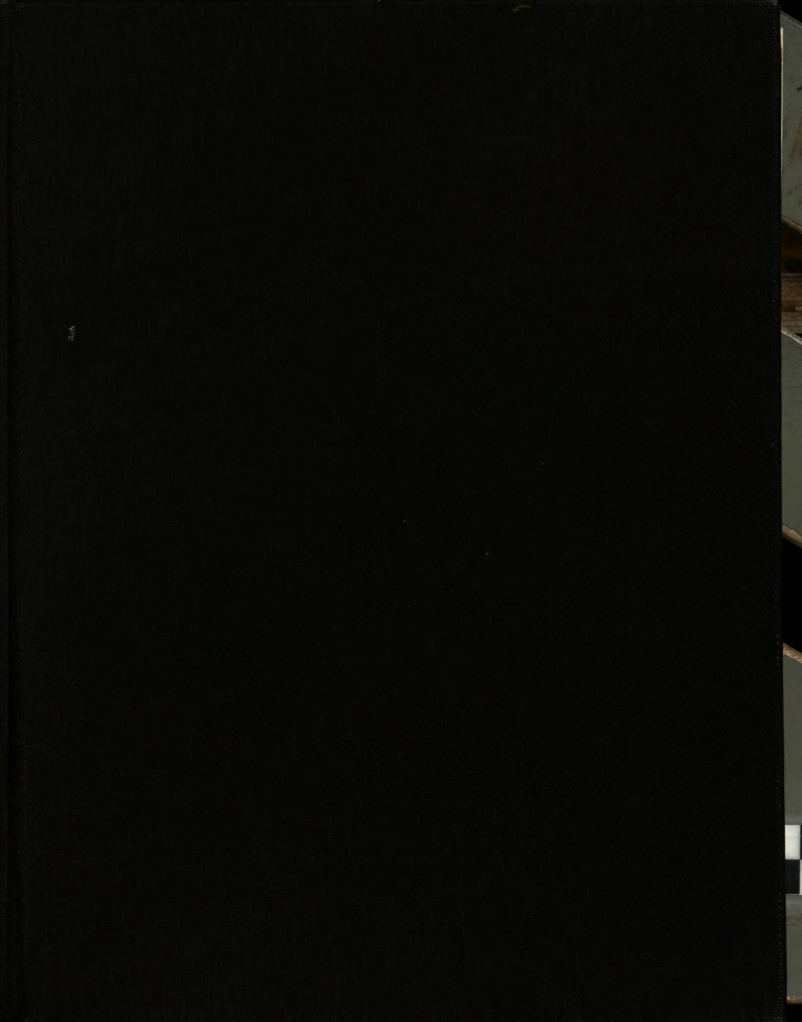
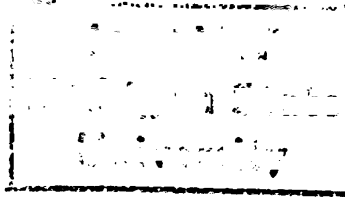






3 1293 00643 1708



This is to certify that the

dissertation entitled

THE EFFECTIVENESS OF A TRADITIONAL AND
A MOVEMENT EDUCATION METHOD AS INSTRUCTIONAL
STRATEGIES IN PHYSICAL EDUCATION FOR PRIMARY
GRADE CHILDREN
presented by

TONI L. POLL-SORENSEN

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in TEACHER EDUCATION

Laura R. Becker
Major professor

Date June 28, 1985



RETURNING MATERIALS:
Place in book drop to
remove this checkout from
your record. FINES will
be charged if book is
returned after the date
stamped below.

NOV 20 1997

NOV 14 2008

271

JAN 30 2001

062701

THE EFFECTIVENESS OF A TRADITIONAL AND A MOVEMENT EDUCATION
METHOD AS INSTRUCTIONAL STRATEGIES IN PHYSICAL
EDUCATION FOR PRIMARY GRADE CHILDREN

By
Toni Poll-Sorensen

A DISSERTATION
Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of
DOCTOR OF PHILOSOPHY

Department of Teacher Education

©1986

TONI LYNN POLL-SORENSEN

All Rights Reserved

METHOD AS INSTRUCTIONAL STRATEGIES IN PHYSICAL

EDUCATION FOR PRIMARY GRADE CHILDREN

By

Toni Poll-Sorensen

This study was designed to compare the effectiveness of a traditional and a movement education method as they were used for physical education instruction with primary school aged children. Estimates of the methods' effectiveness were determined by an analysis of descriptive evidence and by a comparison of the results from measures of motor proficiency and perceived competence.

The project was conducted in a single elementary school with the children in kindergarten through second grade. The two teaching methods to be examined were manipulated by the regular physical education teacher in collaboration with the researcher. One of two classes at each grade level was assigned to be taught by either a traditional or a movement education approach. Five boys and five girls were randomly selected for measurement from the pool of available students in each class. The children were pretested on The Pictorial Scale of Perceived Competence for Children (Harter and Pike, 1981) and The Bruininks-Oseretsky Test of Motor Proficiency (Bruininks, 1978) in November.

The classes were then instructed according to the assigned method for the rest of the academic year. Field observations were made by the researcher once a month during the course of the study to both control and record the manner in which the two methods were applied. Additionally, the classroom teacher kept a daily log of his teaching experiences under each method. Post testing was then done on each of the quantitative measures in May.

The effectiveness of the two methods was documented through consideration of both the triangulation of the descriptive evidence and the results generated from the statistical analysis of the quantitative data. This evidence can be summarized in three points. First, the findings indicated that, within the limitations of this study, the movement education method was more effective than the traditional method in improving motor skill proficiency. Second, the results also demonstrated that neither of the two methods effectively improved the perceived competence of the children in this study. Finally, the evidence demonstrated a link between perceived physical competence and motor proficiency and total perceived and motor proficiency for those children instructed by the movement education method used in this study.

Purpose of the Study

The purpose of this quasi-experimental comparative study with primary grade children is twofold. First, it is designed to investigate the effectiveness of two teaching procedures that are used in physical education classrooms. The teaching methods selected to be compared are examples of the traditional and the movement education approaches. The specific effects being investigated are the changes in measures of global self esteem, perceived physical competence, and actual physical competence. The second focus of the study is to look at correlations between these two measures on the pretest and post test data in an attempt to show the direction of the causal vectors between actual physical competence and global self esteem.

Acknowledgments

I would like to express my sincere appreciation to Dr. Laura Roehler who has served as my major advisor throughout this project. She has taught me the meaning of the word mentor, and she has led me very thoughtfully through the process of learning to write. I would also like to thank Dr. Richard Prawat and Dr. Linda Anderson for their assistance with the self concept literature and the data analysis. I am grateful to Dr. Roy Wesselman for his encouragement and insight into teaching methodologies. And, I extend my thanks to Dr. John Haubenstricker for his assistance in serving on my committee and for his expertise in motor learning and development.

I owe a debt of gratitude to Mr. John Dussia, who served as the collaborating teacher on this project. I also appreciate the cooperation that I received from the Thornapple-Kellogg School District, including Mr. Rich, the building principal at McFall Elementary. The measurement phase of the project could not have been accomplished without the help of the kindergarten through second grade teachers and the librarian and secretary at McFall. I extend my special thanks to each of you. And, of course, I want to say thank you to the children. I have enjoyed each of you, and I have learned a great deal because of you. Without you I would not have a study.

Finally, I extend very special thanks to my family, friends, and colleagues who gave me emotional support and helpful advice throughout the most taxing academic pursuit of my life. I love you all.

To Mentors:

Some of those who teach are technicians;
others share their knowledge and lead students
To enter the world of the scholar.

CEA

Fr

Table of Contents

CHAPTER ONE: Introduction	1
The Problem	2
Statement of the Problem	2
Significance of the Study	3
The Population	4
Definition of Terms	5
Assumptions of the Study	5
The Hypotheses	7
Limitations of the Study	8
The Design and Analysis	10
Quantitative	10
Qualitative	11
The Remainder of the Dissertation	11
 CHAPTER TWO: Theory and Supportive Research	 13
Introduction	13
The Methods	14
The Traditional or Command Style	14
Movement Education	15
An Historical Perspective	15
Existing Support	18
From Skill Development to Self Enhancement	20
Motor Activity and Cognitive Growth	22
Theoretical Foundations: Active Play and Cognitive Competence	 23

Empirical Support: Active Play and	
Early Academic Success	24
Motor Activity and Affective Growth	27
Enhancement Programs: The Nature of Self Concept	32
Self Concept: A Global and Atomistic Construct	32
Self Concept: Developmentally Acquired and	
Hierarchically Organized	39
Self Concept: A Result of Actual and/or	
Perceived Competence	41
Summary	46
 CHAPTER THREE: Methodology	 48
Introduction	48
Experimental Design	48
Procedures	50
Assignment and Sampling	50
Implementation	51
Operationalizing the Methods	53
Planning for Instruction	54
Setting Objectives	55
Organization of the Lesson	55
The Format for Lesson Planning	56
Establishing the Instructional Environment	59
The Role of the Teacher	59
The Role of the Student	59
Organization of the Environment	60
Communication from the Teacher	60

T

S

CHAP

INT

Presentation of the Lesson	61
Interpretation of the Lesson	61
Use of Materials, Equipment and Facilities	62
The Teaching Style	62
Closure	
Class Control	63
Major Ideas and Concepts from the Lesson	64
Measuring Student Success	64
The Lesson Summary	64
Inservicing the Collaborating Teacher	64
Summary of Procedures	69
Data Collection and Measures	70
Quantitative Data Collection	70
The Quantitative Measures	71
The Pictorial Scale of Perceived	
Competence for Children	71
The Bruininks-Oseretsky Test of	
Motor Proficiency	72
The Qualitative Measures	74
Treatment of the Data	74
The Quantitative Design	74
The Qualitative Design	76
Summary	78
 CHAPTER FOUR: The Qualitative Findings	 79
Introduction	79

The Descriptive Data	79
The Teaching and Learning Environment	79
The Setting	80
The Role of the Teacher	83
The Role of the Student	90
Description of the Activity	94
The Process of Instruction	99
Setting Objectives	100
Organization of the Lesson	102
Delivery of Instruction	105
Method of Evaluation	108
The Research Hypotheses	109
Hypothesis One	110
Hypothesis Two	112
Hypothesis Three	114
Hypothesis Four	115
Summary	115
 CHAPTER FIVE: The Quantitative Findings	 119
Introduction	119
The Descriptive Statistics	119
Perceived Competence: Gender	119
Motor Proficiency: Gender	121
Perceived Competence: Grade and Gender	122
Motor Proficiency: Grade and Gender	124
Perceived Competence: Gender and Instructional Method	126
Motor Proficiency: Gender and Instructional Method	128

C

RE

Multiple Analysis of Covariance	130
MANCOVA: Perceived Competence	130
MANCOVA: Motor Proficiency	132
Pearson Product Moment Correlations	135
Product Moment Correlations: Method and Gender	
Summary	139
Hypothesis 1	140
Hypothesis 2	140
Hypothesis 3	141
Hypothesis 4	141
 CHAPTER SIX: Summary and Implications	 143
Introduction	143
Discussion and Summary	143
An Overview	143
The Synthesis	146
The Unexpected Outcomes	149
Problems Associated with the Study	156
Implications and Recommendations	160
 REFERENCES	 171

e

C

m

r

ec

ta

fa

fo

as

it

Howe

is a

educ

chron

core

child

activ

child

respon

Chapter One

INTRODUCTION

The debate between self concept enhancement and skill development theorists is not unique to the profession of physical education. It has been, for some time, a concern of educators in general. The thrust of such debate focuses on the selection of a single best instructional methodology, but the evidence on either side of this pedagogical issue has been inconclusive. According to Calsyn and Kenny (1977), this failure is a result of both conceptual and methodological problems. Educators have approached research by viewing the relationship between self concept and actual competence in any one of the educational domains as reciprocal. However, research on teaching is based on taking a stand on an issue and attempting to prove the generated hypotheses false.

Movement education is an approach to teaching psychomotor skills that focuses on self concept enhancement, cognitive growth, and physical competence as equally important program objectives in the physical education curriculum. It has been used as a method of instruction in England since the 1940's. However, it was not until the 1960's that it was presented in the United States as an alternative to the traditional common style of teaching in physical education. Its methods place an emphasis on education in each of the domains through the use of physical activity. Physical skills are not taught in movement education as isolated elements of games, sports, and dance. Instead, children are taught that movement is a foundation for all forms of human activity. The environment for movement education is designed to encourage the children to make choices, to experiment with movement alternatives, and to be responsible for their own movement choices. The teacher, then, must be

re

cl

ca

an

no

tea

rec

acq

tea

appr

theo

inst

half

super

of ti

tradi

long-

cogni

teach

effic

appro

State

Ph

Netin

responsive to these choices and continue to develop each lesson by building on those choices. This method of planning is based on the belief that the teacher can create an environment that is both supportive of the practice experience and conducive to cognitive and affective growth by accommodating the various movement alternatives that are presented by the children.

The critics of the movement education approach, however, claim that as a teaching method it is inefficient and that by its loose structure children receive not only limited information, but also misinformation about skill acquisition (Creswell, 1968). They advocate, instead, the command style of teaching. The command style is an example of a more traditional instructional approach in physical education that is reflective of the skill development theory. It has been advocated by most leaders in physical education instruction as the preferred method of teaching psychomotor skills for over half a century. However, there is little research which demonstrates its superiority for teaching specific sports or games skills over a limited period of time. In fact, neither the movement education method nor the more traditional methods have been demonstrated to be more effective in reaching long-term program goals related to either improved motor proficiency or cognitive or affective growth. Therefore, it is important for research on teaching physical education to be directed toward investigating the relative efficiency of the movement education approach and the more traditional approaches in meeting these long term program goals.

The Problem

Statement of the Problem

Physical education programs traditionally have been taught in a formal setting. This formal or traditional setting is characterized by a teacher who

a

a

e

a;

me

co

is

un

the

and

the

des

app

prim

Sign

l

other

incon

that

explor

progra

plays a dominant role in decision making, skills that are taught by the drill method, a skill-learning process that is systematically programmed according to the principles of kinesiology and the principles of behavioristic learning theory, and by the establishment of a learning environment in which the attainment of information and the mastery of skills is considered a priority.

Physical education activities also can be taught, however, by alternative approaches that provide the student with more autonomy in the learning environment. One such approach is the movement education approach. It is an approach in which skills are taught via problem solving and exploratory methods. The learning process is conceptually organized around the common cognitive-motor characteristics of all movement, and the learning environment is organized to optimize opportunities for exploration, discovery, self understanding, and skill development. Support for the use of either one of these approaches, however, currently rests on theory and/or common practices and not on the results of research. It is, therefore, important to identify the most effective way to teach physical education to children. This study was designed, then, to determine the relevant efficiency of the movement education approach and the traditional approach for teaching psychomotor skills to primary school aged children.

Significance of the Study

Despite the fact that research on the effectiveness of the traditional and other alternative teaching methods in physical education has been meager and inconclusive, Gallahue (1982) presented a model for teaching psychomotor skills that recommended the indirect approaches of guided discovery and movement exploration as the preferred teaching techniques for physical education programs at the primary school level. He contends that program goals in

a

F

c

P

th

ne

gra

and

ath

unc

adm

the

desi

ater

provi

educa

projec

commun

elementary physical education ought to be aimed at increasing the level of functioning on fundamental skills, rather than sports skills, and on enhancing self concept. Kruger and Kruger (1979) also support this view. They base their support on the link between physical competence and self concept; "Movement skills and concepts grow together, fastened by positive feelings of ableness" (p. 79). In light of the limited amount of research on teaching psychomotor skills and in recognition of the impact of these and other curriculum specialists on the methods selected and the content being taught in physical education programs in the schools, it is important to conduct research that will provide empirical support for making such curricular and methodological choices.

The Population

A single elementary school with a minimum of two classrooms at each primary grade level was selected as the site for the study. The surrounding community and its school officials have, historically, supported physical education and athletic programs. Therefore, entry into the school was relatively uncomplicated and well received by parents, teachers, and school administrators. Further, the school selected for the study was, according to the teachers and the principal, particularly interested in programs that were designed to teach both skills and enhance self concept.

Initially, the classroom teachers in the school assisted in securing parental permission for the involvement of their children in the study and in providing time for the pre- and post-test measurements. The regular physical education instructor for the school agreed to serve as a collaborator on the project. He was an experienced teacher with several years of service in that community. His preservice training was in the traditional method, but his

t

a

n

s

w

c

1.

2.

3.

4.

5.

m

d

Th

theore

traditi

teaching

teaching had evolved over the past several years into a movement oriented approach. The fact that he was familiar with both methods of instruction did not, however, preclude the necessity of clarifying those methods for use in the study. Therefore, he not only taught by the prescribed methods and assisted with the data collection, but he became a subject for qualitative data collection during the actual implementation of the methods.

Definition of Terms

1. Traditional Education (TE): A cluster of teaching behaviors that are expressions of the belief that teaching is telling.
2. Movement Education (ME): A cluster of teaching behaviors that are expressions of the belief that teaching is probing and questioning.
3. The Command Style: A teaching style defined by Mosston (1966) as one in which there is complete domination by the teacher of all phases of decision making.
4. The Guided Discovery Style: A teaching style defined by Mosston (1966) as a method using the process of inquiry to lead the study to the discovery of the desired end product.
5. The Problem Solving Style: A teaching style defined by Mosston (1966) as a method in which students are given specific tasks or questions and then are directed to investigate a variety of alternative solutions.

Assumptions of the Study

The working assumptions for this study were generated from three broad theoretical assertions. First, that the movement education approach and the traditional teaching method are distinguishable and acceptable methods of teaching psychomotor skills. Second, that the program goals for physical

ed

de

at

es

eni

re

ato

tha

rec

com

ass

education instruction in the primary grades should be focused on both the development of fundamental motor skills and the improvement of the student's attitude toward him or herself. And third, that the link between global self esteem and competence, which is critical in the defense of self concept enhancement programs, can be empirically and theoretically supported by prior research in education and psychology if the theories of a global self and of atomistic selves are reconciled by the adoption of a model of a self system that is both hierarchically organized and developmentally acquired. Such a reconciliation would require the link between global self esteem and actual competence to be made via the construct of perceived competence. The following assumptions have, then, evolved from these three broad assertions.

1. The debate between skill development theorists and self concept enhancement theorists is not yet resolved.
2. Traditional methods of teaching are the dominant methods for teaching psychomotor skills and serve as examples of skill development methods of instruction in physical education.
3. It is possible to operationalize a traditional method of teaching and to document its implementation.
4. Movement education approaches are alternative methods for teaching psychomotor skills and serve as examples of self concept enhancement methods of instruction in physical education.
5. It is possible to operationalize a movement education method of teaching and to document its implementation.
6. Fundamental motor skill proficiency is a long-term program goal for primary grade physical education.

a
T
i
e
st
th

7. Increased perceived competence is a long-term program goal for primary grade physical education.

The Hypotheses

The educational objectives of elementary school physical education programs are aimed at improving physical competence and enhancing global self esteem. The samples of the traditional and the movement education methods under investigation in this study will be examined on the basis of their effectiveness with respect to those objectives. The following hypotheses, stated in the null form, are reflective of these objectives and are based on the preceding assumptions.

1. There will be no demonstrable differences in the effectiveness of the movement education method and the traditional method of teaching as measured by changes in actual physical competence scores of primary grade children on the Bruininks-Oseretsky Test of Motor Proficiency.
2. There will be no demonstrable differences in the effectiveness of the movement education method and the traditional method of teaching as measured by changes in perceived physical competence scores of primary grade children on the Perceived Competence Scale for Children.
3. Any changes in actual physical competence, as measured by The Bruininks-Oseretsky Test of Motor Proficiency, will not be accompanied by changes in perceived competence, as measured by The Perceived Competence Scale for Children.

4. Any changes in actual physical competence, as measured by The Bruininks-Oseretsky Test of Motor Proficiency, will not be accompanied by changes in global self-esteem, as measured by The Perceived Competence Scale for Children.

Limitations of the Study

This study was necessarily limited for three reasons. First, it was carried out in a single school and with a single physical education teacher. Second, it was implemented in a naturally existing school setting complete with its usual classroom structures, previously assigned classroom teachers, and prearranged hourly school schedule. And, finally, it is limited due to a two-month delay between the beginning of the school year, September, and the beginning of the study, November. The following list of limitations is a result of the preceding conditions.

1. The results of the study cannot be generalized beyond the scope of this limited population.
2. There is possible confounding due to the effect of the classroom teacher and other unknown variables that may have entered into the assignment of children to any given class, although it was acknowledged by the principal of the school that no systematic criteria were used for such assignment.
3. It should be recognized that in any study such as this, the methods are not and perhaps cannot be purely applied. Instead, they are a conceptual framework that teachers use for thinking about and executing their lesson plans. The application of any method, then, is mediated by the presage variables of the individual teacher using that method.

4. The use of a single collaborating teacher with a bias in favor of the movement education approach was clearly seen as a potential threat to the internal validity of the study. For that reason, field observations were used to help substantiate the actual implementation of the two methods under investigation.
5. The existing school schedule provided for physical education three days a week. Twice a week the individual classrooms met with the physical education teacher for one half hour, but once a week all classes at each grade level met for physical education at the same time for one hour. It was recognized that the treatment effects could be sensitive to such a change, however, the class schedule was an instructional reality. It was decided that large group play activities, particularly games of low organization, would be used during that time when 50 to 80 children were in the gym at once and that skill instruction would be avoided during that time. Such confounding limits the validity of the study, but it is an unavoidable result of the conditions of the natural setting.
6. During the anticipated delay in beginning the study, all classes were taught skills in body image, spatial awareness, and gymnastics as well as the rules of conduct expected in the gym. A less well defined model of the movement education approach was used for all children during this time interval. It is impossible to measure

inv

psy

pres

man

and

using

compe

prof

train

compet

physic

the effect of this delay and the selection of an interim method on the findings of this study. However, it is recognized that such conditions limit the validity of the study.

7. It was recognized that the sample size by sex and grade might bias the data due to extreme scores within the aggregates. However, the actual number of classes available for sampling, the actual class size, and the number of males and females assigned to each class were limited as a function of the naturally existing school setting in which the study was conducted.

The Design and Analysis

This study was designed as both a quantitative and a qualitative investigation of the effectiveness of two different teaching methods used for psychomotor skill instruction. Therefore, the design and the data analysis are presented in two sections.

Quantitative

The project was developed by using nonequivalent control groups (Campbell and Stanley, 1963). The estimated main effect for treatment was measured by using a multiple analysis of covariance on the scores from both The Perceived Competence Scale for Children and The Bruininks-Oseretsky Test of Motor Proficiency. Comparisons were also made between scores on The Bruininks-Oseretsky Test of Motor Proficiency and subscores of The Perceived Competence Scale for Children in order to ascertain if changes in actual physical competence were reflected in changes in perceived competence,

particularly on the physical dimension and on the composite measure of global self esteem. The .05 level of probability was used to determine the significance of the quantitative results.

Qualitative

Analysis of field observations focused on the manner in which the two methods were implemented, their effect upon the classroom environment of the gymnasium, and their effect upon the teacher and the students was used as a descriptive data base. It was concluded by the researcher that such observations would prove to be helpful when discussing the quantitative findings and in weighing the implications of those findings against the realities of life in the gymnasium. Monthly observations by the researcher were recorded in the form of field notes and video tapes. Teacher reports were collected in the form of lesson plans and journal notes. Student responses were recorded by the investigator and the teacher both during and after the activity sessions. Every effort was made to triangulate the data by using evidence from at least three qualitative sources.

The Remainder of the Dissertation

The remainder of this dissertation is organized into five chapters. Chapter Two is a synthesis of the theory and supportive research in education and psychology related to: (1) the link between motor activity and cognitive and affective growth; (2) support for the use of self concept enhancement programs in education; and (3) the establishment of a relationship between actual competence, perceived competence, and improvement in self concept. Chapter Three is a report of the methodology used during the research project. It includes descriptions of and rationales for the design and sample selection

and the choice of instrumentation. It also describes the manner in which the teaching methods were implemented and controlled for over the course of the study. Further, it includes detailed descriptions of the conditions for inservicing the collaborating teacher, for pre- and post-testing the students, and for the collecting of ethnographic traces during the project. The data are analyzed and reported in Chapters Four and Five. Chapter Six contains a discussion of both the qualitative and the quantitative findings. Additionally, it addresses the implications of those findings with respect to their implications for teachers of physical education, teacher educators, and researchers.

to

th

wa

th

fo

ed

ap

in

de

to

of

pr

ed

ap

ta

ed

se

de

de

de

Chapter Two

THEORY AND SUPPORTIVE RESEARCH

Introduction

"Physical education in elementary schools is in a state of transition today. The old approach to teaching young children, which relied heavily upon the command style of teaching and a games-oriented curriculum, is slowly giving way to a newer approach, one more closely aligned with contemporary educational thought" (Dougherty and Bonanno, 1979, p. 48). These two contrasting methods, for the purpose of this study, are defined as the traditional and the movement education approaches. However, research to support either one of these approaches as the best way to teach physical activities is lacking. It is the intent of this study, then, to begin to fill this void by attempting to demonstrate, both empirically and ethnographically, the most appropriate method for teaching physical education to primary school children by identifying some of the strengths and weaknesses of both approaches.

The following literature review is organized in two major segments and is presented as a survey of the foundations for pedagogical change in physical education. The first section, The Methods, defines the two opposing approaches, presents an historical perspective for each, establishes the background for looking at what Dougherty and Bonanno call "contemporary educational thought," and then outlines the existing support for each. The second section, From Skill Development to Self Enhancement, is aimed at developing a case for considering the movement education approach as an alternative to more traditional styles of teaching psychomotor skills in light of its claims as a self concept enhancement program. However, because

0
1
t

s
t
w
s

2
1
2
3
4
5
6
7
8
9

10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

comprehensive literature on this topic is not available in any given discipline, this portion of the review is a synthesis of these theoretical perspectives and related empirical studies from psychology, education, and physical education that in one way or another address self enhancement programs. In this extensive portion of the chapter, the important links between motor activity and cognitive and affective growth are examined first. Then, the construct of self concept is discussed in detail, particularly with regard to its function as an essential element of the affective growth that is critical for learning academic skills and developing movement competency. Finally, the main ideas developed in the review are summarized at the end of the chapter.

The Methods

According to Singer and Dick (1980, p. 5), "Physical education has often suffered from a (this) controlled, teacher-dominated environment." Today, more than in the past, the learning environment of the gymnasium is being looked at with a critical eye. This section of the literature review is designed to bring into focus the debate that generates such statements. It will define the methods and then describe both the historic and continuing conditions which have initiated and kept alive the argument between the advocates of skill development and self enhancement programs for physical education instruction.

The Traditional or Command Style

The command style of teaching commonly has been acknowledged as the dominant method of physical education instruction in the United States for the past sixty years. It is characterized by a formal or traditional setting in which the teacher assumes a dominant role with respect to all decision making.

Mc

sy

pr

is

ar

Mo

in

the

wor

192

tea

lea

tau

conc

move

for

Am H

the

main

educ

truel

found

class

Motor skills are taught by the drill method and the learning process is systematically programmed according to the principles of kinesiology and the principles of behavioristic learning theory. Further, the learning environment is established so that the attainment of information and the mastery of skills are the obvious instructional priority.

Movement Education

The movement education approach, in contrast with the command style, was introduced in the United States during the 1960's. It is designed to provide the student with more autonomy in the learning environment. It is based on the work of Rudolph Laban (1947) in movement analysis that began during the 1920's. This approach presents a very different way of looking at the teaching-learning tasks and the environment of the gymnasium. It is a learner-oriented, rather than a teacher-dominated, approach in which skills are taught via problem solving and exploratory methods. The learning process is conceptually organized around the common cognitive-motor characteristics of all movement, and the learning environment is organized to optimize opportunities for exploration, discovery, self understanding, and skill development.

An Historical Perspective

The traditional approach to teaching physical education was an outgrowth of the educational philosophy of the 1920's. Programmatically, it consisted mainly of calisthenics. Methodologically, it paralleled other disciplines in education at the time. Students in the gymnasium were taught precision routines and exercises by mass drills. Similarly, the rote memorization of the foundational skills of reading, writing, and mathematics were stressed in the classrooms. Like their counterparts in the classroom, the physical education

e
h
a
d
c
e
w
s
t
e

pr
op
bo
an
za
ad
pr
be
zu
de
zu
de
de
de

teachers led the exercises which the students did in unison. Students were evaluated on how well they could repeat the exact information that the teacher had given them. Personal enjoyment, accommodations for individual differences, and understanding of the basis of the activity were not the standard of the day. Through the thirties and forties there was a programmatic shift from calisthenics to team sports and squad drills, but methodologically the teaching environment still, overwhelmingly, placed the students in a passive role. It was not until the 1960's that the focus shifted to the individual worth of the student, and it was Mosston's work on The Spectrum of Teaching Styles that led the way for the advocates of curricular and methodological reform in physical education (Heitmann & Kneer, 1976).

