A RESEARCH PAPER COMPARING THE PROGRESS OF TWO GROUPS OF ELEMENTARY CHILDREN IN TRAMPOLINE SKILL DEVELOPMENT

BY

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A Research Paper

Presented to

The Graduate Council of

Austin Peay State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Education

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by

Samuel Thomas Dillard

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Austin Peay State University Library

To the Graduate Council:

I am submitting herewith a research paper written by Samuel Thomas Dillard entitled, "A Research Paper Comparing the Progress of Two Groups of Elementary Children in Trampoline Skill Development." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts in Education, with a major in Administration and Supervision and a major in Health and Physical Education.

Major Professor

Accepted for the Council:

Dean of the Graduate School

TABLE OF CONTENTS

LIST OF TABLES

Chapter 1

INTRODUCTION TO THE PROBLEM

A study was made comparing the progress of two groups of third grade and fourth grade boys and girls on trampoline skill development.

Group I was taught by the conventional method supplemented with team-sports skills.

Group II was taught by the conventional method supplemented with Basic Movement.

The purpose of this research was to determine how the children in Group I compared in skill development with the children in Group II. This information was obtained by pre-skill tests and post-skill tests given to each group. The children were given the same test and graded by the same standard.

Chapter 2

REVIEW OF LITERATURE

Tillotson (1) has found that Basic Movement and problem-solving situations are preferable when learning skills, developing fundamentals, and combining and refining specific skills. However, command methodology allows for no individualization. Children are told what to do and how to do it. Angell (2) claims that the "new movement education" in the elementary school is a step in the right direction; it is a method which should help children invent their own games, dances, sports, and motor skills with which to express themselves. Tanner (3) states that with a wide range of movement experiences students should improve coordination, flexibility, agility, strength and endurance, thereby developing a movement vocabulary, fostering individual differences, and encouraging creativity.

Logsdon (4) states that movement education will offer wide experience in movement so that children will move with fluency, ease, and versatility. Basic Movement allows for individual differences and promotes growth through providing successful and satisfying movement experiences for every child. Ludwig (5) claims that there seemed to be a significant carry-over into the classroom of such positive behaviors and attitudes on the part of the

children as an independent approach to problem solving, an emphasis to do one's best, and an appreciation of the efforts of other children.

Lanehart (6), Miller, and Rekstad write that it is generally agreed that movement education is the phase of learning which contributes to one's understanding of effective, efficient bodily movement, and in turn enhances one's proficiency in motor tasks. Educational Gymnastics (7) suggests that movement ideas have as their purpose the building of a wide movement vocabulary from which the children learn to select the appropriate action for the task set. The Physical Education Division of the A.A.H.P.E.R. (8) finds that movement education is the foundation component of both physical education and general education. Movement is both the means and the end of physical education.

Chapter 3

THE HYPOTHESIS

The null hypothesis of this study was based on the assumption of the writer that the children in Group I would prove to be no better in skill performance than the children in Group II.

Chapter 4

LIMITATIONS OF THE STUDY

The paucity of reference material in the Austin Peay State University Library was a limiting factor.

Much of the material available on the subject goes by the simple title "Movement Exploration" and seems so titled only to sell more copies.

The study was limited to twenty-five students and to a five-week teaching and testing period.

Chapter 5

DESCRIPTION OF THE GROUPS TESTED

Group I was made up of twelve students between the ages of eight and ten years. One student was eight years old, six were nine years old, and five were ten years old. There were seven male students and five female students.

Group II was made up of thirteen students between the ages of eight and ten years. Two students were eight years old, six were nine years old, and five were ten years old. There were nine male students and four female students.

All students attended St. Bethlehem Elementary School during the school year 1967-68 and were participating in a summer recreation program there.

The students were the nucleus of the combined third grade and fourth grade group and were divided at random.

Chapter 6

DESCRIPTION OF THE TEST

This test was devised to measure to some degree the percentage of improvement in the performance of basic trampoline skills between Group I and Group II.

