

WHAT CHILDREN THINK, FEEL, AND KNOW
ABOUT THE OVERHAND THROW

by

Mark A. Manross

Thesis submitted to the Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

MASTERS OF SCIENCE

in

Health and Physical Education

APPROVED:



G. M. Graham, Chairman

J. K. Sawyers

R. Stratton

November, 1994
Blacksburg, Virginia

WHAT CHILDREN THINK, FEEL AND KNOW
ABOUT THE OVERHAND THROW

by

Mark A. Manross

Committee Chairman: George M. Graham
Health and Physical Education

(ABSTRACT)

The purpose of this study was to gather insights about the thoughts, feelings, and knowledge children had about the skill of throwing. Interviews, conducted with 54 children enrolled in two different schools, served as the primary data collection source. Information concerning their knowledge of the biomechanical throwing cues was gathered using a written test. The children were involved in two different physical education programs. One physical education program was taught using the "skills theme approach" and the other used a "traditional approach." Questions guiding the study included asking the children how they felt about how they were learning to throw, what they liked and disliked about their throwing experiences in their physical education classes, and how important they thought it was to learn to throw. Children were also asked to describe and demonstrate the correct way to throw a ball. Assertions were formed using interpretive research. These assertions framed and organized the results

section of the study. Results indicated that the children taught using the skills themes approach were more knowledgeable about the skill of throwing and they attributed their throwing knowledge to their physical education teacher. The children taught using a traditional approach showed little knowledge about throwing and they relied on others, not their physical education teacher, to teach them about throwing. Additional results revealed that all of the children said throwing was an important skill to learn and the way to improve throwing performance was to practice. Implications for teaching throwing are offered.

In Memory of Dean A. Pease

"We can lift ourselves out of ignorance, we can find ourselves as creatures of excellence and intelligence and skill. We can be free! We can learn to fly!"

Jonathan Livingston Seagull

ACKNOWLEDGEMENTS

I would first like to express my thanks and gratitude to Dr. George Graham from whom I have learned so much over the past several years. It has been a pleasure to work with such a special, talented, and dedicated educator.

I would also like to thank my committee members--Drs. Sawyers, Webster, and Stratton for their insights regarding this project. Special thanks to my former graduate students especially Jon, Peter, Christine, and Steve.

In addition, I extend my gratitude to the teachers and children who were the participants of this study. I am so pleased that they allowed me to learn so much about their world.

My warmest thanks are reserved for my parents because without their help, support, and love the completion of this part of my life would not have been possible. Thanks Mom, for all your help in transcribing and proofreading. Thanks Dad, for being a great teacher of children.

Lastly, I would like to express my sincerest gratitude and dedicate this thesis to Dr. Dean A. Pease, who, unfortunately, is no longer with us. Dean touched many lives over the years through his teaching and I will indeed miss

his warm presence in my life. His courage and inspiration will live with me forever.

TABLE OF CONTENTS

Section		
Title Page.....		i
Abstract.....		ii
Dedication.....		iv
Acknowledgements.....		v
Table of Contents.....		vii
List of Tables.....		viii
List of Figures.....		ix
Chapter I:Introduction.....		1
Chapter II:Review of Literature.....		15
CHAPTER III:Methodology.....		28
CHAPTER IV:Results and Discussion.....		43
CHAPTER V:Conclusions, Implications, and Recommendations.....		155
References.....		167
Appendices.....		178
Vita.....		215

LIST OF TABLES

Table Number and Title	Page Number
Table 1. Mean written test scores of all the fourth and fifth grade children at both schools.....	104
Table 2. Mean written test scores of the interviewed fourth and fifth grade children.....	106
Table 3. Sample list of children's suggestions for becoming a good thrower.....	122
Table 4. Children's answers concerning whom they attributed their throwing knowledge to.....	128

LIST OF FIGURES

Figure Number and Title	Page Number
Figure 1. Example of artist's sketch pad.....	66
Figure 2. Examples of written tests completed by one higher and one lower skilled thrower at Pendelton Elementary School.....	109
Figure 3. Examples of completed written tests by the children at Pendelton and Eckland.....	111
Figure 4-F. Set-up diagram of children's throwing portion of interviews.....	198
Figure 5-F. Overhead view of set-up of children's interviews.....	199

CHAPTER I

To answer the question, "How do children learn?", I did something schools never do: I asked the children. Because they know.