Muska Mosston (1966) began his challenge of the command style when he proposed a spectrum of eight styles for teaching psychomotor skills. He operationalized these styles by defining the necessary changes in the roles of both teachers and students in each of the eight contexts. His focus for this analysis was to examine the structure of learning, the structure of the subject matter, and the structure of teaching as it existed in each style. He addressed questions about the decisions that are made in the teaching-learning process. (1.) Who makes those decisions? (2.) How do they affect teacher behavior? (3.) How do they affect the structure of the subject matter and the curricular progress of the student? (4.) How do they affect the growth and development of the individual student and his or her interaction with the culture. (5.) What, then, is the expected direction of this growth and development? The criteria for such an analysis were divided into three decision categories: preclass, execution, and evaluation decisions. Preclass decisions included the selection of the subject matter, the quantity of the activity, the quality of performance, the degree of teacher involvement, and

t

t

o

t

c

u

s

st

d

pt

mc

th

ch

mc

at

ch

le

th

re

on

on

ca

ca

the

re

re

re

the degree of student involvement. Execution decisions included those related to organization, temporal sequencing, the duration of the activity, the rhythm of the movement (time, pattern, etc.), the determination of when to stop, and the mode of communication to be used. Evaluation decisions included consideration of the procedures, instrumentation, and time sequencing to be used in the evaluation of student progress. The resulting spectrum of teaching styles included teaching by command, teaching by task, reciprocal teaching, small group teaching, individualized programmed instruction, teaching by guided discovery, teaching by problem solving, and teaching by free exploration.

Mosston concluded his analysis by proposing methodological reform in physical education instruction. He suggested that physical educators should move from teaching by command to teaching by discovery. This movement through the spectrum of teaching styles, according to Mosston, is accompanied by a change in the interaction between the teacher and the student. Such modification in the teacher-student relationship results as the teacher shifts at least some of the responsibility for decision making to the student. This change is accompanied by a concomitant shift from teacher dependency in learning to more independent learning for the student. It is apparent, then, that even though Mosston did not advocate any single teaching method, he did recommend a change in the teaching-learning environment in the gymnasium from one of total teacher control to one with more student autonomy. Similarly, movement educators, as well as the other advocates of reform, have built their case for establishing just such a relationship in the classroom.

The movement education approach and other alternative methods proposed in the 1960's were grounded in the emerging psychological and educational theories of the day. The advocates of such reform considered motor development and motor learning as more than a mere taxonomy of physical skills. They became

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

convinced of the link between psychomotor, cognitive, and affective development, as demonstrated by Piaget (1956) and others. They recognized the need to change their teaching technology in order to focus their instruction on this relationship between motor activity and cognitive and social growth. They looked to Bloom's Taxonomy of Educational Objectives (Bloom et al., 1956, 1964; and Harrow, 1972) for the framework for that technology. Bloom's work was particularly important since he identified and defined the cognitive, affective, and psychomotor domains as the unique but interrelated dimensions of individual learning on which to focus the development, execution, and evaluation of educational activities and programs. The writings of scholars such as Jerome S. Bruner (1960, 1963, 1970) were also reflected in these proposals for methodological reform. These writings emphasized a change in the direction of educational programs. They postulated a need for looking at the individual student outside the group context, and they supported programs aimed at developing the individual's potential. Bruner, in particular, presented a new focus for educational programs, one directed toward the development of the student's self concept.

Existing Support

The advocates of the command style of teaching take the position that the movement education approach and other alternative methods are less efficient, both with respect to time and the quality of the student's learning as measured on physical skills tests. Proponents of movement education, on the other hand, view the traditional method as emphasizing a narrow approach to the discipline of physical education that excludes alternative learner responses and fails to accommodate variability in learning and performance (Mosston & Mueller, 1974). But, the efforts to demonstrate the superiority of either one of these

approaches or any of the other alternative approaches of the 1960's have been meager.

Some empirical testing of hypotheses generated from these theoretical claims has been done. However, the majority of this work has been limited and inconclusive. For example, a review of the research on the effectiveness of programmed instruction as an alternative method concluded that it was at least as effective as the command style in promoting the learning of most closed motor skills, that is, those skills performed in an habitual or stable environment (Locke & Jensen, 1971). The majority of the studies reported in this review, however, were limited by the fact that they focused on the performance competence of learners who are over 12 years of age in specific sports or motor skills acquired over a short period of time (3-10 weeks) as the measure of a method's effectiveness. A single study by Thaxton, Rothstein, and Thaxton (1977), which examined the effectiveness of the traditional and movement education methods, demonstrated the superiority of the movement education approach with elementary girls in gymnastics and tumbling. It did not, however, demonstrate such superiority in basketball. The conclusions reached in both their review and in the study were that the choice of method should depend upon the activity to be taught. And further, they recommended that a combination of methods was perhaps the best approach for effective instruction.

Similarly, Annarino (1976) maintained that methods focusing on individualized instructional strategies were at least as effective as the more traditional methods for learning specific skills and knowledges. He did not, however, make any definitive statements about the superiority of any of the methods. Instead, he concluded that one of the reasons for the continued debate on teaching methodology was that research in physical education instruction was only in its beginning stages. Inconclusive reports such as

these, rather than providing the impetus for change, may well have been the reason for maintaining the status quo in physical education instruction. Consequently, it appears that researchers and reviewers of teaching methods used in physical education generally agree that the choice of method should be a function of the program goals, the preference of the teacher, and the needs of the student (Siedentop, 1976; Melograno, 1979).

Such advice, however, has not included an explicit definition of those parameters or a recommended list of pedagogically sound choices. The result has been the retention of the traditional or command style of teaching as the most commonly used method for psychomotor skill instruction. However, the developmental theories of psychologists and educational scholars stand as a theoretical challenge to the command style. These perspectives provide theoretical support for those physical educators who advocate change. Therefore, in spite of the direction taken by the majority of professional physical educators, there is a need to continue to investigate alternative approaches to the command style of teaching psychomotor skills. Such investigation can be done by examining the claims of a given alternative approach in light of existing theoretical support and related empirical evidence, where that form of research is available. In the case of movement education such support can be marshalled to defend its claims as a self enhancement program.

From Skill Development to Self Enhancement

The contributions of play and movement to a child's life are extensive. They have been recognized by parents, physicians, educators, and psychologists as important activities for development in early childhood. Public concern for physical fitness and research efforts in exercise physiology have led to the

1
e
C
e
R
L
ch
re
de
R
L
R

development of cardiovascular fitness programs such as Project Sunflower and the development of normative tests such as the Presidential Fitness Test. In addition, the physiological evidence points to the importance of physical activity for optimal growth and development. For example, it has become commonly accepted that physical activity is a facilitative force in bone ossification in both children and adults. According to Whitehurst (1971), play and movement are also important factors in the lives of young children because they provide the opportunities for intellectual, physical, and social stimulation through environmental discovery that are necessary for normal healthy growth. School programs like Head Start have been developed on principles like these, for it is believed that movement experiences in the school curriculum help the child acquire and refine motor skills, develop goal-oriented behavior, learn roles, develop a self concept, and learn to consider the feelings and needs of other (Staniford, 1977). Yet research on teaching has failed to demonstrate in any qualitative way how physical education programs might best be taught to facilitate this type of growth. Consequently, the debate between the skill development theorists and the self enhancement theorists still exists.

In order to develop a case for the further examination of movement education methods in contrast to the traditional or command style of teaching, it is important to consider in depth the theoretical basis of contemporary thought and the research that has been done since the 1960's that is or can be related to both methods and programs that, like movement education, claim to be self enhancing rather than skill developing in nature. Such research findings and theory are presented in the following section. They are organized to illustrate a link between psychomotor education and cognitive and affective growth. The link between motor activity and cognitive growth is first

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

presented theoretically and then empirically in relation to academic success. The link between motor activity and affective growth is outlined in a general way in order to lay the ground work for an extensive discussion of self concept development which is a key element in the argument offered by self enhancement theorists. Finally, a discussion of self concept is developed in order to demonstrate the potential for self enhancement methods, like movement education, to affect change on measures of self esteem. This portion of the review is designed to highlight three underlying beliefs of such programs: (1) the self can be considered dualistically as both an atomistic and a global construct; (2) the self develops over time and is organized hierarchically; and (3) actual competence and confidence or perceived competence are related in such a way that if the classroom teacher can affect change in perceived competence, actual performance also will be affected.

Motor Activity and Cognitive Growth

The inclusion of play activities in the school curriculum has long been considered sound educational practice. Froebel (1897), who is credited with starting kindergartens in Germany in the 1800's, advanced the "growth through play theory" and utilized structured play environments to enhance both learning and growth. Dewey (1922) also regarded the play of children as a primary experience rich in opportunities for learning and, in fact, he conducted a play program at the University of Chicago Elementary School (Brown & Sommer, 1969). And, Montessori (1964) recognized the inherent curiosity and compulsion in young children to explore and invented a number of teaching aids to bring order and purpose to their natural exploratory movements. Physical education programs in schools in the United States have, however, over the past sixty years tended to focus on physical training and/or training for sports, rather

than on these learning through play theories. However, the work of psychologists and educators alike points to an important link between motor activity and cognitive growth which is seemingly neglected in such programs. The following two sections of this review demonstrate the continued importance of that early "growth through play" theory on today's educational scene.

Theoretical Foundations: Active Play and Cognitive Competence

Associations based on theoretical observations and empirical evidence have been drawn to connect play with the cognitive work of the classroom in a meaningful way. As early as the 1930's, Vygotsky (1933) determined play to be the leading source of development in the preschool years. He preceded other psychologists in this analysis and also in his recognition of the complexity of research on play. Later, movement experiences were used by Piaget (1962, 1970) as examples of the way in which he believed that children come to know about certain cognitive concepts. He suggested, for instance, that children learn about the concept of time by dissociating time from the distance that their body travels. And, that the concept of space is learned as the child measures the unique aspects of the environment in relation to his or her own body; that is, its size, shape, and so on. This Piagetian concept of "intelligence as action" formed the foundation for much of the theoretical and empirical research to follow that links competence in motor skills to cognitive competence.

Sutton-Smith (1966) and Herron and Sutton-Smith (1971) built upon Piagetian theory and described play as a special way of knowing that involves four processes: imitation, exploration, self testing, and model construction. They also accused physical educators of having a restricted view of play, exercise, and sport in which they ask only how the activities contribute to the motor

efficiency and longevity of the organism. The extensive work on play by Sutton-Smith and his colleagues pointed to the fact that there are functional interrelations between the skills learned in games and other aspects of the player, such as elements of his or her cognitive style and personality. However, currently there is no evidence that unequivocally links active play with cognitive competence and subsequently with school achievement.

Empirical Support: Active Play and Early Academic Success

Educators and psychologists alike report the contributions of play to the cognitive development of the preschool and early elementary school aged child. Further, their work is directed at an attempt to correlate motor competence with cognitive competence and with school achievement. An empirical study by Rubin and Maioni (1975) verified a continuum for play which was identified earlier by Smilansky (1968). The Smilansky model identified four hierarchically ordered levels of play: functional play, involving simple exercising; constructive play, involving creating something; dramatic play, involving role playing; and, finally, playing games with rules. The observations of play ability by Rubin and Maioni using this model were compared to assessments of prereading and writing fluency. It was demonstrated that children progressed through the continuum from levels that required simple cognitive processing to levels requiring more complex cognitive processing. Such progress, however, is a result of active involvement in play and its accompanying cognitive growth. However, in today's society, active play is often limited or absent from the lives of many young children.

Society has provided children of this era with many play time robbers. The apartment and condominium lifestyle with limited play space, hours of television, structured lessons and practices of all kinds, and the

electronic wizardry of video games all contribute to this unique form of deprivation. In an article attempting to explain young children's declining achievement test scores, Glickman (1979) hypothesized that this phenomena might well be due to the declining quality of children's play in both the home and in the schools. A study by Pelligrini (1980) demonstrated play to be a significant predictor of success on three measures of school achievement for kindergarteners. He contended that at home most hours are spent passively watching television, while at school young children are exposed to "basic learning" strategies that also place them in a passive role. The thrust of Pelligrini's work was to focus on the importance of active rather than passive involvement in a variety of learning experiences. He concluded that active play was an important vehicle through which children learn. Consequently, he advocated a school environment that would allow and in fact encourage children to engage in many forms of active play.

Extending the school environment to include play and, in fact, planning for play is a crucial aspect of curriculum development for both the student and the teacher. According to Yawkey (1979), children increase verbal and nonverbal communication skills through play. He equated play with these thinking skills and with intellectual growth, and he suggested a push for the return of play to the schools. This movement, he said, has already begun and can continue to be strengthened in a variety of ways. Substantial funding already has been made available for the implementation of play approaches, and evaluation of such programs may well lead to a more comprehensive understanding of play, as it is grounded in practice. Such knowledge and experience gained through practice can then be used in the development and modification of college courses and inservice training programs focusing on play and play instruction. In addition, professional publications and presentations on play

co

at

wo

pu

cu

sc

cu

in

pl

pre

for

con

eve

ear

pla

a s

con

acc

ind

a s

edu

typ

typ

typ

typ

can contribute significantly to the professional development of those teachers and scholars interested in play and play instruction. Further, this kind of work can add important information to the body of knowledge associated with the purpose of play in our lives. The compilation of both theory and practice can culminate in important empirical findings. However, in the case of those school programs focusing on play as an instrument of self enhancement, the current findings are not definitive. Nevertheless, those findings can be used in an attempt to understand and identify important and related elements of both play and self enhancement theory and practice.

Correlational studies, experimental studies, and play training studies were presented in a review of play research by James F. Christie (1980) as support for the inclusion of play as a part of the early childhood curriculum. The conclusions drawn by Christie led to recommendations that the current trend of ever increasing amounts of direct academic instruction at the preschool and early elementary school level be reversed and that more time be allocated for play training and symbolic play, since the empirical evidence is supportive of a school play environment that enhances both the cognitive and affective domains. His recommendations for less time spent on academic content oriented activities at the preschool and early elementary school level were not as ludicrous as they may seem, since those recommendations were really a plea for a more balanced curriculum; that is, one that is contributing to each of the educational domains and one in which children will obtain the benefits of both types of educational experiences.

Movement education, as a method, purports to provide just such opportunities for participation in physical education activities aimed not only at the development of physical competence but also at the acquisition of cognitive skills that may prove useful in games, sports, and classroom

activities. Advocates of this approach, further, claim that the non-threatening environment of the movement education setting is structured to create opportunities for success for each student as a unique and special individual. The result of this carefully structured combination of learning activities and environment is the improvement of not only physical competence, but social skills and feelings of self esteem. The contribution of physical abilities to the development of the self concept and to the whole of the affective domain is an important consideration in the defense of self concept enhancement programs or methods.

Motor Activity and Affective Growth

Despite the fact that the literature related to the link between motor activity and affective growth and, in particular, to the enhancement of the self concept of young children is limited and inconclusive, it is important to survey this perspective as it exists. In physical education instruction as in classroom methods, the literature that advocates self concept enhancement programs exists in the form of theoretical models. These models are presented in secondary sources such as text books and in position papers based on the theoretical perspectives of psychologists and educators. A substantial amount of the empirical research on self enhancement programs is focused on the importance of the relationship between motor activity and affective growth as it pertains to the improved cognitive and social functioning of special populations. Much of it is descriptive correlational research that is not causal in nature.

Theoretical models synthesized from the bulk of the literature related to self concept have been presented as direct recommendations for school programs aimed at self concept enhancement as well as the teaching of content skills and



knowledge. Reynolds (1980) looked at the relationship between classroom behavior and self esteem and underscored the importance of significant others in fostering a positive sense of self. Self attitudes, he concluded, are derived in relation to the judgments, either perceived or real, from four categories of significant individuals in the child's life: peers, parents, school personnel, and self. Along these same lines, Campbell (1981) stated that a negative self concept was one of the most prevalent factors in preventing youngsters from achieving their optimum learning potential. He said that it is important for an individual to be able to identify success relative to his or her family, social group, church, work environment, or participation in sports. And, that spotlighting success in any of these areas can serve as a means of self concept enhancement and is an important curricular consideration.

The following studies are examples of programs in which the improvement of motor skill ability was used as a means to enhance self concept and thereby improve the cognitive and the behavioral functioning within specific populations of young children. Individualized play oriented neuromotor and perceptual training programs in the Physical Development Clinic at the University of Maryland resulted in improved physical skill functioning in children referred to that clinic. These demonstrable changes were accompanied by improved cognitive functioning and behavioral changes such as reductions in hypertensive or non-productive activity levels and improved personal social adjustments as reported by parents and teachers (Johnson and Furst, 1968, 1969, and Furst and Johnson, 1973). A study by Simpson and Meaney (1979) identified a relationship between motor success and self concept in mentally retarded children as reflected in teacher reports. It should be noted, however, that these teacher reports were solicited by the research assistants because of perceived changes that were not reflected in the Lipsitt Self Concept Scale. Nevertheless, based

on the results of their study, Simpson and Meaney did support the use of motor activity programs for self concept enhancement with mentally retarded individuals and said that, "... success in one activity will lead to an enhanced self concept, which will provide a positive disposition for approaching other tasks" (p. 24). The efficacy of a developmental play program that focused on facilitating independence in mildly handicapped youngsters was reported on by Roswal and Firth (1980). The motor activities in this program included gross motor skills, skills involving eye-hand coordination, and perceptual motor skills. This particular program was considered a success based on the clients' improvement in motor proficiency, risk taking, and self concept. Such approaches to the study of personality and its relationship to the development of psychomotor skills, according to Cratty (1975), suggest that the physical and intellectual components of the personality are inseparable.

Descriptive correlational studies also have been done to examine the relationship between the components of the motor and affective domains; however, it has not been clearly demonstrated whether or not increased physical competence actually enhances psychosocial adjustment. A study by Leithwood (1971) investigated the correlations between the motor, cognitive, and affective measures of sixty advantaged preschool children. The cognitive measures were found to have significant correlations with the motor measures, but the affective sphere was not related to either the cognitive or the motor domain. In his conclusion, however, Leithwood recommended that programs designed to influence personal and social adjustment should focus more directly on increased cognitive or motor competence since there exists an apparent lack of relationship between the affective and either the cognitive or motor domain. This increased competence, he said, would in turn enhance the self concept and move the child toward the achievement of "primary status." And,

"primary status," according to Ausubel's satellization theory (1958), is a stable condition of the self concept in which the child is able to deal with the conflict between the ideal and the real self. Such evidence would appear to give at least superficial support to the skill development theories in physical education instruction. However, Leithwood then went on to point out that pre- and post-test designs with intervening training would be more appropriate for establishing causal relationships between such changes in actual competence and self concept.

One such study by Martinek, Zaichowsky and Cheffers (1977) looked at the effect of two physical activity program types on both motor skill development and self concept. One of the two experimental program types in the study afforded children the opportunity to share in the decision making while the other did not. The results of the study demonstrated that the shared decision-making method was more conducive to self concept enhancement than a method in which the teacher dominated the decision making. And, according to Martinek and his colleagues, "... a physical activity program designed to encourage student sharing in decisions concerning curriculum selection, time allotment, amount of student interaction, amount of student mobility and overall student evaluation significantly improves the student's self concept" (p. 354). Movement education as a teaching methodology provides just such a classroom environment for psychomotor activity. It is an approach in which the teacher lets go of the authoritarian reins and allows the child to make movement choices, to experiment with movement alternatives, to choose from those alternatives, and to become responsible for those choices and for self discipline. In short, it creates an environment that is more conducive for working on thinking skills. However, the empirical evidence in its favor is not yet definitive, and, in spite of the psychological and educational theory

supporting its underlying premises, movement education remains a controversial alternative to the traditional method of teaching physical skills.

The theoretical perspectives and empirical research documented up to this point provide some direction for curricular planning and pedagogical change in physical education instruction and develop a case for evaluating both existing and alternative programs. Play and physical activity have been demonstrated to provide important learning experiences in the lives of young children. Through active environmental discovery, children improve their physical, cognitive, and social functioning. Active play has been unequivocally linked with physical growth and physical fitness. Further, active play has been demonstrated to be an important factor in the development of cognitive competence, an element considered to be significantly correlated with school success. In fact, school programs have been extended to include play on the basis of its contribution to cognitive growth. In addition, improved physical functioning has been accompanied by behavioral changes in the affective sphere. Such behavioral changes are linked with successes in physical activity that lead to an enhanced view of the self which in turn provides a more positive disposition in other areas. This relationship between classroom behavior and self esteem underscores the importance of continuing the investigation of self enhancement programs such as movement education.

In light of the inconclusive nature of the evidence on self concept enhancement programs, in general, and on movement education, in particular, it seems necessary to continue a search of the theoretical literature in order to make a case for the developmental and hierarchical nature of the self concept as an important underlying premise of the self enhancement perspective. In this way, then, it is possible to establish a theoretical chain that presumes a causal link between competence, confidence, and self esteem. The following

5
3
0
0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

four sections of this review are designed to present this type of theoretical and related empirical support for self enhancement programs. This is done by outlining the way in which advocates of such self enhancement programs view the construct of self concept.

Enhancement Programs: The Nature of Self Concept

School programs that focus on the enhancement of self concept as well as on the acquisition of content area knowledges and skills are built upon three basic premises. First, that the self concept is both global and atomistic in nature. Second, that the self concept is hierarchically organized and developmentally acquired. And third, that personal competence is an important substructure in the organization of the self concept. In order to understand the educational perspective of the advocates of such enhancement programs, it is also necessary to look critically and systematically at the vast body of literature on self concept that proposes divergent but not necessarily inconsistent theories about the nature and function of the self concept.

There are two basic schools of thought in the self concept literature. One theoretical perspective focuses on the self concept as an antecedent to behavior which is inherent in the individual's constellation of predispositions. The other perspective is constructivist in nature and views the self concept as a consequence of behavior that develops over time and experience. It is important to acknowledge work done in both these theoretical perspectives because it is imperative to establish the compatibility of the two perspectives if one is to understand the foundation of self concept enhancement programs.

The Self Concept: A Global and Atomistic Construct

The historical perspective and the nature of self as presented by William James (1913, 1910) is singularly unique. He addressed the importance of a

b

e

h

i

se

st

te

to

u

ve

w

y

z

a

c

e

i

o

u

y

z

a

c

e

i

o

u

y

z

belief in both the subjective, inherent characteristics of the individual's endowment and the objective, empirical evidence related to an awareness of the individual's integrated self image. The self concept, according to James, is intimately associated with emotion and is mediated through a construct called self esteem. James identified the global self as the "knower"; an existential subjective self that becomes aware over time and experience of the uniqueness of his or her personal existence. Further, in James' theory of self, the atomistic self includes the objective awareness of what is empirically known by an individual about him or herself. This evidence relates to any of the several atomistic selves: the social self, the material self, and the spiritual self.

Subsequent work by C.H. Cooley (1902) and G.H. Mead (1925, 1934) digressed from the existential manner of knowing about self posited by James to propose, in each case, that an individual comes to know about self as a consequence of how others view him or her. Cooley introduced the concept of the "looking glass self" to refer to the notion that an individual's perception of self is based on the ways that others, important to him or her, reflect their perceptions of him or her. According to Cooley, this concept of self exists in a feeling state and is a result of the belief that an individual has control over both the events and cognitions in his or her life. In the same, but more expansive, vein, Mead proposed that the self concept is an outgrowth of an individual's concern for how others, in the form of what he identified as the "generalized other," may view him or her. He used the term "generalized other" to include a composite of the ways that others would respond to the situationally determined actions of the individual. The self, in this case then, is a result of social interaction, and there are as many selves as there are social roles.

and

educ

psyc

the

him

new

1963

inter

spec

the

what

effect

teache

a stud

page

may

is the

of

by

the

the

inter

with

of tea

the con

Only scant attention was given to the study of the self system between 1920 and 1940 due to the impact of Watsonian behaviorism on the psychologists and educators of the day. However, the debate was rekindled and the developmental psychologists and the cognitive learning theorists once again took issue with the stance that an individual learns because of external forces exerted upon him or her. They proposed instead that children learn what they interpret from new information in light of past experiences and their self concept. Sullivan (1953), like Cooley and Mead, proposed that the self concept arises from social interaction. Sullivan, however, identified particular individuals as being especially important in the development of a self concept. He suggested that the individual internalizes the subsystems of approved and disapproved behaviors from these "significant others" in order to avoid any unpleasant affect from them. Advocates of self concept enhancement programs believe that teachers are "significant others." They also believe that the child's role as a student is an important role in the more global picture of the child's self image. Finally, they believe that in some way teachers convey the way that they feel about individual students to those students. But, just how important is the child's role as student to the integrity of the child's sense of self? And, more importantly, is it even possible to alter a child's self concept in any meaningful way through the activities and the environment of the school?

The alternative approaches to physical education, advocated for the first time in the 1960's, asserted that freedom to learn, meaning autonomy for the student in the teaching and learning environment, was essential to personality growth. Proponents of the freedom to learn concept have focused on changes in the teaching-learning environment which afford the student the opportunity for more control over his or her learning behavior. Such approaches demand that

students become active participants in the process of making choices. It is believed by self enhancement theorists that this involvement by the students in the decision-making process of the classroom will have a more positive effect on the development of their self concept which serves as a fundamental construct related to both personality development and school success. The movement education approach and other alternative approaches were based on theories of learning that, like the psychological theories of Lecky (1953) and Snygg and Combs (1949), viewed the integrity of the self as a fundamental goal of human existence. The positions taken by these three theorists agree that the preservation or unity of the self is the strongest motive for human behavior and that the self is a fundamental element of the personality with which every individual is apparently endowed.

Lecky defined the self concept as the nucleus of the personality. It functions, he said, as a stable and pre-existing construct that determines which future events and ideas are acceptable for assimilation into the overall organization of the personality. Snygg and Combs quite similarly identified the self concept as the nucleus of a broader organization, but they did, very importantly, indicate that they believed the self construct to contain both incidental and changeable as well as stable personality characteristics. These two self theories are illustrative of the kinds of support that can be marshalled to build a case for a construct like self concept that can both control and be controlled by behavior. This type of reciprocal argument is at the roots of the educational debate between the advocates of skill development theories and the advocates of self enhancement theories. Educators who believe in skill development programs see the self concept a relatively permanent structure that can only be affected by consistent and long-term success (Calsyn and Kenny, 1977). For this reason the focus of skill development programs is

on success in the skill itself. On the other hand, educators who believe in self enhancement theories point to the important relationship between a student's self concept and that student's ability to learn new skills. Advocates of such a position do not deny the importance of skill achievement, but place an emphasis on creating a teaching-learning environment that supports a rather fragile self concept while the student takes the necessary risks involved in attempting to learn a new skill (Purkey, 1979; Harter, 1982).

Advocates of self concept enhancement programs, then, believe in the fluid nature of the self concept construct. Fluctuations in the self concept are to be expected, and it is the teacher's responsibility to create an environment that is supportive of behavioral change. It is believed by self enhancement theorists that changes in behavior can effect changes in the self concept. The client-centered therapy of Rogers (1951) is based on a functional description of the self which supports that idea. According to Rogers, behavior is aimed at both the maintenance and enhancement of the self concept. He also claims that in order to effect change in the self concept a behavioral change is first necessary. In Rogers' theory, the self definitionally remains an antecedent to behavior, but it is limited in that definition to only those characteristics of the individual that she or he is aware of and over which she or he exercises control. Consequently, the self concept, according to Rogers, is a construct that can be modified by altering specific behavioral characteristics of the existing composite self when the individual consciously acknowledges them and then chooses to effect change. Recognition of the possibility that the self concept is atomistic in nature and that it can be affected by behavioral change is necessary if a case in favor of self enhancement programs based on this perspective is to exist.

The view of the self as an organization of empirical selves, such as the somatic self and the social self, emanates from the view that the subjective global self can be differentiated from the objective or atomistic self. Sarbin (1952) identified the self as one of the cognitive structures around which behavior was organized. He considered the atomistic self to be a cross section of all the cognitive structures including the existing hierarchy of empirical selves at any given moment in time. The movement education approach, as a self concept enhancement program, focuses on the primacy of body awareness in the enhancement of the self concept because of the importance of motor skills as a means through which children interact with and learn about their environment (Allenbaugh, 1967).

