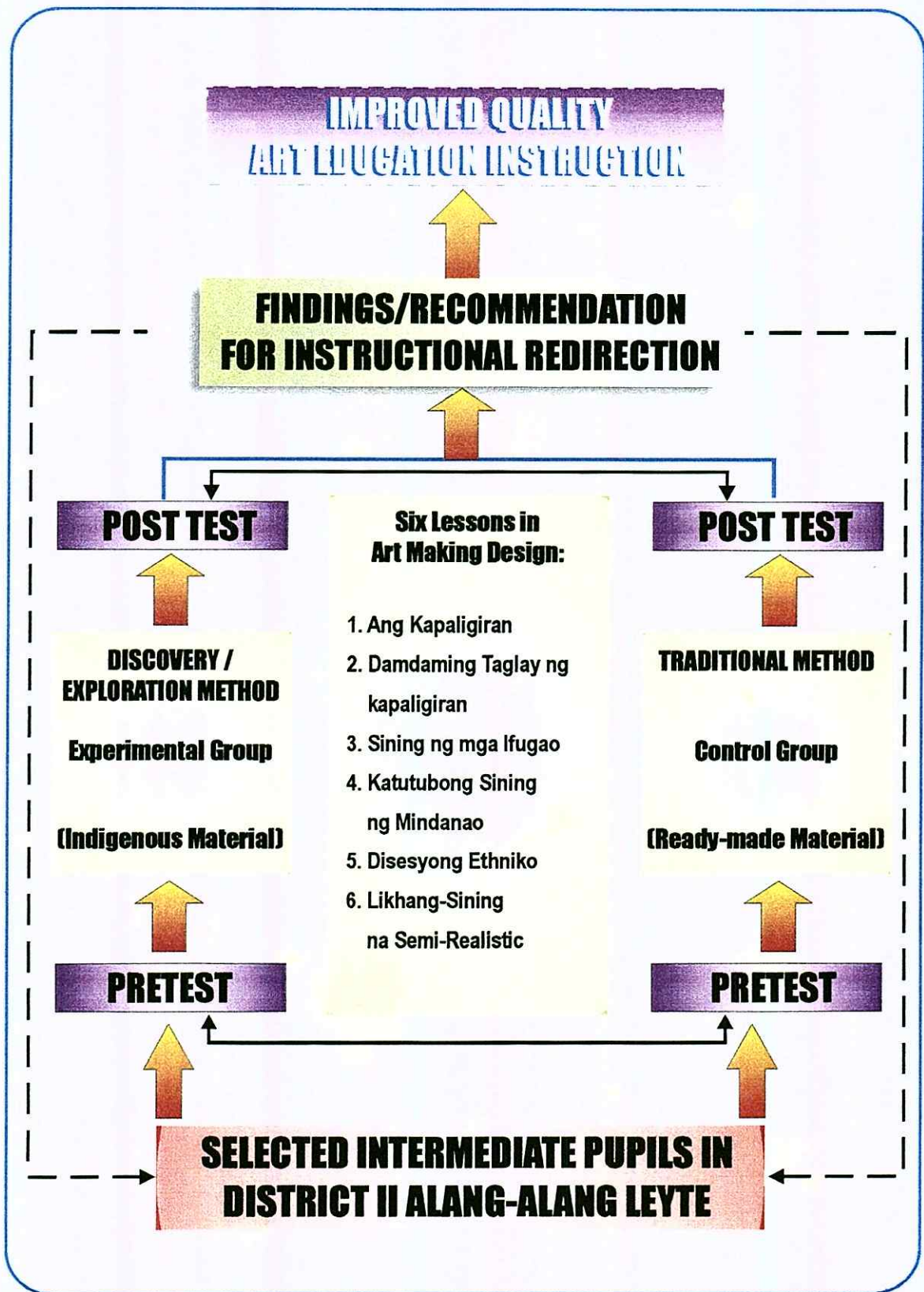


Figure 1. The Conceptual framework of the study.

level of performance achieved by each group. This was subjected for treatment according to age, sex, and the rating in Art Education V in determining the significance of the study.

The dependent or outcome variables were the actual performance of the pupils daily art activities using the ready-made and indigenous materials in making arts design which were deemed affected by the independent or treatment variable.

The findings of this study provided the researcher inputs in the formulation of instructional redirection and in turn led to the ultimate objective of the study which was improved quality art instructions.

Significance of the Study

This study would be of great use to the pupils, teachers, administrators, curriculum planners, and future researchers.

To the Pupils. Whatever instructional redirection that would come out as a result of the study would mean better learning process on the part of the pupils. From the instructional redirection would evolve better strategies and better teaching-learning situation for both pupils and teachers.

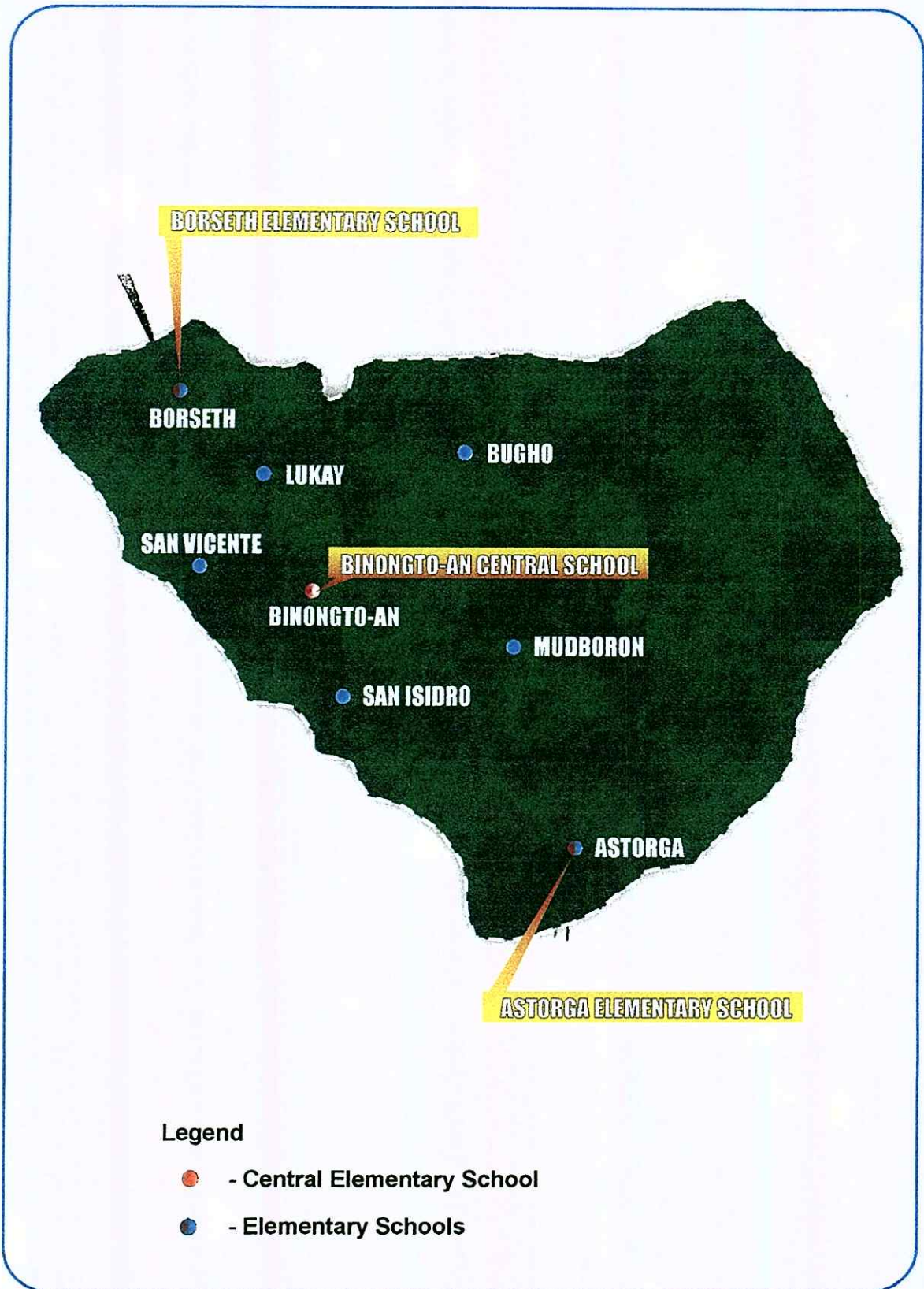


Figure 2. Alang-alang District II Municipality of Alang-alang Leyte showing the location of the respondents schools.

Realistic, Edukasyong Paglalakbay, Hanapin ang Palatandaan, Tatlong Dalubhasa at Makabagong Sining na Pilipino which covers the fourth grading period. Lessons in art making design was chosen for the effectiveness of Discovery/ Exploratory method using the indigenous materials.

There were six lessons in art making design to be experimented applied for the practical-application test: 1) Ang Kapaligiran; 2) Damdaming Taglay ng Kapaligiran; 3) Sining ng mga Ifugao; 4) Katutubong Sining ng Mindanao; 5) Disenyong Ethniko; and 6) Likhang-Sining na Semi-Realistic. Pupils were made to choose at least two art design using the ready-made materials for the control group, and indigenous materials for the experimental group in art making design. This study was conducted during the school year 2002-2003.

Definition of Terms

In order to have a common understanding and reference for the terms used in this study, the following are defined:

Art. The term refers to the power of performing an action acquired through study, observation or experience. These include music, dance, dramatics, painting, drawing (Halsey, 1980).

Art Education. This term refers to the idea that the school must be a place where pupils go, not merely to learn, but to carry on a way of life (Killpatrick, 1983).

Control group. This refers to a group of forty (40) Grade VI pupils from three (3) selected complete elementary schools in District II Alangalang, Leyte, who were taught using the traditional Lecture-Discussion/Application Method of teaching using the ready-made materials for art design.

Discovery/Exploratory Method. This is sequential series or challenges and observation that lead towards an understanding of predetermined objectives (Gregorio, 1986). In this study, children are encouraged to use their creative powers to discover and explore their knowledge and skills in creating art design by using the indigenous materials.

Effectiveness. As used in this study, this term refers to the effectiveness of pupils for artistic creativity in exploring and developing their skills and talent in art designing.

Experimental group. Conceptually, this term refers to groups that was exposed to the treatment under consideration (Herrin, 1987). Operationally, this term refers to a group composed of forty (40) Grade VI pupils

with whom Discovery/Exploratory method of instruction was utilized using indigenous materials for art making design.

Indigenous materials. This term refers to the materials originating in the locality (Webster, 1985). As used in this study it is the indigenous materials used for art design available within the locality abundantly found.

Instructional materials. As used in this study, the terms refers to the organized and sequence lesson in grade VI continue to create arts activities to their imagination and feeling and explore their knowledge and skills to practice in making art design.