ROBERT FULGHUM

Introduction

In recent years physical education researchers have drawn a telling portrait of what is going on in the gym and playground (Anderson & Barrette, 1978; Martinek, 1983). Anderson and his colleagues began the initial portrait in 1972 when they gathered 83 videotapes of 60 school physical education programs in the states of New York and New Jersey (Anderson & Barrette, 1978). Among other things, these videotapes were used to describe student and teacher behaviors, teacher-student interactions, and teacher feedback patterns. Since then, a number of descriptive studies have embellished the portrait of physical education classes (Metzler, 1985; Pieron & Graham, 1984; Siedentop, 1991).

Recently, through the use of qualitative research methods, the portrait has further developed because of the efforts of researchers who have attempted to gain a deeper and more thorough understanding of children's thoughts and feelings concerning their physical education experiences (Hopple, 1994; Lee, Landin, & Carter, 1992; Martinek &

Griffith, 1994; Portman, 1992; Sanders, 1993). Through the use of interviews, these researchers have discovered that some low-skilled sixth graders often felt humiliated during physical education class (Portman, 1992), fourth and fifth graders revealed that they didn't understand the purpose behind some of the fitness test items they were required to take (Hopple, 1994), and Sanders (1993) described what it was like to be a five year old in an organized physical education class for the first time. Further studies employing these methods are being completed and the addition of these children's voices will further embellish the portrait of physical education classes.

Other studies have had a more focused (i.e., narrow) purpose by gaining insights about the various motor skills that typically make up the content of physical education programs (Graham, Metzler, & Webster, 1991; Kelly, Reuschlein, & Haubenstricker, 1989; Nelson, Thomas, & Nelson, 1991; Ratliffe & Ratliffe, 1990). The skill of throwing has not been neglected in this literature. In fact, it appears to have emerged as the single most studied motor skill (Wickstrom, 1983). The skill of throwing has been studied in various ways--via comparing throwing accuracy and distance between boys and girls (Nelson, et al., 1991; Wickstrom,

1983), examining the qualitative components of the throwing motion (i.e., stepping with opposition, extension of elbow on takeaway) to gain insights into whether children were performing the skill of throwing using a mature pattern (Kelly, et al., 1989; Stroot & Oslin, 1993), and motor development researchers have followed and examined the development of throwing patterns of children over long periods of time (Halverson, L., Robertson, M., & Langendorfer, S., 1982; Robertson & Halverson, 1984; Robertson, M., 1978). This interest in obtaining information about this skill suggests that throwing may be an important skill for children to be learning. This throwing literature further contributes to the descriptive portrait of physical education classes.

As of yet, however, the skill of throwing has not been examined from a qualitative viewpoint. Gaining a deeper, richer, more thorough understanding of what children think about how they are learning and feeling about throwing seems to be warranted at this time. The aforementioned qualitative physical education research that used interviews to gather information revealed important insights about the thoughts and feelings of children. However these results have solely revealed what children think in general about their physical education experiences. With the exception of Hopple (1994),

specific content areas (i.e., throwing, catching, dancing, gymnastics) have not served as the centerpiece of any qualitative research studies in physical education.