The test is very similar to skill tests administered in the class Teaching Theory of Tumbling taught at Austin Peay State University.

This test includes seven individual tests: (1) simple bounce, (2) knee-drop, (3) seat-drop, (4) front-drop, (5) seat-knee-front, (6) bunny hop, and (7) back-drop.

Chapter 7

ADMINISTRATION OF THE TEST

The fifth week of the program was set up for the testing of these two groups of students. The first hour of the scheduled four-hour day (summer program) was set aside for testing periods.

The tests were administered by a Physical Education Aide under the auspices of a certified Physical Education Teacher employed by the Clarksville-Montgomery County School System.

Each group was allowed thirty minutes testing time per day, and all were given equal opportunities to perform at their best. They were tested on the same seven items and in the same order.

Chapter 8

A STUDY OF MOVEMENT EXPLORATION

When one speaks of Movement Exploration, he is talking about a unique approach to physical education. Movement is an integral part of physical education. It is considered one of the basic keys to learning: one must move to learn.

The Movement Exploration approach to physical education requires total physical and mental involvement. It is concerned with the whole body moving, exploring, and finding out about itself. Because all children are moving in different ways, it may appear that there is lack of discipline. This is not so. The teacher is in complete control at all times. This is accomplished by the teacher conditioning the children to certain signals; for example (1) a tambourine beats out slow or fast movement, (2) a clap of hands to start, and/or (3) a whistle blow to stop.

A newborn child moves to discover his environment. Each movement contributes to the child's storehouse of knowledge that can be recalled at a later date. Everything a child does from birth affects his performance in the future.

Movement Exploration can provide a number of experiences to develop the child's motor potential and help

him to live better in his competitive surroundings. Through the development of motor skills, the child will be able to experience success as a participant in complex activities.

Movement Exploration as an approach to physical education began in Europe, particularly Germany and England. A common underlying philosophy embraces both of these programs, that philosophy being that motor development is dependent upon numerous experiences involving all possible movement patterns. The German program, though creative, tends to be dependent upon specific physical skills. The British, perhaps the leaders in movement experiences, stress concepts of time, space, force, and flow (Laban, 9). In a comparison of these two systems, the British may be more creative; but in any sense the basic theme is to know oneself better.

The movement program in America is by no means new. Many researchers have long known the relationship between motor development and achievement. However, under the impetus of psychology, we are now more than ever aware of motor-readiness relationships. For this reason there has been an emphasis on motor skills through Movement Exploration.

Many centers, as well as individuals, are now engaged in developing movement programs. Before long, American children should be able to reap the benefits of an intensive program of movement.

Basic Movement deserves consideration and warrants inclusion in elementary physical education curricula because it is so appropriate for young children for these reasons:

1. Children love movement for movement's sake, and all movement has purpose to them.

2. It is desirable to aid the creative aspect of the child while he is young.

3. Children are less inhibited and are more free to create and react spontaneously.

4. They have fewer learned movement patterns and can respond to the problems in a much more creative way.

5. It provides a challenge to all children who have not had basic movement, regardless of past experiences.

6. It satisfies the child's need for activity.

A suggested lesson sequence follows (Schurr, 10):

1. Part I of the lesson should be vigorous to bring about an immediate physiological change. This can usually be accomplished more readily with locomotor movements.

2. Part II is usually a continuance of the beginning activity with the introduction of equipment to be used while moving about the space. This gives a wider range of movement experiences.

3. Part III concentrates on non-locomotor movements to bring about greater awareness of the movements which the body can perform while remaining in a limited area.

4. Part IV provides opportunities which should be developed around small-group participation. This provides unique experiences inherent in working in small groups.

5. Part V arranges activities so that all children are participating in solving problems while moving in a prescribed floor pattern. Facilities available in limited quantities can be utilized effectively in this phase of the lesson.

6. Part VI consists of quiet activities usually stressing relaxation with emphasis on the non-locomotor movements.

Chapter 9

HOW THE BODY MOVES

Elements of the following chart were taken from a publication of the Great Britain Ministry of Education (11).