A child's most active motoric explorations are instrumental not only in the way that she or he learns about the environment, but also in the way that she or he learns about self. The work of Allport (1955) provides support for this premise. First, he dissected the self construct into both global and atomistic components. Then, he focused on the functional attributes of the self. He began his theory with the use of the term "proprium," rather than self, and he defined the limits of the global term proprium to include any aspects of the individual that she or he considers of central importance and a factor contributing to an affect described as "inward unity." Allport, then, delineated eight functional attributes of the self: an awareness of the bodily self, a sense of continuity over time, ego enhancement or a need for self esteem, ego extension or a need for identification of the self beyond the borders of the body, integrative process or the synthesis of the inner needs with the outer reality, self image or the person's perceptions of himself as an objective of knowledge, the self as a knower or as an executive agent, the propiate striving or the motivation to increase rather than decrease tension and to extend awareness and seek out challenges. The extension of a child's

bodily

with A

would

person

The

of the

synthes

into a

from ma

subsystem

organize

empirical

self. The

experience

over time

develops

interactio

essential

experience

disapproval

situation a

disapproval

environment

challenging

one of his

The case

more trac

bodily self awareness as advocated by movement educators would be in harmony with Allport's theory. In fact, advocates of such self enhancement programs would agree that the foundation for building self esteem lies in the child's personal control of his or her world (Allport, 1963).

The need for self esteem is seen as basic and superior to all other aspects of the self system by numerous educators and psychologists. Epstein (1973) synthesized the growing and divergent body of knowledge related to self concept into a theory of the self system containing seven constituent elements drawn from many of the theorists mentioned so far. He defined the self as a subsystem of the broader conceptual framework containing hierarchically organized concepts. These concepts, according to Epstein, include different empirical selves, such as the bodily self, the spiritual self, and the social self. This dynamic organization of the self is noted by Epstein to change with experience and, in fact, to seek out change. Further, it has the capability over time to assimilate increasingly more information. The self concept, then, develops out of these experiences and is particularly influenced by social interaction with significant others. The maintenance of the self concept is essential to human functioning since it serves to both organize the data of experience and to facilitate the fulfilling of other needs while avoiding disapproval and anxiety. Accordingly, self enhancement programs like movement education are designed to create an environment in which the threat of disapproval from teachers and peers is reduced. It is believed that in such an environment the child can be more readily encouraged to actively seek out challenging experiences that will be instrumental in the development of one or more of his or her constituent selves.

The case for self enhancement programs as alternatives for or additions to the more traditional teaching approaches can be systematically built only

because it is possible to theoretically explain the self as both a global and an atomistic structure. And, as this section has demonstrated, there does exist theoretical support from the work of James through that of Epstein for both the global and the atomistic view of self. Furthermore, self enhancement theorists do not find it incongruent to simultaneously hold both of these views of the nature and the function of the self system. Indeed, it has been illustrated that the self can be looked at globally as a relatively stable picture of the totality of the individual and atomistically as several constituent elements that contribute differentially to the quality of the composite. It is on the basis of the fluid nature of the several components of the atomistic self and the stable nature of the global self that a case can be made for the second assumption of this paper: that the self is developmentally acquired and hierarchically organized.

Self Concept: Developmentally Acquired and Hierarchically Organized

Support for the developmental nature of the self structure also is necessary if programs in self concept enhancement are to be thoroughly understood. For the constructivist theorists, both biological and social forces function as the potential building materials for the affective and cognitive constituents of the self system. Further, because of the belief that the self is constructed over time, these same theorists propose that the self system undergoes change as a result of experience. Such development of the self is supported by the theoretical positions of Erickson (1968), Piaget and Inhelder (1956), Cooley (1902), Mead (1934), and others who focused on the importance of "instrumental action" in the self definition of the young child. Piaget (1965), for example, would not expect to see a hierarchical organization of the self system during the preoperational stage. But, as the child develops the

cognitive ability to conserve, she or he becomes able to weigh the relative importance of the atomistic components of the self. The result of such cognitive development is a change in the characteristics of the self system. Cooley and Mead might well explain that same developmental change in the self structure by focusing attention on the importance of the acquisition of particular role taking skills for the contribution of either the "looking glass self" or the "generalized other." Such cognitive abilities are identified, at least theoretically, as necessary requisites for the observed developmental changes in the self systems of young children. It is important, then, when approaching research with young children to acknowledge the fact that kindergarten children and some first and second grade children who are still preoperational might well respond very differently to self enhancement programs than older children.

Support for these and other existing developmental theories related to the principles of self enhancement programs can be strengthened by looking at some of the cross-sectional research with young children on the developmental nature of the self system. Lewis and Brooks-Gunn (1979) defined the categorical self according to the self descriptors that were used by young children of various ages. They, then, demonstrated that the development of representational thought and language is a condition for being able to identify the concrete characteristics of the self system. In this sense, the categorical self can only occur after the infant is aware of his or her existential existence and has determined that she or he is an active, independent, and causal agent in the environment. An earlier study by Bannister and Agnew (1977) had investigated the kinds of changes that occurred in the self descriptions of young children over time. It was found that younger children define themselves according to physical features, activities, and behavior. Older children, on

the contrary, use personality constructs as their self descriptors. On this basis, then, it seems important to identify the changeable categories in the self system and to establish their relative importance.

Self concept enhancement programs are built upon the premise that change in the categorical selves is accompanied by change in the more global self structure. Therefore, the identification of the categorical selves is imperative to the defense of such programs. Work by Susan Harter (1980, 1982), reported earlier in this chapter, supported the contention "that there is a gradual progression in the self descriptions of young children from concrete observable attributes to psychological characteristics." Harter extended this notion, however, to accommodate what she saw in children as a gradual shift from thinking of themselves as totally good or bad or totally competent or incompetent to a kind of thinking that allows them to hold a more differentiated picture of themselves. She, then, asserted that within this frame of reference it becomes the child's cognitive task to learn which characteristics of the self are constant, like gender, and which define changeable categories, like age and capabilities. Movement education and other self enhancement programs are designed to create a practice environment for skill development that helps the child identify and work on his or her own existing competencies without the pressure of competing against peers.

Self Concept: A Result of Actual and/or Perceived Competence

Is the level of competence in any of these categories associated with changeable characteristics such as personal capabilities a determining factor in the child's overall assessment of self? Answers to questions such as this are central to the resolution of the debate between skill development and self enhancement theorists. Therefore, it is important to first understand the

connec
has be
selves
descri
catego
charact
dimensi
habitua
these a
housed
the con
instead
continue
actual c
instruc
all per
associati
important
competenc
competenc
the impac
resear
first pr
exclusivel
evidence
of this
multipati

connection that has been made between competence and self concept. Competency has been demonstrated to be a salient dimension of several of the categorical selves. A study by Keller, et al. (1978) identified nine categories of self description used by three- to five-year old children. Of these nine categories, the action dimension was demonstrated to be the most salient characteristic of the self concept of preschool aged children. This action dimension represented competencies in the form of helping behaviors and habitual action. The identification of specific sets of competencies such as these also was important in the work of Harter, which was cited earlier. She focused on the importance of considering unique clusters of competencies since she concluded that young children do not have a sense of self in general, but instead evaluate themselves according to specific behaviors. She then continued her investigations of these separate selves and determined that actual competence was mediated by social and environmental factors and that the construct of perceived competence was perhaps a better measure of a child's self perceptions. Certainly, at least in the minds of those scholars advocating self enhancement programs, actual competence may well be less important to the child's concept of self than his or her perceptions of that competence, since perceived competence is not a direct result of actual competence, but an affect produced by the responses of significant others and the impact of important environmental events.

Researchers in education and self theory have attempted to measure the affect produced on the self structure by the existence of or change in particular competencies within the framework of the categorical selves. Self confidence has been the term used by the general public and many researchers to label this affect. Rosenberg (1979) defined self confidence as the anticipation of successfully being able to master challenges or overcome

obstacles. But then, self confidence must also involve being able to successfully carry off a particular task (Dickstein, 1977). Research by Ruble, et al. (1976) tested the hypothesis that the degree of positive affect that children have about their performance would be important not only in maintaining positive attitudes toward school and learning, but also in promoting feelings of competence and self worth. Ruble and her colleagues looked at the perceived competence among children in a contrived achievement setting as a test of this hypothesis. These authors were able to identify developmental trends related to the child's judgments about his or her competence. They concluded that older children used comparisons between their own performance and existing social norms related to that performance in order to make judgments about their task competence. In addition, older children also considered the relevancy of the task for future use as an important factor when weighing their competence on that task. A study by Minton (1979) further investigated the use of social norms by children as they evaluate their own competence. He identified three sources for determining personal competence according to such social norms. These sources included selection by peers, evaluative information from an authority, and personal assessment of one's concrete ability and liking. Such evidence about self confidence or perceived competence provides support for the belief that actual competence is not enough to produce a positive self affect.

The environment in which the child exists must provide positive evaluative information with respect to personal competency in order for that competence to result in a positive affect. This is precisely the point made by movement educators when they propose a method for teaching physical skills that provides an environment for the child that is inner directed, self paced, and intended to help the child gain not just competence, but confidence (Dougherty &

Bonanno, 1979). The method is based on a belief that there exists a chain of self concept constructs. This chain begins with the acceptance of the global construct of self esteem which can be thought of as a super structure in the organization of cognitive behavior. This super structure is composed of constituent atomistic elements, all differentially contributing to the global self. The cognitive, physical, and social selves form the constellation of substructures under this global construct. Since the proponents of this methodology do not consider an affective sense of self to be an endowment of nature, experience in the cognitive, physical, and social domains becomes the means by which the child is able to become aware of the parameters of his or her atomistic selves. Perceived competence in each domain as it is judged against the input from social sources, then, is the salient dimension for establishing those parameters.

It is this link between perceived competence in the cognitive, physical, and social domains and the global self esteem that educators like Brookover et al. (1965, 1967), Irwin (1967), Purkey (1979), and others have investigated with respect to the impact of the child's self concept on his or her academic achievement. Brookover and his colleagues identified "self concept of ability" as an important factor related to success in school. They defined the term "self concept of ability" as an atomistic construct referring to the student's confidence in his or her own ability as a student. They claimed that this "self concept of ability" was a result of the students' perceptions of the evaluations of their academic ability by others, namely, teachers, parents, and friends. In addition, they concluded that "self concept of ability" might well be a better predictor of school success than the more global measures of the self concept that had been used previously. It may well be that a positive conception of one's self as a person is not only more important than striving

to get ahead and enthusiasm for studying and going to school, but that it is a central factor when considering optimal scholastic performance (Irwin, 1967). This work on self concept of ability and school achievement not only identifies confidence in one's academic ability as a salient dimension of the overall self structure, but it also identifies the teacher as a powerful force in shaping the child's attitudes about him or herself in the school setting. Both of these factors are critical to the development of a case for self concept enhancement programs in the schools.

It is important, then, to identify which aspects of the teaching and learning environment under the teacher's control are the most critical when self concept enhancement is the focus of the school program. According to Purkey (1979), if the child sees the educative process as meaningful and self enhancing and if the degree of threat provided by the school experience is not too overpowering, then the child is likely to grow in self esteem and in academic achievement. A 1981 study by Wolf, Chandler, and Spies provided tentative support for the notion, advocated by Purkey and others, that a child's perceptions of the quality of his or her school life, created by teachers and others, can lead to perceptions that the child has responsibility for his or her own academic success, which in turn leads to enhanced self concept of ability (Brookover's term) and subsequently to an increase in academic achievement. A study cited earlier by Martinek, et al. (1977) suggested, in the case of physical activity programs, that the choice of method might well affect self concept. In fact, the results of that study advocated a program designed to encourage student sharing in decision making much like that described by Mosston at the far end of the spectrum of teaching styles, opposite the more traditional command style. This type of method also corresponds to the approach used by movement educators.

Summary

For the past twenty years, the movement education approach has been advocated as an alternative to the more traditional methods of teaching psychomotor skills. It was presented in contrast to the skill development approaches as an example of a self enhancement program. As such, it was designed to alter the quality of the educational environment in the gymnasium in an attempt to enhance the child's perceptions of his or her own competence. However, neither descriptive research defining its premises nor empirical research demonstrating its superiority is available. Therefore, the literature review presented in this chapter was designed to present support for self enhancement programs in general and movement education in particular by focusing on current educational beliefs, the links between active play and cognitive and affective growth, and the link between perceived competence and self concept. It was demonstrated in this chapter that:

1. Active play is important to the development of competency in the physical, cognitive, and affective domains.
2. Competency is related to self concept through a construct called perceived competence.
3. Perceived competence is not necessarily a measure of actual competence.
4. The learning environment can serve as a mediating force with respect to the child's assessment of competence.

Consequently, although the time spent in the gymnasium is only a small portion of the child's school life, it has been demonstrated theoretically that physical activity may well be instrumental in shaping a child's overall

perceptions of self. However, mere competence in any activity or cluster of activities has not been consistently demonstrated to produce a positive self affect. Instead, it has been pointed out that the learning environment in the school may be a significant factor in mediating the child's perceived competence. Therefore, since the child's perceived physical competence has been identified as an important aspect of his or her composite of atomistic selves and since perceived competence can potentially be mediated by the learning environment, it is important to continue to investigate the quality of the teaching and learning environment in the gymnasium. A theoretical case for the movement education approach has been made throughout this chapter. In the following chapters, the methodology, research results, and conclusions of a study focusing on a comparison of the traditional and movement approaches will be presented in order to examine the impact of these methods on both skill attainment and perceived competence.

Chapter Three

METHODOLOGY

Introduction

This study was designed to compare the effectiveness of two distinctly different theoretical models for teaching physical education to primary grade children. In the first chapter, the problem was presented, and its significance was outlined. This was followed by a review of the pertinent literature in Chapter Two. In this chapter, the methodology used for the study will be presented. Consideration will be given to the experimental design, the procedures used to implement the study, the process used for data collection, the choice of measurement instruments, and the methods employed for treating the data. Finally, a summary of the research hypotheses as well as the procedures used for statistical analysis and for descriptive data collection and analysis will be presented.

Experimental Design

This study was constructed in two distinct but related parts. First, it was designed as a quasi-experimental comparative study of the effectiveness of two different teaching methods. Second, it was designed as a descriptive study of life in the gymnasium under the two different methods. The remainder of this section outlines those two aspects of the study in more detail.

The study was developed on the quantitative dimension by using the nonequivalent control group design (Campbell and Stanley, 1963) where 0 = time of testing and X = experimental treatment. The figure below illustrates that the classrooms involved in the study were randomly assigned to one of two groups. Group one was instructed by a movement education approach whereas group two was taught by a traditional method.

Figure 1. Design of the Study

0	X	0
0		0

Each group of available students in the study was then randomly sampled and pretested on both motor skills and perceived concept of self. One of the two treatment groups was then randomly selected to be taught by a movement education method. The other treatment group was to receive instruction by a traditional method. Next, the teaching intervention was implemented. It was followed five months later by posttesting on motor skills and perceived competence measures. Finally, the pretest and posttest measures were used to estimate the treatment effect of the two methods on both motor proficiency and perceived competence.

The shortcomings of the quantitative portion of this study did not go unrecognized. It was limited in both population and sample size. It was designed to study a single teacher in a single school. And, it was additionally acknowledged that the impact of the physical education teacher would be limited by a whole host of factors, not the least of which was the classroom teacher. The study, then, also was developed on the qualitative dimension. Field observations were used to collect descriptive evidence related to the implementation of the two instructional treatments under investigation. Triangulation of those observations was then used to examine the effect of the two methods on both the teacher and the students involved in the study. The twofold nature of this design functioned to help the researcher both quantify the effects of the two methods in a limited setting

and to explain that quantitative evidence in light of the actual teaching-learning environment as recorded by the field observations.

Procedures

Procedurally this study required both quantitative and qualitative considerations that are not logically separable. The subsections included under this heading describe the processes used for assignment and sampling and the implementation of the research design. In addition, discussion is given to the process of clarifying and operationalizing the methods to be examined in the study and to the process of inservicing the collaborating teacher. Finally, a summary of the preliminary planning and execution of the procedures associated with this study is provided.

Assignment and Sampling

The elementary school selected for the study housed two kindergarten, two first grade, and three second grade classrooms at the primary school level. One classroom from each grade level was randomly assigned to the control method, and one classroom from each level was assigned to the experimental method. At the second grade level the third classroom was taught by the experimental method, but was not included in the measurement portion of the study. Five boys and five girls were randomly selected from each classroom for measurement on the two pretests and posttests. This resulted in a total of 60 students for the data analysis. In addition, a sixth boy and girl were selected from each classroom for replacement where the available pool of students allowed. One replacement subject was required for data analysis at the second grade level for a child who moved between the pretesting and the posttesting. Figure 2 illustrates the pattern of parental permission and the pattern of selection from that pool of students.

Figure 2. Patterns of Selection for Subjects for Testing Based on Parental Permission for Subject Participation

CLASS/ METHOD	MALE		FEMALE	
	YES	NO	YES	NO
K/TE	5(6)	1	5(14)	0
K/ME	5(6)	1	5(14)	0
1/TE	6(7)	0	6(8)	2
1/ME	5(6)	2	6(10)	0
2/TE	5(6)	1	5(8)	0
2/ME	6(8)	0	6(11)	0
2/ME	0(5)	1	0(8)	0
TOTAL	32(44)	6	33(73)	2

TE - Traditional Method

ME - Movement Education Method

Implementation

Entry into the school was negotiated during the summer preceding the implementation of the project and was finalized in early September of that school year. Then it was necessary to obtain permission for the testing program from the parents or guardians of the primary grade children in the school so that the pool of students could be determined from which the test sample would be drawn. Letters explaining the nature of the study and containing the permission slips were prepared. During the first week of

Desot

permi

permi

ethe

masu

P.

pres

partic

mid,

holder

ET per

swers

ther a

erest

ere in

urinu

at beg

uring

Prio

Zipula

ether

uring

herent

birds.

nserv

October, the classroom teachers took responsibility for sending the letters and permission slips home with the children and for collecting the returned permission slips. In the meantime, the classes were randomly assigned to either the control or the experimental method. In mid-October, the sample for measurement was randomly drawn from the pool of affirmative parental responses.

Pretesting was done in early November. The children who were selected for pretesting were drawn from the pool of students for whom parental consent to participate in the measurement portion of the study had been received. Each child, then, gave his or her verbal assent prior to the actual testing. Those children were pretested first on the measure of perceived competence, so that any performance feedback from the motor proficiency test would not bias those answers. Testing on the motor proficiency measure was begun in mid-November after all children had been testing on perceived competence. All the pretesting was completed by the end of the month, and the two teaching methods were implemented during the first week of December. The treatment was continued from December 1982 through May 1983. In early May, the posttesting was begun. Posttests were administered in the same order as the pretests. All testing was completed by the end of May.

Prior to the administration of any of the pretest measures or the manipulation of the teaching methods under examination, the collaborating teacher and the researcher met to clarify the methods to be used, to review the existing physical education curriculum, and to formulate guidelines for implementing the daily lessons within the framework of the experimental methods. This preliminary work involved operationalizing the methods as well as inservicing the collaborating teacher.

Operationalizing the Methods

The traditional and the movement education methods used in this study were operationalized by studying the spectrum of teaching styles defined by Mosston (1966) and then adapting a format, proposed by Melograno (1979), that classified teaching behaviors into four functional phases. The first phase focuses on the analysis of the category of teacher behaviors involved in the process of planning for instruction. The objectives, organization, and format used for each type of lesson in this study were addressed in this first phase. The second category of teacher behavior included the delineation of the teacher's role, the student's role, the physical organization of the space in the classroom, and the mode of communication used between the teacher and the student. These subsets of teacher behaviors were identified as important considerations related to the process of establishing the instructional environment. The third phase identifies those teaching behaviors inherent in the presentation of the lesson. Interpretation of the lesson, use of materials, and teaching style were considered important aspects of this phase. These behaviors were then clarified for both the traditional method and the movement education method. Finally, the concepts and major ideas of the lesson, class control, measures of student success, and the lesson summary were outlined as necessary elements for closure of the lesson. Figure 3 is a schemata which lays out the manner in which the two teaching methods implemented in this study were operationalized.

Figure 3. Schematic Drawing of the Traditional and the Movement Education Methods as they were operationalized for and used in this study.

Traditional		Movement Education
Method		Method
TE		ME
Skill Development	Theoretical	Self Enhancement
	Base	
Command	Instructional	Questions and Probes
	Delivery	
Squads	Organizational	Scatters/Circles
(Relay Formation)	Format	
Norms/Developmental	Evaluation	Daily Personal Best
Standard		
Competitive	Activity	Non-Competitive
	Selection	

Planning for Instruction

The contrasts between the two methods which follow were then used as guidelines for the collaborating teacher to use when implementing the methods in the classroom setting.

Setting Objectives

(TE) Acquisition of skill(s) is the focus of the lesson. Instructional, practice, and application opportunities for the skill(s) are designed by applying the principles of growth and development that are related to fundamental skill acquisition to the mechanical principles of skill analysis. The resulting activities are then presented in a demonstration and drill format that is geared toward the mastery of the specified skills by the end of the lesson, week, or other clearly defined time interval.

(ME) The development of cognitive understanding of a skill or movement concept is the focus of the lesson. Instructional, practice, and application opportunities for that lesson are designed by combining cognitive and motor activities in a problem solving or guided discovery format. Skills are selected from any one of three categories: posture, transport, or manipulation. Concepts are selected from one of four categories: time, space, force, or flow. The resulting activities are then presented by using probes or questions that lead the student into either divergent or convergent problem solving experiences.

Organization of the Lesson

(TE) The traditional lesson is organized into three segments: introduction, demonstration and drill, and culminating activity. The teacher first must plan the introduction to the lesson which involves telling the students what skill(s) they are going to work on in that lesson and why. Next, the teacher must plan appropriate drills. This includes not only selecting a drill on the basis of a skill analysis for that age group, but also determining the number of repetitions of the practice pattern each child will execute in the prescribed drill situation. Finally, the teacher needs to plan a

culminating activity that utilizes the skills worked on in that lesson in a competitive game situation.

(ME) The movement education lesson is, similarly, constructed in three parts: introduction, problem solving or guided discovery activity, and culminating activity. The teacher must first plan a discussion of the movement problems for the lesson by using questions and probes to encourage the students to think about the kinds of movement problems that they will be doing that day. Next, the teacher must outline the basic direction for the lesson, with several options, since the lesson will actually evolve based on the kinds of responses that are given by the students during the lesson. Finally, a cooperative, noncompetitive activity should be planned that allows the students to use the skills that were worked on in that lesson in a group situation.

The Format for Lesson Planning

The format selected for lesson planning in both teaching approaches was designed to further delineate five important aspects in the teaching and learning process: who will be taught, what will be taught, how will the lesson be taught, why will the lesson be taught, and how will success in the teaching-learning environment be evaluated? (see Figures 4 and 5).

Figure 4. Lesson Plan Format for the Traditional Method

LESSON PLAN FORMAT

Primary Objective:

Secondary Objective:

Time	What To Do	By What Means	Why	How Tested
	A. Skill	Squads and whole class		
		Use developmental progression		
	B. Drill			
	C. Repeat			
	D. Culminating Activity	Competitive game		

Note: All testing and evaluation is done against a given norm.

10

11

12

13

14

15

16

17

18

19

20

21

Figure 5. Lesson Plan Format for the Movement Education Method

LESSON PLAN FORMAT

Primary Objective:

Secondary Objective:

Time	What To Do	By What Means	Why	How Tested
	A. Concept	Scatter: use divergent and convergent probes		
	B. Skill	Use: show me... and can you...?		
	C. Culminating Non-competitive activity			

Note: All testing and evaluation is done against the child's personal best.

(TE) In the traditional approach, the student will be taught a given skill(s) in a demonstration and drill format for the purpose of improving competence in that skill in a competitive game situation. Success is determined by comparing the student's performance on the skill to a competency standard, to performance norms, to the performance of others in the class through the competitive game situation or by posting or somehow recording scores for others to see.

(ME) In the movement education approach, the student is provided with a variety of movement experiences for the purpose of improving his or her depth of cognitive understanding of a motor skill(s) or concept(s) so that she or he can apply that skill in a wide variety of movement situations. Success is determined by completing the movement tasks, and since successive approximations of the optimal skill level are acceptable, each child's performance can only be measured against his or her personal best.

Establishing the Instructional Environment

The Role of the Teacher

(TE) The teacher dominates the lesson. She or he plans for whole class common instruction in which the ideal performance mode on a given skill is presented to all students. During the drill phase of the lesson the teacher should provide specific corrective feedback in order to remediate individual movement errors.

(ME) The teacher is a facilitator. She or he provides activities or an environment which is conducive to practicing the skills identified as important in the lesson. The teacher works from the students' responses to the movement problems to continuously modify either the problems, the environment, or both in order to create a richer environment for the activity.

The Role of the Student

(TE) The student is the receiver of information. She or he has the responsibility to mirror the presented skill(s) as closely as possible.

(ME) The student is an interactor with the environment. She or he has the responsibility to experiment with movement alternatives and/or to solve movement problems.

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

Organization of the Environment

(TE) The teacher, students, and the physical space of the gymnasium are organized in a formal manner. Permanent squads, lines, and/or circles are the rule. These methods of organizing the physical space place the teacher at the head of the class so that she or he has maximum visual and verbal control over the student. Furthermore, the squad method, in particular, is functional in the demonstration and drill situation since it allows the teacher to more readily observe the students engaged in the drill and also to control the students who are waiting for their turn. During the activity portions of the lesson each student's path through the space in the gym is prescribed so that there is no interference with practice and no threat to personal safety.

(ME) The teacher, students, and the physical space of the gymnasium are organized informally. Scatters and other more flexible groupings are the rule. Students are encouraged to assist with this aspect of the lesson. Individual students are responsible to come close enough to the teacher so that they can attend to the movement problems for the lesson while they also are encouraged to respect the personal space of others in the room. During the activity portions of the lesson the children are usually free to utilize any and all of the space in the gymnasium, providing that they respect the personal space of others.

Communication from the Teacher

(TE) The teacher using the traditional approach communicates with the students during the lesson through the lecture-demonstration method and via command statements. First, she or he tells the students what they will do and why. Next, she or he delivers a step by step presentation of how to best perform a given skill. Then, feedback is given to specific students during the

1

1991

1991

the

with

quest

less

new a

probi

to un

the te

global

appear

hypori

hether

hasent

hether

(12)

animal

of this

tramat

of decis

his exp

stmati

(12)

hether

time designated for practice in the drill setting. Finally, the teacher organizes, supervises, evaluates and/or keeps score during the culminating activity.

(ME) The teacher using the movement education approach communicates with the students during the lesson through the guided discovery and problem solving method and via questions and probing phrases. She or he first uses the questions and probes to investigate what the students already know about the lesson for the day and to encourage them to consider new ways of thinking about new and old tasks. Next, the movement problems are presented. These movement problems also are phrased as questions and probes in order to lead the student to understand both why and how a given skill is performed. During this time the teacher provides corrective feedback to individual students and provides global feedback or redirection in the form of more questions and probes when it appears that the intent of the problem has been misunderstood or when a majority of the students are making common movement errors. Finally, the teacher organizes, supervises, and evaluates during the culminating activity.

Presentation of the Lesson

Interpretation of the Lesson

(TE) The traditional approach has a product orientation. Consequently, an optimal level of skill attainment is the most important educational objective of this approach. To this end, the prescribed series of learning activities is systematically introduced by the teacher so that she or he controls all forms of decision making and the flow of all information about the given skill(s). It is expected that, in this way, the student receives the maximum amount of information and/or practice that can be provided in a given amount of time.

(ME) The movement education approach has a process orientation. Consequently, participation in the activity session and completion of the

movement t
approach.
students g
interstand
His into

Use of Mat

(IE)
Integral p
equipment,
mixed pla
officiala
other kee

(ME) I
art of eac
and during
ment pe
or involve
express wi
mivity.

Teaching

(IE) T
writing an
his belief
his teach
others are

movement task(s) are the most important educational objectives of this approach. Trial and error experiences are contrived by the teacher to help the students gain not only physical competence at a given skill, but a cognitive understanding of how the skill is performed and an appreciation for where it fits into the world of movement activities.