Posttest. Generally, posttest refers to a test given after the introduction of the experimental factor or project (Herrin, 1987:39). In this study this refers to a twenty five multiple type of written test and fifty (50) points for practical/application test administered to the experimental and control group after the experimentation. This was done to evaluate pupils' performance through the total application of knowledge/skills and attitudes that have been sequenced from the Sining Book VI. The content of this test were the same as those of the pretest.

Pretest. This term means a test given before the introduction of the experimental factor or project (Herrin,

1987:39). In this study, this is a diagnostic test composed of twenty five (25) items multiple type of written test and fifty (50) points for practical/application test, administered to both the experimental and control groups before the start of the experiment designed to determine the entry behavior of the two groups.

Proficiency level. An advancement level of the pupil's attainment of a high degree of knowledge and skills (Harris, 1985:198). As used in the study this refers to the highest achievement of pupils rating in their performance in art making design.

Skill. This is defined as any pattern of performance (Gove, 1986:308). In this study, it means the creativeness of developed skills to discover and explore their thinking skills in art making of the intermediate pupils using ready-made and indigenous materials.

Strategy. This refers to the methods/techniques used by the teacher in carrying out the plan of a lesson or activity (Gregorio, 1987:305). In this study, Discovery and Exploratory Method of teaching is used.

Traditional approach. Conceptually, this refers to the use of an inherited or established way of doing things (Gove, 1986:224). As used in this study, this term refers

to the lecture-discussion application method of teaching art education in the elementary level particularly the Grade VI pupils using the ready-made materials stipulated in the Sining Book VI.

Chapter 2

REVIEW OF RELATED LITERATURE AND STUDIES

To enrich this study, the researcher gathered relevant ideas in reading books, magazines, unpublished thesis and other materials and documents that give substance to this study.

Related Literature

In order to provide the researcher with adequate background and insights into this inquiry, she explored a lot of related literature. The following were deemed significant and useful.

The National Art Education Association's of U.S.A. publication seems to have greater confidence in the role of the classroom teacher (Packwood, 1987:89) it states:

"many people considered that it is the classroom teacher who knows the child and can best relate art experiences to the other areas of learning that the child is encountering in his daily program. They feel strongly that through such relationship and understanding, art becomes a means of expression and communication which is needed for every other learning experience in the daily class program."

Hess (1985:124) pointed out that young children learn mentally as they do things physically. In the art program,

a child learns many important concepts or ideas that are used later in other learning experiences. Art activities give the child a chance to learn through the use of the body, senses and mind. The child learns important concepts like hard-soft and same-different by doing artwork. Artwork helps in developing a child's mental abilities: learning to think in terms of change (reversibility), being able to see differences, and being able to hear and listen well. Finally, art helps the child develop a creative mental attitude, which will be applied to all school subjects. Art is an attitude that cannot and should not be separate from the total elementary program.

Perhaps the most obvious characteristic of art is that it is the result of forming, or making. Anyone who attempts to form or make anything is an artist in embryo. As one writer puts it "We are no longer sure of what a work of art is in an objective way. As we become unsure of standards, the finished work of art diminishes in importance while the artist becomes increasingly more interesting and important. Art becomes what an artist does, not what he makes" (Weller, 1988:58).

Harris (1986:212) feels that every elementary school should have at least one person trained in the visual arts

who can give leadership and assistance to the program. This person will be in position to contribute a great deal to the effectiveness of the school in general and to become a unifying force (Hastie, 1988:84). Even if every elementary school were suddenly to be allotted its own art teacher, however, there would still be the problem of finding hours in the week for each child to be reached by his single specialist. The realities of the situation are such that, at best, the classroom teacher will serve as a partner to trained art personnel in planning and will take on a significant share of the program.

Cheney (1984:78) has offered a number of examples demonstrating the disastrous effect that unnecessary restriction has on artist's output. He mentions the Chinese, who, with their passion for regulating design, did not escape the cramping effects that attend the codification of rules related to composition. Cheney also cites the codification of the rules of architecture by Vitruvius originally written in the first century A.D. These rules were discovered and enthusiastically adopted by the architects of the renaissance until he maintains that until the second decade of this century, submission to the

classic mode of architectural design seriously impeded the development of a creative building art based on human need.

The more immediate forebears of twentieth-century art were a group of painters known as the Postimpressionist because of their close relationship to the earlier movement. The most significant of these artists were Vincent Van Gogh, Paul Cezanne, Paul Gauguin, and Georges Seurat. These four men, all highly individualistic, contributed their own distinctive perceptions of art to those who were to follow. The vivid, emotionally charged works of Van Gogh left their mark on the Expressionists; the broad, flat tones of Gauguin were to find echoes in the work of Henry Matisse; and the construction of form in terms of planes undertaken by Paul Cezanne opened the door to Cubism, perhaps the most revolutionary of twentieth-century styles. Cezanne refused to limit his vision to the forms given by the tradition of painting and thus examines the structure beneath the outward aspects of objects. He invited viewers to study his pictorial subjects from multiple points of view and made the space between objects as meaningful as the objects themselves. Cezanne rejected the hazy softness of Impressionism and applied his paint in clearly articulated flat strokes of color, which appeared

to literally build his paintings as one small passage led to larger areas. This method of organizing the structure of painting unified the entire work into a "fused, crystallized unit, within which the shapes and colors work together" (Wasserman, 1985:66).

Wrightstone (1985:198) pointed out that certain evaluation techniques have been employed in art education. Standardized measuring devices for the production and appreciation of art are available. Teachers also devise what are known as objective and easy-type examination to test various aspects of the art program. Anecdotal records and observational techniques are used, as are checklist, interviews, and cumulative records. If experts in the science of testing are available presumably even the "projective" techniques or self-descriptive personal reports, and the "sociometric" methods of evaluation, which reveal information about the structure of social groups including the leaders and isolated children they contain, might be used in an art program.

The decade between 1920 and 1930 witnessed extraordinary attempts to develop standardized test to discover children's abilities both to produce art and to appreciate it. High hopes were held for the success of

these tests. Thousands of children were involved; each child a scientific indication of the ability to produce or to appreciate art forms was often set down. By the beginning of the 1930's however, those particularly interested in art education began to question the accuracy of the tests. Statements such as the following by Tannahill (1986:208), began to appear:

Of all the tests in art, which have been published the most successful ones have to do with the testing of art appreciation. It is difficult, however, even in this field to reach an agreement of opinion among the art teachers and connoisseurs because personal taste and styles are changeable factors and artists have more or less prided themselves upon their non-adherence to a rigid standard rather than upon their adherence to one. This is true especially of creative expression where the individuality of the artists, whether child or adult, is so important. It would seem that any attempt to test ability to create futile. What may be a creation to one is not necessarily a work of art to another.

Chase (1987:103), mentioned the Linear Drawing Program that around 1850's a type of work that in some respects might be considered the beginning of school art appeared in several European and American institution of learning. This work was usually called "linear drawing," and although it did not include expressive work, it involved some of the media associated with art. At first, linear drawing

consisted for the most part of map-making, but time went on the content of the program was broadened. By the 1880's included map drawing and the delineation of common objects on paper, slates and blackboard, by which advanced pupils might master the intricacies of linear perspective.

The view that art must be identified with concepts of beauty is of limited extent in the history of world art. As Read (1989), points out, it probably arose in Greece as the offspring of a humanistic philosophy of life, was inherited by Rome, and was revived by the renaissance.

Lansing (1986:58) refers to the problem of goal classification when he states:

Another thing that makes the formulation of goals difficult is the fact that some of them must be cognitive, while others must be affective and psychomotor. In other words, youngsters must know and understand certain things about art; they must have relevant attitudes and values; and they must possess certain skills. Their knowledge must cover life in general artistic procedures, composition, art, history, and aesthetics. Their attitudes must include an interest in the making and appreciating of art, confidence in their own ability to make and appraise art, tolerance of the various forms that art might take, and a willingness to work hard. And their skill must center around efficient manipulation of art tools and materials.

In kindergarten and in the first six grades of elementary school is common for the classroom teachers to

be responsible for their own art program and for the children to perform art activities in their own homerooms. The generally accepted practice of teaching art in the children's regular classroom, while not entirely convenient in all situations, has much in its favor.

Art activities in the elementary school, especially in the lower grades, should take place immediately following the motivation phase. In a situation where a special art room is provided, children who are ready to express themselves through art may be denied the opportunity the special room is occupied by another class. When the regular classroom is used for artwork, however, expression may occur as the occasion demands. By using the homeroom, moreover, the teacher tends to have greater control over the supplies and equipment required for work in art.

Teaching arts as a subject is not an easy ask. Teachers teaching art education in the elementary and secondary schools lacks knowledge of the fundamental of arts making design and the "how" on the methods of teaching art to the children. Methods and techniques in teaching art is one of the most important phases of art education evaluation. Innovations have been made on methodologies of teaching arts suited to the child skills, interest and

abilities. These methods, however are expected to help solve the problems of art education. There are current approaches and methods of teaching art education which most teachers desired much more from their professional knowledge and skill in teaching arts in the elementary level to improve and maintain their enthusiasm to teach and let their pupils discover and explore their skills in art making design in preparation for future life situation.

Related Studies

The researcher gathered ideas and concepts that were related to her study, through a thorough review of related studies. Information elicited provided her guidance to be able to conduct the present endeavor systematically.

Gordove (1993) in his study "Effectiveness of Self Learning Kits in Grade V Mathematics," revealed that the experimental group performed better than the control group. Hence, individualized approach to teaching Geometry to Grade V pupils through self-learning kits is better than the use of any traditional lecture-method.

He recommended the use of self-learning kits since it develops certain mathematical abilities and skills of pupils:

The study of Gordove is similar to the present study since both studies deal with comparing strategies. The present study is teaching art education in the elementary level using the discovery-exploratory method of teaching with the use of indigenous materials in art making design, while the latter using the instruction-material centered approach. The two studies differ in the target group. Gordove's study was directed to catering elementary pupils while the output of this study is directed particularly for Grade VI pupils to discover and explore their knowledge and skill using the indigenous materials for art making design.

Avelino (1995) in his study entitled "Effectiveness of Cooperative Learning" had the primary objective of finding out the effect of cooperative learning and the traditional approach in learning mathematics. The study utilized the pretest-posttest control group design with 50 first year high school students of Tinablan National High School. In his findings that there was a significant gain of knowledge ease determined using the t-value computation for significant difference between the pretest and the posttest scores in both groups; there was also no significant difference in the posttest scores between the control group and the experimental group; there was no significant

difference in the means of the evaluation tests. This suggest that as far as short quizzes are concerned, the experimental group can perform comparatively with the control group. Through his findings he concluded that cooperative learning as an approach to teaching mathematics is as effective as the traditional lecture approach, it can also be utilized in the performance of weekly activities of the students including exercises and short quizzes.

Avelino study dealt on the effectiveness of cooperative learning in mathematics for high school students, while the present dealt on the effectiveness of teaching art education in the elementary level using the discovery/exploratory method. The study is related to the present study with regards to the conduct of the experiment. It utilized the pretest and posttest design. The study differs only in the subject setting and the grade level of the respondents because the present study made use of Grade VI pupils and focus in teaching art education.