Elements of Movement		Dimensions
IN SPACE	Direction	forward
		backward
		sideways
		upward
		downward
		diagonally
	Level	high
		medium
		low
	Pathway	round
		straight
		angular
		curved
		twisted

IN TIME

- Rhythm
- Quick
- Slow
- Accelerating
- Decelerating

WITH WEIGHT OR FORCE

- Strong
- Heavy
- Light
- Relaxed

WITH FLOW

- Continuous
- Broken
- Successive
- Simultaneous
- Alternating

Chapter 10

METHODS TO BE USED IN ANALYZING DATA

The experimental design which was used in this research was set up to compare the rate of trampoline skill improvement between Group I which was the control group supplemented with free play and team sport skills with Group II which was supplemented with Basic Movement. The two groups consisted of third and fourth grade elementary students who were randomly selected with no regard to age or sex. The t-test will be used to determine the significance of gain between the two groups.

This is the mathematical formula used to computate the t-scores.

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{\mathcal{E}x_1^2 + \mathcal{E}x_2^2}{n_1 + n_2 - 2}\right)\left(1/n_1 + 1/n_2\right)}}$$

A simple mathematical breakdown of comparisons between the pre-test and post-test scores of the two groups will be made, as well as a simple percent breakdown showing the rates of improvement between the comparative scores and the percent of difference between the rates of improvement.

Table 1

GENERAL MOVEMENT PATTERNS TEST

		GROUP I	GROUP II
1.	"Let's see how many different ways you can balance on two supports, i.e., two hands, one hand and one foot, both feet."	2	3
2.	"Can you show me the different ways you can move across the room?"	1	4
3.	"Show me how many different parts of the body you can move in a circle. What different combinations can you make up?"	2	3
4.	"How many different ways can you show me to bounce a ball across the room?"	4	3
5.	"Let's explore the different ways you can stretch the body to the full limits."	2	3
6.	"What are the different ways you can roll across the mat?"	3	3
7.	"Let's see you carry a ball around the room without using your hands."	4	3
8.	"What are the different ways you can move along the white lines?"	2	3

Table 2

PERCEPTION TEST

		GROUP	
		I	II
1.	"Close your eyes and walk forward until until you're even with the mid-court line."	3	4
2.	"Close your eyes and walk backwards until you're even with the mid-court line."	3	4
3.	"Using all the space on your half of the court, see how far you can get from each of your team mates."	3	4
4.	Works well by oneself	3	4
5.	Works well with others (children were given an opportunity to work up a pantomime skit)	1	4

Table 3

TRAMPOLINE SKILLS PLUS TEAM SPORTS SKILLS

Test No. 1

Subject Number Group I	Simple Bounce	Knee Drop	Seat Drop	Front Drop	Knee Seat Front	Bunny Hop	Back Drop	Total
1	3	3	4	3	3	4	3	23
2	2	3	2	3	2	2	1	15
3	2	3	2	3	3	3	2	18
4	1	2	2	4	1	2	1	13
5	3	2	2	3	2	3	1	16
6	2	3	3	3	2	3	1	17
7	2	2	3	2	2	3	1	15
8	2	2	1	2	1	3	0	11
9	2	2	3	3	3	3	2	18
10	2	3	2	4	3	3	2	19
11	3	2	3	3	4	3	3	21
12	2	3	2	2	2	3	1	15

Table 4

TRAMPOLINE SKILLS PLUS BASIC MOVEMENT SKILLS

Test No. 1

Subject Number Group II	Simple Bounce	Knee Drop	Seat Drop	Front Drop	Knee Seat Front	Bunny Hop	Back Drop	Total
1	2	2	3	2	2	2	2	15
2	3	3	3	4	2	3	1	19
3	2	3	2	4	3	3	1	18
4	2	3	2	2	2	3	2	16
5	2	3	2	3	3	4	2	19
6	2	3	3	2	3	2	2	17
7	3	3	3	3	3	4	2	21
8	3	3	4	3	3	4	3	23
9	2	3	2	1	2	1	1	12
10	2	3	3	3	3	3	2	19
11	2	3	3	3	3	3	2	19
12	2	3	3	3	4	3	3	21
13	3	3	3	3	3	3	3	21