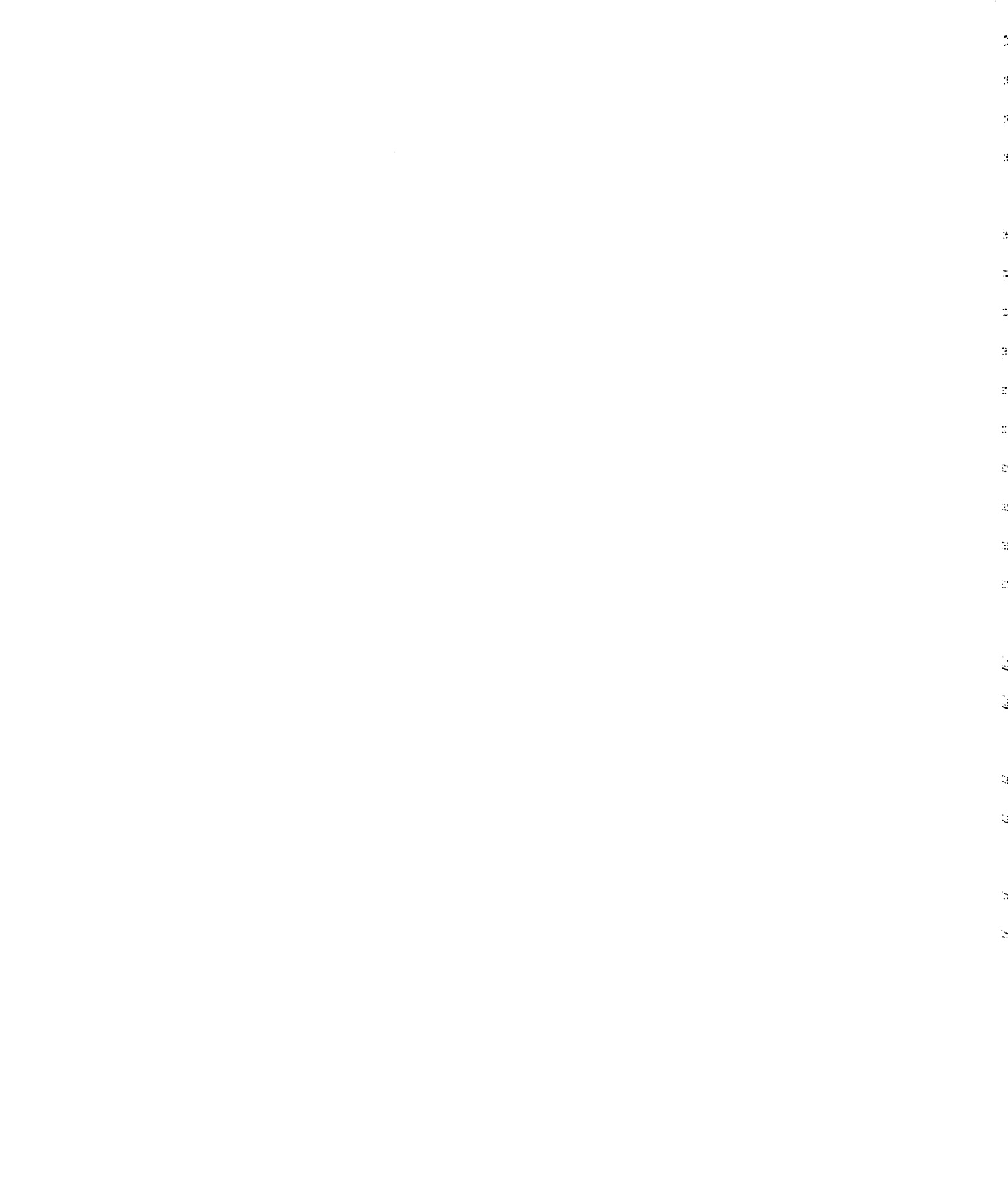
Use of Materials, Equipment, and Facilities

(TE) Drills, competitive team games, and games of low organization are an integral part of each traditional lesson. As such, standard physical education equipment, including items such as balls and bats, and facilities, including marked playing surfaces and controlled areas for play, is necessary. Some type of officiating also is necessary in such games since these activities involve either keeping score or some form of elimination.

(ME) Exploration, problem solving, and cooperative games are an integral part of each movement education lesson. Novel or homemade equipment often is used during such activity sessions to help stimulate the use of alternative movement patterns. Further, since these activities involve all players and do not involve keeping score, the teacher is free to observe and evaluate student progress while the children are actively engaged in a learning or self testing activity.

The Teaching Style (Albertson, 1974)

(TE) Teaching by the traditional method is an expression of a belief about teaching and learning in which teaching can be defined as telling. Inherent in this belief system are underlying principles about the learner and learning. First, teachers should make decisions about learning for the learner. Second, learners are required to participate in the teaching and learning environment.



Third, learners are motivated extrinsically by rewards, grades, and so on. The result of such a belief system is a method in which teaching is based on a step by step progression to the same single standard for all learners guided by the teacher's decisions and the teacher's information input.

(ME) Teaching by the movement education method is an expression of a belief system about teaching in which teaching can be defined as probing and questioning. Inherent in this belief system are underlying principles about the learner and learning. First, learners are self reliant and can assume personal responsibility for decisions related to their learning. Further, they are self motivated and interested in physical activities. And finally, the potential for such learning behaviors can be cultivated in an appropriate environment. The result of this belief system is a method in which teaching is based on a series of movement challenges that evolve from the movement responses of the children engaged in problem solving and exploratory activities.

Closure

Class Control

(TE) The teacher in the traditional approach is an authority figure and the single leader in the class. She or he makes all instructional and discipline decisions.

(ME) Students are responsible for themselves and for others in the movement education approach. The teacher is in the class to initiate the movement problems, answer questions, and provide help when necessary.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Major Ideas and Concepts from the Lesson

(TE) Knowledge of how to optimally perform a specific skill is the major concept in a traditional lesson.

(ME) The interrelationships between the movement concepts of time, space, force, and flow and the fundamental movement patterns of posture, transport, and manipulation are the major concepts in a movement education lesson.

Measuring Student Success

(TE) Student success is based on either standard or normative scores or on a comparison with one's peers or a technically acceptable performance.

(ME) Student success is based on the student's personal best performance during each activity session.

The Lesson Summary

(TE) The discrete lessons of a traditional approach are summarized at the end of the day or at the end of the unit.

(ME) All movement concepts and skills are used and elaborated upon in every lesson. Time, space, force, and flow are important concepts for all activities involving posture, transport, and manipulation.

Inservicing the Collaborating Teacher

The regular physical education teacher was selected as the collaborating teacher for this study because he was an experienced teacher and because he was familiar with both the control and the experimental methods to be used in the study. According to his self reports, his undergraduate preteaching experience emphasized the use of the command style. However, he also reported that over

several years of teaching his actual teaching style had evolved into a movement oriented approach. Discussions with the collaborating teacher during the summer months preceding the beginning of the study indicated a reluctance on his part to go back to using the command style. His concerns were focused on what he saw as a potential loss of teacher autonomy during the year long study. He had a good deal of teaching experience in the gymnasium and had developed his own unique classroom personality. Consequently, control over his teaching methods by a researcher was seen as a threat. In addition, his bias in favor of the movement approach had convinced him that he might actually be cheating the students who were to be assigned to the traditional method. Therefore, it became important to establish a mentoring relationship with the collaborating teacher.

In order for the mentoring relationship to function, it was necessary to re-establish that the very reason for the selecting just one teacher for the study was, in fact, to hold this global and multifaceted teacher characteristic of classroom personality constant. The role of the collaborating teacher was then clarified. The collaborating teacher was to take primary responsibility for physical education instruction after curricular and methodological issues were resolved with the researcher. In addition, he was to maintain what both the researcher and the collaborating teacher described as a "warm, caring attitude toward children" as he applied both methods. Monitoring of his teaching through field observations by the researcher would be used to assist the collaborating teacher in making the most equitable applications of the two theoretical teaching models within the constraints of his own unique classroom personality. Once these things were clearly understood the mentoring relationship between the researcher and the collaborating teacher began to serve to (1) maintain his interest in the study, (2) assist him in the

implementation of the traditional and movement education methods, and (3) help him to more clearly distinguish appropriate teaching behaviors for both methods.

The inservicing was begun as the researcher and the collaborator jointly looked at the existing physical education curriculum in the school and attempted to select appropriate instructional activities for the duration of the study. There was no formal curriculum guide for psychomotor skill instruction in this particular school although the physical education teacher reported that he had established a rather consistent program over the past several years. After discussing the informal curriculum of the past few years, body image and spatial awareness stood out as important program elements which the collaborator could not imagine teaching by the traditional method and for which the researcher could not offer acceptable alternatives within the traditional approach. It was decided, then, that these activities would be taught prior to the implementation of the study by the movement education method.

The next step was to establish a focus for curricular planning and activity selection for the study. This necessitated working around two problems associated with establishing a common basis for curriculum development for both methods under investigation. First, it is common in programs taught by the traditional method to subdivide the curriculum into discrete units. This same notion of units is not, however, consistent with the approach taken by movement educators who advocate an integrated approach both within physical education and across other academic disciplines. Second, the concepts of time, space, force, and flow are necessary considerations when planning a physical education curriculum from the movement education perspective. These same concepts are not, however, substantive considerations when planning the curriculum for the

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

traditional approach. Since neither the researcher or the collaborating teacher was able to reconcile these two opposing points of view, it was jointly decided that the content of the curriculum for the study should be focused on a goal that would be representative of appropriate content for both methods.

The conclusion was reached that an appropriate goal for elementary physical education was the development of fundamental skills and that this classification of skills could be effectively used as the common basis for curricular planning and activity selection for both the traditional and the movement education methods. Furthermore, a focus on the development of fundamental skills also was considered to be consistent with the performance objectives adopted by the State of Michigan for physical education instruction. Consequently, instructional activities throughout the year were selected from appropriate fundamental skills in each of three categories: posture, transport, and manipulation. Skill acquisition was then identified as the point of emphasis for the traditional approach. Similarly, an understanding of the related concepts of time, space, force, and flow was considered to be central to the movement education model.

This joint review of the intended curriculum was a necessary step in the process of providing inservicing for the collaborating teacher, but it was not enough. Further discussion was necessary in order to effectively implement the two theoretical teaching models. The collaborating teacher felt uncomfortable about equitably applying each of the teaching methods and, therefore, requested technical assistance. The lesson plan formats and the operationalized methods were developed by the researcher and used by the collaborator as a guide for clarifying the actual teaching behaviors to be used when implementing each method. The collaborating teacher was instructed to use the lesson plan formats for planning each lesson. He also was expected to respond in journal

form to both the problems and successes associated with teaching fundamental skills by each of the two methods under investigation.

Regular consultations between the researcher and the collaborating teacher were used to monitor the implementation of the methods. Additional consultations by telephone and in the field were used as the teacher requested. These additional consultations usually took one of two forms. They were either requests for more technical assistance, or they were requests for emotional support. The field observations were used not only for monitoring purposes but also as a form of technical assistance for the collaborating teacher. The researcher advised the teacher both during and after each field visit of any observed teaching behaviors that were not consistent with the application of the two models and of any teaching behaviors that might be employed by the collaborator to make his teaching life easier. Support also was given for those teaching behaviors that were working well and fit neatly into the framework of the operationalized methods.

During the months of September and October and prior to the pretesting for the study, the collaborating teacher taught body image and spatial awareness skills to all children by a less well controlled movement education approach. In addition, he taught gymnastics by a combined approach, using both the traditional and movement education methods. This teaching time provided both the researcher and the collaborating teacher with insight into the fact that it would be difficult to keep the implementation of both methods technically clean. This teaching time also provided a further clarification of both methods before they were actually put into practice. It was evident as a result of these trial experiences that supportive and corrective feedback on the use of both methods would be necessary in order to insure that the teaching treatments were purely applied.

Summary of Procedures

The procedures used in this study were specifically designed to accommodate both the quantitative and the qualitative considerations associated with the implementation of two different teaching methods used for psychomotor skill instruction in a naturally existing school setting. The reality of the school setting selected for the study included two broad conditions that precipitated those procedures. (1) Instruction in physical education is given to children in their individual classroom units, each with their own classroom teacher. For this reason, it was necessary to randomly assign whole classes to treatment. The sampling for the pretesting and posttesting then was done at random from the available pool of students in each classroom. (2) There is one physical education instructor in this school, and he is responsible for all psychomotor skill instruction in the kindergarten through sixth grade. It was necessary to initially train and to continue to inservice this collaborating teacher in the two methods under investigation to insure that the methods were implemented as consistently as possible across grade levels and across the curricular content.

The inservicing and regular field observations served as a means for monitoring the implementation of the theoretical models. In short, the quantitative procedures were used to equate the naturally existing classroom units and to measure the effectiveness of the two methods on the children sampled from those units. The qualitative measures were used to monitor, document, and explain the results of each theoretical model as it was applied to the naturally existing educational setting.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Data Collection and Measures

The data collected for this study were both quantitative and qualitative in nature. Pretest and posttest measures of perceived competence and motor proficiency were used as the basis for data analysis. Other data included notes from field observations and videotaped teaching segments of the experimental methods as they were actually implemented. Stimulated recall was used with the collaborating teacher on a regular basis in order to provide the necessary evidence for the triangulation of the qualitative data.

Quantitative Data Collection

The quantitative data collection for the study occurred at the pretest and posttest intervals. The data were collected by using two measures. The Pictorial Scale of Perceived Competence for Children is a paper pencil task that examines a child's perceived competence on four dimensions: cognitive ability, peer acceptance, physical ability, and maternal acceptance. The Bruininks-Oseretsky Test of Motor Proficiency is a test of general motor ability. The short form of that test was used for data collection in this study. That version includes gross motor tasks that are appropriately tested in the gymnasium and fine motor tasks that are paper pencil tasks. Pretesting was done first on the Pictorial Scale of Perceived Competence for Children since it is possible that merely taking the Bruininks-Oseretsky Test might bias the child's answers on the physical competence portion of perceived competence scale.

Pretesting on the Pictorial Scale of Perceived Competence for Children was begun in early November. The children were tested during the regular school day in available testing areas. Individual testing on the perceived competence scale took between 10 and 15 minutes per child. Pretesting on this dimension

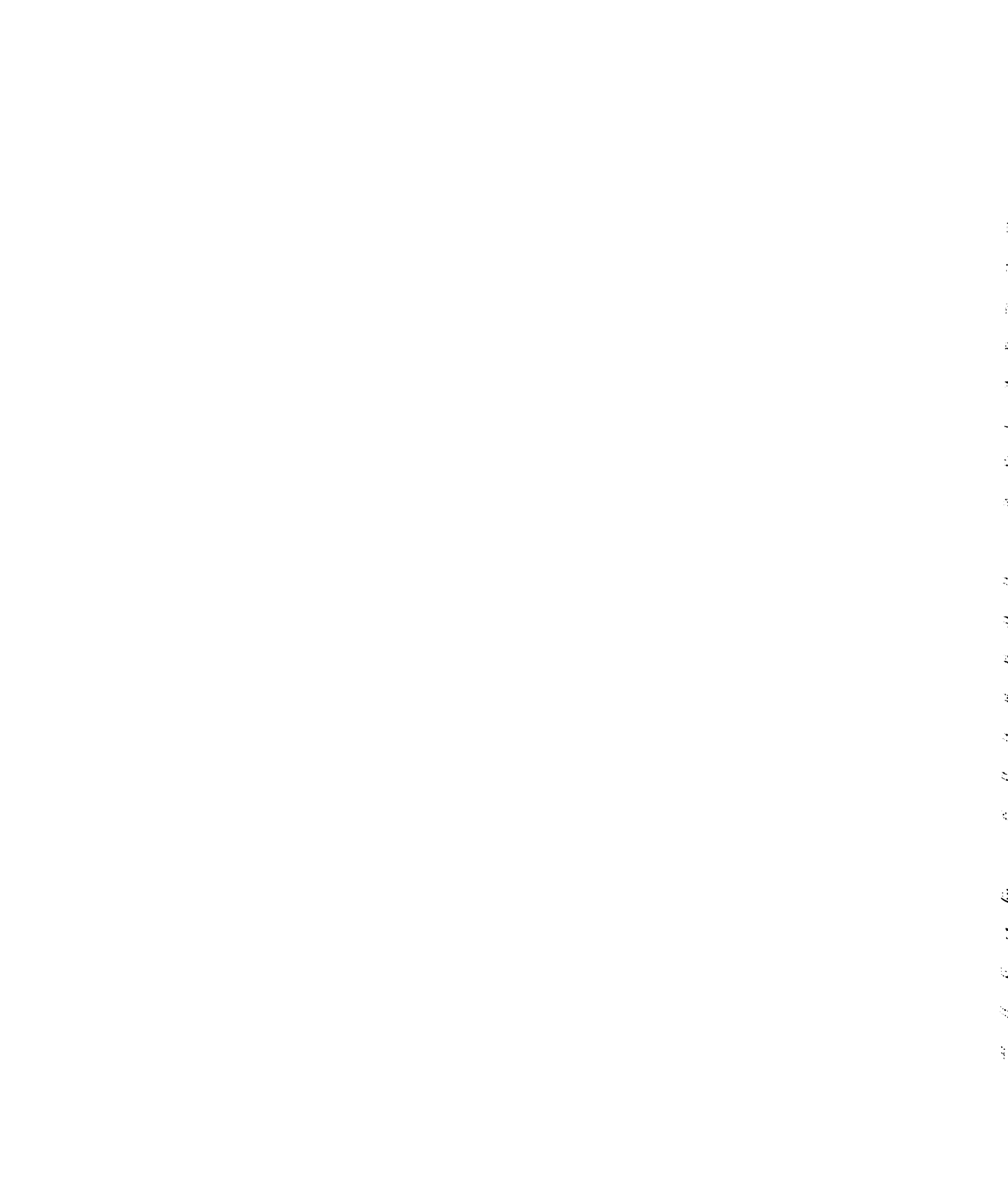
on the sixty subjects measured in the study was completed in about a week and a half. When the pretesting on the first measure was completed the motor performance measure was administered. The regular physical education teacher assisted the researcher by evaluating each child's performance on the items that were more appropriately performed in the large open space of the gym while the researcher evaluated the paper pencil tasks in the classroom. The motor proficiency testing took about 20 to 30 minutes per child. All pretesting on both measures was done on the same measures and in the same order as the pretesting. Posttest data collection was begun in early May and was completed by the end of the month.

The Quantitative Measures

The effectiveness of the two methods under investigation in this study was measured by using two criteria. First, the methods were evaluated according to their effect upon the child's perceived concept of self. Second, each teaching method was assessed according to its impact on the students' motor proficiency. The Pictorial Scale of Perceived Competence for Children was used as the measure of change in self concept and the Bruininks-Oseretsky Test of Motor Proficiency was used as the measure of motor achievement.

The Pictorial Scale of Perceived Competence for Young Children

The Pictorial Scale of Perceived Competence for Young Children is a new scale that is designed to assess the young child's perceptions of his or her competence in the cognitive, physical, and social domains, as well as his or her perceived maternal acceptance. It is based on the belief that the child's perceived competence is central to his or her sense of self, and further, that it is a mediating factor in the child's intrinsic motivation to engage in



mastery attempts of any kind. Construction of the scale was guided by an interest in the developmental and hierarchical nature of the self system. It also was based on the format for a similar test by Harter that was designed for use with older children.

The item means for the test are generally reported between 3.0 and 3.6. Standard deviations, however, indicate considerable variability among the respondents to date. Subscale means follow a similar pattern, and it is generally noted that scores are higher for competence scales than for acceptance scales. There has been no indication that age differences emerge over the four year period for which the scale was designed (pre-kindergarten, kindergarten, first, and second grades). Reliability coefficients for the subscales range from .46 to .79, but the reliability for the entire scale averages in the mid .80's.

The Pictorial Scale of Perceived Competence for Young Children was selected for use in this study, first of all, because it assesses the atomistic components of self in the cognitive, physical, and social domains. This characteristic of the instrument allowed the researcher to "tease out" any potential correlations between the subscales of perceived competence and the scores on the motor proficiency test. Further, the picture plates and the manual provided are very straightforward and assessment does not require special training for the examiner.

The Bruininks-Oseretsky Test of Motor Proficiency

The Bruininks-Oseretsky Test is a widely used assessment instrument for evaluating motor proficiency in young children. Both fine and gross motor functioning can be evaluated on children from 4 1/2 to 14 1/2 years of age by using this test. It is an individually administered test that includes a

complete battery for which composite gross motor and fine motor subscores are available. It also includes a short form that can be used as a survey of motor proficiency. The test is based on an adaptation of the Oseretsky Tests of Motor Proficiency by Doll, 1946 (Bruininks, 1978). The adaptation of the original test was standardized in 1978 on 765 students selected by stratified sampling procedures on the basis of age, sex, race, community size, and geographic region.

Standard scores, percentile ranks, and stanines are available for the conversion of point score totals on the complete battery and its subtests, as well as on the short form. Each subtest has a mean of 15 and a standard deviation of 5. The composite scores have a mean of 50 and a standard deviation of 10. The reported test-retest reliabilities for the battery composite range from .86 to .89, and on the short form they average .86. The reported standard error of measurement for the battery composite is 4.0. The validity of the instrument is determined by its ability to assess the construct of motor proficiency, that is, the motor performance of a given child on a given day. According to Jerome M. Sattler (1982) this test should prove useful in assessing motor ability, developing and evaluating motor training programs, and screening children for special purposes.

The short form of the Bruininks-Oseretsky Test of Motor Proficiency was selected for use in this study for several reasons. First, the short form provides the necessary survey of general motor ability required for this study. Second, the short form requires 15 to 20 minutes to administer, which is less than half the time required for the complete battery. Third, only familiarity with the test and practice at giving it in a simulated situation are required of the examiner as no special training is necessary.

The Qualitative Measures

The regular physical education teacher began the treatment manipulation the first full week of school after the pretesting was completed. Field observation of both teaching methods was done at monthly intervals by the researcher. These observations included the researcher's notes and videotapes of selected lessons. Copies of the field notes were given to the collaborating teacher and problems with implementing the methods were discussed at each observation. Lesson plans were evaluated in discussion with the collaborating teacher and subsequently were collected along with the journal notes as evidence of the actual manner in which these two methods were applied. The application of these separate methods continued from early December until early May and included a total of over 20 hours of observation time.

Treatment of the Data

The treatment of the data for this study also has both a quantitative and a qualitative dimension. The data for each aspect of the study was approached differently. Statistical treatment is discussed under the subsection on quantitative design and the descriptive analysis is explained under the heading of qualitative design.

The Quantitative Design

Three forms of statistical analysis were used as the basis for determining the effectiveness of the two teaching methods under investigation in this quasi-experimental study. First, basic descriptive statistics were used to provide background information for this study and to identify unexpected trends that could not be tested by the primary form of data analysis. Second, and most importantly, a multivariate A multiple analysis of covariance was used as

the primary form of data analysis. This procedure was selected because it combined the features of both analysis of variance and regression and, thereby, facilitated the assessment of the effects of the covariates before, after, and with the main effects. This statistical treatment tested the effectiveness of two teaching methods as it was determined by student performance on the selected measures of perceived competence and motor proficiency. Finally, Pearson Product Moment Correlations were used to test the strength of the relationship between the selected measures of perceived competence and the selected measures of motor proficiency. The following is a summary of how these procedures were used to address the four research hypotheses first outlined in Chapter One of this study.

A multivariate analysis of covariance was used to estimate the treatment effect of the two methods under investigation with respect to the following null hypotheses.

1. There will be no demonstrable differences between the movement education and the traditional methods when their effectiveness is measured by changes in actual physical competence scores on the Bruininks-Oseretsky Test of Motor Proficiency.
2. There will be no demonstrable differences between the movement education and the traditional methods when their effectiveness is measured by changes in perceived competence scores on The Perceived Competence Scale for Children.

In addition, correlations between the two independent measures of motor proficiency and perceived competence were used to test two additional hypotheses.

3. Any changes in actual physical competence, as measured by the Bruininks-Oseretsky Test of Motor Proficiency, will not be accompanied

by changes in perceived competence, as measured by the Perceived Competence Scale for Children.

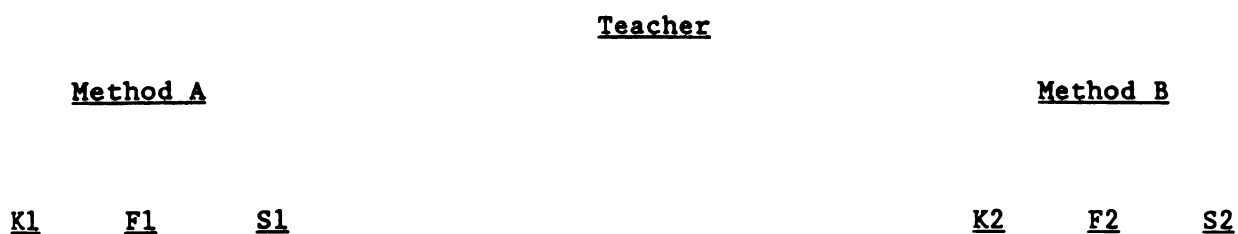
4. Any changes in actual physical competence, as measured by the Bruininks-Oseretsky Test of Motor Proficiency, will not be accompanied by changes in global self esteem, as measured by the Perceived Competence Scale for Children.

A .05 level of significance was set for either accepting or rejecting the preceding null hypotheses.

The Qualitative Design

This study was designed on the qualitative dimension as a multicase observational study (Bogdan and Biklen, 1982). A single teacher was observed teaching one class at each of three grade levels by one of two methods. Figure 6 illustrates the qualitative design; where, K = kindergarten, F = first grade, and S = second grade.

Figure 6. Flow Chart Illustrating the Qualitative Design



Extensive inservicing both prior to and during the course of the study was used to keep the implementation of the two theoretical teaching methods as pure as possible in the actual teaching-learning environment. Field notes were kept of each observation and deviations from the models were documented. Additionally,

any changes in the actual implementation of the theoretical models were documented.

The field observations in this study were focused on the process of implementing the two teaching methods under investigation and on the qualitative results of that implementation in the physical education setting. The field notes and other evidence collected throughout the study included both descriptive and reflective accounts. The descriptive data provides outlines of the physical setting, depiction of the classroom activities, portraits of the students and the teacher, accounts of particular classroom events, and the reconstruction of some of the dialogue from the teaching-learning environment. The reflective data is focused on the process of implementing each of the methods, the ethical dilemmas associated with that implementation, points of clarification surrounding the implementation, and the disclosure of the observer's frame of mind throughout the study.

The field observations were made at monthly intervals to both control and document the manner in which the two teaching methods under investigation were being implemented. Data collected during those observations took the form of field notes, videotapes, and lesson plans and journal notes from the collaborating teacher. Such data were then examined by the triangulation of several traces from at least three sources. For example, evidence from an observation by the researcher was compared to a matrix of other related data from (a) self reports by the teacher, his students, the parents of students, and sometimes the classroom teacher and (b) the reflections of those same individuals by using stimulated recall.

The field observations also resulted in the collection of data which was useful in other aspects of the study. Such descriptive evidence also was used during the study to assist the teacher with the continued implementation of the

words.

any to

The

used to

in psych

testing

mental

theoretical

claim to

an accu

initiat

wanted

since

science

of

report

methods. Finally, this evidence was used in order to apply the results of this study to the actual practice of teaching physical education.

Summary

The methodology selected for this study had two purposes. First, it was chosen to demonstrate the effectiveness of two different teaching methods used for psychomotor skill instruction. These two methods have not been previously investigated with respect to their effect on the long term program goals of elementary physical education. Second, it was selected to verify the theoretical descriptions of those methods. Such verification was used to explain their empirically demonstrated outcomes on the basis of how the methods were actually used in practice. For these reasons, this research was both quantitative and qualitative in nature. The findings from this study are presented, analyzed, and discussed in Chapters Four and Five. The qualitative evidence is presented in Chapter Four. Such evidence both examines the actual implementation of the theoretical models and presents the qualitative data in light of the research hypotheses. Chapter Five examines those same hypotheses by reporting the quantitative findings.

Chapter Four

THE QUALITATIVE FINDINGS

Introduction

This chapter is devoted to the presentation of the qualitative findings. It begins with a synthesis of the descriptive data. Discussions in the first section outline the actual implementation of both the traditional and the movement education approaches. The second section of this chapter addresses those qualitative findings in light of the four research hypotheses. Finally, the third section is focused on a summary of the qualitative data collected during the actual teaching-learning situations resulting from the implementation of each of the two methods.

The Descriptive Data

This portion of the chapter is specific to the descriptive findings. It first examines the teaching-learning environment created during the study. Then it delineates the process of instruction used with each of the two methods under examination.

The Teaching and Learning Environment

This subsection of Chapter Four lays out the elements of the teaching-learning environment. First, the physical setting of the school is discussed. Second, the role of the teacher is presented. Third, the role of the student is examined. And finally, a general description of the activities included under each instructional method is given.

the S.