Pastores (1995) made another study on the "Evaluation of the Physical Education Program of the Public Elementary Schools of Sison Pangasinan." In his study, he recommended the following: 1) proper method of teaching with the use of appropriate instructional materials, proper administration

of test, and application by evaluative techniques should be emphasized; 2) in-service trainings and informal college courses for improving Physical Education instruction should be conducted to upgrade teachers competence; 3) clinics for different activities, officiating and coaching should be offered to the P.E. teachers; 4) more funds should be allotted for the P.E. program; 5) teachers should be motivated to excel in particular education or P.E. activities; 6) proper coordination with the community agencies must be maintained by the school administrators and teachers.

The study of Pastores has relevance on the present study since both deal with the evaluation of the effectivity of teaching methods and strategies. The difference lies on the use of respondents, research design and their areas of concern. The former study highly differs with the present study in their areas of concern. The latter focused mainly on physical education. However, music, arts and P.E. are considered as one subject under the basic education curriculum in the elementary level.

Del Puerto, (1990) in her study on the "Status of the Elementary School Music Program in the District of Calabanga, Division of Camarines Sur," looked into the

status of the elementary school music program in a district level. Aspects considered under the program of implementation were the content, instructional materials, musical instruments, and methods and approaches. The findings revealed that music theory ranked fourth as an area which appeal to the children of the six areas. Little emphasis was given to it by the music teachers. Nine percent of them adapted the conceptual approach. The problems met by the teachers were mainly on content like knowledge of musical terms and symbols, key signature note and rest value in different time signatures; recognition of pitch names and so-fa syllables; finding "do" in each key signature; and reading from staff notation.

The study of Del Puerto has relevance on the present study since both deal with factors affecting the difficulties of teachers in teaching the particular subject like method of teaching, evaluation strategies, teachers competencies and instructional materials. The difference is that the previous study considered the total program in the district level focused on elementary music education using the descriptive survey method, while the present study used the experimental method focused on art education

using the discovery/exploratory method with the use of indigenous materials.

The study of Acuna, (1991) on "Proposed Taped Lessons in the Elementary Music Program in the Division of Legaspi City" involved 10 taped lessons to strengthen and reinforce music teaching in the upper elementary level. Each lesson was tried out by key music teachers and district cultural coordinators. The lessons were found to possess content validity, and were novel, interesting, rich, informational and workable. Pupils' performance was dependent on their musical growth and experiences. It was recommended that teachers create their own way of presenting music lessons by employing varied techniques and approaches using the taped lessons as samples.

Acuna's study is analogous to the present study because both intended to help the teachers overcome some difficulties in their method of teaching. Whereas the lesson in the previous study would intensify the music program in the elementary level, the current study would improve the instruction in teaching art education using the discovery/exploratory method with the use of indigenous materials.

The former study highly differs with the present study in their areas of concern. The latter focus mainly on music education, while the present study focused on art education. However, music, arts, and P.E. are considered as one subject under the Basic Education Curriculum (BEC).

Tatarunis (1998) conducted a study entitled "The Effect of Two Teaching Methods Utilizing Pop Music on the Ability of Seventh Grade Students to Perceive Aurally and Identify Musical Concept." She made an investigation on the effectiveness of programmed instruction to high school students in grade nine to 12 and seventh grade students, respectively. The posttest scores on music theory revealed in the study found a significant mean difference between the achievement of the two treatment groups, in favor of the experimental group. It was concluded that the programmed approach was more effective of the two treatments. Tatarunis utilized pop music on the growth in ability of the seventh grade students to perceive aurally and identified selected precepts related to rhythm. The analysis of variance indicated that the experimental group had a greater increase in ability and retention of the same material than the control group. The experimental group also showed a greater positive increase in attitude toward

the general music class than the subjects of the control group.

The study of Tatarunis resembles that of the present study in methodology. They made use of the experimental method to find out the effectiveness of two teaching techniques.

Tatarunis employed the programmed approach in teaching music, while the present on discovery/exploratory approach in teaching art education on art making design among the elementary grade six pupils, while the latter, used the grade nine students in music instruction.

Lunetta (1999) conducted a comparative study on the "Lecture Method and the Activity-Oriented Method Among Grade Six Pupils of Guisijan Elementary School, Lawaan Antique," the activity-oriented method made the following conclusions. She concluded that the activity oriented method was better in the development of the ability to classify information, and data, ability to apply previous knowledge and information, and the ability to make generalization and conclusions. It was just as good as the lecture method in the development of the ability to recall facts; the activity-oriented method allowed brighter students to learn more than the lecture method.

This study is similar to the present study since both studies deals with comparing strategies. The present is teaching art education using the discovery/exploratory method of teaching with the use of indigenous materials in art making design, while the latter using the activity-oriented method approach in the development of the ability to classify information and data and apply previous knowledge and information.

The study of Adan (1997) entitled "An Evaluative Survey of the Methods and Procedure by the Teachers in the Teaching of Music in the Elementary Grades in the Division of Camarines." It revealed that considerably a high percentage of teachers in the division lack the essential knowledge and procedures in teaching music in the grades, information of the use of existing methods and procedures in teaching music and that, there was no balance of emphasis on the types of activities used in music instruction. Essential phases such as instructional and creative music appreciation were left out. A very significant finding of this study was that few teachers utilized their radio cassette, transistorized phonograph for listening to music but the materials they got were not

suited to the lesson under study. Neither were there materials organized into meaningful lessons.

This study is similar to the present investigation because like the latter, the present study aims to measure how effective the methods and procedures the teachers are using in their music teaching, while the present study is concerned with the effectiveness and appropriateness of instructional materials on discovery and exploratory method of teaching art education.

The study of Escudra (1996) entitled "Effectiveness of Modules as an Aid in Dressmaking Instruction at Wright Vocational School, Wright, Samar," concluded that the learning performance of the control group was substantial as indicated by the t-test which yielded results establishing significant difference between the pretest and posttest; that the experimental group demonstrated substantial learning achievement during the research period as indicated by the significant increase in their scores from pretest to posttest; and the experimental group had better learning performance than the control group as indicated by the t-value of the difference between the pretest scores of both groups; finally, she concluded that teaching with modules was indeed more effective than

Leyte.

Chapter 3

METHODOLOGY

This chapter discusses in detail the methodology which focused on research design, instrumentation, validation of the instruments, sampling procedure, data gathering procedure and statistical treatment and their respective formulas.

Research Design

This study attempted to evaluate the effectiveness of Discovery/Exploratory Method in art education in the elementary particularly among Grade VI Pupils of Alang-alang District, Alang-alang, Leyte. This study employed the experimental method of research using the pretest and posttest control group design represented by ROX₁O/ROX₂O with eighty (80) grade six pupils taking art education VI as the respondents of the study. The samples chosen through purposive sampling were divided into two groups which were the experimental and the control groups. Both groups were composed of forty (40) grade VI pupils. The groups were matched in terms of their general average of their ratings in Art Education V. The purpose here was to determine at least that the two groups more or less had

equal entering competency or background so that the comparison of the results could be more valid and reliable.

Classes for both groups were held from Monday to Friday starting from 7:00-9:00 A.M. Both groups were taught by the researcher. The experimental group used discovery/exploratory method of instruction using indigenous materials for art making design. The control group was taught the same subject matter using the traditional method or approach and the subject was divided into separate units according to the time allotment. Two art education room at Binongto-an Central Elementary School were used by the two groups. In the middle part of the study there was swapping of schedule between the experimental group and the control group. The experimental group used Discovery/exploratory approach using the indigenous materials in art making design, and the control group used the traditional method of teaching art education. To get the desired result, the pretest-posttest control group design (Herrin, 1987:39) was used as shown:

R	O ₁₁		O ₁₂
		X	
R	O ₂₁		O ₂₂

Experimental Design of the Study

Where:

O₁₁ refers to the pretest administered to the experimental group

O₁₂ refers to the pretest administered to the control group

O₂₁ refers to the posttest administered to the experimental group

O₂₂ refers to the posttest administered to the control group

X refers to the treatment, in this case the use of the discovery/exploratory method of teaching art education using indigenous materials in making art design

R refers to the randomization procedure used in selecting the study units

The independent variables were the traditional and discovery/exploratory method of teaching art education. The dependent variables were the performances of the pupils

in making art design. The data gathered were treated with frequency counts, mean, standard deviation, t-test for dependent and independent samples.

Instrumentation

The instrument used in gathering data were the following:

Tests. Two types of tests are administered by the researcher.

PRETEST (Written and Practical Application Test)

Written Test. This test containing 25 items developed pupils' knowledge in art education given both the experimental and control group; while the Application Test - containing fifty (50) points encouraged pupils to use their creative powers to discover and explore their skills in creating art design by using the indigenous materials. This application test was chosen from among the ten lessons stipulated in the Sining Book VI in art making design covering the last grading period. The following six lessons in art design is applied for application test:

- 1) ANG KAPALIGIRAN;
- 2) DAMDAMING TAGLAY NG KAPALIGIRAN;
- 3) SINING NG MGA IFUGAO;
- 4) KATUTUBONG SINING NG MINDANAO;
- 5) DISENYONG ETHNIKO;
- 6) LIKHANG-

SINING NA SEMI-REALISTIC. The following criteria to evaluate the performance score of the pupils are: creativeness, 20 points; originality, 15 points; neatness, 5 points; materials, 10 points - with a total of fifty (50) points.

This was done in order to determine the pupils skills in making art design.

POSTTEST. These contained the same test items as the pretest and it was given to each group after experimentation in order to evaluate the performance skills of the pupils.

Documentary Analysis. Pupils records were taken from the school Registrar of Binongto-an, Borseth and Astorga Central Elementary School in District II Alang-alang Leyte to obtain the needed information in the research endeavor. This particular technique enabled the researcher to group the Grade Six Pupils homogenously. The following records taken were; a) age, b) sex and c) average grades in art education V.

Questionnaire. This represents the pupils evaluation on the effectiveness of discovery/exploratory method of teaching art education using indigenous materials in District II Alang-alang Leyte. Pupils expresses the extent

of agreement or disagreement on the basis of evaluation at the end of the experiment.

Validation of the Instrument

The researcher employed the following procedure in the validation of instrument: 1) construction and validation of the diagnostic test; 2) identification of difficulties; 3) validation/evaluation of the written and practical/application test.

1. Construction and Validation of the Diagnostic Test. Based on the objectives of the test a table of specification was prepared. The topic is on "Pagpapahalaga sa Kagandahan" from Sining Book VI. The purpose of this table is content validity. Forty (40) multiple choice type test items were prepared. This number would give allowance for the possibility of rejecting the too easy and too difficult test items subjected to criticisms and comments of her fellow art education teachers. The objective was to establish the reliability of the test items. After considering their comments and suggestions final copies were produced and subsequently given to the respondents.

A try-out was done to establish the validity of the test items in terms of: 1) index of difficulty of each item and 2) discriminating power of the test.