Common sense tells us that performing content areas proficiently may lead to children choosing to participate in regular physical activity for a lifetime. As Buschner (1994) so eloquently stated, "Think how much mastery of throwing, catching, striking, volleying, dribbling, and kicking can increase activity options throughout life" (p. 32). Having these options may very well lead people to living more enjoyable, longer, and healthier lives. Therefore, it would seem, the feelings and attitudes that children harbor towards the many content areas so often presented to them in their physical education classes becomes that much more important and assumes a greater meaning.

The formation of positive feelings and attitudes towards physical education should be stimulated through physical education classes (Franck, Graham, Lawson, Laughery, Ritson, Sanborn, & Seefeldt, 1991). Is this happening? Are children understanding the importance of learning motor skills (in particular throwing), and the role that the attainment of these skills play in the enjoyment of a healthy lifestyle as adults? Are children learning skills, such as throwing, in an

enjoyable manner? Are children learning how to correctly perform motor skills such as throwing? Are lower and higher skilled children enjoying and learning about throwing in their physical education classes? Do these children learn differently? Through the use of interpretive research methods, such as interviewing and participant observation, insights and answers to these questions can be gained. These answers, thereby, can be used to further develop the portrait of physical education.

This study sought some of the answers to the aforementioned questions by doing what rarely has been attempted by researchers in the field of physical education - asking children specifically about a single motor skill (throwing).

Statement of the Purpose

The purposes of this study were: (a) to gain a deeper understanding of children's thoughts and feelings about the skill of throwing and (b) to see if children could correctly identify the biomechanical components that form a mature overhand throw. Seven major research questions guided the study:

1. How do children feel about their throwing experiences (in games, sports, physical education classes, everyday

life)? Why do they feel this way?

2. Do children feel that throwing skills are important to learn? Why or why not?

3. Do children know the correct ways to execute an overhand throw? Do they think it is important to know these?

4. Where do children report they are learning how to throw? Who do they say is teaching them?

5. Do children know how to improve their throwing performance? Where did they learn to do so?

6. Are there differences between the way lower and higher skilled children respond to the aforementioned questions?

7. Do children from two different physical education programs respond differently to the aforementioned questions?

Assumptions

It was assumed, for the purposes of this study, that all children, teachers, and administrators gave forthright, honest, and candid answers to the queries put forth to them in this study. It was also assumed that the lessons and programs observed represented what normally happened at these schools on a day-to-day basis.

Limitations of the Study

One of the goals of qualitative research is to study the setting and its people as they truly exist. It is important to note that the two physical education programs studied were ongoing, existing programs, which could not be controlled by the researcher.

Delimitations of the Study

The delimitations for this study are listed below.

1. Only two schools were utilized as data collection sites.
2. Only the children enrolled in the fourth and fifth grades at these two schools were participants in the study.
3. Only 54 children were interviewed in the study.
4. Only the knowledge, perceptions, feelings, and thoughts of children about the skill of throwing was studied.
5. Only children enrolled in the school for an entire school year were interviewed for the study.

Operational Definitions

The following list of definitions is presented in order to clarify significant terms that were used in this study.

Lower-Skilled Throwers: these were children, in the estimation of their physical education teacher, who did not practice good throwing techniques (i.e., did not "turn side" or "step with the opposite foot" during the throwing motion).

These were children who were typically chosen last for games that involved throwing, who were frequently not thrown the ball by their teammates during games, who threw with little force or accuracy on a consistent basis, who needed teacher assistance in throwing correctly in games or practice situations, and who showed little interest in a majority of the throwing games or practice situations.

Higher-Skilled Throwers: these were children, in the estimation of their physical education teacher, who consistently practiced good throwing techniques (i.e., used "opposition" when throwing, "turned side to target"). These were children who usually dominated (always had the ball, and consistently scored most of the goals for their team) in the games that involved throwing, who consistently threw with accuracy and force, who consistently played or practiced throwing skills at a higher task level when compared to the other children, and who participated in out-of-school activities that involved the skill of throwing.