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

The Setting

Information about the instructional setting used for this study was predetermined as a condition of the physical plant of this particular school and occurred as a consequence of the implementation of the study itself. The next several paragraphs describe location and physical conditions of the gymnasium and provide a general description of how that space was used under each method. In addition, general descriptions of the collaborating teacher and of the physical education classes involved in the study are provided as significant information leading to a deeper understanding of the findings gathered in this study.

The gymnasium used for physical education instruction was located across a service road and parking lot from the elementary school building. It was housed in an older section of the middle school that services that same district. Consequently, the children had to be escorted to and from their physical education class by their classroom teachers. This necessitated leaving time to put on and remove outerwear prior to and following the physical education class time. This time appeared to be spent out of the classroom teacher's allotted time and not out of the instructional time assigned to the physical education teacher. The classroom teachers seldom remained in the gymnasium during the physical education class, and if they did they usually brought in classroom work like papers for correction or a variety of record keeping tasks.

The physical space of the gymnasium was divided into three major areas: a balcony, a stage, and the gymnasium floor itself. The balcony was used as a place to remove outerwear, a place for guests to sit and, at times, as an instructional area. The stage was used as a testing area, a time out area during instruction, a storage area, and as an instructional area. The



gymnasium floor served as the primary instructional space. It was the size of a standard basketball court with the boundary lines next to the walls. It had a wooden floor marked for basketball and one basketball hoop at either end. It also had a chalk board along a portion of one wall. Equipment storage areas and restrooms were located immediately adjacent to the gymnasium and under the balcony area.

The use of this space during the instruction time varied according to the portion of the lesson being delivered and the instructional method being employed. During the introductory phase of each class the children entered the gymnasium and moved to the center circle inscribed on the gymnasium floor. In the traditional method the children then moved to one end of the gymnasium where they were arranged in squads for skill instruction. Skill instruction, on the other hand, in the movement education method was most often done in a scatter formation throughout the entire gymnasium. Games were frequently used as culminating activities for both methods and were selected on the basis of their ability to promote the use of the skills taught on that day. The space used for those culminating activities did not vary significantly between methods, except when a relay was used in the traditional method. Closure for the class period was done most frequently on the center circle for the traditional method. The circle was also used for the movement education method, but quite frequently closure was attained in the scatter formation. Class was dismissed from file lines at the exit doors regardless of the instructional method employed.

The physical education teacher selected as the collaborator for the study was an experienced teacher. He had served for ten years in that system and held a Masters Degree. He was well respected by his building principal and his

185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

classroom teacher colleagues. He promoted his physical education program through parents' nights and other special events, and he was actively involved in the school and community sports programs. His focus on elementary physical education was on the development of basic skills. According to his self reports, his training in methodology was in the traditional approach, although his actual teaching style evolved into a mode more akin to the movement education method. His rapport with the children was warm and relaxed. As a rule, he stood close to the children and got down to look into their eyes when he spoke to them. His classroom manner did not appear to be at all intimidating. He frequently joked with the children and helped them manage with their pre-class and post-class responsibilities of taking off and putting on coats, hats, and mittens. The children appeared eager to share the events of their lives with him.

The physical education classes came to the gymnasium eagerly. The children appeared to be excited about their gym time and both the physical education teacher and the children talked about coming to the gym to do work. The classes did not respond differentially with respect to their general attitude toward physical education based upon the instructional method being used with their given class. It also appeared that both boys and girls participated equally throughout the physical education class time regardless of teaching methodology being used. The classroom teachers seemed to be supportive of the physical education program and, in fact, used supplementary motor skill activities in their classrooms. It was evident from conversations with the staff members that the physical education class time was arranged for the classroom teacher's convenience whenever possible; however, once the class time was established, it was held relatively stable.

The Role of the Teacher

It was evident prior to the implementation of the study that there should be some real differences in teacher behavior between the two instructional methods under examination. The observations made during the study clarified those perceived theoretical differences even further. In addition, the study provided the framework for looking at one teacher's application of the theoretical models into practice. The following paragraphs are focused on observations of the teacher's role with respect to classroom organization.

The teacher most often greeted each class on the center circle of the gymnasium. Early on in the study he tried to organize the traditional classes into squads for the class greeting. He found this manner of introduction unacceptable and asked to use the circle. Since skill instruction was not going on at this time, it was agreed that the circle could be used in both methods for the opening of class. It was also felt by the researcher after observing both methods of introduction that such a concession would ease the transition for the teacher back into the more traditional format and allow him to maintain a warmer, less threatening and less authoritarian manner in the traditional setting. In spite of the inservice work done with the physical education teacher and the collaborative efforts between the instructor and the researcher in setting goals, developing curricular content and operationalizing the methods to be used in the study it was believed by the researcher that consistency in the implementation of the instructional methods was not achieved until January because of the kinds of problems illustrated above.

After

the 20

struction

recovered

struction

light by

finally,

children to

ming. I

relationship

the child

It had

own the

organization

squad for

ment ed:

national

their squ

union, in

which. I

wanted v

and to r

the gre

utilized

national

union se

After the teacher greeted the children and introduced the lesson for the day, he moved the children into an organizational format for skill instruction. This format varied substantively by method. Classes taught by the movement education method either remained in the circle for skill instruction or, more frequently, moved into a scattered formation. The classes taught by the traditional mode moved into squads at one end of the gymnasium. Initially, the transition from the organizational format used for greeting the children to the instructional format was more difficult in the traditional setting. It then became necessary to make modifications in the teacher's leadership so that the aforementioned transition could be made more acceptable to the children, the teacher, and the researcher.

It had been agreed during the inservicing that a fundamental difference between the two instructional methods under investigation was the organizational format used for instruction. The teacher was expected to use the squad format in the traditional setting and the circle or scatter in the movement education setting. The teacher implemented the squad format in the traditional setting by escorting the children in almost a marching fashion over to their squads. This approach was time consuming and impractical, and, in addition, it changed the teacher's style to a very abrupt and authoritarian approach. It was decided by the researcher that the children were sufficiently acquainted with the squad format and that the teacher should use a verbal command to move the children into their squads. This transition by verbal cue from the greeting to the instructional phase of the lesson was then standardized for both instructional methods. The teacher's approach in the traditional setting then became more consistent with his style in the movement education setting.

The daily lessons were brought to closure by the use of large group activities that were related in some way to the skill that was the focus for instruction on that day. The culminating activities selected for the traditional setting were designed to be competitive in nature. In contrast, the activities used in the movement education setting were designed to be cooperative. The squads were used as a basis for forming teams in the traditional setting. In the movement education setting, the teacher divided the class approximately in half from the scatter or circle formation used during the final activity in the instructional phase. On the average it appeared that the culminating activities selected for both instructional methods were very well accepted by the children. Sometimes, however, the children in the movement education classes requested the more familiar competitive games that were being used in the traditional setting. It was not evident, however, that the children from the traditional setting wanted to play the cooperative games used in the movement education approach.

Another important dimension of the teacher's role that was demonstrated to vary between the traditional and the movement education method was related to the practical aspects of classroom management. It was expected right from the beginning of the study that the traditional approach would be more formal than the movement education approach. It was not evident, however, how such formality or the lack of it might actually be translated into practice. Observations of the teaching-learning situations used under both methods of instruction led to interesting disclosures about class control, the establishment of authority, and the type and frequency of feedback and reinforcement given to the students.

1911

1912

1913

1914

1915

1916

1917

1918

1919

1920

1921

1922

1923

1924

1925

1926

1927

1928

1929

1930

1931

1932

1933

1934

1935

The squad organization of the traditional approach seemingly set up an optimal condition for classroom management. First, the teacher could give directions and other information from a location in front of the class so that he could both maintain eye contact with the students and be clearly heard. Second, the students would wait in the squad lines for instruction and for their turn to work on a given skill. Third, the teacher could watch a limited number of students at one time and give immediate corrective feedback on an individual basis. And finally, task completion for the individual child and turn taking was designated by returning to the squad line. In actual practice, however, and in spite of its formal management safeguards, it appeared as though the squad organization ceased to function as a classroom management tool and instead became a classroom management problem.

Four conditions were identified during the observations which seem to have precipitated that outcome. First, once the activity was begun in the traditional setting, the children's attention shifted to the activity itself and away from maintaining their squads. Consequently, the teacher had to spend a great deal of time trying to maintain the organizational structure of the squad. Second, the squads developed an impetus of their own during the activity, and the teacher had to get louder than the students or use some other mechanism such as whistle in order to gain their attention. Third, since only four or five children were active at once, the wait time for the other students resulted in the generation of some discipline problems, particularly after the first few children in the squad had had their turn. The teacher, then, was less free to watch and critique skill performance because he was attending to the discipline problems within the individual squads. And fourth, the practice time afforded during the squad drills did not appear to be very effective. The

tasks performed in the squads were nearly always done as a race, even when the teacher specifically gave instructions that the activity was not a race. This may well have been the result of the structure of the squad organization itself in which children are impatiently waiting for their turn and encouraging their peers to hurry.

The original analysis of the movement education method and the subsequent inservicing for the collaborating teacher also focused on classroom management techniques and classroom management problems that might be expected to occur when implementing the method. Two major areas of concern similar to the four previously examined issues addressed in the implementation of the traditional method were considered. First, it was expected that classroom management might well become a problem in the movement education approach since there were no formal organizational structures by which the teacher gained and maintained control. Second, with all children active at one time it was possible that there would be so much student behavior to monitor that the teacher would not be able to effectively direct the activities of the lesson or to provide sufficient corrective feedback and reinforcement to the students. Such speculations, however, were not borne out during the actual classroom observations made throughout the study.

Observations of the movement education approach resulted in the following representation of classroom control. First, the teacher in the movement education setting provided instruction and gave directions and other information from a circle or more frequently from a scatter position. Since neither of these structures put the teacher in a position where he had optimal eye contact with all the students, it might be expected that children out of the teacher's immediate visual field would not be attending to instruction and

and

which

which

which

which

which

which

which

the ca

The

use at

early

which

which

which

which

which

which

which

in Co

to

the pr

the pr

the pr

the pr

could instead be engaged in disruptive or nontask-related behavior.

Examination of actual practice, however, indicated that the teacher changed his position frequently while delivering instruction so that he made random eye contact with the majority of the students during any given portion of the lesson. Such teacher behavior may in fact have controlled potentially disruptive behavior. Additionally, it is also possible that because the children in the movement education setting were not engaged in follow-the-leader types of instructional drills that they may have attended more carefully to directions and task-related information.

The field observations for this study also revealed that the instructional phase and the practice phase of the movement education approach were not as clearly discernible as those used in the traditional setting. Short spurts of instruction were merged with immediate practice for the class as a whole in the movement education approach, while in the traditional method longer units of instructional time were followed by individual practice time in the squad format. Additionally, feedback and reinforcement were given globally throughout the combined practice and instructional segments of the movement education lesson while in the traditional setting this same information about performance was given to an individual student during his or her practice time. Consequently, instruction via additional questions and probes was being given to all students in the movement education setting throughout the majority of the practice time. Indeed, it was this rather continuous interaction between the teacher and the class as a whole in the movement education method that seemed to provide the teacher with a means of control within a relatively informal and unstructured method.

The relationship between the instructional phase and the practice phase of the lesson also appeared to be related to the way in which the teacher communicated with the students and gained their attention for further instruction or for a change in instructional direction or activity. In the traditional setting the teacher used a designated period of time for instruction after which the students were directed to begin their practice. The practice, then, continued until each member of each squad completed his or her drill or, with less frequency, until the teacher stopped the activity. During the practice session, the teacher observed and provided feedback and reinforcement to each individual student based on his or her personal performance. If the student misunderstood the instructions or if he or she needed to be redirected, the teacher had to stop the squad activity, provide the new information, and begin the drill again.

The teacher in the movement education setting, by contrast, was almost constantly engaged in verbally cueing the students as a class. Each cue given by the teacher usually initiated only about 1 minute of activity, and it was followed by additional probes and questions that further developed the skill being taught according to the physical and verbal responses of the class. In this way, the activity was more continuous, and the teacher was less apt to have to regroup the students for further instruction. Upon observation, it became evident that communication in the movement education setting was more frequently directed at the positive aspects of skill acquisition and less directed to discipline and class organization than in the traditional method.

The relationship between the instructional and the practice phases of the lesson appears to be a distinguishing feature between the traditional and the movement education methods. It was unexpectedly demonstrated to be a

contributing factor in several aspects of the collaborating teacher's behavior. It was shown to be related to classroom organization, classroom control, and to the approach used for distributing both reinforcement and feedback. Additionally, this particular aspect of classroom management can be examined with respect to its influence on student behavior.

The Role of the Student

The student's role in the teaching-learning process is an important consideration when evaluating the effectiveness of a teaching method. Observations made during the course of this study identified differences by method associated with the way in which the students related to the teacher, to their peers, and to the content of the instruction. Original analysis of the traditional and the movement education approaches theoretically defined the relationship between the students and the teacher for each method.

The traditional approach was characterized during the inservice portion of this study as formal in nature. The teacher in that method was responsible for providing all instructional information, for setting up all aspects of the practice environment, for providing the necessary feedback to remediate errors in the students' motor skill performance, and for making all the connections between the individual elements of the lesson in order to provide the students with closure on that lesson.

The students were then expected to listen to the directions and commands given by the teacher and to respond accordingly. In the traditional setting, the appropriate response for the students during instruction was to listen to the teacher and to watch any demonstrations. Then, during practice, the students were expected to mirror the demonstrations and to correct errors as they were identified by the teacher.

A similar analysis of the movement education method demonstrated it to be characterized as a democratic approach in which the students and the teacher are co-learners. The teacher implementing this approach initiated the instructional process, but from that point on the lesson evolved into a rather continuous verbal and physical exchange between the students and the teacher. The teacher used the students' responses as a foundation for further instruction and practice and as the basis for providing global feedback about the execution of a particular skill. Closure for the daily lessons was brought about by the same type of questions and probes used throughout the lesson, and, therefore, it became a joint effort aimed at understanding how the skills taught that day were executed, how they were related to each other and to previously learned skills, and how they could be used in a game situation. The student, therefore, was expected to both listen and do throughout the movement education lesson.

The implementation of these instructional models differentially affected both the amount of and the nature of the contact between the students and the teacher. The field observations made throughout the study indicated that in general the amount of contact between the teacher and the class as a whole was greater in the movement education method. Additionally, the amount of individual contact with a given student was greater in the movement education method than in the traditional method. However, it is also important to address the nature of that contact.

Contact between the teacher and the class as a whole was virtually continuous during most movement education lessons. Such contact in the traditional setting, however, was limited to the short intervals designated for actual instruction on specific skills included in the daily lesson. In the

traditional method individual contact with a student was most frequently aimed at correction or discipline. Students were seldom called on to contribute to the instructional process. In the movement education approach students were often called on to contribute to the instructional phase of the lesson by providing either verbal or physical responses to a movement problem. Additionally, the student in the movement education approach was seldom given individual correction. Discipline, however, was most often given on an individual basis in the movement education setting. A further look at the type of contact given in each method indicated that there was less visual and less verbal contact between the teacher and the individual student in the traditional approach. Physical contact, however, was more frequent in the traditional setting where such contact appeared to be one way for the teacher to gain the attention of a single student during a skill drill. If the relationship between the teacher and the student is an important aspect of the instructional process, then such information will be valuable in interpreting both the qualitative and the quantitative findings of this study.

The relationship between the individual student and his or her peers was also demonstrated to be a differential consequence of the instructional models used in this study. The inservice analysis of the traditional and the movement education models identified the traditional models as a competitive model and the movement education model as a cooperative model. Observations of both models as used in actual practice confirmed the original analysis and pointed to specific consequences in the relationships between students engaged in instruction under each approach.

The teaching-learning activities in the traditional method were designed such that the students were involved in competition throughout the practice and application phases of the lesson. First, it was observed that the squad organization almost consistently resulted in a relay race during the drills. Students were frequently heard encouraging others in their squad to "hurry" or to "beat 'em," even when the teacher specified that the drill was not a race. Additionally, the individual child was almost always being watched by either the teacher or his or her peers while she or he practiced new skills in the drill situation. And, finally, the culminating activity for each lesson in the traditional setting was selected as a competitive game that would test the child's prowess on skills learned that day.

By contrast, the activities selected for use in the movement education method were designed such that the teacher and the students would be engaged in a cooperative learning experience. The whole class method of instruction delivered through the use of questions and probes facilitated that cooperation. Additionally, the students in the movement education setting were afforded a substantial amount of anonymity during the combined instructional and practice portions of the lesson. Two conditions of that approach fostered such anonymity. First, the teacher did not single out the errors of individual students; instead, he used both movement errors and movement successes as the basis for giving global feedback. And secondly, since all students were active at one time, they had little time to attend to the performance of the other children in the class. Finally, the culminating activities also contributed to this cooperative environment because they were selected not to test skill prowess, but to apply the skills to a cooperative game situation. Such games permitted even the unskilled child to make a contribution to the game situation.

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

The students receiving instruction under the traditional method and the movement education method also responded differentially with respect to the content of the lesson. The traditional model was designed with a product orientation, while the movement education model was founded on a process orientation. The teacher in the traditional setting developed the instructional activities into discrete teaching and learning episodes. Every aspect of skill performance was clearly defined, including information on the preparation, execution and follow-through of the skills, as well as the number of repetitions allowed in the drill and the established criteria for success at the skill. Consequently, the students in the traditional setting approached new skills to achieve the desired end product by completing the drill and by meeting the established criteria. On the contrary, the teacher in the movement education setting developed the learning activities so that they would encourage exploration into a variety of possible movement responses. The students in the movement education method were, therefore, both eager to try new ways to accomplish a movement problem and anxious to continue working on a learning activity. These base line differences both theoretically and practically affected the students' approach toward the instructional content.

Description of the Activity

The focus of the physical education program in this study under both the traditional and the movement education methods was on the development of fundamental skills. The study was designed to hold the teacher as a constant factor and to manipulate the instructional approach used for psychomotor skill instruction in order to demonstrate the effect of the two methods on teaching and learning. In order to more clearly investigate the research hypotheses

outlined in this study, it is important to further examine the teaching and learning environment with respect to the selection and initiation of the instructional activities employed with each method.

The lesson plan format served as the basis for instructional planning regardless of the method being used. The formats for both methods identified three distinct aspects of instruction to be included in each lesson: (1) the introduction to and instruction on a given skill, (2) the practice of that skill, and (3) the use of that skill in a game situation. The traditional method focused on skill instruction and practice drill combinations culminating in a competitive game. The movement education approach developed a movement concept through both cognitive and movement oriented questions and probes aimed at the acquisition of a skill or skills in a combined instructional and practice setting that culminated in a cooperative nontraditional game. These inherent differences in the methodologies, then, led to both expected and unexpected differences between the traditional and the movement education methods as they were actually used in the instructional setting. Such findings will be discussed in the next section of this chapter on the process of instruction.

Regardless of the instructional approach being implemented, the following skill categories were used as the basis for selecting learning activities for physical education instruction.

Basic locomotor skills

Object control skills

Fundamental motor skills

Body awareness - body part identification, laterality, directionality

Spatial awareness

Body control - effort control

Manipulative skills

Postural skills - balancing

Fitness activities - obstacle course, Mimetics, Parachute Robe Climb, Cargo
Net

Dance activities - Fold and Square Making Dances

Temporal awareness

Aquatic skills

When a particular skill in one of these categories was selected for use as an instructional activity in one method, it was also used in the other method. Although every effort was made to give equal time to a selected skill across both methods on a daily basis, it was found that the instructional approach itself controlled, to a great extent, the time available for work on any given task. A curricular outline by month is included on the next several pages for reference.

Curricular Outline

November and December - Personal Space

Body Part Identification

Basic Locomotor Skills

Walk

Run

Jump

Hop

Skip

Gallop

Leap

Slide

Fitness Activities

Mimetics

Ball Handling

Roll

Bounce

January

- Ball Handling

Bouncing

Dribble

Soccer Dribble

Catch

Shoot

Throw

Kick

Punt

Fitness Activities

Rope Climb

Dance Activities

Folk and Square Making Dances

February

- Fitness Activities

Continuous Obstacle Course

Parachute

Basic Locomotor Skills

Jump

Leap

Temporal Awareness

Tempo

Rhythmic Pattern

Accent

Fundamental Skills

Toss/Catch

Spatial Awareness

Direction

Floor Pattern

Level

March

- Temporal Awareness

Tempo

Accent

Rhythmic Pattern

Dance Activities

Making Dances

Folk Dances

Tinikiling, Bunny Hop, Pop Corn, LaRaspa,

Pop Muzic, Pattycake Polka

Manipulative Activities

Balls, Hoops, Ropes

Lumni Sticks

Balloons/Batters

Aquatic Activities

Bob

Float

Kick

Stroke

Dive

Tread Water

Drownproofing

April and May - Fundamental Skills

Dribble

Shoot baskets

Striking - bats/racquets

Hurdle

Throw

Jumping Rope

Fitness Activities

Rope Climb

Cargo Net

Games

Line Soccer

Shocker Soccer

Home Made Games

The Process of Instruction

In order to be able to clearly interpret both the qualitative and the quantitative findings of this study with respect to the previously outlined research hypotheses, it is important to look carefully at how physical education instruction was actually delivered under the traditional and the movement education methods. The analysis of those delivery systems will include investigation into the process of setting objectives and organizing the lesson. In addition, it will look specifically at the efficiency of each

delivery system and the other consequences of the implementation of the two theoretical models. Finally, the method of evaluation used with each method will be outlined.

Setting Objectives

The process of setting objectives in this study was dictated by the long term program goals and the instructional parameters of the selected teaching methodology. The long term program goals were the same across both the traditional and the movement education methods: (1) to develop physical competence in a variety of fundamental skills and (2) to develop a positive perception of competence. The suggested instructional strategies of the two methods, however, differed substantially, and the observation of the models in practice indicated differences in the actual performance objectives set for any given daily lesson.

The performance objectives for the traditional approach were established to insure that the student would perform a given skill at the level of an expected standard. Such an objective very specifically identified the performance criterion of the skill selected for instruction. Very explicit information was given to the students about what skill they were going to perform, how they were going to perform, how they were going to perform it, and how they were going to be evaluated on their performance. Information about what skill the students were to perform included the name of the skill, a verbal description of how to prepare, execute, and follow through on the skill, as well as an accompanying demonstration of the correct way to perform the skill. Specific information about how the students were to perform the skill included a description of the practice drill and the number of times that the drill was to be executed. A criterion for successful performance of the skill also was provided. It often included a success to failure ratio, a comparison between

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

members in the squads, or a comparison between the squads as teams.

Performance objectives of this nature were expected and in fact prescribed because of the basic tenets of the traditional model which advocate skill development on the basis of mechanical skill analysis and an understanding of the developmental principles of motor skill learning.

On the contrary, the performance objectives for the movement education approach were established to provide the student with a variety of related movement experiences that would enhance the child's movement repertoire and increase his or her cognitive understanding of a given category of skills. Consequently, the performance objectives for this method were very loosely structured so that student responses could be used to reformulate the lesson once the combined practice and instructional phase of the lesson had begun. The teacher in the movement education class, however, did not approach the instruction time unprepared. He had a focus for the lesson and an entire host of convergent and/or divergent movement probes based on the expected responses of the students to use as a means of initiating and maintaining the teaching-learning activities during the combined instructional and practice time. Additionally, it should be noted that these probes were selected to bring the child through a variety of activities to his or her personal best performance of one or more related skills. The use of objectives of this nature was similarly expected since the movement education model is based on the notion that the playful process of exploring skills and coming to a cognitive understanding of how skills are performed is an important aspect of motor skill learning.

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

Organization of the Lesson

The organization of each lesson was controlled by the theoretical model used for planning and implementing physical education instruction. The following paragraphs address the impact of the lesson plan formats for both the traditional and the movement education methods on instruction. Comparisons between the expected efficiency and the observed efficiency of both models form the basis for that discussion.

The instructional phase of the traditional approach began with whole class instruction on a particular skill. A verbal explanation of the expected standard for the class was provided either prior to or concurrent with a demonstration of the skill being taught. The skill was then practiced by each student in an appropriate drill situation within the squad structure. These distinct segments of the lesson on instruction and practice could be repeated for a variety of skills throughout the lesson; however, a culminating activity in the form of a competitive game which focused on using the skill(s) learned that day was designed to be included as the final phase of the lesson. It was expected that by using this well-structured method information about how to perform a skill and information about personal performance of that skill could be provided very efficiently. It was also expected that there might well be more time available for practice since instructional information could be handled efficiently and since the squad structure provided a very systematic approach to organizing the practice sessions and the process of turn taking.

By contrast, the movement education approach began with a whole class discussion about a movement concept. The concept of locomotion, for example, could form the basis of discussion for a lesson on walking, running, skipping, and other locomotor activities. Questions and probes would be used as the foundation of such a discussion in order to prompt the students to think about

how they move and/or a variety of different ways to move across the floor. The teacher would then initiate the practice of the selected skill by using action oriented probes like "Show me..." and "Can you...?". These probes could then be manipulated by the teacher to focus on a single skill or a variety of different skills. Such probes could also be used as a means of providing feedback about skill performance by drawing the students' attention to the source of movement errors. Finally, the movement education lesson incorporated a noncompetitive, nontraditional game as the culminating activity during which the children could use the skills that they had been learning and practicing. It was expected that such an approach to instruction might well be less efficient than the traditional method in terms of providing information about correct skill performance. It was also expected, however, that the students would have more practice time with this method than with the traditional method since the approach allows all students to be moving at the same time. It was not known, however, whether the global feedback given in the movement education approach would be more effective than the specific individual feedback given in the traditional approach.

Efficiency in the delivery of instruction and feedback appeared to be the strength of the traditional method right from the inservicing phase of this study. And observation confirmed that skill instruction in the traditional method was handled as efficiently as expected. The children responded well to the squad organization. They listened carefully to both the information about how to perform the skill and to the directions about the practice drill as evidenced by their performance in that practice drill. It was not evident, however, that feedback about personal performance was delivered efficiently. As each drill began, the teacher was careful to watch the performance of

individual students within the squads; however, as the drill progressed the teacher spent the majority of that individualized instructional time disciplining the students who had returned to their squads and were waiting for another turn. Consequently, the traditional approach did not afford a substantial amount of practice time for the individual student. In spite of the systematic organization provided by the squad format, wait time for the individual students within the squads far outweighed practice time for each child. It may well be that with older children such wait time would be used as watch time, which could be a valuable tool in instruction; however, it was not evident with these primary school aged children that wait time was a contributing factor to effective instruction.

Efficiency did not originally appear to be a strength in the movement education approach. Instead, the practice time available for all students was initially seen to be a potential advantage in psychomotor skill instruction if global feedback was effective and if divergent learning activities were appropriate for the development of fundamental skills. Observations of the movement education approach, however, did not demonstrate that model to be less effective than the traditional approach with respect to providing instruction. In fact, because the instructional and practice phases of the lesson virtually merged in the movement education approach, the teacher actually spent more time providing instructional information while still affording the children the opportunity to practice. A series of convergent probes were used when the teacher wanted to bring the children toward a single best way to perform the skill. Divergent probes were used when the teacher had decided that it was necessary for the students to further develop their movement repertoire through exploration before going on to a new and more difficult skill. It did appear

through observations of the actual teaching process that the global feedback and divergent learning activities of the movement approach were, indeed, appropriate elements of instruction in physical education.

Delivery of Instruction

Field observations of the two theoretical models as they were actually used in practice confirmed inservice speculations about the implementation of each approach. Discussion about the actual execution of the two methods is focused on the classroom approach employed by the collaborating teacher while delivering instruction. Such discussions are reflective of the style of communication used by the teacher, the teacher's interpretation of the lesson, and the manner in which the instructional activities are employed by the teacher.

One of the fundamental assertions of the traditional method of teaching motor skills defined teaching as telling or showing. Consequently, the teacher in the traditional setting was identified as the primary source of information in the classroom. As such, the communication in the classroom was primarily a one-way exchange from the teacher to the students. Instruction most often consisted of a verbal explanation accompanied by a visual demonstration of the skill as it was supposed to be performed. Drills and activities for the practice portion of the lesson were selected to bring the children through their present developmental skill level to an optimal level of skill performance. Practice on a given skill was performed by one child at a time from each of the four or five squads. It was in this portion of the lesson that it was expected that the student and the teacher might enjoy a more personal relationship since the squad organization was designed to free the teacher up to work one-on-one with his or her students. However, as stated

previously, the field observations did not support the fact that the squad format functioned efficiently enough to allow the teacher such freedom.