A test item analysis was conducted so that those that were found to be very easy and very difficult were rejected. The written test were corrected, scored and analyzed using the steps suggested by Ebel (1965:346).

1. The answer sheets were arranged from the highest to the lowest score.

2. The subgroups of answers were separated: A high scoring of twenty-seven percent (27%) of the total group who received the highest scores in the test and low scoring group consisting of twenty-seven (27%) of the total group who received the lowest score.

3. The number of correct responses per item of the high scores were tabulated. The same was done separately to those who received the lowest scores.

4. To compute the difficulty index, the number of correct responses on both groups were added and expressed as a ratio to the number of cases on both groups. The quotient obtained was the index of difficulty.

The formula used was:

$$P = \frac{U + L}{2}$$

Where: P = difficulty index

U = proportion of the upper 27 percent group
who got the item right

L = proportion of the lower 27 percent group
who got the item right

Since the difficulty of the item referred to the percentage getting the item correct, the smaller the percentage figure, the more difficult was the item.

Index of Difficulty	Item Evaluation
0.86 - 1.00	Very easy item
0.71 - 0.85	Easy items
0.40 - 0.70	Moderately difficult items
0.15 - 0.39	Difficult items
0.10 - 0.14	Very difficult items

5. To obtain the discrimination index of the item, the number of correct responses in the lower group were subtracted from the number of correct responses of the upper group and was expressed as a ratio to the number of cases in each group. The quotient obtained is the discrimination index (Sevilla, 1992).

$$D = U - L$$

Where: D = discrimination index

U = proportion of the upper 27% group who got
the item right

L = proportion of the lower 27% group who got
the item right

N = number of cases in each group

The index of discrimination was interpreted with use of the guidelines given by Ebel (1965).

Index of Discrimination	Item Evaluation
0.40 and up	Very good items
0.30 to 0.39	Reasonably good but possibly subject for improvement
0.20 to 0.29	Marginal items, usually needs improvement
0.19 and below	Poor items, to be rejected or improved by revision

Items with negative discrimination were rejected. Items with the discrimination index of 0.20 and above were considered for inclusion in the final twenty five items were based on the discrimination value of each items.

The reliability of the test were interpreted based on the suggested guide by Ebel, suggestion is given below:

Reliability	Degree of Reliability
0.95 - 0.99	Very high, rarely found among teacher made tests
0.90 - 0.94	Rarely equaled by few tests
0.80 - 0.89	Fairly high, adequate for individual measurement
0.70 - 0.79	Rather low, adequate for group measurement but not very satisfactory for individual measurement
Below 0.70	Low, entirely inadequate for individual measurement, useful for group average school survey

Sampling Procedure

The experimental method utilizing the pretest-posttest control group design was used in this study. Two groups randomly assigned to the experimental and control groups composed of eighty Grade VI pupils from Binongto-an Elementary School, Astorga Elementary School and Borseth Elementary School of District II Alangalang, Leyte, were made as subjects of the study. Forty Grade VI pupils constituted the control group and 40 Grade VI pupils formed the experimental group. To avoid bias in the grouping,

their ratings in art education from Grade V were matched correspondingly.

Data Gathering Procedure

The data gathering procedure involved three phases namely: 1) pre-experimentation, 2) experimentation, 3) post experimentation phase.

Pre-Experimentation Phase. Before the start of the experiment, a pretest was conducted simultaneously to both the control and experimental groups last August 30, 2002 at 8:00 to 10:00 in the morning at Binongto-an Elementary School. To identify them easily, CG is written on the control group while the experimental group is marked EG on the answer sheets.

The result of the pretest on the written and practical/application test provided the researcher a means of checking whether or not the group had the same performance in knowledge and skills in art education and their capacity to create and discover the use of indigenous materials in art making design thru the practical/application test.

Experimentation Phase. A pretest was administered to both groups of respondents before instruction. It provided the researcher a means of checking whether or not the

groups had the same entry behavior or present abilities in art making design.

The researcher personally handled both groups. The try-out of the practical/application test was done from September 9 to September 24, 2002. The six lessons in art making design were scheduled for three hours and twenty minutes per week for the duration of three (3) weeks. Both classes were recited in the afternoon session. During the first week of experimentation the experimental group was scheduled from 1:00 to 2:00 o'clock P.M. The control group scheduled from 3:00 to 4:00 o'clock P.M. After six days of classroom instruction, the two groups exchanged their schedules. This was done to control the time variable. Other factors that might influence the outcome of the study such as the indigenous materials, conduciveness of the classroom, ventilation, light and teacher were controlled to eliminate or minimize the possible effect of the above-mentioned variables other than the one being guided.

Post-Experimentation Phase. Immediately after the experimentation, the two groups were subjected to posttest. It provided the researcher an idea whether or not the experimental group performed better in art making design

using indigenous materials than the control group using the ready made materials or vice-versa.

To evaluate the pupils performance skill in art making design pupils are made to answer the questionnaire to determine the effectiveness of discovery/exploratory method of teaching art education using indigenous materials. Pupils expressed their extent of agreement or disagreement on the basis of evaluation at the end of the experiment.

Statistical Treatment

The statistical tools used were the following:

1.) Mean - This tool is employed to find the average performance of the group.

2.) t-test for independent samples - The tool was used to compare the pretest mean score obtained from the control and experimental groups and the posttest mean score of the written and practical/application test obtained from each group, thus;

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{(N_1-1) SD_1^2 + (N_2-1) SD_2^2}{N_1 + N_2 - 2} \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}}$$

Where:

- t = the computed pupil t-value
- SD₁ = the standard deviation for the experimental group
- SD₂ = the standard deviation for the control group
- \bar{X}_1 = computed mean of the experimental group
- \bar{X}_2 = computed mean of the control group
- N₁ = number of pupils in the experimental group
- N₂ = number of pupils in the control group

3.) t-test for Dependent Means. To find out the existence of the significant difference between the pretest and posttest results for the control and experimental groups, the t-test for dependent sample was used. The formula is: (Walpole, 1982:314)

$$t = \frac{\bar{d} \sqrt{n}}{SD}$$

Where:

- t = the computed pupil t-value
- \bar{d} = the average difference between the pretest and posttest of each pair
- n = number of paired observation

Chapter 4

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with the presentation, analysis and interpretation of data obtained from the subjects through the achievement test. The data consisted of students' profile, pretest and posttest scores. They are here presented correspondingly as to the specific questions raised from the statement of the problem.

Profile of the Subjects

The data in Table 1 deals with the composition of the subjects categorized into two - the experimental group and the control group.

It can be noted from the table that among the members of the experimental group, the oldest member is 14 years old followed by 13 years of age. The youngest member was 12 years old. Age range of Grade VI pupils were 12-14 years old. The corresponding mean age of this group was 12.6 years old with a standard deviation of 0.58 years. On the other hand, among the members of the control group, the oldest was likewise 14 years of age followed by 13 and 12 years of age. The youngest member was 11 years old. It

Table 1

Age, Sex and Grades Profile of the Subjects

Samples No.	A G E		S E X		Art Education Grades in V	
	EG	CG	EG	CG	EG	CG
1	12	14	F	M	83	83
2	12	12	F	M	80	80
3	12	13	F	F	81	81
4	13	12	F	M	83	83
5	13	11	M	F	82	82
6	12	12	M	F	80	80
7	12	12	F	F	80	80
8	13	13	F	F	81	81
9	14	13	M	M	84	84
10	13	12	M	M	82	82
11	12	13	F	F	80	80
12	12	12	F	F	80	80
13	12	11	M	F	80	80
14	13	12	M	M	82	82
15	12	11	F	F	82	82
16	12	12	M	M	83	83
17	13	12	M	M	83	83
18	13	13	F	M	83	83
19	13	12	M	M	81	81
20	12	12	F	F	79	79
21	13	12	F	F	77	77
22	13	13	F	F	80	80
23	12	12	M	F	78	78
24	13	12	F	M	81	81
25	13	13	M	M	82	82
26	13	12	F	M	81	81
27	12	12	M	F	79	79
28	13	12	M	F	79	79
29	13	12	M	M	78	78
30	13	12	M	M	82	82
31	12	12	M	F	80	80
32	13	13	F	M	81	81
33	13	12	M	M	81	81
34	13	11	M	M	82	82
35	13	12	M	F	78	78
36	12	12	F	F	77	77
37	12	12	M	F	78	78
38	14	13	F	F	79	79
39	13	12	M	M	80	80
40	12	13	F	F	79	79
Total	505	488	F=19 M=21	F=21 M=19	3221	3221
Mean	12.6	12.2			80.5	80.5
SD	0.58	0.64			1.76	1.76

can be gleaned from the same table that the mean age turned out to be 12.2 years old with a standard deviation of 0.64 years. The data revealed that the two groups belonged to more or less the same age level.

In terms of sex, the experimental group consisted of 19 females and 21 males while the control group consisted of 21 females and 19 males. For their grades in Art Education in Grade V, the members of the two groups were exactly matched with one another with a highest grade of 84 and lowest grade of 77. Thus, the mean grade in Art Education in Grade V of these two groups registered to 80.5 with a standard deviation of 1.76. It is significant to note at this point that the experimental group was matched or equated in terms of the subjects' age, sex and grades in Art Education. Hence, their entry behavior were controlled and essentially equivalent at the beginning of the experiment.

Pretest Results of the Experimental Group and the Control Group

Table 2 shows the pretest scores of the experimental and control groups. Under experimental group, the highest score obtained was 50 and the lowest score was 31. The sum of the scores of the experimental group was 1628 with a

Table 2

Pretest Scores of the Experimental and Control Groups

Student Number	Pretest	
	Experimental Group	Control Group
1	31	30
2	32	42
3	40	44
4	47	39
5	42	35
6	34	42
7	36	42
8	50	42
9	44	33
10	42	40
11	43	36
12	45	47
13	39	36
14	40	45
15	33	37
16	35	46
17	37	40
18	42	35
19	42	42
20	49	36
21	38	34
22	38	41
23	37	44
24	37	36
25	44	43
26	49	35
27	41	45
28	38	42
29	44	42
30	45	38
31	47	40
32	40	41
33	43	43
34	45	44
35	39	37
36	43	41
37	37	41
38	44	41
39	37	41
40	39	41
Total	1628	1599
Mean	40.7	39.975
X ²	67,114	64,503
SD	4.62	3.82
Computed t = 0.76		Tabular t = 1.98

mean of 40.7 and a standard deviation of 4.62. On the other hand, the highest score obtained by the control group was 47 and the lowest score was 30. Hence, the sum of the scores was 1599 with a mean of 39.975 and a standard deviation of 3.82.

In determining the difference of the mean scores obtained by these two groups of subjects, the experimental group turned out to be higher than the control group by 0.725. The difference in the mean scores was tested for significance by using t-test for independent or uncorrelated means. The computed t-value of 0.76 turned out to be lesser than the tabular or critical t-value of 1.98 at $\alpha = .05$ and degrees of freedom equals 78. Thus, the first null hypothesis which states that there is no significant difference between the pretest mean scores of the experimental and control groups was accepted. The observed difference between their pretest mean scores was not significant. This results implied that the experimental and control groups had the same level of entry behavior prior to experimentation. It can be said that proper grouping was done.