Cues: simple, short phrases or words that focus on the salient aspects of the skill being practiced (Graham, Holt/Hale, & Parker, 1993, p. 103). Cues make up the "proper form or technique" of a particular skill. An example would be "stepping with the opposite foot" when throwing or striking

an object with a paddle. Cues are also referred to as "biomechanical components," "refinements," or "qualitative components."

Skill Theme Approach: an approach to teaching children's physical education that focuses on teaching the basic skills that are common to the games and sports, leisure time activities, and dance and gymnastic activities that persons participate in.

Traditional Approach: an approach to teaching physical education that has children primarily involved in playing traditional sports (e.g., baseball, basketball, football, track and field), traditional games (e.g., Four Square, Kickball, Duck-Duck-Goose, Dodgeball), traditional type dances (e.g., folk, square, circle dances) and Olympic-style gymnastics (e.g., specified floor routines, apparatus activities such as rings, balance beam and vault) (Buschner, 1994). Other common activities and practices typically associated with this approach are calisthenics and/or laps as a warm up, captains picking teams, and elimination games.

Research Hypotheses

The following research hypotheses were held by the researcher at the onset of this study:

1. Children of higher throwing ability would have favorable attitudes towards throwing, while children of lower throwing ability would have unfavorable attitudes towards throwing experiences.

2. All children interviewed would value the importance of learning how to throw.

3. Children of higher throwing ability would have learned the skill of throwing from somewhere other than their physical education teacher or class (e.g., coach, parent, or sibling), while children of lower ability would have learned from their physical education teacher.

Author Bias

It was a recognized bias of the researcher that the children at Pendelton Elementary would articulate a more detailed account of their throwing knowledge (shown through the initial part of the interviews and with the written test) as opposed to their classmates at Eckland Elementary. Due to other projects that I had been involved with during my graduate program, some time had been spent prior to the study observing the physical education program at Pendelton Elementary. These observations and the subsequent discussions with the teacher led me to believe that this was a quality program and that children were learning a great deal.

Unfortunately, the researcher had not spent any time at Eckland Elementary and after several class observations and the subsequent discussions with the physical education teachers that followed, a noticeable difference was detected between this program and the one at Pendelton. The teacher's practices, philosophies, curriculum, and teaching environment were very different. The type of program at Eckland was one that the I was familiar with because I had taught elementary physical education earlier in my career using a similar method. I was in the process of moving away from that type of "traditional" program and philosophy. This bias was recognized early in the study, therefore, every attempt was made to keep this bias away from my ability to properly and appropriately interpret the results of this study.

In addition to self-monitoring my bias while interpreting the results, I had a fellow researcher, who had experience in conducting interpretive research in physical education, read all of the children's interviews to see if she concurred with my general thoughts about the children's thoughts, feelings, and knowledge. To accomplish this, she read all of the interviews and wrote down what she thought were the common themes that emerged from the children's interviews. We then met and compared notes and thoughts. Our

discussion revealed similar thoughts about what the data was saying.

Significance

Recently, several physical education studies have focused their intent on obtaining insights about what children think, feel, and understand about their physical education experiences (Hopple, 1994; Martinek & Griffith, 1994; Portman, 1992; Sanders, 1993). These studies revealed interesting and important insights. However, with the exception of Hopple (1994), no physical education study has attempted to gain, through the use of qualitative research methods, insights from children about their thoughts and feelings about a particular content area (i.e. throwing, catching, dance). This study, by focusing on gaining insights from children about the content area of throwing using interpretive research methods, becomes significant because of its ability to fill this gap in the physical education literature.

Research conducted in the regular classroom that sought the thoughts and feelings of children regarding a specific content area has revealed interesting and important insights (Bondy, 1990; Carpenter, Fennema, Peterson, Chiang, and Loef, 1989). Due to the results of the interviews with children, a

teacher changed the way she taught after gaining access to what her children had said.