The traditional approach to both instruction and practice set up a situation in which the teacher was to give information first to the class as a whole and then to individual students during their designated practice time. In this way the teacher could monitor the progress of a given student and both identify performance errors and provide the necessary feedback to remediate those errors. Consequently, it might be assumed that the teacher was in control of the interpretation of all forms of instructional information. Field observations in the traditional setting, in fact, demonstrated very few occasions in which the students relied on their own problem solving skills or the help of their peers as a means to improve their own performance. It was also noted that the students in the traditional setting were even less apt to solicit the teacher's help, but rather would avoid contact with the teacher by hurrying to get the drill finished. Such information, indeed, confirms the original speculation that the teacher is the primary source of and the interpreter of instruction in the traditional approach.

Further analysis of the traditional model also indicated that the teacher was in a position of having control over all the materials used for instruction. The use of the squad format necessarily limited the quantity of instructional materials required for the practice portion of the lesson. In addition, the consequences of that format dictated that the teacher in the traditional setting must serve as a gatekeeper with respect to turn taking and control the limited number of instructional supplies. Although the squad method facilitated such sharing among the students, it should be once again noted that enforcement of the squad order became an additional task for the

collaborating teacher. It was observed during the course of the study that in the actual implementation of the traditional model this gatekeeping function of the teacher became a very important role, often to the exclusion of the teacher's role of providing feedback during practice. Such limitations of the model appear to seriously impair its effectiveness with respect to delivering instruction.

A similar investigation into the movement education model also has disclosed pertinent information about the delivery of instruction in the physical education setting under that approach. The model used for the movement education method was particularly designed to be more democratic than the traditional model. The teacher was still a leading source of information; however, student responses were almost consistently used as the basis for instruction and as examples for further exploration. In fact, instruction was based on the use of questions and probes which were designed to challenge the students to think about the way that skills were performed and to explore the widest possible range of options for a given movement. Consequently, the teacher, although in control of the instructional process, was regularly engaged in the reciprocal form of communication with the students.

Analysis of the structure of the movement education approach indicated that it was based on the notion that teaching is a process of providing an appropriate environment for self discovery. Consequently, although the teacher is a leader in establishing the teaching-learning environment, it should be noted that she or he is not the sole source of instructional information in the classroom. In fact, students are encouraged by this method to rely on their own movement repertoire as they approach new skills and to seek the help of their peers as they approach new movement problems. The opportunity to

interpret the proposed movement problems in any daily lesson, then, is left up to the students with the teacher controlling the evolving environment through the use of additional probes and questions.

The movement education approach, unlike the traditional method, does not require the teacher to serve a gatekeeping function. Every child, pair of children, or small group of children has its own equipment and is active the majority of the class time. Consequently, the teacher is free to observe individual performance or the performance of the group as a whole and provide the necessary feedback for effective instruction to either specific individuals or, more frequently, to the entire class. Therefore, it appears that the parameters of the movement education model itself promote effective instruction in the physical education setting by freeing the teacher up to attend to the students and by providing more continuous practice time for the children.

Method of Evaluation

Evaluation is also a critical aspect in the delivery of instruction. As a process, it includes the ongoing examination of the teaching and learning environment in the classroom. The original inservice analysis of the two theoretical models under investigation in this study focused on the way in which they each provided a structure for this process. Such analysis, first, required that progress in either teaching or learning be examined in light of the program goals which in this study were consistent across both methods: (a) improved proficiency in the fundamental motor skills and (b) increased perceived competence. Additionally, investigation into the process of evaluation also required that the basic tenets of each instructional approach be considered.

Successful teaching in both the traditional and the movement education setting is judged on the ability of the teacher to both plan and execute suitable learning activities aimed at bringing the students to an appropriate age and developmental level of skill attainment. However, it is the measure of learning, that is, student success, which is the point of departure for the two methods on a day-to-day basis with respect to evaluation. In the traditional method a student's success is measured against an established standard. Consequently, the student in the traditional setting is nearly always remediating errors while trying to attain the standard. By contrast, student success in the movement education approach is measured against his or her personal best performance. Therefore, the child in the movement education setting can be satisfied with his or her level of skill attainment, until she or he has a better cognitive understanding of how to perform the skill or until she or he has more fully developed the physical base upon which to build the components of that new skill. Observations of the two teaching approaches in actual practice indicated a higher level of frustration during the practice time among the students in the traditional method as evidenced by outbursts of temper and the number of students who quit before finishing the drill. Such levels of frustration did not appear to enhance the instructional environment.

The Research Hypotheses

This subsection of Chapter Four is designed to examine the qualitative findings of this study in light of the research hypotheses as they are stated in Chapter One. Those four research hypotheses were developed to be consistent with two program goals that had been identified as appropriate for physical education instruction in the primary grades under both the traditional and the

movement education methods. The first long term program goal was to develop competency in fundamental skills. The second program goal was to develop a positive perception of personal competence. The presentation of the findings in this subsection will be organized so that each of the four hypotheses is addressed separately.

Hypothesis One

There will be no demonstrable differences between the movement education method and the traditional method as measured by changes in actual physical competence scores on the Bruininks-Oseretsky Test of Motor Proficiency.

The Bruininks-Oseretsky Test is a measure of general motor ability and was selected for use in the quantitative analysis as a way to look at the improvement in motor proficiency across method, sex, and grade level. Qualitative observations throughout the duration of the study were not able to identify any demonstrable differences in the level of motor proficiency by method as it was examined across all grade levels. The analysis of the descriptive data by the researcher was not consistent with the self reports of the collaborating teacher when assessing overall changes in motor ability across all grade levels. It was, however, possible to triangulate the differential effects of the methods with respect to some special cases. There was some evidence that the movement education method might well be superior to the traditional method in the kindergarten and first grades. Additionally, it appeared that the movement education method might be superior to the traditional method with respect to the less skilled students.

Field observations at the kindergarten level demonstrated superiority of the movement education method with instruction in throwing. Specifically, the nontraditional game of "Clean Out Your Own Back Yard" which was used as a

100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

culminating activity in the movement education approach produced more advanced stages of throwing ability than the throwing for distance or throwing at a target activities of the traditional approach. In the traditional setting the kindergarten children predominantly displayed stage two, side arm throw, patterns. In the movement education setting there were overwhelmingly more stage three, ipsilateral, and stage four, contralateral, patterns. Such a disparity in performance between methods with this age group is important information to use in evaluating the effectiveness of the teaching method.

Additionally, observations of students at the kindergarten and first grade levels identified two types of behavior associated with the pressure of hurrying in order to compete within the squad organization. Such behaviors may serve as indicators of less effective instruction in the traditional setting. Children in the squad format who were having difficulty with a skill or who were performing the skill more slowly than their peers frequently responded by (1) quitting and walking away from the practice drill or (2) varying the skill so that they could finish the drill more quickly. Specifically, it was noticed that when the children practice locomotor skills in a squad drill that the skips often turned into gallops and gallops were often interspersed with runs. Additionally, it was also noticed that in striking or shooting activities the less skilled children would give up at fewer attempts than the assigned number of practice repetitions for the drill. Such inappropriate practice or limited practice was not demonstrated to make a positive contribution to skill instruction.

In the kindergarten, as well as in the other primary grades, it also appeared as though the use of imagery and analogy was an important element of effective motor skill instruction. Such an approach is used in designing the

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

probes and questions for instruction in the movement education method. By contrast, the traditional method is based on the process of breaking a skill down into its component parts. On several occasions throughout the study it was noted that there were two boys in the traditional setting who could not skip. A momentary break from the traditional approach was used to demonstrate that both boys could skip well by using the image of striking a magic ball with their knee on each step even though they were not able to skip when the skill was broken down into a step-hop pattern. In this particular case, it was demonstrated that the mechanical skill analysis often used for instruction in the traditional approach was not as effective as the imagery generally used in the movement education approach.

Hypothesis Two

There will be no demonstrable differences between the movement education method and the traditional method as measured by changes in perceived physical competence scores on The Perceived Competence Scale for Children (Harter, 1981).

The Perceived Competence Scale for Children was selected for use in the quantitative portion of this study as a means to assess both perceived competence and global self esteem. It was expected that the impact of a given teaching methodology might well have a measurable effect on the way that students appraised their own abilities. Qualitative observations of the traditional and the movement education method, however, did not yield any differential effects of either method across whole classes of students. Observations of more specific cases can, however, be associated with effects by method on perceived competence.

1. The first part of the document is a list of names and titles, including "The Hon. Mr. Justice" and "The Hon. Mr. Justice".

It has already been demonstrated through the qualitative data that the student in the traditional setting was engaged in practice sessions that were almost consistently under the observation of the teacher or the student's peers. By contrast, the student in the movement education setting, although engaged in a social context for practice, was not in a position of dealing with an audience. It also should be noted that the practice behavior of at least some of the students in the traditional setting revealed that they might well be stressed by the audience condition as indicated by those students who were observed not completing the assigned drills or substituting well-learned skills for less well-developed skills in the drills. Although such behavior is not directly associated with perceived competence, it might be assumed that if a student considered him or herself competent that she or he would be less threatened by the addition of an audience to the social context of the practice situation.

An additional example of student behavior which may be indicative of the differential effects of the two methods on perceived competence is highlighted by a single report from the researcher as documented through observations by the collaborating teacher and a parental complaint. During the pretesting on the Perceived Competence Scale for Children, a first grade female student voluntarily disclosed to the researcher that she really liked gym. She had had instruction from the collaborating teacher, by a more flexible movement education model than the one agreed upon for the study, the previous year and the first six weeks of the year of the study. This particular student was randomly placed with her classmates in the traditional method. The teacher acknowledged some attitudinal changes for this particular student in the physical education setting quite early on in the study. She would avoid

finishing the drills and would avoid involvement in the culminating activity whenever possible. In physical size, she was substantially larger than her age-mates. Her skills were average, but they were not excellent. However, it also may be important to note that she was considered to be a perfectionist by her classroom teacher. By January the student's father had called to find out why his daughter was complaining about physical education. Again, such behavior is not directly linked to perceived competence, yet it might be assumed that such a behavioral change may well be associated with a negative appraisal of ability as a consequence of the new instructional setting.

Hypothesis Three

Any changes in actual physical competence, as measured by The Bruininks-Oseretsky Test of Motor Proficiency, will not be accompanied by changes in perceived competence, as measured by The Perceived Competence Scale for Children.

This hypothesis was important to the investigation of the kind of relationship that exists between perceived competence and actual competence. The field observations made during the course of this study were not able to demonstrate that improvement in actual competence enhanced perceived competence. Such observations did, however, illustrate that perceived competence might well differentially affect the student's response in the instructional environment. Consider again the behavior responses of the less skilled students and the very young learner in traditional setting. The child who avoids practice or play situations for skills with which she or he is having difficulty is also avoiding the means by which instruction is provided in the gymnasium.

17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

Hypothesis Four

Any changes in actual physical competence, as measured by The Bruininks-Oseretsky Test of Motor Proficiency, will not be accompanied by changes in global self esteem, as measured by The Perceived Competence Scale for Children.

This hypothesis set the groundwork for the examination of the link between actual competence, perceived competence, and global self esteem. It was not possible during the qualitative observations for this study to discern what impact, if any, improved physical competence had on either perceived competence or global self esteem. Regardless of the instructional method employed, personal achievement was met with smiles and joy; however, it was not possible to determine if these personal victories were used by the students to modify their existing self appraisals of perceived competence or global self esteem. Additionally, it was not evident through the observations made during this study if the vectors between actual competence, perceived competence, and global self esteem ran from ability to the affective appraisal or from the affective appraisal to ability.

Summary

This summary is designed to highlight the disclosed findings as they are associated with the differences between the traditional and the movement education methods as they were actually implemented during the course of the study and as they relate to the research hypotheses. The following are eight major points considered to be distinguishing features of the two methods as they were employed by the collaborating teacher.

Th

bo

or

of

th

fo

pr

Th

pr

an

ma

me

in

in

ava

Th

an

ed

vi

Th

che

di

in

les

1. The two methods were distinguished by the use of physical space for both instruction and practice. The squad format was the basis for organization in the traditional method. This format limited the use of space. The scatter format and to a lesser extent the circle were the basis for organization in the movement education approach. This format encouraged the use of all the space in the gymnasium and provided more movement options for the students with respect to space.
2. The teacher's role in the traditional method identified him as the primary source of information, a gatekeeper with respect to equipment and instructional content, and as the person responsible for maintaining the structure of the squad. In the movement education method the students and the teacher cooperated to provide instructional information. Additionally, equipment was not an issue in the movement education approach since there was enough equipment available for all children.
3. The student's role in the traditional setting was to listen and watch, and then replicate the example. The student's role in the movement education setting was to listen and interact throughout the lesson with verbal and motor responses.
4. The relationship between instruction and practice was a distinguishing characteristic of the two methods. Instruction and practice were distinct segments of the lesson in the traditional setting. Instruction was merged with practice throughout the movement education lesson.

5. The form of communication used between the teacher and the students varied across the two methods. Communication was a one way activity from the teacher to the student in the traditional setting. The teacher controlled the interpretation and flow of both instructional information and feedback in that method. Communication was a two way discourse throughout the movement education lesson. The students and the teacher both contributed to the interpretation and flow of information.
6. In the traditional setting, feedback was provided by the teacher to the individual student by first identifying an error and then outlining specific steps for the student to take to remediate that error. Global feedback was provided through convergent questions and probes for all students in the movement education method.
7. The measure used for success in teaching and learning across both methods was student performance. Student performance, however, was measured according to a prescribed standard in the traditional setting and according to the students' personal best performance in the movement education setting.
8. Instruction across both methods was performed in a social setting. The formality of the squad organization led to the addition of an audience factor in the traditional setting. The scatter format used in the movement education setting encouraged an informal atmosphere and the simultaneous participation of all students. An additional stress factor of competition was added to the social setting in the traditional approach.

These distinguishing features of the two methods contribute to the following general findings related to the research hypotheses.

1. The movement education method provides an instructional approach which appears to be more effective for motor skill learning when teaching the less skilled or very young learner.
2. Perceived competence appears to influence instruction and learning because of its effect on the student's approach to practice.

Chapter Five

THE QUANTITATIVE FINDINGS

Introduction

The data presented in this chapter are a summary of the statistical analyses of the pretest and posttest measures of perceived competence and motor proficiency as they are established by The Pictorial Scale of Perceived Competence for Young Children and The Bruininks-Oseretsky Test of Motor Proficiency. Such quantitative evidence was collected to provide additional insight into the analyses of the qualitative evidence reported in Chapter Four. First, a general descriptive analysis of the pretest and the posttest data is provided. Second, the outcome of a multivariate analysis of covariance is documented. And third, correlational evidence is presented.

The Descriptive Statistics

The descriptive statistics outlined in this section provide insightful information about the performance of the children on each of the pretest and posttest measures. The means and standard deviations are used to look at the tendency of each measure to change across the time of measurement, the gender of the subjects, the method of instruction used or class assignment of the subjects, and the grade level of the subjects.

Perceived Competence: Gender

Statistics on perceived physical competence and total perceived competence according to the time of measurement and the gender of the subjects are presented in Table 1. The data in the table demonstrate a general increase in both the mean scores and the standard deviation on perceived physical



competence measure. However, when males and females are compared with respect to this general trend, there are noticeable differences. There is an increase in the mean score for the male subjects from the pretest to the posttest time of measurement that is accompanied by a decrease in variability. On the contrary, there is a decrease in the mean scores for female subjects accompanied by an increase in variability. This general trend identified for perceived physical competence, however, is not similarly observed for total physical competence. The posttest means and variances on the measure of total perceived competence decrease for all subjects regardless of gender.

Table 1

PERCEIVED COMPETENCE--GENDER: Means and standard deviations for pretest and posttest measures of perceived competence obtained from primary grade children.

VARIABLE	MEAN	STD DEV	N
PERCEIVED PHYSICAL COMPETENCE			
Pretest	3.4611	.4606	60
Male	3.3445	.4672	30
Female	3.5778	.4304	30
Posttest	3.4028	.5146	60
Male	3.4278	.4369	30
Female	3.3778	.5887	30
TOTAL PERCEIVED COMPETENCE			
Pretest	3.2499	.4021	60
Male	3.1875	.3873	30
Female	3.3124	.4134	30
Posttest	3.1494	.3319	60
Male	3.1778	.2906	30
Female	3.1209	.3714	30

Motor Proficiency: Gender

Table 2 contains the means and standard deviations for the motor proficiency measure reported both in terms of point scores and standard scores, according to time of measurement and gender of the subjects. The data in the table show increased mean scores and a general trend for reduced variability in the subject's motor ability scores from the pretest to the posttest time of measurement. There is, however, one exception. The standard deviation on the point scores decreased for the male subjects in this study.

Table 2

MOTOR PROFICIENCY--GENDER: Means and standard deviations for pretest and posttest point scores and standard scores measures of motor proficiency obtained from primary grade children.

VARIABLE	MEAN	STD DEV	N
POINT SCORES			
Pretest	45.8500	8.1528	60
Male	46.0667	9.0513	30
Female	45.6333	7.2942	30
Posttest	51.9833	8.5440	60
Male	53.4667	8.3820	30
Female	50.5000	8.5853	30
STANDARD SCORES			
Pretest	63.9833	7.5722	60
Male	65.0667	7.9174	30
Female	62.9000	7.1792	30
Posttest	65.6500	7.2060	60
Male	67.8667	7.2859	30
Female	63.4333	6.5109	30

Perceived Competence: Grade and Gender

Table 3 contains the means and standard deviations for perceived physical competence and total perceived competence according to the time of measurement as well as the gender and grade level of the subjects. These data reveal a general trend toward increased mean scores on perceived physical competence and decreased mean scores on total perceived competence. It should be noted, however, that there are two exceptions to this trend. The mean scores for kindergarten and second grade females decrease on the perceived physical competence measure and mean scores for second grade male students increase on the total perceived competence measure. Additionally, these data show a trend toward decreased variability from the pretest to the posttest measurements on both components of perceived competence. Again, two exceptions should be noted. The variability for all kindergarten students increases on the perceived physical competence measure and the variability for female kindergarten students increases on the total perceived competence measure.

2000
2001
2002
2003
2004
2005

2006

2007
2008

2009

Table 3

PERCEIVED COMPETENCE--GRADE AND GENDER: Means and standard deviations for kindergarten, first, and second grade children on pretest and posttest measures of perceived competence.

VARIABLE	MEAN	STD DEV	N
PERCEIVED PHYSICAL COMPETENCE			
Males			
Kindergarten/pre	3.5000	.3949	10
post	3.5666	.4172	
First/pre	3.3500	.4936	10
post	3.3834	.4085	
Second/pre	3.1834	.5059	10
post	3.333	.4905	
Females			
Kindergarten/pre	3.4500	.4160	10
post	2.9667	.7234	
First/pre	3.6334	.4499	10
post	3.6501	.3964	
Second/pre	3.6500	.4406	10
post	3.5165	.3805	
TOTAL PERCEIVED COMPETENCE			
Males			
Kindergarten/pre	3.2124	.3983	10
post	3.1834	.2533	
First/pre	3.2667	.3913	10
post	3.1958	.2833	
Second/pre	3.0835	.3898	10
post	3.1542	.3558	
Females			
Kindergarten/pre	3.3165	.4367	10
post	2.9668	.4409	
First/pre	3.2540	.4342	10
post	3.1875	.3352	
Second/pre	3.3666	.4054	10
post	3.2084	.3130	

Motor Proficiency: Grade and Gender

Table 4 contains the means and the standard deviations of the motor proficiency measures on both the point scores and the standard scores according to the time of measurement as well as the grade level and gender of the subjects. There is a noticeable trend toward an increase in the mean scores on both the point scores measure and the standard scores measure. The only exception to that trend is that there is a decrease in the standard scores measure for kindergarten female students. Additionally, there is a general trend for increased variability from the pretest to the posttest time of measurement on the point scores measure. However, male subjects at the first grade level and female subjects at the second grade level are shown to be the exception to this trend. Finally, the data reported for the standard score analysis demonstrate a consistent decrease in the variability between the pretest and the posttest scores for males and females at each grade level.

15

2

...

Table 4

MOTOR PROFICIENCY--GRADE AND GENDER: Means and standard deviations for kindergarten, first, and second grade children on pretest and posttest measures of motor proficiency.

VARIABLE	MEAN	STD DEV	N
POINT SCORES			
Males			
Kindergarten/pre 			

Perceived Competence: Gender and Instructional Method

Table 5 contains the means and the standard deviations for the components of perceived physical competence and total perceived competence according to the time of measurement, the gender of the subjects, and the method of instruction. The mean scores on perceived physical competence show an increase for males and a decrease for females. However, the mean scores on total perceived competence show a general trend toward a decrease, except for a noted increase among male students taught by the traditional approach. Additionally, the data demonstrate that the variability for males in both instructional settings is reduced on the component of perceived physical competence whereas variability on this component is increased for the female students. Finally, there is a decrease in variability on the total perceived competence measure for all subjects except females instructed by the movement education method.

Table 5

PERCEIVED COMPETENCE--GENDER AND INSTRUCTIONAL METHOD: Means and standard deviations for male and female students instructed by either a traditional or a movement education method on measures of perceived competence.

VARIABLE	MEAN	STD DEV	N
PERCEIVED PHYSICAL COMPETENCE			
Male - TE/pre	3.2889	.5509	15
post	3.3112	.5226	
Female - TE/pre	3.6000	.3716	15
post	3.4000	.4217	
Male - ME/pre	3.4001	.3770	15
post	3.5433	.3051	
Female - ME/pre	3.3556	.4945	15
post	3.3555	.7342	
TOTAL PERCEIVED COMPETENCE			
Male - TE/pre	3.1639	.4178	15
post	3.1695	.3019	
Female - TE/pre	3.2609	.3638	15
post	3.0640	.2336	
Male - ME/pre	3.2111	.3674	15
post	3.1861	.2891	
Female - ME/pre	3.3638	.4647	15
post	3.1778	.4736	

Motor Proficiency: Gender and Instructional Method

The performance of the children on the motor proficiency measure as reported by point scores and standard scores is presented according to the time of measurement as well as the gender of the subjects and the method of instruction in Table 6. The data demonstrate a general trend toward an increase in the mean scores on both the point scores measure and the standard scores measure for all students in each of the instructional settings. The single noted exception is a decrease in the mean scores on the standard scores measure for female subjects instructed by the traditional method. Additionally, there is a general trend for reduced variability from the pretest to the posttest time of measurement with respect to the motor ability data on these basic statistics. However, when the gender of the subjects and the method of instruction are considered, the data demonstrate some gender related differences. The scores for females instructed by the traditional approach show an increase in variability across both analyses of the motor proficiency measure whereas the scores for females instructed by the movement education approach show a decrease in variability. The changes in the standard deviations for males show a consistent decrease in both measures and across both methods.

Table 6

MOTOR PROFICIENCY--GENDER AND INSTRUCTIONAL METHOD: Means and standard deviations for male and female students instructed by either a traditional or a movement education method on measures of motor proficiency.

VARIABLE	MEAN	STD DEV	N
POINT SCORES			
Male - TE/pre	44.0000	9.8923	15
post	49.4000	8.1135	
Female - TE/pre	46.8667	7.0899	15
post	49.2000	8.7521	
Male - ME/pre	46.2667	7.9180	15
post	57.5333	6.6533	
Female - ME/pre	44.4000	7.5290	15
post	51.8000	8.5122	
STANDARD SCORES			
Male - TE/pre	63.4000	9.1167	15
post	64.0667	7.3335	
Female - TE/pre	66.4000	6.3223	15
post	63.3333	7.5182	
Male - ME/pre	66.7333	6.3860	15
post	71.6667	5.0238	
Female - ME/pre	59.4000	6.3673	15
post	63.5333	5.5917	

Multiple Analysis of Covariance

The multivariate analyses of covariance presented in this section provide specific information about the treatment effects of the teaching methodologies under investigation in this study. The selected components of the perceived competence scale and the separate scores of the motor proficiency test are metric independent variables and are, therefore, designated as covariates. Grade level and method of instruction are nonmetric categorical variables and are consequently designated as factors for these analyses. The data in the several tables to follow provide specific statistic evidence with respect to the changes in perceived competence and motor ability by grade level and method of instruction. Additionally, a multiple classification analysis is presented for tables in which significant main effects are documented. Such an analysis provides a clearer picture of the direction of the main effects.

MANCOVA: Perceived Competence

The analyses of covariance presented in Tables 7 and 8 provide statistical evidence with respect to the reported changes on the selected measures of perceived competence. The data presented in those tables show that there are no significant main effects on perceived physical competence or total perceived competence either by grade or by method in this study. Additionally, there are no demonstrated interaction effects between grade and method with respect to either of the two measures of perceived competence.

1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 40
 41
 42
 43
 44
 45
 46
 47
 48
 49
 50
 51
 52
 53
 54
 55
 56
 57
 58
 59
 60
 61
 62
 63
 64
 65
 66
 67
 68
 69
 70
 71
 72
 73
 74
 75
 76
 77
 78
 79
 80
 81
 82
 83
 84
 85
 86
 87
 88
 89
 90
 91
 92
 93
 94
 95
 96
 97
 98
 99
 100
 101
 102
 103
 104
 105
 106
 107
 108
 109
 110
 111
 112
 113
 114
 115
 116
 117
 118
 119
 120
 121
 122
 123
 124
 125
 126
 127
 128
 129
 130
 131
 132
 133
 134
 135
 136
 137
 138
 139
 140
 141
 142
 143
 144
 145
 146
 147
 148
 149
 150
 151
 152
 153
 154
 155
 156
 157
 158
 159
 160
 161
 162
 163
 164
 165
 166
 167
 168
 169
 170
 171
 172
 173
 174
 175
 176
 177
 178
 179
 180
 181
 182
 183
 184
 185
 186
 187
 188
 189
 190
 191
 192
 193
 194
 195
 196
 197
 198
 199
 200
 201
 202
 203
 204
 205
 206
 207
 208
 209
 210
 211
 212
 213
 214
 215
 216
 217
 218
 219
 220
 221
 222
 223
 224
 225
 226
 227
 228
 229
 230
 231
 232
 233
 234
 235
 236
 237
 238
 239
 240
 241
 242
 243
 244
 245
 246
 247
 248
 249
 250
 251
 252
 253
 254
 255
 256
 257
 258
 259
 260
 261
 262
 263
 264
 265
 266
 267
 268
 269
 270
 271
 272
 273
 274
 275
 276
 277
 278
 279
 280
 281
 282
 283
 284
 285
 286
 287
 288
 289
 290
 291
 292
 293
 294
 295
 296
 297
 298
 299
 300
 301
 302
 303
 304
 305
 306
 307
 308
 309
 310
 311
 312
 313
 314
 315
 316
 317
 318
 319
 320
 321
 322
 323
 324
 325
 326
 327
 328
 329
 330
 331
 332
 333
 334
 335
 336
 337
 338
 339
 340
 341
 342
 343
 344
 345
 346
 347
 348
 349
 350
 351
 352
 353
 354
 355
 356
 357
 358
 359
 360
 361
 362
 363
 364
 365
 366
 367
 368
 369
 370
 371
 372
 373
 374
 375
 376
 377
 378
 379
 380
 381
 382
 383
 384
 385
 386
 387
 388
 389
 390
 391
 392
 393
 394
 395
 396
 397
 398
 399
 400
 401
 402
 403
 404
 405
 406
 407
 408
 409
 410
 411
 412
 413
 414
 415
 416
 417
 418
 419
 420
 421
 422
 423
 424
 425
 426
 427
 428
 429
 430
 431
 432
 433
 434
 435
 436
 437
 438
 439
 440
 441
 442
 443
 444
 445
 446
 447
 448
 449
 450
 451
 452
 453
 454
 455
 456
 457
 458
 459
 460
 461
 462
 463
 464
 465
 466
 467
 468
 469
 470
 471
 472
 473
 474
 475
 476
 477
 478
 479
 480
 481
 482
 483
 484
 485
 486
 487
 488
 489
 490
 491
 492
 493
 494
 495
 496
 497
 498
 499
 500
 501
 502
 503
 504
 505
 506
 507
 508
 509
 510
 511
 512
 513
 514
 515
 516
 517
 518
 519
 520
 521
 522
 523
 524
 525

Table 7

MANCOVA--PERCEIVED PHYSICAL COMPETENCE: A test of the effectiveness of a traditional and a movement education method on student performance on the measure of perceived physical competence.

SOURCE OF VARIATION	Multi F	DF	SIG
Covariate			
physical	17.404	1	.000
Main Effects	1.179	3	.327
grade	1.557	2	.220
method	.423	1	.518
Two-way Interaction			
grade/method	.750	2	.477

Table 8

MANCOVA--TOTAL PERCEIVED COMPETENCE: A test of the effectiveness of a traditional and a movement education method on student performance on the measure of total perceived competence.