Pretest and Posttest Results of the Experimental Group

Table 3 presents the results of the statistical computation done on the pretest and posttest mean scores of the experimental group. It shows that the pretest mean score of the experimental group was 40.7 while the posttest was 64.875. The difference was 24.175. The difference in the mean scores was tested for significance by using the t-test for dependent or correlated means.

The computed t-value of 30.62 was very much greater than the tabular or critical t-value of 0.012 at .05 level of significance at 39 degrees of freedom. Hence, the hypothesis which states that there is no significant difference between the pretest and posttest mean scores of the experimental group was rejected. This implied that the increase in the scores of the posttest in the experimental group showed a significant amount of learning after the subjects were exposed to discovery/exploratory method in art education with the use of indigenous materials.

Pretest and Posttest Results of the Control Group

Table 4 shows the results of the statistical computation done on the pretest and posttest mean scores of the control group. It shows that the pretest mean scores

Table 3

Pretest and Posttest Scores of
the Experimental Group

Student Number	Pretest Scores	Posttest Scores
1	31	59
2	32	59
3	40	70
4	47	65
5	42	62
6	34	66
7	36	67
8	50	66
9	44	63
10	42	65
11	43	63
12	45	64
13	39	62
14	40	61
15	33	67
16	35	65
17	37	66
18	42	68
19	42	65
20	49	64
21	38	60
22	38	62
23	37	65
24	37	69
25	44	68
26	49	63
27	41	59
28	38	68
29	44	59
30	45	67
31	47	67
32	40	68
33	43	71
34	45	65
35	39	66
36	43	64
37	37	68
38	44	66
39	37	65
40	39	68
Total	1628	2595
Mean	40.7	64.875
SD	4.62	3.08
Computed t = 30.62		Tabular t = 2.012

Table 4

Pretest and Posttest Scores of
the Control Group

Student Number	Pretest Scores	Posttest Scores
1	30	54
2	42	65
3	44	67
4	39	62
5	35	62
6	42	62
7	42	66
8	42	66
9	33	65
10	40	62
11	36	60
12	47	64
13	36	67
14	45	63
15	37	67
16	46	64
17	40	67
18	35	60
19	42	67
20	36	59
21	34	70
22	41	61
23	44	63
24	36	67
25	43	63
26	35	67
27	45	70
28	42	66
29	42	68
30	38	65
31	40	66
32	41	68
33	43	67
34	44	68
35	37	63
36	41	67
37	41	64
38	41	63
39	41	62
40	41	65
Total	1599	2584
Mean	39.975	64.60
SD	3.82	3.112
Computed t = 37.67		Tabular t = 2.012

of the control group was 39.975 while the posttest was 64.60. The difference was 24.625. The difference in the mean scores was tested for significance by using t-test for dependent or correlated means.

The computed t-value of 37.67 was very much greater than the tabular or critical t-value of 2.012 at .05 level of significance at 39 degrees of freedom. Hence, the hypothesis which states that there is no significant difference between the pretest and posttest mean scores of the control group was rejected. This implied that the increase in the scores of the posttest in the control group showed a significant amount of learning after the subjects were exposed to the traditional lecture-discussion/recitation method in art education.

Posttest Results of the Experimental and Control Group

Table 5 reflects the statistical treatment result of the posttest scores of the experimental and control groups. The data shows that the experimental group had a total of 2595 and a mean of 64.875 while the control group had a total of 2584 and a mean score of 64.60. It can be noted that the mean score of the experimental group in the posttest is higher than that of the control group by 0.275.

Table 5

Posttest Scores of the Experimental
and Control Groups

Student Number	Posttest	
	Experimental Group	Control Group
1	59	54
2	59	65
3	70	67
4	65	62
5	62	62
6	66	62
7	67	66
8	66	66
9	63	65
10	65	62
11	63	60
12	64	64
13	62	67
14	61	63
15	67	67
16	65	64
17	66	67
18	68	60
19	65	67
20	64	59
21	60	70
22	62	63
23	65	63
24	69	67
25	68	63
26	63	67
27	59	70
28	68	66
29	59	68
30	67	65
31	67	66
32	68	68
33	71	67
34	65	68
35	66	63
36	64	67
37	68	64
38	66	63
39	65	62
40	68	65
Total	2595	2584
Mean	64.875	64.60
X ²	168,729	167,316
SD	3.08	3.12
Computed t = 0.40		Tabular t = 1.98

Quantitatively, it can be said that there was a minimal difference between the mean scores of the posttest of the two groups.

The difference in the mean scores was tested for significance by using t-test for independent or uncorrelated means. The computed t-value of 0.40 turned out to be lesser than the critical t-value of 1.98 at $\alpha = .05$ and degrees of freedom equals 78. Thus, the hypothesis which states that there is no significant difference between the posttest mean scores of the experimental and control groups was accepted. The observed difference between their posttest mean scores was not significant. This implies that although the experimental group obtained a higher mean score, there is not enough evidence to conclude that discovery/exploratory method is better than the traditional lecture-discussion method in teaching art education. Both teaching methods can produce impressive results as attested by the gains from pretest and posttest results. Hence, discovery/exploratory method and lecture-discussion are equally effective as approaches in teaching art education.

Posttest Results of the Experimental Group According to Age

Table 6 revealed the result of the grades or academic achievement in Grade VI in art education of the experimental group. The subjects were divided into two groups. One group composed of 17 subjects whose ages were 12 years and below and the other composed of 23 whose ages ranges from 13 years and above. The mean grade of the first group was 80.4 while the second group was 80.0. To determine if the difference of 0.4 between the two sample means was significant, the t-test for independent samples was employed. The computed t-value was 1.05 which proved to be lesser than the tabular t-value of 1.98. This signifies the acceptance of the null hypothesis. This means that there is no significant difference of the mean grades of the academic achievement of the experimental group according to age. This is attributed to the fact that the subjects belonged more or less to the same age bracket.

Academic Achievement of the Experimental Group According to Age

Table 7 gives the result of the grades of the experimental group according to age. The subjects were divided into two groups. One group of subjects composed of

Table 6

Academic Achievement of the Experimental
Group According to Age

12 years & below	13 years & above
82	83
80	81
80	79
82	82
80	80
79	80
79	80
80	81
81	80
80	79
80	79
81	80
79	80
83	80
80	79
79	80
81	78
	79
	81
	81
	80
	78
	79
Total = 1366	1839
Mean = 80.4	80.0
SD = 1.2	1.2
Computed t = 1.05	tabular t = 1.98
	I: Not Significant

21 males and the other composed of 19 females.

The mean grade was 80.14 with a standard deviation of 1.2 for the male group and 80.11 with a standard deviation of 1.2 for the female group. The computed t-value of 0.08

Table 7

Academic Achievement of the Experimental
Group According to Sex

Male (N=21)	Female (N=19)
81	83
82	80
82	80
80	83
80	80
80	79
80	79
80	79
80	81
79	81
81	80
79	79
80	80
79	80
80	79
78	81
83	80
81	78
80	81
79	
79	
Total = 1683	1522
Mean = 80.14	80.11
SD = 1.2	1.2
Computed t = 0.08	tabular t = 1.98

was less than the tabular t-value of 1.98 at .05 level of significance and 38 degrees of freedom. This led to the acceptance of the null hypothesis. This implies that there is no significant difference of the mean grades of the academic achievement of the experimental group according to sex. This implies further that the males performed just as

well as or equally with the females.

Academic Achievement of the Experimental Group According to Grades

The data in Table 8 show the summary of computations of the academic achievement of the experimental group according to Grade V grades in art education. The mean grade of the subjects whose grade is below 81 was 79.95 and the mean grade of the other group whose grade is 81 and above was 80.3. The mean difference was 0.35. Moreover, the table shows the computed t-value of 0.92 was lesser than the tabular t-value of 1.98 at .05 level of significance and 38 degree of freedom. Hence, the null hypothesis was accepted. This means that there is no significant difference of the mean academic achievement of the experimental group where they were grouped according to their grades in Grade V in art education. Students whose grade is below 81 performed equivalently in art education compared to the students whose grade is 81 and above.

Academic Achievement of the Control Group According to Age

Table 9 showed the result of the grades or academic achievement in Grade V in art education of the control group according to age. The subjects were divided into two

Table 8

Academic Achievement of the Experimental
Group According to Grade V Grades
in Art Education

Below 81	81 & above
80	82
82	83
80	81
79	79
80	82
80	80
80	80
79	81
79	80
81	80
79	81
79	80
83	78
81	81
80	80
80	79
79	80
78	80
79	80
81	79
Total = 1599	1606
Mean = 79.95	80.3
SD = 1.2	1.2
Computed t = 0.92	tabular t = 1.98

groups. One group composed of 29 subjects whose ages were 12 years and below and the other composed of 11 whose age ranges from 13 years and above. The mean grade of the first group was 80.9 while the second group was 80.2. To determine if the difference of 0.7 between the two sample means was significant, the t-test for independent samples

Table 9

Academic Achievement of the Control Group According to Age

12 & below	13 & above
80	79
79	81
82	80
80	82
80	78
81	81
80	82
81	80
83	85
80	78
82	76
80	
83	
80	
80	
84	
85	
81	
78	
77	
80	
79	
82	
83	
84	
80	
80	
82	
79	
Total = 2345	882
Mean = 80.9	80.2
SD = 1.9	2.4
Computed t = 1.4	tabular t = 1.98

was employed. The computed t-value was 1.40 which proved to be lesser than the tabular t-value of 1.98. This

signifies the acceptance of the null hypothesis. This means that there is no significant difference of the mean grades of the academic achievement of the control group according to age. This is attributed to the fact that the subjects belonged more or less to the same age bracket.

**Academic Achievement of the Control
Group According to Sex**

Table 10 reflects the statistical treatment result of the control group in terms of sex. The subjects were divided into two groups. One group of subjects composed of 19 males and the other composed of 21 females.

The mean grades was 81.37 with a standard deviation of 2.0 for the male group and a mean grade of 80.24 with a standard deviation of 1.6 for the female group. The mean difference was 1.13. The computed t-value of 1.982 is greater than the critical t-value of 1.98 at .05 significance level with 38 degree of freedom. Therefore, the null hypothesis was rejected. The findings revealed that there was a significant difference between the academic achievement of the control group in terms of sex. Males performed better compared with the females from the control group.