Bondy (1990), for example, discovered that first graders harbored different definitions and feelings about reading. The lower skilled readers saw reading as saying words correctly, as schoolwork, and as a source of social status. They also viewed reading as an externally imposed task and were not likely to choose to read during free choice periods. Reading was a chore to them; therefore, they did not engage in social reading. The higher skilled readers, in contrast, viewed reading as a way to learn things, a private pleasure, and a social activity. These children sought out books during free choice periods and read socially on numerous occasions. When these insights were shared with the children's teacher, Mrs. Saunders changed the way she taught:

Mrs. Saunders was dismayed to find out how her low-group readers had come to define reading. She became determined, however, to revise her reading program to communicate to students that reading means constructing understanding on the basis of information from the text and one's head (Bondy, 1990, p. 43).

By interviewing children specifically about the skill of throwing, similar results may be found. These results would

further our understanding of children and their thoughts about how they are learning to throw and perhaps a physical education teacher would also change the way they taught like the teacher did in Bondy's (1990) study. An important void in the existing research literature would also be filled. This fact alone makes this research very significant.

Summary

This study was designed to gain insights into the feelings, thoughts, and knowledge of children concerning their physical education experiences by interviewing children of different abilities about the skill of throwing. It is intended to narrow the gap in the physical education research literature by doing so.

CHAPTER II

Review of Literature

Since the purposes of this study were to find out what children knew, thought, and felt about the skill of throwing, the following areas of related literature were identified as being relevant to review; 1) the importance of learning motor skills (this section also includes a review of the throwing literature), 2) a summary of studies using interviews of children, 3) and the value of using interviews. These three areas are described in the following section.

The Importance of Learning Motor Skills

Recently, the National Association of Sport and Physical Education (NASPE) has defined a physically educated person (Franck, et al., 1991). This document states that a physically educated person;

"HAS learned skills necessary to perform a variety of physical activities,

DOES participate regularly in physical activity,

IS physically fit,

KNOWS the implications of and the benefits from involvement in physical activities,

VALUES physical activity and its contributions to a healthful lifestyle."

Each of these five components relies on the other. It seems that all components hinge on whether the first one (HAS) has been accomplished. For example, if a person HASN'T learned skills to perform a variety of physical activities, then it would be harder for them to become fit, participate regularly in physical activity, or value physical activity. This holds true because people most often participate in activities they value (i.e., are good at, enjoy, and are successful in); hence, they can become fit by participating regularly in that activity. Therefore, the learning of basic motor skills is essential if we are going to enjoy participating in the majority of our leisure activities (e.g., tennis, racquetball, basketball, baseball, volleyball).

One of the most important of these motor skills to master is that of throwing. Throwing is one of the most widely-used sport skill employed in the majority of our children's play activities (e.g., playing catch with a partner, skipping rocks on a lake, dodgeball), youth sports activities (e.g., softball, baseball, basketball), and our adult leisure time activities (e.g., softball, baseball, basketball, throwing frisbees). Numerous studies have focused their attention on this skill (Halverson & Robertson, 1979;

Hoffman, Imwald, & Koller, 1983; Kelly, et al., 1989; Nelson, et al., 1991; Wild, 1938). These studies have used quantitative research methods to examine throwing technique, accuracy, distance, and velocity. Other throwing studies have revealed a difference between the accuracy, power, and distance thrown between boys and girls (Wickstrom, 1983). A brief synopsis of the results of a few of these studies revealed that girls typically lag behind boys in throwing for accuracy, distance, and power. This literature has also let us know when we can expect most youngsters to have developed certain phases of the overarm throw (Robertson, 1978). These findings are both important and significant because they have told physical educators and coaches when children can throw properly and what children can-and can't do-as it relates to the skill of throwing. However, these studies used quantitative methods of research to gather data and therefore, the results have told us virtually nothing about the children's feelings and understanding's about the skill of throwing. Important questions that remain unanswered include: Do children care about learning to throw? Are children understanding the importance of learning to throw as youngsters? Are they understanding the lifelong benefits that learning to throw can provide them? Is throwing an enjoyable

activity for them? Do they care about learning to throw? Are children learning to throw properly? How do children feel about how they are learning how to throw? Where are they learning to throw? The answers to these important questions remain unanswered and deserve attention in the physical education literature.