SOURCE OF VARIATION	Multi F	DF	SIG
Covariate			
total	27.361	1	.000
Main Effects	.900	3	.447
grade	1.265	2	.291
method	.168	1	.684
Two-way Interaction			
grade/method	.048	2	.953

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

MANCOVA: Motor Proficiency

The analysis of covariance and the multiple classification analysis (MCA) presented in Tables 9 through 12 provide statistical evidence with respect to the reported changes in the point scores and the standard scores measures of motor proficiency. It is evident in Tables 9 and 11 that there are main significant effects on both the point scores and the standard scores by method but not by grade. It also should be noted that there are no interaction effects between grade and method with respect to those motor ability measures. Further examination of this data using a multiple classification analyses indicates that the significant effects by method occur in opposite directions. Such analysis indicated by using the square of ETA that the proportion of the variance could be explained by the factors grade and method. Adjusted effects associated with the individual categories of the grade and method variables are indicated by Beta. Tables 10 and 12 demonstrate main effects by method that are reflected in an increase in performance on both motor proficiency measures for students instructed by the movement education method employed and a decrease for students instructed by the traditional method selected.

Table 9

MANCOVA: MOTOR PROFICIENCY: A test of the effectiveness of a traditional and a movement education method on student performance on the point scores measure of motor proficiency.

SOURCE OF VARIATION	Multi F	DF	SIG
Covariate			
point score	137.567	1	.000
Main Effects			
grade	1.423	2	.250
method	16.527	1	.000
Two-way Interaction			
grade/method	.357	2	.701

Table 10

MCA--MOTOR PROFICIENCY--POINT SCORES: A comparison of the adjusted deviations on the point scores measure of motor proficiency by grade and method on the point.

VARIABLE/CATEGORY	N	UNADJUSTED		ADJUSTED FOR	
		DEV.	ETA	INDEPENDENTS	/COVARIATES
				DEV.	BETA
Grade					
kindergarten	20	-7.33		-1.90	
first	20	1.42		.84	
second	20	5.92		1.06	
			.65		.16
Method					
TE	30	-2.68		-2.38	
ME	30	2.68		2.38	
			.32		.28
Multiple R Squared					.744
Multiple R					.863

Table 11

MANCOVA: MOTOR PROFICIENCY: A test of the effectiveness of a traditional and a movement education method on student performance and on the standard scores measure of motor proficiency.

SOURCE OF VARIATION	Multi F	DF	SIG
Covariate			
standard score	47.827	1	.000
Main Effects	4.863	3	.005
grade	.038	2	.963
method	14.516	1	.000
Two-way Interaction			
grade/method	.209	2	.812

Table 12

MCA--MOTOR PROFICIENCY--STANDARD SCORES: A comparison of the adjusted deviations on standard scores measure of motor proficiency by grade and method on the standard.

VARIABLE/CATEGORY	N	UNADJUSTED		ADJUSTED FOR	
		DEV.	ETA	INDEPENDENTS	
				/COVARIATES	
				DEV.	BETA
Grade					
kindergarten	20	1.55		-.03	
first	20	-.85		-.21	
second	20	-.70		.24	
			.15		.03
Method					
TE	30	-1.95		-2.55	
ME	30	1.95		2.55	
			.27		.36
Multiple R Squared					.529
Multiple R					.734

Pearson Product Moment Correlations

The Pearson Product Moment Correlations presented in this section provide information about two separate aspects of this study. First, the correlation coefficients provide important information about the relationship between the two selected measures of perceived competence and the two measures of motor proficiency. Second, the information presented in this section provides additional insight into the gender differences highlighted in the qualitative observations of Chapter Four and into the basic statistics presented in the first section of this chapter.

Product Moment Correlations: Method and Gender

The product moment correlations in Table 13 show a significant difference between the traditional and the movement education education methods with respect to their impact on the selected measures of perceived competence and motor proficiency. Examination of the posttest correlations show that improvement in motor proficiency was accompanied by improvement in perceived physical competence for the children instructed by the movement education approach. Such results are not apparent for those students instructed by the traditional method.

Additionally, the data in Tables 14 and 15 show that the gender differences highlighted by the qualitative observations made during this study are born out by product moment comparisons. The correlation coefficients reported in Table 14 for male students are generally not shown to be significant on any comparisons between the perceived competence measures and the motor proficiency measures. The single exception to this trend is in the case of the pretest coefficient between perceived physical competence and the standard scores measure for boys instructed by the movement education approach. A similar

trend is found in the data reported for female students in Table 15; however, a method difference in the coefficients is also apparent in that table. The correlation coefficients for female students instructed by the traditional method are not significant for the comparisons between the perceived competence measures and the motor proficiency measures. On the other hand, the coefficients for female students instructed by the movement education approach indicate significant posttest correlations on the comparisons between perceived physical competence and point scores and between total perceived competence and both point scores and standard scores. Such evidence can be used to build a case for a link between perceived competence and motor proficiency that can be confounded by either the method of instruction or the gender of the students.

Table 13

PRODUCT MOMENT CORRELATIONS--METHOD: Changes in product moment correlations from pretest to posttest on measures of perceived competence and motor ability for students instructed by either the traditional or the movement education method.

THE TRADITIONAL METHOD

	PHY	TOT	PS	SS
PHY	1.000	.4550* .3304*	-.0915 .0159	.1243 -.1808
TOT		1.0000	-.0979 .0856	-.0414 -.1299
PS			1.0000	.4553* .5746*
SS				1.0000

THE MOVEMENT EDUCATION METHOD

	PHY	TOT	PS	SS
PHY	1.000	.7086* .8044*	.2059 .6185*	-.0443 .3437*
TOT		1.0000	.0637 .4227*	-.0173 .3375*
PS			1.0000	.2190 .4415*
SS				1.0000

NOTE: Correlation coefficients are reported pre/post for PHY=perceived physical competence, TOT=total perceived competence, PS=point scores, and SS=standard scores. Correlations that were shown to be significant at the .05 level are denoted by an *.

Table 14

PRODUCT MOMENT CORRELATIONS--GENDER: Product moment correlations for pretest and posttest measures of perceived competence and motor proficiency for male students instructed by either a traditional or a movement education approach.

MALE - TE

	PHY	TOT	PS	SS
PHY	1.000	.3806 .2555	-.3911 -.1129	-.0555 -.1702
TOT		1.0000	-.2445 .2244	-.0622 -.0619
PS			1.0000	.6360* .6202*
SS				1.0000

MALE - ME

	PHY	TOT	PS	SS
PHY	1.000	.6608* .4507*	.3400 .1987	.4679* .3830
TOT		1.0000	.0493 -.0891	.0826 .2921
PS			1.0000	.0163 .0185
SS				1.0000

NOTE: Correlation coefficients are reported pre/post for PHY=perceived physical competence, TOT=total perceived competence, PS=point scores, and SS=standard scores. Correlations significant at the .05 level are denoted by an *.

Table 15

PRODUCT MOMENT CORRELATIONS--GENDER: Product moment correlations for pretest and posttest measures of perceived competence and motor proficiency for female students instructed by either a traditional or a movement education approach.

FEMALE - TE

	PHY	TOT	PS	SS
PHY	1.000	.5529* .5230	.3264 .1670	-.3259 -.1878
TOT		1.0000	.0723 -.0797	-.0784 -.2486
PS			1.0000	.0363 .5341*
SS				1.0000

FEMALE - ME

	PHY	TOT	PS	SS
PHY	1.000	.7214* .9192*	.2047 .7683*	-.2570 .3044
TOT		1.0000	.1700 .7160*	.1003 .5042*
PS			1.0000	.2169 .4931*
SS				1.0000

NOTE: Correlation coefficients are reported pre/post for PHY=perceived physical competence, TOT=total perceived competence, PS=point scores, and SS=standard scores. Correlations significant at the .05 level are denoted by an *.

Summary

This summary is designed to highlight the quantitative findings reported in this chapter. Summary statements related to the previously outlined basic statements, the multivariate analysis of covariance and the Pearson Product Moment Correlations are presented in a format focused upon each of the four original hypotheses.

Hypothesis 1

There will be no demonstrable differences in the effectiveness of the movement education method and the traditional method of teaching as measured by changes in actual physical competence scores of primary grade children on The Bruininks-Oseretsky Test of Motor Proficiency.

The data outlined in this chapter provide two forms of statistical evidence related to the effectiveness of both the traditional and the movement education methods with respect to improving actual physical competence. First, the basic statistics demonstrate a general trend toward an increase in the mean scores and a decrease in the variability from the pretest to the posttest on both measures of the motor proficiency test. However, when method and gender are considered, the movement education approach appears to be more effective than the traditional approach in improving the motor performance of girls. Second, when the data were further examined by a multivariate analysis of covariance, the results demonstrate that the movement education method is a more effective method of instruction than the traditional method when that effectiveness is measured by changes in actual physical competence. It is, therefore, necessary to reject the above hypothesis.

Hypothesis 2

There will be no demonstrable differences in the effectiveness of the movement education method and the traditional method of teaching as measured by changes in perceived physical competence scores of primary grade children on The Perceived Competence Scale for Children.

The data outlined in this chapter provides two forms of statistical evidence related to the effectiveness of both the traditional and the movement education methods with respect to improving selected components of perceived competence. First, the basic statistics demonstrate a general trend toward decreased mean scores in both perceived physical competence and total perceived competence. Additionally, the data show reduced variability from the pretest

to the posttest time of measurement on each component of perceived competence examined. However, it is important to note that there are gender differences in perceived physical competence that may require further examination. Second, when these data were further examined by a multivariate analysis of covariance, no evidence was found to indicate that either one of the two teaching methods was a more effective method of instruction when effectiveness was measured by changes in perceived competence. It is, therefore, necessary to accept the above hypothesis.

Hypothesis 3

Any changes in actual physical competence, as measured by The Bruininks-Oseretsky Test of Motor Proficiency, will not be accompanied by changes in perceived competence, as measured by The Perceived Competence Scale for Children.

Conflicting evidence was found in this chapter with respect to this hypothesis. The data outlined in the section on multiple analysis of covariance demonstrate significant changes in motor proficiency but do not demonstrate significant changes in perceived physical competence. On the other hand, the Pearson Product Moment Correlations revealed significant coefficients for children instructed by the movement education method on comparisons of perceived physical competence and motor proficiency. In light of this evidence, then, it is possible to accept this hypothesis with reservation and recommendations for further study.

Hypothesis 4

Any changes in actual physical competence, as measured by The Bruininks-Oseretsky Test of Motor Proficiency, will not be accompanied by changes in global self esteem, as measured by The Perceived Competence Scale for Children.

Conflicting evidence was found in this chapter with respect to this hypothesis. The data outlined in the section on multiple analysis of covariance demonstrate significant changes in motor proficiency, but do not demonstrate significant changes in total perceived competence. However, the Pearson Product Moment Correlations revealed significant coefficients for children instructed by the movement education method when comparing total perceived competence and motor proficiency. It is, therefore, possible on the basis of this evidence to accept this hypothesis with reservation and make recommendation for further study.

The evidence presented in this chapter and the evidence presented in Chapter Four will be compared and contrasted in Chapter Six. The implications of this dissertation will then be addressed in light of those comparisons, and recommendations for further research in this area will be outlined.

Chapter Six

SUMMARY AND IMPLICATIONS

Introduction

The purpose of this chapter is twofold. First, a synthesis of the research findings as reported in Chapters Four and Five is presented. This synthesis is focused on the outcomes associated with implementing the two theoretical models of instruction under investigation in this study. Discussion in this segment is related to the four research hypotheses of the study and to other unexpected outcomes of the study. Second, the implications of this study are discussed. Those implications are presented in terms of their impact upon the process of physical education instruction and the preparation and inservicing of physical education teachers. Recommendations are made in this section for professionals involved with physical education instruction, teacher preparation, and research.

Discussion and Summary

This dissertation was a study of the effectiveness of two different methods for teaching physical education to primary school aged children. The qualitative and quantitative evidence collected throughout the duration of the study has generated a data base on which the effectiveness of the traditional and the movement education methods can be judged. The discussion which follows is designed to compare and contrast those two teaching methods with respect to the findings reported in Chapters Four and Five.

An Overview

This study began on the premise that the traditional and the movement education methods were distinctly different theoretical models for teaching

psychomotor skills. Additionally, it was assumed that each method was grounded in substantively different principles of instruction. The traditional approach was designated as a skill development method. The underlying premise of the skill development method is that actual skill competence precedes any personal judgments of perceived competence by the individual student. Skill competence, then, is the most important outcome of physical education instruction within the framework of a skill development approach. The movement education approach was defined as a self enhancement method. Self enhancement methods are based on the belief that students must perceive themselves to be competent if they are actually to become competent at a given skill. Perceived competence is, therefore, viewed to be the most important focus of the movement education lesson.

Efforts were made in designing the study to provide instructional equity across both of the teaching methods while maintaining the integrity of each approach. Consequently, the goals of physical education instruction that formed the baseline for teacher decision making in this study were the same, regardless of the teaching method being employed. The first goal of physical education instruction was to assist the students involved in the study with the acquisition of a variety of fundamental skills. The second goal was to develop positive perceptions of competence, particularly physical competence, among the students involved in the study. The planning stages of instruction also were consistent for both the traditional and the movement education methods. The teacher assessed the developmental level of the children in each physical education class, regardless of the method of instruction, and planned instructional activities accordingly. The same qualitative analysis of fundamental skills was used for both assessment and instructional planning under each of the two teaching methods. The point of departure for the two

methods investigated in this study was the actual implementation of those two theoretical models as instructional delivery systems in the physical education setting. The differences in implementation, however, were grounded in the relationship between the two previously stated goals of physical education instruction as they were interpreted within the framework of the traditional and the movement education approaches.

Instruction within the framework of the traditional model was focused on a skill drill format. This format used lecture and modeling as the primary modes of delivering instruction and providing for practice. Squad organization and the skill drill format were then paired to create an instructional environment that would provide for efficient use of instructional time for motor skill learning. This type of instruction with an emphasis on skill development is based on the assumption that cognitive growth and affective development, in terms of enhanced self concept, are consequents of motor skill learning. Within the framework of the skill development approach, cognitive understanding of a skill is considered to be an outgrowth of the student's ability to imitate that skill. Furthermore, self concept enhancement is considered an extension of the student's improved physical competence.

The implementation of the movement education model resulted in a very different format for instruction. This format used questions and probes as the primary modes for delivering instruction and providing for practice. Students were expected to develop physical examples of movement ideas and then to build on those examples with continuous guidance from the teacher. A scatter or circle organization was used in conjunction with the teacher directed questions and probes to create an environment which focused on self enhancement and cognitive growth through movement experiences. In such an environment, each student's physical execution of the skills was accepted and built upon while

the child's cognitive understanding of those skills was challenged by further questions and probes. Within the framework of the self enhancement approach, physical skill acquisition is considered to be contingent upon the student's perceived ability to succeed at a given skill and his or her cognitive understanding of that skill.

The Synthesis

The implementation of both the traditional and the movement education methods was examined in light of four research hypotheses. Those four hypotheses were developed to be consistent with the two program goals used as guidelines for physical education instruction in this study. The qualitative and quantitative evidence gathered throughout the duration of the study and reported in Chapters Four and Five is synthesized in the several paragraphs that follow.

The first hypothesis stated that there would be no demonstrable differences between the traditional and the movement education methods with respect to their effectiveness in improving the motor ability of the students involved in the study. Field observations throughout the course of this study led to support of this hypothesis except in a limited number of cases. However, the quantitative evidence showed that significant improvements in motor proficiency were only reported in the movement education setting. A repeated analysis of the qualitative data in the following special instances then can be used to support this contention. The movement education approach appeared to be more effective with kindergarten and first grade children and with children who were not as highly skilled as their peers. Evidence of this was found in special cases of children from both methods who were able to throw or skip at a much higher level of proficiency when asked to do so in a movement setting rather

than in a traditional setting. Additionally, it should be noted that there were far more instances of "finishing at all costs" and "giving up" during the traditional practice condition than during the movement education condition. Observational evidence of these phenomena indicated that such behavior was most prominent in children with lower skill levels who are exposed to a practice condition that put them in competition with another child or that put them in front of an audience of their peers.

The second hypothesis stated that there would be no demonstrable differences between the traditional and the movement education methods with respect to their effectiveness in improving the perceived competence of the students involved in the study. Field observations of the traditional and the movement education methods did not reveal any differential effects across whole classes of students. Analysis of the quantitative data not only supported the contention of this hypothesis and the results of the field observations, but it also demonstrated that neither of the two methods was effective in improving the perceived competence of the students involved in the study. Additional analysis of more specific instances reported in the field observations can, however, be associated with isolated differential effects on perceived competence by method. When student behavior was looked at as an indicator of perceived competence, it was evident that the practice condition in the traditional setting set up circumstances in which at least some students were making negative appraisals of their own physical skill abilities. Such evidence was not observed in the children instructed by the movement education method.

The third hypothesis stated that there would be no demonstrable link between motor ability and perceived physical competence for students instructed by either the traditional or the movement education method. Quantitative

analyses of the data by using Pearson Product Moment correlation revealed evidence that improvement in actual physical competence was linked to the enhancement of perceived physical competence for those students instructed by the movement education method, but not for students instructed by the traditional method. Support for this contention was also found in the qualitative evidence that suggested that negative assessments of perceived competence might well create a condition in which the student is either unable to perform a given skill or chooses not to perform that skill. Consideration of such evidence leads to the speculation that a child who makes negative assessments of his or her own abilities might avoid participation in games or play activities where she or he feels inadequate. Additionally, reflection on the qualitative evidence also indicated that the teaching and learning environment in the traditional setting was demonstrated to differentially create a condition in which female students, students with lower skill abilities, and very young learners might become frustrated with their personal performance.

The fourth hypothesis stated that there would be no demonstrable link between motor ability and global self esteem for students instructed by either the traditional or the movement education method. It was demonstrated, however, through Pearson Product Moment Correlations that improvement in motor proficiency was accompanied by significant changes in the correlation coefficients between the measure of total perceived competence and the selected measures of motor proficiency for children instructed by the movement education approach. Similar findings were not demonstrated for children instructed by the traditional approach. Additionally, it should be noted that the investigation of gender differences showed significant correlations for females instructed by the movement education approach but not for males.

The Unexpected Outcomes

A summary of the evidence associated with these research hypotheses indicates that the movement education method was superior to the traditional method in improving motor proficiency but not in significantly improving perceived competence. The data did, however, point to a correlational link between motor proficiency and selected measures of perceived competence by method and gender. Such evidence is important to both the future research and to practicing physical educators and teacher educators who are in the process of evaluating teacher effectiveness.

Additional analysis of the qualitative data has identified several unexpected outcomes of this study that highlight the superiority of the movement education method with respect to particular types of students. These outcomes, although not directly related to the four research hypotheses, are associated with the relative effectiveness of the traditional and the movement education models. Consideration of these unexpected outcomes is important to understanding the strengths and weaknesses of each of the two teaching methods as paradigms for instruction in physical education.

Before the traditional and the movement education methods were implemented in this study, several aspects of each theoretical model were operationalized. It was not known what effects these operationalized differences between the two methods would have when those models were translated into practice. However, one such manifestation of those differences came to the forefront during the analysis of the field observation. The data from the field observations demonstrated that the quantity and the quality of the time that the students spent on any given instructional task was differentially affected by the type of organizational format used for instruction and practice.

The squad method was employed in the traditional setting and the scatter or circle was employed in the movement education setting. The purpose of the squad method was to provide the teacher with a formal means of controlling the students in the open space of the gymnasium. It was thought that this structure would facilitate instruction by very clearly organizing and controlling the environment for instruction and practice. The purpose of using the circle or scatter formation in the movement education setting was to provide more freedom to the students by leaving spatial choices as well as other movement choices up to them. It was acknowledged that such a loosely structured organizational format might cause classroom management problems, but it was considered a necessary condition of the movement education model. Field observations of both methods failed to confirm original speculations about the effectiveness of either one of the organizational formats.

The field observations indicated that from a very practical perspective the squad method failed to work effectively as a classroom management tool. It was observed that even though the squad organization functioned to control and organize the physical environment of the gymnasium for instruction and practice, it required the teacher to spend a great deal of valuable instructional time maintaining the structure of the squad format itself. In the case of the movement education method, the expected organizational problems associated with the use of scatters and circles were never observed. Students made easy transitions from one activity to another and from one format to another. Additionally, it should be noted that instructional time was not spent on maintaining those organizational formats in the movement education setting. It is evident through the actual observation of this aspect that classroom management was not associated with a structure, but was the result of continuous interaction between the teacher and the students.

Additional analysis of the data associated with these organizational formats and the process of instruction under each method indicated that there was another significant difference between the two methods that could be attributed to the type of format selected for classroom organization and the relationship between instruction and practice. The time spent on instruction and practice in the traditional setting was clearly separate. This meant that it was necessary for the teacher to spend instructional time regrouping the students into their squads in order to clarify instruction or change the instructional activities. In the movement education setting, the instructional and the practice phases of the lesson were merged. Consequently, the instructor was in continuous interaction with the students and change was ongoing. This meant that any alteration in instructional procedures could be handled without the disruption of either the instructional or the practice condition. The contrasts between these two methods that were identified through this analysis indicated that the practice time in the traditional setting was further limited by the organizational format of that method. However, practice time in the movement education setting was not similarly limited.

Continued investigation of the combined impact of the organizational format and the relationship which evolved by method between instruction and practice also identified differential effects on the purposeful teacher behaviors associated with the delivery of feedback and reinforcement. Both feedback and reinforcement were considered to be vital aspects of the teaching and learning environments of the traditional and the movement education approaches. It was originally thought that the traditional model would provide greater opportunity for delivering specific feedback and reinforcement to individual students because of the organization and control afforded by the squad format. On the

other hand, the movement education method was expected to provide more continuous restructuring of the idea of a given motor skill for all students through the use of questions and probes. Analysis of the field observations, however, demonstrated that on numerous occasions the squad format lost its effectiveness as a means of classroom organization and control in the traditional setting. In several related situations, the teacher in the traditional setting began the practice portions of each lesson by providing feedback and reinforcement; however, he was frequently diverted from that task by the unruly behavior of those students waiting in the squad lines for their turns. Consequently, time that was originally designated for teaching was spent disciplining a few disruptive students. It was evident, by contrast, that there were fewer behavioral problems in the movement education setting where all children were active during the merged instructional and practice phases of the lesson.

Previous research on feedback and reinforcement highlights the importance of those concepts to the process of psychomotor learning and skill instruction. Generalizations by Ammons (1956) point out the significance of feedback and reinforcement as teaching tools that can serve as motivational devices and also enhance the rate of learning and the level of skill acquisition. Recommendations are made in that body of research that stress the importance of continuous feedback, specific feedback, and feedback related to formulating an idea of the motor skill. Theoretically, both the traditional and the movement education method provide avenues for the teacher to deliver feedback and reinforcement. Practically, however, it has been demonstrated that the squad method and the relationship between the instructional and practice conditions in the traditional approach work against the teacher in trying to provide that information.

The preceding evidence and discussion has pointed out the failure of the squad format to function as an effective classroom management tool. It appeared from the evidence collected during this study that the squad format actually encumbered the process of instruction. It was demonstrated that the squad format limited both the time and the quality of the instructional and practice conditions in the traditional setting. The following evidence and discussion is focused on yet another manifestation of the theoretical differences between the traditional and the movement education methods as those models were translated into practice. In the next several paragraphs, the competitive and cooperative nature of the two models is central to continued discussion of the effect of each method on the quality of the instructional and practice conditions.

During the planning stages of this study the traditional method was designated as an approach that would build on and foster a sense of competitiveness in the physical education setting. On the contrary, the movement education method was designated as an approach that would build on and foster a sense of cooperation in that setting. Field observations throughout the course of the study have generated data that confirm the assumptions about the traditional model, but denies the cooperative nature of the movement education model. Since, according to Singer (1975) competition is a more natural behavioral response for young children than cooperation, it is perhaps not surprising that the traditional model was borne out, in fact, to be a competitive model when it was implemented in actual practice. Additionally, when considering the observational evidence and the literature on cooperation which defines it as set of complex social behaviors that are difficult for young children to acquire (Singer, p. 512), it is also not surprising that the movement education method fell short of its designation as a cooperative model.

In actual practice the traditional model was, indeed, a competitive model. The students were frequently heard saying "Hurry!" or "Beat'em!" during the practice drills. Additionally, it should be noted that the students instructed by the traditional method were often heard making negative comments about the performance of one or more of their peers during the practice condition. Observations of the movement education approach resulted in very few instances that could be used to confirm the assumption that it was a cooperative model. Instead, the method of instruction seemed to foster an environment in which there was a noticeable focus on the self rather than on helping others. The students instructed by the movement education approach, in fact, seemed to "get lost" in the movement tasks at hand. The results of such an analysis indicated an additional outcome of the competitive and cooperative foundations of those two theoretical models. The competitive model created a practice condition which was confounded by the presence of an audience, whereas implementation of the cooperative model resulted in the absence of the audience condition.

An audience condition can be composed of coactors who are simultaneously engaged in the same activity or spectators who observe the activity. The use of a squad format for classroom organization in the traditional model set up an environment for learning in which the student was faced with both coactors and an audience. The movement education approach, however, set up an environment in which all children were active at all times. This eliminated the spectator audience condition while further constraints of that environment worked to limit the coaction condition. The questions and probes used throughout the movement education lesson were phrased such that each child's unique movement expression was accepted. This part of the instructional process was intentional and was used in an effort to create a more positive feeling by each child about his or her own skill abilities. It was not expected, however, that



such an approach would eliminate coactors from the environment and create a solitary or parallel play environment for instruction. Such evidence documented the audience and the coercion conditions as points of contrast between the traditional and the movement education methods. It is now important to assess the impact of these conditions on the instructional effectiveness of the traditional and the movement education models.

The work of Zajonc (1965) in "social facilitation" has indicated that the presence of others might prove to be detrimental to skill acquisition if the skill is in the early stages of being learned. Further recommendations from Zajonc's work have indicated that complex motor tasks should be learned in a solitary condition. Then, when the student has achieved a reasonable level of skill attainment she or he should be exposed to the stress of the social condition. Application of these criteria might well explain why the movement education approach appeared superior to the traditional approach in isolated instances with very young children and with children of lower skill ability. In contrast to the traditional approach, the movement education method afforded anonymity within the physical education setting for the student who was having difficulty mastering a given skill or set of skills.

Further examination of the stress associated with the practice condition in the traditional approach revealed yet another point of contrast between the two methods. The field observations indicated that the role of the students in the traditional setting had evolved into one in which the students were nearly always remediating error while trying to meet the standard for skill acquisition established at the beginning of the lesson. In contrast, the probes and questions used by the teacher in the movement education setting were focused almost exclusively on the positive aspects of the students' skill performance. Students instructed by the movement education approach were,

therefore, not remediating errors but were focusing on what they had done, how they could change what they had done, and whether or not that change was better or just different. Although the role of the student was operationally defined for both the traditional and the movement education methods during the planning stages of this study, it was not believed that the students' actual task during instruction would become so different from one method to the other. It is important, then, to consider that such a difference in roles also might explain the higher level of frustration evidenced during the practice condition for those students of lower skill ability instructed by the traditional method. In this instance competition against a standard adds yet another dimension to the social context of the practice condition in the traditional setting.

Problems Associated with the Study

The implications of the preceding synthesis and discussion of both the qualitative and the quantitative evidence collected and analyzed for this study hinge upon a variety of factors related to the context in which this study was carried out. Three such factors identified as problems associated with this research are relevant to the remaining discussion and recommendations presented in this chapter. Each of these problems were first addressed in Chapters One and Three. However, a review of each initial problem and a presentation of the practical outcomes of those problems from evidence collected during the site visits is important for a better understanding of the impact of this research study.

The first and perhaps most difficult problem to reconcile in this particular study resulted from the environmental constraints placed on a quasi-experimental study of this nature. The use of the naturally existing classroom units for physical education instruction meant that the data that

were collected would be confounded by a variety of different factors, including the classroom teacher. It was possible, although not expected, that any one of the classroom teachers could either undermine or significantly enhance the work of the physical education teacher with her class. Evidence collected throughout the study from the physical education teacher and from the classroom teachers during casual conversations in the teachers' lounge indicated that there was a great deal of support for the efforts of the physical education teacher. However, it was not apparent that any of the teachers were independently working on gross motor skill acquisition with their students. Consequently, it was assumed that such confoundings of the motor ability data would be limited. There was, however, an emphasis on self concept enhancement throughout the school. In fact, there was some evidence in the perceived competence data to indicate that there might be trends by class on those data. It is, therefore, probable that the evidence related to perceived competence is biased due to this confounding. Such speculation is supported by the research of Deci (1981) as reported in his review of the "Problems in the Schools Questionnaire."