Table 10

Academic Achievement of the Control
Group According to Sex

Male	Female
79	81
80	82
79	80
82	80
81	80
83	78
82	80
80	81
81	80
83	80
85	80
80	80
81	82
80	84
79	78
85	77
83	82
84	80
79	80
	82
	78
Total = 1546	1685
Mean = 81.37	80.24
SD = 2.0	1.6
Computed t = 1.982	tabular t = 1.980

**Academic Achievement of the Control
Group According to Grades**

The data in Table 11 show the summary computations of the academic achievement of the control group according to Grade V grades in art education. The mean grade of the subjects whose grade is below 81 was 78.85 and the mean

Table 11

Academic Achievement of the Control
Group According to Grade V Grades
in Art Education

Below 81 (N=20)	81 & above (N=20)
80	79
80	81
80	79
78	82
80	80
81	82
80	81
80	83
82	80
84	82
78	80
77	81
80	83
82	85
80	80
80	79
82	85
78	83
79	84
76	81
Total = 1597	1620
Mean = 78.85	81.0
SD = 1.9	2.8
Computed t = 3.7	tabular t = 1.98

grade of the other group whose grade is 81 and above was 81.0. The mean difference was 2.15. Moreover, the table shows that computed t-value of 3.70 was greater than the tabular t-value of 1.98 at .05 level of significance and 38 degree of freedom. Hence, the null hypothesis was rejected. This means that there is a significant

difference of the mean academic achievement of the experimental group where they were grouped according to their grades in Grade V in art education. Pupils whose grades is 81 and above performed better in art education compared to the pupils whose grade is below 81.

Pupils' Evaluation in the Discovery/Exploratory Method at the End of the Experiment

To ascertain the effectiveness of the discovery/exploratory method employed to the experimental group, the posttest mean scores were treated statistically with significant results. Moreover, an evaluation instrument was utilized to determine the perception of the samples or subjects related to the effectiveness of discovery/exploratory method of teaching art education using indigenous materials.

The mean ratings of the samples are presented in Table 12. An examination of the mean ratings in the perceptions of the experimental group relative to the effectiveness of discovery method of teaching art education using indigenous materials revealed that the means ranged from 3.90 to 4.73 which implies that the samples respectively "agree" and "strongly agree." The lowest ratings of 3.90 further implies that the procedure and instructions are easily

Table 12

Perceptions of the Experimental Group
On the Effectiveness of Discovery/
Exploratory Method

Statements	RATING SCALE					Total	Weigh- ted Mean	Inter- preta- tion
	SA 5	A 4	N 3	D 2	SD 1			
1. The learning concepts in art making design are presented logically.	(100) 20	(10) 2	(6) 2	(4) 2	(1) 1	(171) 40	4.28	A
2. Adequate availability of indigenous materials.	(140) 28	(40) 10	(3) 1	(2) 1	(0) 0	(185) 40	4.63	SA
3. Procedure and instruction are easily made.	(65) 13	(68) 17	(15) 5	(6) 3	(2) 2	(156) 40	3.90	A
4. Aesthetic/artistic value are objectively measured through practical/application test.	(150) 30	(32) 8	(3) 1	(2) 1	(0) 0	(187) 40	4.68	SA
5. Exploration of individualized designing were developed.	(75) 15	(80) 20	(9) 3	(4) 2	(0) 0	(168) 40	4.20	A
6. Enhancement / enrichment of creativity were developed.	(100) 20	(64) 16	(6) 2	(2) 1	(1) 1	(173) 40	4.33	A
7. Appreciation of indigenous materials used in different art activities.	(160) 32	(24) 6	(0) 0	(2) 1	(1) 1	(187) 40	4.68	SA
8. Alloted time is minimized during art education activities.	(95) 19	(60) 15	(6) 2	(4) 2	(2) 2	(167) 40	4.18	A
9. Positive attitude toward art education is highly developed.	(130) 26	(52) 13	(3) 1	(0) 0	(0) 0	(185) 40	4.63	SA
10. Lesser amount of expenses incurred using the indigenous materials.	(125) 25	(44) 11	(9) 3	(2) 1	(0) 0	(180) 40	4.50	A
11. Pupils art making activities are easy to facilitate.	(70) 14	(80) 20	(9) 3	(4) 2	(1) 1	(164) 40	4.10	A
12. Appropriateness of evaluative activities is based on are education outputs.	(150) 50	(36) 9	(3) 1	(0) 0	(0) 0	(189) 40	4.73	SA
Total	=						52.84	
Grand mean	=						4.40	

Legend:

- SA - Strongly agree with the statement
- A - Agree with the statement
- N - Neither agree nor disagree
- D - Disagree with the statement
- SD - Strongly disagree with the statement

made. Furthermore, the highest mean rating of 4.73 implies that the appropriateness of evaluative activities is based on art education output. As a whole, a grand mean of 4.40 is an evidence that samples "agree" on the effectiveness of discovery/exploratory method of teaching art education using indigenous materials. This means that the teaching method used was appropriate and effective in enhancing pupils' performance in art education.

Chapter 5

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

This chapter contains the summary of findings, conclusion and recommendations of the study.

Summary of Findings

Based on the data gathered by the researcher the following are the salient findings:

1. The average age of the experimental group was 12.6 and the average age of the control group was 12.6. The two groups belonged to more or less the same age level.

2. The experimental and control groups had an average grade of 80.5 in art education. The two groups had more or less the same entry behavior in terms of art education grades.

3. The pretest results of the experimental and control groups has a mean score of 40.7 and 39.975, respectively. The computed t-value for the pretest results of the experimental and control groups was 0.76. This led to the acceptance of the hypothesis that there is no significant difference between the pretest results of the experimental and control groups.

4. Based on the pretest and posttest of the experimental group the computed t-value of 30.62 was very much higher than the critical t-value of 2.012. This led to the rejection of the hypothesis which states that there is no significant difference between the pretest and posttest mean scores of the experimental group.

5. Based on the pretest and posttest of the experimental group the computed t of 37.67 was very much higher than the critical t-value of 2.012. This led to the rejection of the hypothesis which states that there is no significant difference between the pretest and posttest mean scores of the control group.

6. The experimental group had a mean score of 64.875 in the posttest while the control group had a posttest mean score of 64.60. The corresponding computed t-value was 0.40 which was lesser than the critical t-value of 1.98. This led to the rejection of the hypothesis which states that there is no significant difference between the posttest mean scores of the experimental and control groups.

7. The art education academic achievement of the experimental group did not differ significantly when grouped according to age, sex and grade.

8. The art education academic achievement of the control group significantly differed when they are classified according to sex. However, when grouped according to age and grade, the academic achievement of the two groups of subjects did not differ significantly.

9. The mean ratings of the experimental group in the effectiveness of discovery/exploratory method ranged from 3.90 to 4.73 with a grand mean of 4.40. This results implied that the pupils "agree" with how the discovery method was used in teaching art education using indigenous materials by the experimental group.

Conclusions

In the light of the above stated findings, the following conclusions were drawn.

1. The experimental and control groups had more or less the same level of entry behavior on the basis of their sex, age, and grades in art education and pretest mean scores. This meant that the experimental was free from bias on the basis of the results arrive at.

2. The performance of the experimental group and the control group in the posttest was significantly better than its performance in the pretest.

3. The art education academic achievement of the control group significantly differed when they are classified according to sex, but when they are classified to age and grade, the mean grade of the experimental and control has no significant difference and this is attributed to the fact that the subjects belonged more or less to the same bracket.

4. At the end of the experiment, the two groups had the same level of performance. Discovery/exploratory method and the use of lecture-discussion method resulted in a better academic performance in art education as attested by the gains from pretest to the posttest results. Hence, the use of any of the teaching methods in teaching art education was effective.

5. Discovery/exploratory method as an effective tool in improving their performance in art education using indigenous materials.

Recommendations

1. The utilization of discovery/exploratory method using indigenous materials be tried out as an alternative strategy in teaching other art education in the elementary grades.

2. A seminar or demonstration teaching in the utilization of discovery/exploratory method be conducted among elementary grades teachers aimed at strengthening art education instruction.

3. Pupils should be exposed to discovery/exploratory method of teaching for them to develop their creative powers in art making design.

4. Formulate teaching guide in using indigenous materials.

5. An experimental study to determine the effect of discovery/exploratory method on the academic achievement of pupils in other disciplines be conducted.

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APPENDICES

Appendix A

Republic of the Philippines
Samar State Polytechnic College
Catbalogan, Samar

Aug. 26, 2001

The Dean of Graduate Studies
Samar State Polytechnic College
Catbalogan, Samar

Sir:

In my desire to start writing my thesis proposal, I have the honor to submit for your approval one of the following research problems, preferably problem No. 1:

1. Modular Instruction in Teaching Art Education among the intermediate pupils in District II Alangalang Leyte.
2. Effectiveness of Teaching Art Education using indigenous materials in the elementary level in district II Alangalang, Leyte: an innovation.
3. Comparative study in teaching MAPES among the elementary grades in District I and District II Alangalang, Leyte: an assessment.

I hope for your early favorable action on this request.

Very truly yours,

(SGD.) Rosabella Q. Marañon
Researcher

Approved:

(SGD.) Eusebio T. Pacolor, Ph.D.
Dean, Graduate Studies

Appendix B

Republic of the Philippines
 SAMAR STATE POLYTECHNIC COLLEGE
 Catbalogan, Samar
SCHOOL OF GRADUATE STUDIES

APPLICATION FOR ASSIGNMENT OF ADVISER

NAME: MARAÑON ROSABELLA Q
 (Surname) (First Name) (Middle Name)

CANDIDATE FOR DEGREE: Master of Arts in Physical Education

AREA OF SPECIALIZATION: PHYSICAL EDUCATION

TITLE OF PROPOSED THESIS/DISSERTATION: _____

"EFFECTIVENESS OF THE DISCOVERY METHOD USING INDIGENOUS

MATERIALS IN TEACHING ART EDUCATION AMONG GRADE VI PUPILS"

(SGD.) ROSABELLA Q. MARAÑON
 Applicant

(SGD.) YOLANDA M. MARAÑON, Ph.D.
 Name of Designated Adviser

APPROVED:

(SGD.) EUSEBIO T. PACOLOR, Ph.D.
 Dean, Graduate Studies

CONFORME:

(SGD.) YOLANDA M. MARAÑON, Ph.D.
 Adviser

In 3 copies : 1st copy - for the Dean
 2nd copy - for the Adviser
 3rd copy - for the Applicant

Appendix C

Republic of the Philippines
Department of Education
Region VIII
Leyte Division
Alangalang II District
Alangalang, Leyte

August 5, 2002

THE PRINCIPAL
BINONGTO-AN CENTRAL SCHOOL

Name of School

Alangalang II District
Alangalang, Leyte

I have the honor to request permission from your good office to conduct a try out pretest / post test among selected Grade VI pupils of your school to meet my partial requirements for the Degree of Master of Arts in Physical Education, which of course I am pursuing in the Samar State Polytechnic College.

Anticipating your favorable response & consideration, I remain.

Very truly yours,

(Sgd) ROSABELLA Q. MARAÑON
Researcher

Approved:

(Sgd) MRS. TELESFORA M. APURILLO
Principal / TIC

Republic of the Philippines
Department of Education
Region VIII
Leyte Division
Alangalang II District
Alangalang, Leyte

August 5, 2002

THE PRINCIPAL
ASTORGA ELEM. SCHOOL

Name of School

Alangalang II District
Alangalang, Leyte

I have the honor to request permission from your good office to conduct a try out pretest / post test among selected Grade VI pupils of your school to meet my partial requirements for the Degree of Master of Arts in Physical Education, which of course I am pursuing in the Samar State Polytechnic College.