Summary of Studies Using Children's Interviews

One way to answer these questions is by talking with children. Through the use of formal and informal interviews interesting and important insights can be gained about what children think, feel, and know. Researchers in other disciplines such as reading, psychology, family and child development, and mathematics, for instance, have used interviews as a means to gain this information.

Carpenter, Fennema, Peterson, Chiang, and Loef (1989) and Bondy (1990) reported that by gaining insights into how their children thought, felt, and learned about particular subjects the teachers of the children made changes in the way they taught. Carpenter, et al. (1989) for example, enrolled teachers (experimental group) in a four week workshop that focused on teaching them how children think and learn about math concepts. The control group did not have this experience. When comparing teachers in both groups after a

year, who attended the four week workshop were not only more effective in their instruction, but also focused more on the process of how they did math problems by talking and listening to their children. One teacher commented "I have always known that it was important to listen to kids, but before I never knew what questions to ask or what to listen for" (Carpenter, et al., 1989, p. 531).

Bondy (1990) discovered, also through the use of interviews, that children in a first grade class harbor different definitions and feelings about reading. The lower skilled readers saw reading as saying words correctly, as schoolwork, and a source of social status. These children also viewed reading as an externally imposed task and were not likely to choose to read during free-choice periods. Reading was a chore to them and they did not engage in social reading. The higher skilled readers, in contrast, viewed reading as a way to learn things, a private pleasure, and a social activity. These children sought out books to read during free-choice periods and read socially on a number of occasions. After these insights were shared with the children's teacher, Mrs. Saunders, changed the way she taught. After seven months of contemplation, Mrs. Saunders started the next school year with a new emphasis on writing

in her classroom. She changed her instruction by basing it on children's interests, their language, and their understandings about print (Bondy, 1990).

Program, as well as instructional changes, are called for in studies by Ford (1989), Commins and Mirramontes (1989) and Lawson, et al. (1982) as a result of insights gained from interviews with children. Ford (1989) discovered that gifted youngsters in the fifth and sixth grades think and feel differently about their school programs when compared to what teachers and parents think about them. "Through the children's interviews, it is clear that children are confused by their abilities, bored with school, burdened with the quality of work, and distressed by the expectations of their parents and teachers" (Ford, 1989, p. 134). Overall, discussions with these gifted youngsters revealed that they wanted to be like everyone else--"normal." "Many of the children wished they were bright enough for school work to be easy for them but not so bright that anyone else would notice" (Ford, 1989, p. 132). These findings support the call for program changes that meet the talents, interests, and needs of these gifted children.

Several physical education studies have utilized children's interviews as a data collection technique (Hopple,

1994; Lawson et al., 1982; Lee et al., 1992; Martinek & Griffith, 1994; Portman, 1992; Sanders, 1993). Lawson et al. (1982) suggested that changes needed to be made in physical education programs as a result of insights gained from talking with 298 children about their physical education experiences. They found that a majority of the children saw few differences between recess and their physical education class. In fact, one-third of the 298 children saw no differences at all. The other two-thirds distinguished recess as being different from physical education class only because a teacher refereed the games played during physical education class, and the fitness test was administered during physical education class (Lawson, et al. 1982). In addition, the interviews of the children revealed that they would like to learn more about the "whys" and the "hows" of skillful performance of various sports skills, and children do not always share the perceptions of their teachers about the importance of fitness testing.