Table 5

TRAMPOLINE SKILLS PLUS TEAM SPORTS SKILLS

Test No. 2

Subject Number Group I	Simple Bounce	Knee Drop	Seat Drop	Front Drop	Knee Seat Front	Bunny Hop	Back Drop	Total
1	4	4	4	4	4	4	4	28
2	3	3	3	2	3	3	2	19
3	3	3	3	3	4	4	3	23
4	2	2	3	4	2	3	1	17
5	3	3	3	3	3	3	1	19
6	3	4	3	3	2	3	3	21
7	3	3	3	3	2	3	2	19
8	3	3	3	2	2	3	1	17
9	3	3	3	3	3	4	3	22
10	2	4	3	4	3	3	2	21
11	2	3	3	4	4	3	2	21
12	2	2	3	3	3	3	1	17

Table 6

TRAMPOLINE SKILLS PLUS BASIC MOVEMENT SKILLS

Test No. 2

Subject Number Group II	Simple Bounce	Knee Drop	Seat Drop	Front Drop	Knee Seat Front	Bunny Hop	Back Drop	Total
1	3	3	3	3	2	3	3	20
2	3	4	4	4	3	4	2	24
3	3	4	3	3	3	4	2	22
4	3	4	3	3	2	3	2	20
5	3	4	3	3	3	4	3	23
6	3	3	4	3	3	3	3	22
7	4	4	4	4	4	4	3	27
8	4	3	4	4	3	4	3	25
9	3	4	2	2	2	2	1	16
10	3	4	3	3	3	3	2	21
11	3	3	4	4	3	3	3	23
12	3	3	4	4	4	3	3	24
13	3	4	4	3	4	4	3	25

Table 7

TEST DATA

		GROUP I	GROUP II
1.	Skill test before the four-week instruction period (groups scored in total points)	201	240
2.	Skill test at end of four-week instruction period and fifth week of testing (scored in total points)	244	292
3.	Total points improvement per group	43	52
4.	Ratio of points improvement per child	3.58	4.00
5.	Percent scored on first test	56.27	67.19
6.	Percent scored on second test	68.31	81.75
7.	Percent improvement of each group	12.4	14.56
8.	Difference in rate of improvement		2.16
9.	General movement patterns test (scored in total points)	20	25
10.	Perception test (scored in total points)	9	12
11.	Works well by oneself	3	4
12.	Works well with others	1	4
13.	Mean score Test 1, Group I	16.75	
14.	Mean score Test 1, Group II		18.46
15.	T-score of comparison between Groups I and II on Test 1		20%
16.	Mean score Test 2, Group I	20.33	
17.	Mean score Test 2, Group II		22.46
18.	T-score of comparison between Groups I and II on Test 2		10%

Chapter 11

SUMMARY AND CONCLUSIONS

Results show that Group II did progress at a 2.16% faster rate and at a 10% higher level of significance in skill development than did Group I. Group II also scored higher on a post test of general movement patterns and perception than did Group I.

After testing twenty-five students, I believe the results shown are correct. The null hypothesis was rejected.

The material presented in this paper is intended to show that Movement Exploration can make a vital improvement in the elementary physical education program. If one is to experiment with this concept it is important to remember that the initial outcome is dependent upon the teacher's individual personality and vitality.

Exploration is not to be conceived of as an undisciplined activity filled with nothing more than ineffective free-play motions, but as a dynamic form of learning. It must be a challenging, progressive series of movement problems which induce the children to greater skill and mastery of a variety of ways of moving.

Each teacher venturing into this method of teaching will probably see responses from children that no one else

has witnessed. In turn, he will probably challenge his students in many different ways.

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