Anticipating your favorable response & consideration, I remain.

Very truly yours,

(Sgd) ROSABELLA Q. MARAÑON
Researcher

Approved:

(Sgd) MRS. CORAZON GACOSCOSAN
Principal / TIC

Republic of the Philippines
Department of Education
Region VIII
Leyte Division
Alangalang II District
Alangalang, Leyte

August 5, 2002

THE PRINCIPAL
BORSETH ELEM. SCHOOL

Name of School
Alangalang II District
Alangalang, Leyte

I have the honor to request permission from your good office to conduct a try out pretest / post test among selected Grade VI pupils of your school to meet my partial requirements for the Degree of Master of Arts in Physical Education, which of course I am pursuing in the Samar State Polytechnic College.

Anticipating your favorable response & consideration, I remain.

Very truly yours,

(Sgd) ROSABELLA Q. MARAÑON
Researcher

Approved:

(Sgd) MS. ARACELI P. TAYABAS
Principal / TIC

Appendix D

TALAHANAYAN NG ISPISIPIKASYON SA ART EDUCATION

NILALAMAN	LAYUNIN/KASANAYAN	BLG. NG AYTEM	PORSYENTO
1. Ang Kapaligiran	Nakikilala ang uri ng mga linya, kulay, hugis, at tekstura na makikita sa mga likas na bagay sa kapaligiran.	5	20%
2. Damdaming taglay ng kapaligiran	Nailalarawan ang damdaming dulot ng mga larawan ng iba't ibang uri ng kapaligiran.	2	8%
3. Sining ng mga Ifugao	Nakikilala ang kahalagahan ng katutubong sining sa kultura ng bayan.	5	20%
4. Sining ng Mindanao	Nakikilala ang mga katutubong sining ng Mindanao.	5	20%
5. Disenyong Etniko	Nakalilikha ng isang disenyong etniko sa pamamagitan ng pagguhit.	5	20%
6. Likhang-Sining na Semi-Realistic	Nakikilala ang mga likhang-sining na makatotohanan, di-makatotohanan, at hindi lubos na makatotohanan.	3	12%
	TOTAL	25	100

Appendix E

Republic of the Philippines
Department of Education
Leyte Division

PRE / POSTTEST SA SINING VI

Pangalan _____ Baitang _____ Iskor _____ Petsa _____

I Panuto: Piliin at isulat ang titik ng tamang sagot sa sagutang papel.

___ 1. Anong uri ng pag-uulit ng mg linya ang ipinakikita sa sumusunod na disenyo?



- | | |
|------------------|---------------------------|
| a. parayos-rayos | c. sunud-sunod |
| b. salit-salit | d. lahat ng mga nabanggit |

___ 2. Alin sa mga sumusunod ang nagtataglay ng likas na hugis?

- | | |
|----------|-------------|
| a. aklat | c. bulaklak |
| b. bote | d. dahon |

___ 3. Alin sa mga ito ang may teksturang biswal?

- | | |
|------------------------------|--------------------------|
| a. larawan ng isang prutas | c. tunay na prutas |
| b. prutas na yari sa plastik | d. wala sa mga nabanggit |

___ 4. Ano ang binibigyan diin o pansin sa mga likhang-sining:

- | | |
|-----------------------|---------------------------|
| a. kulay ng kawilihan | c. sentro ng kawilihan |
| b. laki ng kawilihan | d. lahat ng mga nabanggit |

___ 5. Anong tekstura ang laruang yari sa plastik?

- | | |
|---------------|----------------|
| a. biswal | c. natural |
| b. artipisyal | d. simi-biswal |

___ 6. Anong likhang-sining ang pagguhit sa gilid ng balangkas ng isang anyo o bagay?

- a. contour drawing
- b. distortion
- c. profile
- d. modelo

___ 7. Ano ang kahulugan ng pag-uulit sa mga likhang-sining:

- a. pag-uulit ng mga linya, anyo at hugis
- b. paulit-ulit na pagguhit
- c. paulit-ulit na pagdadala ng mga kagamitang pansining
- d. lahat ng mga nabanggit

___ 8. Bakit tinatawag na abstract ang larawan o iskultura?

- a. makatotohanan o realistic
- b. hindi lubos na makatotohanan o semi-realistic
- c. hindi makatotohanan o abstract
- d. lubos na makatotohanan

___ 9. Alin sa mga sumusunod ang katutubong sining na bantog sa Luzon at Visayas?

- a. tapayan o banga
- b. kutsarang yari sa kahoy
- c. bunay at kwintas
- d. palamuting yari sa kahoy

___ 10. Ano ang katawagan sa paglilimbag mula sa disenyo nakaalsa.

- a. frottage
- b. relief printing
- c. disenyo
- d. block printing

___ 11. Ano ang ibig sabihin ng disenyo etnikong ito?



- a. ilog
- b. bayawak
- c. ahas
- d. palaka

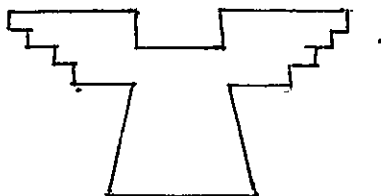
___ 12. Ano ang katawagan sa mga sining na inukit o nililok.

- a. myural
- b. pagpipinta
- c. iskultura
- d. disenyo

___ 13. Alin sa mga sumusunod ng katutubong sining na pinagyaman ng mga Tiboli.

- a. ornamentong gawa sa kabibe
- b. kwintas na yari sa metal
- c. ornamentong yari sa mga buto
- d. lahat ng mga nabanggit

___ 14. Ano ang kahulugan ng disenyong etnikong ito ng mga Ifugao?



- a. palaka
b. agila
c. unggoy
d. araw

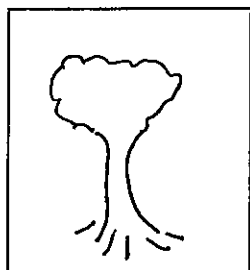
___ 15. Ang ornamentong pangkatawan na gawa sa kabibe ay katutubong sining ng mga:

- a. Tausug
b. Mangyan
c. Igorot
d. Ifugao

___ 16. Ano ang katawagan sa mga antigong bagay.

- a. disenyong etniko
b. sinaunang bagay
c. katutubong sining
d. wala sa mga nabanggit

___ 17. Ibigay ang kahulugan ng disenyong etnikong napaloob sa kahon.



- a. tao
b. puno
c. palaka
d. ulo at paa

___ 18. Likhang-sining na binubuo ng pinagdikit-dikit na bagay na kaaya-aya at may iba't ibang tekstura.

- a. disenyo
b. collage
c. biswal
d. elemento

___ 19. Alin sa mga sumusunod ang nagtataglay ng di-likas na hugis?

- a. bulaklak
b. dahon
c. aklat
d. salamin

___ 20. Ang mga sumusunod ay mga palatandaan ng likhang sining para madali itong

maunawaan:

- a. kahulugan ng mga kulay, linya at hugis na ginamit
- b. mga bagay na kilala o karaniwan
- c. kaugnayan ng pamagat sa kabuuang disenyo
- d. lahat ng mga nabanggit

___ 21. Ito ay mga katutubong sining ng Mindanao:

- a. palamuting yari sa kahoy at tanso
- b. pagbuburda
- c. paglalagay ng abaloryo (decorative beads)
- d. lahat ng mga nabanggit

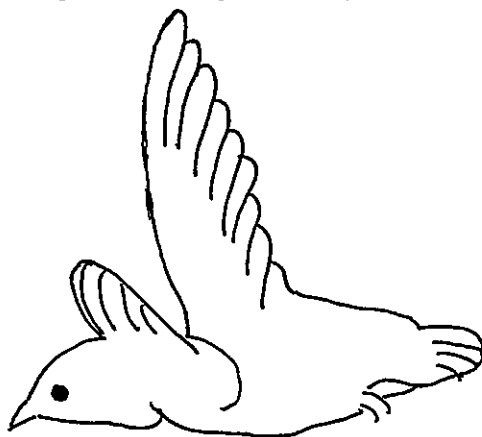
___ 22. Ang disenyong etniko at kasalukuyang ginagamit bilang disenyong:

- a. pansulok
- b. panggitna
- c. pangkalahatan
- d. lahat ng mga nabanggit

___ 23. Ano ang katawagan ng paglilimbag sa pamamagitan ng pagkuskos ng krayon sa pinagdikit-dikit na piraso ng karton?

- a. collage
- b. batik
- c. frottage
- d. relief printing

___ 24. Sa larawang ito, ano ang sentro ng kawilihan?



- a. inahing manok
- b. ibon
- c. bundok
- d. isda

___ 25. Paano nagkatugma-tugma sa likhang sining ang kulay, hugis, linya at tekstura?

- a. pangkat-pangkat
- b. magkakatulad
- c. magkakasalungat
- d. lahat ng mga nabanggit

Appendix FQUESTIONNAIRE ON THE EFFECTIVENESS OF DISCOVERY/EXPLORATORY
METHOD OF TEACHING ART EDUCATION USING INDIGENOUS MATERIALS

Direction: The statement below represent the pupils evaluation on the effectiveness of discovery/exploratory method of teaching art education using indigenous materials in District II Alangalang, Leyte. Kindly express the extent of your agreement or disagreement on the basis of your evaluation at the end of the experiment. Please check under the appropriately labeled columns.

- SA - Strongly Agree with the statement
- A - Agree with the statement
- N - Neither agree nor disagree
- D - Disagree with the statement
- SD - Strongly disagree with the statement

Statements	RATING SCALE				
	SA 5	A 4	N 3	D 2	SD 1
1. The learning concepts in art making design are presented logically.					
2. Adequate availability of indigenous materials.					
3. Procedure and instruction are easily made.					
4. Aesthetic/artistic value are objectively measured through practical/application test.					
5. Exploration of individualized designing were developed.					
6. Enhancement/enrichment of creativity were developed.					
7. Appreciation of indigenous materials used in different art activities.					
8. Alloted time is minimized during art education activities.					
9. Positive attitude toward art education is highly developed.					
10. Lesser amount of expenses incurred using the indigenous materials.					
11. Pupils art making activities are easy to facilitate.					
12. Appropriateness of evaluative activities is based on are education outputs.					