This report of his research indicated that students may well take on the disposition of their classroom teacher toward autonomy in the classroom within the first two weeks of school. Such teacher oriented beliefs about who is responsible for success and learning in the classroom environment can range from attitudes that place the teacher in total command of all success and failure to attitudes that place that kind of responsibility in the hands of the students. Deci's work also creates a link between perceived competence and personal responsibility for success and failure which is important to both understanding the outcomes of this study and weighing the impact of yet another problem associated with the study. Since the pretest measures on perceived

competence and motor ability were not taken until early November, it is quite possible that the students in this study already had taken on the attitudes of their respective classroom teachers toward autonomy in the classroom. The assumption of such attitudes may have significantly affected the students' pretest scores on perceived competence. Additionally, the late start in the pretest assessment made it impossible to measure the impact of that kind of confounding by evaluating the attitudes of the teachers.

The second problem resulting from the environmental constraints of this study also is related to possible confounding due to the naturally existing school setting in which this research project was implemented. It was apparent from looking at the pretest and the posttest scores of perceived competence on the kindergarten aged cohort that school was hard on these children. This study, however, did not attempt to identify those factors in the school that work against the continued development of a positive self concept. Instead, the study was designed to accept those factors as one of the realities of the school environment.

The third problem associated with the environmental constraints surrounding the implementation of this study is related to the scheduling of physical education class time. The physical education instructor met each class for one-half hour two days per week. On a third day each week, two classes at each grade level were combined for an additional period of physical education. This type of scheduling meant that classes instructed by the two experimental methods were merged on one day each week. The possibility of confounding the data base under such circumstances is obvious; however, it was not possible to intervene in instructional scheduling for an entire school year. Therefore, it was decided that the third day of physical education each week would be a play day rather than an instructional time. Additionally, it was decided that a

variety of favorite competitive games of low organization would be used during this time in lieu of instructional activities.

Field observations of this third day of physical education time did not reveal any evidence that would indicate that instruction by either one of the two methods created a play advantage for either class of children in this setting. Further, it was not apparent that participation in this large group setting affected the way the children responded on the two days per week that they received physical education instruction. Indications of a preference for a particular type of instructional activity on the part of the children was limited. It is important to note, however, that on at least a few occasions one or more of the children instructed by the movement education method requested one of the well known competitive games as a culminating activity rather than the selected activity for that day. Although the children in the traditional setting did not request cooperative games and activities, they also requested their favorite competitive games rather than the activity selected for the day. It is certainly not possible to ascertain the impact of confounding from this limitation on the school environment. However, field observations did not indicate that it was a significant factor related to the instructional process for children in either the traditional or the movement education setting.

Consideration of the data and the inherent problems associated with this particular study have led to the examination of one final question which is couched in the constraints surrounding this research project. How much effect can a single teacher have on the skill development and self concept enhancement of the children entrusted to him or her for instruction? In this particular case that one teacher was in contact with individual classes of students for only one and one-half to two hours per week in an instructional setting. His

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

academic charge during that time was to improve the motor skill abilities and enhance the self concepts of those children through a variety of instructional activities in the gymnasium and within the imposed constraints of two different theoretical models of instruction.

The data collected in this study demonstrated that it was possible to improve the motor skill abilities of children through physical education instruction by either the traditional or the movement education method. However, both the quantitative and the observational evidence confirmed that the movement education method was a more effective instructional strategy in improving the motor skill abilities of these primary grade school aged children. The evidence associated with the effectiveness of the two methods in enhancing the self concepts of these students was not as conclusive. Neither the observational evidence nor the quantitative data identified significant differences between the two methods on the pretest and posttest comparisons of perceived competence. However, analysis of the observational evidence indicated that the traditional method created a stressful condition for instruction and practice for the young learner and the student with lower skill abilities. It is probable that such conditions for instruction and practice could result in negative self appraisals; however, that was not demonstrated to be true. It was only demonstrated that those conditions did not exist in the movement education setting.

Implications and Recommendations

Discussion of the implications and recommendations for this study are presented in three distinct but interrelated segments. First, the impact of the results of this study on physical education instruction is outlined. Second, recommendations are made based on the evidence collected in this study

for teacher training at both the preservice and the inservice level. Finally, recommendations are made for future research on the same topic and on other related issues.

Two broad implications have emerged from the findings of this research study for physical educators who are interested in improving psychomotor skill instruction. First, it confirmed the importance of maximizing the amount of time that students spend in practice. Second, it established the importance of assuring the quality of the instruction and practice conditions in the teaching and learning setting. However, it is important to note that the theoretical claims of a given instructional methodology may not come to fruition when that model is actually implemented as an instructional strategy.

Theoretically, the traditional method of physical education instruction was designed to make the most efficient use of instructional time and to improve the quality of that time by structuring the teaching and learning environment so that the teacher was free to provide specific feedback and reinforcement to individual students. The accompanying squad format was designed to organize the open space of the gymnasium into small group practice settings with a built-in procedure for taking turns so that each student could have an opportunity for individual instruction and practice. The practical result of the implementation of this method, however, did not support the effectiveness of the squad format.

The observational evidence from this study identified two reasons for the failure of the squad method as a classroom management tool. First, it was inadequate because it did not function to provide the most efficient use of instructional time. It was discovered that the squad format needed to be enforced if it was to work effectively. It is quite possible that the effectiveness of that structure was limited because it required rather complex

social skills of cooperation to maintain. Primary grade children, such as those involved in this study, lack sophistication with those cooperative behaviors. Second, the squad format also failed because it did not function to improve the quality of the instructional and practice conditions. It was discovered that the time required to monitor the squad format took away from the time that was available for the teacher to provide feedback and reinforcement. Further, it was demonstrated that the squad format created a stressful condition in the instructional and practice environment. The squad format was designed to provide opportunities for individual instruction and practice; however, in the process of doing that it created both an audience and a coercion condition. Such stressors during instruction and practice do not facilitate motor skill learning with young learners or learners with lower skill abilities.

Theoretically the movement education method lacked a formal framework for maximizing instructional and practice time and for improving the quality of the instructional and the practice conditions. The scatter or circle formations used as organizational formats for this method were not chosen as vehicles for maximizing instructional or practice time. They were selected for use in this method because it was believed that they created emotionally safe environments for learning motor skills. Although this reason for selecting those formats addresses the qualitative dimension of organizing for instruction and practice time, it was expected that such a lack of structure might cause some classroom management problems in actual practice. However, that was not proven to be the case and, in fact, the movement education method was demonstrated to be more effective than the traditional method in improving motor skill abilities of the primary school aged children in this study. Two conditions resulting from the implementation of the movement education method have been identified as aspects

of the teaching and learning environment that contributed to improved physical education instruction in this study.

The first condition that contributed to improved physical education instruction in this study was a result of a basic premise of the movement education approach which addresses the fact that every child should be actively engaged in a learning task throughout the majority of the allotted class time. This was accomplished through whole class instruction which was continuously guided by the teacher. Consequently, every student in the movement education setting was moving at the same time while practicing one aspect of a given fundamental skill. The implementation of this premise not only increased the time spent on instruction and practice, but it also improved the quality of the instructional and the practice conditions. The use of continuously guided whole class instruction precipitated the merger of the instructional and practice environments which served as the second condition of improved classroom instruction in this study.

The merger of the instructional and the practice environments through whole class instruction improved the quality of physical education in a variety of ways. The implementation of a whole class approach using questions and probes as the foundation for instruction resulted in a playful classroom environment with ongoing discourse between the teacher and the students. This ongoing discourse between the teacher and the students served as a positive classroom management strategy as well as the means of providing instructional information, feedback, and reinforcement. During the instructional and practice time, the present skill level of each student was accepted and then carefully shaped by the use of questions and probes until the behavior of the class as a whole more closely resembled the desired skill pattern. Both divergent and convergent probes were used, and they were focused on a cognitive

understanding of the skill more frequently than the actual execution of the skill. Reinforcement, although globally directed in most cases, was ongoing. Feedback also was given globally through the questions and probes and was, therefore, focused less on correction than on understanding. Once the individual student understood the skill the feedback became intrinsic to the execution of the skill itself.

The preceding contrasts between the traditional method and the movement education method have been used to formulate several recommendations related to the teaching of physical education and to the preservice and inservice training of teachers. However, it is important to acknowledge the discussion by Locke (1966, 1969) in the early years of this scholarly debate over the traditional and movement education approaches in which he cautioned the members of the profession against a war of methods. He, instead, took the position that physical educators could look forward to a fruitful blend of the best of both methods. It is in this spirit, then, that each of the recommendations and principles presented throughout the remainder of this dissertation are offered.

Hanson (1968) outlined movement education as a new look for physical education in which the focus for instruction would be on the child rather than the instructional activity. She suggested a teaching and learning environment in which children were allowed to (1) work at their own pace and level of ability and (2) become totally involved in the learning experience. Additionally, she recommended removing highly competitive or threatening situations from the instructional and practice setting. However, according to Sanborn and Hartman (1982), the case for choosing movement education or any other specific methodology remains unclear. The following five principles related to instruction in the physical education setting at the primary grade level are presented in an attempt to clarify the conditions for effective instruction that were highlighted by the evidence generated in this study.

1. Time on task is affected by the organizational format and the process of delivering instruction.
2. The quality of the instructional and the practice conditions is negatively affected by audience effect, coaction, and competition.
3. Motor skill acquisition is not the same as motor skill fluency. Fluency indicates a level of cognitive-motor understanding that makes the skill useful in a variety of settings.
4. Classroom management and control is not a function of a method or formal structure, instead it is the result of continuous interaction with the teacher and the instructional materials.
5. Children who avoid practice or play situations because they are having difficulty with fundamental skills also are avoiding the means by which physical education instruction is delivered in the gymnasium.

Allenbaugh (1967) suggested that as children come to understand their environment and to use it successfully in movement they acquire a more realistic body image and, therefore, a more healthy self concept. However, the postscript offered by Allenbaugh was that frequently in elementary education when children enter the gymnasium for physical education they are limited in their freedom to examine and explore. Her response to this problem was to offer the movement education approach as a method in which all children could work independently but simultaneously at movement tasks which would develop movement proficiency and help the child to become a self accepting productive individual. However, research to this data has not demonstrated in specific ways how the movement education model would be translated into actual practice. The following three recommendations are for the physical education teacher to consider when planning for and delivering psychomotor skill instruction to primary school aged children. They have been derived from the

observational analysis and comparison of the traditional and the movement education methods as they were implemented in this study.

1. Develop and use an environment for teaching and learning in which student practice is continuously guided by instruction.
2. Insure that the teaching and learning environment limits the presence of audience, coercion, and competitive conditions during instruction and practice.
3. Develop an approach toward providing instruction that focuses on the cognitive aspects of psychomotor skill acquisition as well as the physical execution of those skills.

Field observations throughout this study have indicated that any model of instruction is difficult to internalize into useful teacher behaviors. Theoretical knowledge of teaching methodologies is not sufficient for either the preservice or the inservice teacher. Both must be provided with opportunity to practice those behaviors under the guidance of a teacher educator who is familiar with the theoretical framework of the model being used. The trained teacher educator then can guide the preservice or inservice teacher through the implementation of that model by providing ongoing instruction related to the effectiveness of their actual teaching behaviors. The following principles for teacher educators in physical education are presented as open-ended guidelines for assessing instructional models and actual teaching behaviors. They are formulated from the contrasts that were identified between the traditional and the movement education methods in this study.

1. Teaching isn't necessarily telling. Telling results in mirrored behavior and does not necessarily result in understanding.

2. Mirroring, although commonly used in physical education instruction, is not necessarily the most effective instructional strategy.
3. Physical assessment and skill progression, although important aspects of psychomotor skill instruction, are not sufficient conditions for effective instruction.

The recommendations for teachers and teacher educators that follow are based on the preceding principles. They are grounded in the observational evidence from this study associated with the impact of the actual implementation of the two methods by the collaborating teacher. Reflective analysis of these data has led to the understanding that research on any teaching method must be reviewed by considering the way in which that method was operationalized and implemented.

1. Teachers and teacher candidates in physical education must be taught to effectively use progression and skill analysis to help students acquire higher level thinking skills with respect to motor skill learning.
 - a. It is important for physical education teachers to learn to create the link between the cognitive and the motor dimensions of psychomotor skills. In order to do this the teacher must learn how to help the child make sense of the instructional information and filter out the most useful or important concepts.
 - b. Both preservice and inservice teachers in physical education need to be taught to use questioning and probes as a part of their instructional strategy.
2. Both preservice and inservice teachers should be taught to use organizational formats other than the squad for classroom management and instruction.

The preceding principles and recommendations are offered as guidelines for physical educators charged with providing psychomotor skill instruction and teacher educators charged with the preparation of preservice and inservice physical education teachers. However, it is important to note that the research results from studies of pedagogy continue to remain inconsistent from one study to the next. For example, Toole and Arink (1982) examined the effect of movement education on motor skill performance in first grade children and determined that a traditional method using demonstration was more effective when the object of the lesson was to teach a specific skill in a short period of time. Similar results were documented in a study of three different styles of teaching physical education to fifth grade children (Goldberg, Gerney, and Chamberlain, 1982). In this study the traditional method was demonstrated to be well suited as a general approach to skill instruction, while an "inclusion style," which afforded opportunity for student decision making, was shown to be difficult for the students to manage. On the contrary, two similar studies reported very different results. First, a study by Lydon and Cheffers (1984) demonstrated that learners can be given responsibility within the elementary school physical education environment for decision making and at the same time maintain a level of achievement equivalent to that of students exposed to a more traditional environment in which the teacher is the decision maker. Second, a study of the influence of decision making on attitudes, creativity, motor skills, and self concepts in elementary children concluded that children instructed by a shared decision making model scored significantly higher on measures of creativity, motor skills, and self concept than those children instructed by a teacher dominated method (Schempp, Cheffers, and Zaichowsky, 1983).

Perhaps additional research focused on the more qualitative aspects of the teaching and learning environment in physical education would help to define what now exist as internal inconsistencies between the theoretical models that are being examined and compared in the literature of today. Mueller (1970) suggested that the teacher's behavior was a major determinant in the kind of learning climate existing in the gymnasium, and he identified several aspects of that environment that need clearer definition: the manner of teaching, the manner of learning, the quality and kind of motivation and feedback, the character of the activities leading to the internalization of motor skills, and the structure of the subject matter. The final set of recommendations in this dissertation is for future research on this topic and on other related topics. These suggestions are not all inclusive, but they are based on both the problems associated with this project and its findings.

1. Replicate the study, but use scatters and circles for both methods to control for time on task between the two methods.
2. Replicate the study. Include a pretest of the classroom teachers and the physical education teacher on the "Problems in the Schools Questionnaire," (Deci, 1981) prior to the measurement of the students on perceived competence and motor ability.
3. Investigate the relationship between instruction and practice in a variety of settings and across a variety of teachers.
4. Investigate the use of the squad format in a variety of settings and across a variety of teachers.
5. Investigate the link between the cognitive and the motor components of psychomotor skills by observing that connection in a variety of instructional settings and across a number of teachers.

6. Survey teacher training programs in physical education to determine the kind and the quality of methods instruction provided to preservice teachers.
7. Survey inservice training programs to determine the focus of inservice training for professional physical educators.

References

- Albertson, L.M. (1974, May). Physical education or physical indoctrination. The Physical Educator, 31, 90-92.
- Allenbaugh, N. (1967, March). Learning about movement. The NEA Journal.
- Allport, G.W. (1955). Becoming: Basic considerations for psychology of personality. New Haven, CT: University Press.
- Allport, G.W. (1963). Pattern and growth in personality. New York: Holt, Rinehart, & Winston.
- Ammons, . (1956). Effects of knowledge of performance: A survey and tentative theoretical formulation. Journal of Genetic Psychology, 54, 279-299.
- Annarino, A.A. (1976). Individualized instructional materials. In Personalized learning in physical education, American Alliance for Health, Physical Education and Recreation, Washington, D.C.: AAHPER Publications.
- Ausubel, D.P. (1958). Theory and problems of child development. Grune & Stratton.
- Astrand, P., & Rodahl, K. (1977). Textbook of work physiology: Physiological basis of exercise. New York: McGraw-Hill Book Co.
- Bannister, D., & Agnew, J. (1977). The child's construing of self. In J. Cole (Ed.), Nebraska symposium on motivation. Lincoln, NE: Nebraska University Press.
- Bloom, B.S. (Ed.) (1956). Taxonomy of educational objectives. Handbook I: Cognitive Domain. New York: David McKay Co.
- Bloom, B.S., Krathwohl, D.R., and Masia, B.B. (1964). Taxonomy of educational objectives. Handbook II: Affective Domain. New York: David McKay Co.
- Bogdan, R.C., & Biklen, S.K. (1982). Qualitative research for education: An introduction to theory and methods. Boston: Allyn & Bacon, Inc.

1972,

1973

1974

1975

1976

(Ed

Ind

Inner

Un

Inner

Mapbe

de

aslym

ev

Ed

Mapbe

in

Inter

Be

Y.

1975

1976

1977

1978

1979

1980

- Brown, M.C., & Sommer, B.K. (1969). Movement education: Its evolution and a modern approach. Boston: Addison Wesley Publishing Co.
- Bruininks, R.H. (1978). Examiners manual. Oseretsky Test of Motor Proficiency. Circle Pines, MN: American Guidance Service.
- Bruner, J.S. (1970). The growth and structure of skill. In K.J. Connally (Ed.), Mechanisms of motor skill development. New York: Academic Press, Inc.
- Bruner, J.S. (1963). The process of education. Cambridge, MA: Harvard University Press.
- Bruner, J.S. (1960). The process of education. New York: Vintage Books.
- Campbell, D.T., & Stanley, J.C. (1963). Experimental and quasi-experimental designs for research. Boston: Houghton Mifflin Co.
- Caslyn, R.J., & Kenny, D.A. (1977). Self concept of ability and perceived evaluation of others: Cause or effect of academic achievement. Journal of Educational Psychology, 69, 136-145.
- Campbell, (1981, January). Every student a success: Improving self image to increase learning potential. NASSP Bulletin.
- Cantor, N., & Mischel, W. (1979). Prototypes in person perception. In L. Berkowitz (Ed.), Advances in experimental social psychology (Vol. 12). New York: Academic Press.
- Christie, J.F. (1980). The cognitive significance of children's play. Journal of Education.
- Cooley, C.H. (1902). Human nature and the social order. New York: Scribners.
- Cratty, . (1975). Remedial motor activities for children. Philadelphia: Lea Febegir.
- Creswell, W.H. (1968, October). The Academy Papers, No. 2, p. 6.

- Dauer, V.P., & Pangrazi, R.P. (1975). Dynamic physical education for elementary school children. Minneapolis, MN: Burgess Publishing Co.
- Deci, R. (1981). The problems in the schools questionnaire. Journal of Educational Psychology, 73(5), 642-650.
- Dewey, J. (1922). Human nature and conduct. New York: Henry Holt & Company.
- Dickstein, E. (1977). Self and self esteem: Theoretical foundtions and their implications for research. Human Development, 20, 129-140.
- Dougherty, N.J., & Bonanno, D. (1979). Contemporary approaches to the teaching of physical education. Minneapolis, MN: Burgess Publishing, Inc.
- Epstein, S. (1973). The self concept revisited or a theory of a theory. American Psychologist, 28, 405-416.
- Erickson, E.H. (1968). Identity: Youth and crisis. New York: W.W. Norton & Company.
- Flynn, (1979). Parental attitudes and the preschool child's self concept. Child Study Journal, 9(1).
- Froebel, F. (1897). The education of man. Translated by W.N. Hailman. New York: D. Appleton & Co.
- Furst, & Johnson, (1973). Behavioral changes in children participating in a physical development clinic. Perceptual Motor Skills.
- Gallahue, D. L. (1982). Development movement experiences for children. New York: John Wiley & Sons.
- Gallahue, D.H, (1982). Understanding motor development in children. New York: John Wiley & Sons.
- Glickman, (1979). Problem: Declining achievement scores. Solution: Let them play. Phi Delta Kappan.

- Goldberger, M., Gerney, P., & Chamberlain, J. (1982). The effects of three styles of teaching on the psychomotor performance and social skill development of fifth grade children. Research Quarterly for Exercise and Sport, 53(2), 116-124.
- Hanson, M.R. (1968). The new look in elementary school physical education. Physical Education for Children Healthful Living. Washington, D.C.: Association for Childhood Education International, p. 74.
- Harrow, A.J. (1972). A taxonomy of the psychomotor domain. New York: David McKay Co.
- Harter, S., & Pike, R. (1981). The Pictorial Perceived Competence Scale for Young Children. Unpublished manuscript. University of Denver.
- Harter, S. (1982). Developmental perceptions of the self system. In Mavis Hetherington (Ed.), Carmichaels manual of child psychology (Volume on social and personality development). New York: John Wiley & Sons.
- Harter, S. (1980). The development of competence motivation in the mastery of cognitive and physical skills: Is there still a place for joy? Psychology of Motor Behavior and Sport, 3-29.
- Heitmann, H.M., & Kneer, M.E. (1976). Physical education instructional techniques: An individualized approach. New Jersey: Prentice Hall, Inc.
- Herron, & Sutton-Smith (1971). Child's play. New York: John Wiley & Sons.
- Houghton, W. (1972). Educational gymnastics: A guide for teachers. London: The Inner London Education Authority.
- James, W. (1913). Psychology. New York: Fawcett Publications, Inc (originally published in 1892).
- James, W. (1910). Psychology: The briefer course. New York: Holt.
- Johnson, . & Furst, . (1967). Changes in perceptual motor skills after a children's physical development program. Perceptual Motor Skills.

- Johnson, ., Furst, ., & Johnson, . (1968). Changes in self concept after a physical development program. Research Quarterly.
- Keller, A., Ford, L.H., & Meachan, J.A. (1978). Dimensions of self concepts in preschool children. Developmental Psychology, 14, 483-489.
- Kenniston, (1977, September). All our children: The American family under pressure. Carnegie Council Report on Children.
- Kenney, D.A. (1975). Cross-lagged panel correlations: A test for spuriousness. Psychological Bulletin, 82, 887-903.
- Kruger, H., & Kruger, J.M. (1979). Movement education in physical education: A guide to teaching and planning. Dubuque, IA: Wm. C. Brown.
- Laban, R., & Lawrence, F.C. (1947). Effort. London: MacDonald and Evans.
- Lecky, . (1945). Self consistency, a theory of personality. New York: Island Press Cooperative.
- Leithwood, K. (1971). Motor, cognitive, and affective relationships among advantaged preschool children. Research Quarterly, 42(1).
- Lewis, M. (1979). The self as a developmental concept. Human Development, 22, 416-419.
- Lewis, M., & Brooks-Gunn, J. (1979a). Toward a theory of social cognition: The development of the self. In I. Uzigiris (Ed.), New directions in child development: Social interaction and communication during infancy. San Francisco: Jossey-Bass.
- Lewis, M., & Brooks-Gunn, J. (1979b). Social cognition and the acquisition of self. New York: Plenum Press.
- Locke, L.F. (1969). Movement education--a description and critique. In R.C. Brown, Jr. & B.J. Crathy (Eds.), New perspectives of man in action. Englewood Cliffs, NJ: Prentice hall, Inc.

- Locke, L.F. (1966, January). The movement movement. JOHPER, 37, 26-27+.
- Locke, L.F., & Jensen, M. (1971, September). Prepackaged sports skills instruction: A review of selected research. Journal of Health, Physical Education and Recreation, 42, 57-59.
- Lydon, M.C. & Cheffers, J.T.F. (1984). Decision making in elementary school-age children: Effects upon motor learning and self concept development. Research Quarterly for Exercise and Sport, 55(2), 135-140.
- Malina, R. (1969). Exercise as an influence upon growth: Review and critique of current concepts. Clinical Pediatrics, 8, 16-26.
- Martinek, ., et al. (1977). Decision making in elementary age children: Effects on motor skills and self concepts. Research Quarterly, 48(2).
- Mead, G.H. (1925, April). The genesis of self and social control. International Journal of Ethics, (3), 251-273.
- Mead, G.H. (1934). Mind, Self, and Society. Chicago: University of Chicago Press.
- Melograno, V. (1979). Designing curriculum and learning: A physical coeducation approach. Iowa: Kendall Hunt.
- Minton, B. (1979). Dimensions of information underlying children's judgments of their competence. Unpublished Master's thesis, University of Denver.
- Montesorri, M. (1964). Dr. Montessori's own handbook. Cambridge, MA: Robert Bentley, Inc.
- Mosston, M. (1966). Teaching physical education. Ohio: Merrill Publishing Co.
- Mosston, M., & Mueller, R. (1974). Mission, omission and submission in physical education. In George H. McGlynn (Ed.), Issues in physical education. Palo Alto, CA: National press Books.

- Mueller, R. (1970). A way of looking at movement education. In R.T. Sweeney (Ed.), Selected readings in movement education. Addison Wesley Publishing Co.
- Pellegrini, . (1980). The relationship of kindergarten play and writing. Psychology in Schools.
- Piaget, J. (1962). Play, dreams, and imitation in childhood. London: Routledge and K. Paul.
- Piaget, J. (1965). The child's conception of the world. Patterson, NJ: Littlefield Adams.
- Piaget, J. (1979). The child's conception of time. New York: Basic Books.
- Piaget, J., & Inhelder, . (1956). The young child's conception of space. London: Routledge and K. Paul.
- Purkey, W.W. (1979). Self concept and school achievement. Englewood Cliffs, NJ: Prentice Hall.
- Reynolds, . (1980, April). Self esteem and classroom behavior. Psychology in schools, 17.
- Rogers, C.R. (1951). Client centered therapy. New York: Houghton Mifflin.
- Rosenberg, M. (1979). Conceiving the self. New York: Basic Books.
- Roswal, . & Firth, . (1980). Children's developmental play programs. Education and Training of Mentally Retarded.
- Rubin, . & Maioni, . (1975). Play preference and its relationship to egocentrism, popularity, and classification skills in preschoolers. Merrill-Palmer Quarterly.
- Ruble, D.N., Parsons, J.E., & Ross, J. (1976). Self-evaluative responses of children in an achievement setting. Child Development, 47, 990-997.
- Sanborn, M.A., & Hartman, B.G. (1982). Issues in physical education. Philadelphia: Lea & Fibiger.

Sarbin, T.R. (1952). A preface to a psychological analysis of self.

Psychological Review, 59, 11-22.

Sattler, J.M. (1982). Assessment of children's intelligence and special abilities. Boston: Allyn & Bacon, Inc.

Schempp, P.G., Cheffers, J.T.F., & Zaichkowsky, L.D. (1983). Influence of decision making on attitudes, creativity, motor skills, and self concept in elementary children. Research Quarterly for Exercise and Sport, 54(2), 183-189.

Siedentop, D. (1976). Developing teaching skills in physical education. Boston: Houghton Mifflin Co.

Simpson, . & Meaney, . (1979, July). Effects of learning to ski on the self concept of mentally retarded children. American Journal of Mental Deficiency, 84.

Singer, R.N. (1975). Motor learning and human performance: An application to physical education skills. New York: MacMillan Publishing Co.

Singer, R.N., & Dick, W. (1980). Teaching physical education: A systems approach. Boston: Houghton Mifflin Co.

Smilansky, . (1968). The effects of sociodramatic play on disadvantaged preschool children. New York: John Wiley and Co.

Snygg, D., & Combs, A.W. (1949). Individual behavior. New York: Harper Row.

Staniford, . (1977). Play and physical activity in early childhood socialization. CAHPER: University of Calgary.

Sutton-Smith, B. (1966). The folkgames of children. Psychological Review.

Thaxton, A.B., Rothstein, A.L., & Thaxton, N.A. (1977). Comparative effectiveness of two methods of teaching physical education to elementary school girls. Research Quarterly, 48, 420-427.

- Thomas, . & Chisson, . (1974). Prediction of first grade academic performance from kindergarten perceptual motor data. Research Quarterly, 45(2).
- Toole, T., & Arink, E.A. (1982). Movement education: Its effects on motor skill performance. Research Quarterly for Exercise and Sport, 53(2), 156-162.
- Vygotsky, . (1976). Play and its role in the mental development of the child. In J. Bruner (Ed.), Play: Its role in development and evolution. New York: Basic Books.
- Whitehurst, K. (1971, May). What movement means to the young child. Journal of Health, Physical Education and Recreation, 42, 34-35.
- Werner, P.H. (1979). A movement approach to games for children. St. Louis: C.V. Mosby Co.
- Yawkey, . (1979). More on play as intelligence in children. Journal of Creative Behavior.
- Zajonc, R.B. (1965). Social facilitation. Science, 149, 269-274.