Appendix G

COMPUTATIONS

Computation of t-value of Pretest Scores of the
Experimental and Control Groups

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{(N_1-1) SD_1^2 + (N_2-1) SD_2^2}{N_1 + N_2 - 2} \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}}$$

$$t = \frac{40.7 - 39.975}{\sqrt{\frac{39(4.62)^2 + (39)(3.82)^2}{78} \left(\frac{1}{40} + \frac{1}{40} \right)}}$$

$$t = \frac{0.725}{\sqrt{.89842}}$$

$$t = \frac{0.725}{0.9479}$$

$$t = 0.76$$

Computation of t-value of Pretest and
Posttest Scores Experimental Group

$$\Sigma D = 987$$

$$\Sigma D^2 = 25,367$$

$$N = 40$$

Formula:

$$t = \frac{\Sigma D}{\sqrt{\frac{N \Sigma D^2 - (\Sigma D)^2}{N - 1}}}$$

$$t = \frac{987}{\sqrt{\frac{40 (25,367) - (987)^2}{39}}}$$

$$t = \frac{987}{32.23}$$

$$t = 30.62$$

Computation of t-value of Pretest and
Posttest Scores Control Group

$$\sum D = 983 \qquad \sum D^2 = 24,821$$

$$N = 40$$

Formula:

$$t = \frac{\sum D}{\sqrt{\frac{N \sum D^2 - (\sum D)^2}{N - 1}}}$$

$$t = \frac{983}{\sqrt{\frac{40 (24,821) - (983)^2}{39}}}$$

$$t = \frac{983}{26.09}$$

$$t = 37.67$$

Computation of t-value of Posttest Scores of the
Experimental and Control Groups

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{(N_1-1) SD_1^2 + (N_2-1) SD_2^2}{N_1 + N_2 - 2} \left[\frac{1}{N_1} + \frac{1}{N_2} \right]}}$$

$$t = \frac{64.875 - 64.60}{\sqrt{\frac{39(3.08)^2 + 39(3.12)^2}{78} \left[\frac{1}{40} + \frac{1}{40} \right]}}$$

$$t = \frac{0.275}{\sqrt{0.48}}$$

$$t = \frac{0.275}{0.693}$$

$$t = 0.40$$

Computation of t-value on Academic Achievement
in Art Education of the Subjects According
to Age (12 years old)

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{(N_1-1) SD_1^2 + (N_2-1) SD_2^2}{N_1 + N_2 - 2} \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}}$$

$$t = \frac{80.9 - 80.4}{\sqrt{\frac{16(1.13)^2 + 28(1.83)^2}{44} \left(\frac{1}{17} + \frac{1}{29} \right)}}$$

$$t = \frac{0.5}{0.49}$$

$$t = 1.02$$

Computation of t-value on Academic Achievement
in Art Education of the Subjects According
to Age (13 years old)

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{(N_1-1) SD_1^2 + (N_2-1) SD_2^2}{N_1 + N_2 - 2} \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}}$$

$$t = \frac{80.18 - 79.96}{\sqrt{\frac{22(1.16)^2 + 10(2.32)^2}{32} \left(\frac{1}{23} + \frac{1}{11} \right)}}$$

$$t = \frac{0.22}{0.59}$$

$$t = 0.37$$

Computation of t-value on Academic Achievement
in Art Education of the Subjects
According to Sex (M)

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{(N_1-1) SD_1^2 + (N_2-1) SD_2^2}{N_1 + N_2 - 2} \left[\frac{1}{N_1} + \frac{1}{N_2} \right]}}$$

$$t = \frac{81.37 - 80.14}{\sqrt{\frac{20(1.17)^2 + 18(1.95)^2}{38} \left[\frac{1}{21} + \frac{1}{19} \right]}}$$

$$t = \frac{1.23}{0.502}$$

$$t = 2.45$$

Computation of t-value on Academic Achievement
in Art Education of the Subjects
According to Sex (F)

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{(N_1-1) SD_1^2 + (N_2-1) SD_2^2}{N_1 + N_2 - 2} \left[\frac{1}{N_1} + \frac{1}{N_2} \right]}}$$

$$t = \frac{80.11 - 80.00}{\sqrt{\frac{18(1.17)^2 + 20(3.32)^2}{38} \left[\frac{1}{19} + \frac{1}{21} \right]}}$$

$$t = \frac{0.11}{\sqrt{0.645}}$$

$$t = \frac{0.11}{0.80}$$

$$t = 0.14$$

Computation of t-value on Academic
Achievement of the Experimental
Group According to Age

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{(N_1-1) SD_1^2 + (N_2-1) SD_2^2}{N_1 + N_2 - 2} \left[\frac{1}{N_1} + \frac{1}{N_2} \right]}}$$

$$t = \frac{80.4 - 80.00}{\sqrt{\frac{(17-1) (1.2)^2 + (23-1) (1.2)^2}{17 + 23 - 2} \left[\frac{1}{19} + \frac{1}{21} \right]}}$$

$$t = \frac{0.4}{0.38}$$

$$t = 1.05$$

Computation of t-value of the Experimental
Group According to Sex

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{(N_1-1) SD_1^2 + (N_2-1) SD_2^2}{N_1 + N_2 - 2} \left[\frac{1}{N_1} + \frac{1}{N_2} \right]}}$$

$$t = \frac{80.14 - 80.11}{\sqrt{\frac{(20-1)(1.2)^2 + (19-1)(1.2)^2}{21 + 19 - 2} \left[\frac{1}{21} + \frac{1}{19} \right]}}$$

$$t = \frac{0.03}{\sqrt{(1.44)(0.1)}}$$

$$t = \frac{0.03}{0.38}$$

$$t = 0.08$$

Computation of t-value of the Experimental
Group According to Grade V Grades
in Art Education

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{(N_1-1) SD_1^2 + (N_2-1) SD_2^2}{N_1 + N_2 - 2} \left[\frac{1}{N_1} + \frac{1}{N_2} \right]}}$$

$$t = \frac{79.95 - 80.3}{\sqrt{\frac{(20-1) (1.2)^2 + (20-1) (1.2)^2}{20 + 20 - 2} \left[\frac{1}{20} + \frac{1}{20} \right]}}$$

$$t = \frac{-0.35}{\sqrt{(1.44) (0.1)}}$$

$$t = \frac{-0.35}{0.38}$$

$$t = 0.92$$

Computation of t-value of the Control
Group According to Age

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{(N_1-1) SD_1^2 + (N_2-1) SD_2^2}{N_1 + N_2 - 2} \left[\frac{1}{N_1} + \frac{1}{N_2} \right]}}$$

$$t = \frac{80.9 - 80.2}{\sqrt{\frac{(29-1) (1.9)^2 + (11-1) (2.4)^2}{(29 + 11) - 2} \left[\frac{1}{29} + \frac{1}{11} \right]}}$$

$$t = \frac{0.7}{0.50}$$

$$t = 1.4$$

Computation of t-value of the Control
Group According to Sex

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{(N_1-1) SD_1^2 + (N_2-1) SD_2^2}{N_1 + N_2 - 2} \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}}$$

$$t = \frac{81.37 - 80.24}{\sqrt{\frac{(19-1) (2.0)^2 + (21-1) (1.6)^2}{19 + 21 - 2} \left(\frac{1}{19} + \frac{1}{21} \right)}}$$

$$t = \frac{1.13}{\sqrt{(3.2) (0.1)}}$$

$$t = \frac{1.13}{0.57}$$

$$t = 1.9824 \text{ or } 2.0$$

Computation of t-value of the Academic
Achievement of the Control Group
According to Grade V Grades
in Art Education

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{(N_1-1) SD_1^2 + (N_2-1) SD_2^2}{N_1 + N_2 - 2} \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}}$$

$$t = \frac{78.87 - 81.0}{\sqrt{\frac{(20-1) (1.9)^2 + (20-1) (2.8)^2}{20 + 20 - 2} \left(\frac{1}{20} + \frac{1}{20} \right)}}$$

$$t = \frac{-2.13}{\sqrt{(5.73) (0.1)}}$$

$$t = \frac{-2.13}{0.57}$$

$$t = 3.7$$

CURRICULUM
VITAE

CURRICULUM VITAE

Name : ROSABELLA Q. MARAÑON
 Address : Blumentritt St., Alangalang, Leyte
 Date of Birth : December 25, 1969
 Place of Birth : Alangalang, Leyte
 Present Position : Teacher I
 Station : Capiz Primary School
 Alangalang II

EDUCATIONAL BACKGROUND

Elementary : Alangalang I Central School
 1977 - 1982
 Secondary : Alangalang High School
 1982 - 1986
 College : Divine Word University, Tacloban City
 1986 - 1991
 Graduate Studies : Samar State Polytechnic College
 Catbalogan, Samar
 Curriculum Pursued : Master of Arts
 Major : Physical Education

CIVIL SERVICE ELIGIBILITY

Licensure Examination for Teachers, 1998

SEMINARS/TRAINING ATTENDED

Empowerment for Peak Performance, DECS Region VIII, May 3-5, 1999.

CPE Seminar-Workshop for MAPE, DECS Region VIII, May 13-21, 1999.

1999 Division MSEP/PEHM Seminar Workshop for Untrained Teachers, October 7-9, 1999, Leyte Division, DECS Region VIII.

Reorientation Seminar for MSEP Teachers, DECS Region VIII, August 16, 2000.

Division Training for Elementary and Secondary Teachers in Music Education, May 3-4, 2001, Leyte Division, DECS Region VIII.

TEEP In-Service Training for Untrained Grades I and II Teachers, May 21-24, 2001, Leyte Division, DECS Region VIII.

A Demonstration Teacher during the Division Training for Untrained Grades I and II Teachers at Palo Central School, Palo, Leyte on May 21-24, 2001.

District Training Course on Coaching and Judging Verse Choir, Declamation, Oration, and Jazz Chant, October 27, 2001, Alangalang District II.

Division Cluster-Based Live-out Training of Elementary and Secondary School Teachers and Administrators on the Restructured Basic Education Curriculum (BEC) held on May 6-10, 2002 at Binongto-an Central School.

School Based Refresher Course for Grades I-IV Teachers, December 16 to December 18, 2002 at San Vicente Elementary School.

A Demonstration Teacher during School Based Refresher Course for Grades I-IV Teachers, December 16-18, 2002 at San Vicente Elementary School.

Division Training for Untrained Multi Grade Teachers and Elementary School Administrators held at Binongto-an Central II on May 13-16, 2003.

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	Age, Sex and Grades Profile of the Subjects	55
2	Pretest Scores of the Experi- mental and Control Groups	57
3	Pretest and Posttest Scores of the Experimental Group	60
4	Pretest and Posttest Scores of the Control Group	61
5	Posttest Scores of the Experimental and Control Groups	63
6	Academic Achievement of the Experi- mental Group According to Age	66
7	Academic Achievement of the Experi- mental Group According to Sex	67
8	Academic Achievement of the Experi- mental Group According to Grade V Grades in Art Education	69
9	Academic Achievement of the Control Group According to Age	70
10	Academic Achievement of the Control Group According to Sex	72
11	Academic Achievement of the Control Group According to Grade V Grades in Art Education	73
12	Perceptions of the Experimental Group on the Effectiveness of Discovery/ Exploratory Method	75

LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
1	The Conceptual Framework of the Study .	10
2	Alang-alang District II, Municipality of Alang-alang, Leyte	14
3	Municipality of Alang-alang, Leyte . . .	15