Hopple (1994) interviewed 54 fourth and fifth grade children about their thoughts and feelings about physical fitness tests. She found that the children interviewed did not have a clear understanding of why they were taking the physical fitness tests. Many children said they found little

purpose in taking them. Interestingly, she also found that the children were affected by their teachers "urging" and "encouraging" behavior. In other words the children didn't like it when the teachers urged them on because this typically meant, at least from their standpoint, they were not trying their best. Urging behavior was typically characterized as yelling or being strict. Urging behavior occurred most during the mile run test. Encouraging behavior on the teachers part was met with much more positive feelings. This meant that the teachers were being supportive of their efforts and they were giving them specific instruction on how to improve their performance. Lastly, she discovered that students who performed poorly on the tests were often subjected to ridicule and embarrassment from their classmates.

Ridicule and embarrassment of children was also a discovery of the qualitative research of Portman (1992). In her interviews of thirteen low-skilled sixth-grade children enrolled in three different schools, she discovered that these children found physical education classes humiliating, frustrating, and embarrassing. These children were also chastised and criticized by their peers. Unfortunately their teachers did not do anything about this. To avoid poor

performances during class they simply stopped engaging in any of the tasks presented to them.

The findings of these studies are important. They suggest that physical education programs be designed, implemented, or changed to meet the various interests, needs, and abilities of children in physical education classes.

The Value of Using Interviews

The use of interviews provides numerous opportunities to gain important and interesting insights about children. Interviews offer a unique and reliable way of obtaining information that is not often gained through the use of questionnaires or surveys (Amato & Ochiltree, 1987; Parker, 1984). "The interview can achieve a more direct and reliable access to the subjective, inner world of the respondent than observational or paper-and-pencil measures" (Parker, 1984, p. 19).

The main advantage interviews offer to researchers and educators is that it permits them to see that adults and children are very different in the way they view, perceive, and feel about their respective worlds. Piaget's study (cited in Yonemura, 1974) states that:

Even those of us who work with children day by day can be deceived by their language and need reminders

that theirs (the children's) is a different perception of a different world: a world being created by minds that think differently from ours in ways that deserve to be respected as valid (p. 65).

The findings of the aforementioned studies clearly confirmed this notion. Often times educational programs, curriculums, and lessons are designed without the consideration of the children's subjective world in mind. Many authors are concerned with this trend and advocate talking with children so teachers can plan more effective instruction, monitor student progress, and relate more successfully with children (Parker, 1984; Tammivaara & Enright, 1986; Yonemura, 1974).

Another advantage of using interviews is that, if conducted properly (Measor, 1985; Parker, 1984; Rogers, 1987), they can potentially evolve into more of a conversation between participant and researcher and less of a rigid "interview." Therefore, extended conversations can occur between the researcher and the children (Rogers, 1987) potentially yielding valuable information which goes beyond the scope of the researcher's original questions.

Interviews also have allowed researcher's access to deeper understandings of what children know (Parker, 1984). One-word or unclear answers are probed with follow up

questions that allow the researcher to clearly understand what the children are saying. In addition, questions can be repeated in case the children misinterpret or misunderstand the questions.

Feelings can also be discussed during the interview. Feelings are not easily written about on a questionnaire, especially for children. In a pleasant, conversational setting, the feelings children have about certain things are more likely to emerge and can be discussed. Therefore, the interviews are more revealing in terms of the amount and quality of information gathered than paper-and-pencil techniques.

In an interview setting, negative "valence" can be minimized by the researcher. Valence means that people, because of our society's values and beliefs, are unequal in terms of their status (Tammivarra & Enright, 1986). This status could be economic, physical, or occupational in nature. For example, there is a negative valence created when a citizen is pulled over for speeding. The police officer is in a positive valence and the citizen is in a negative valence. The reason this occurs can be attributed to the authority-figure status that surrounds a police officer and the offender's status as "only" a law abiding citizen.

Although both parties are adults, an unequalness is felt by the "lower status" citizen. The same kind of valence can occur when adults talk with children. An adult towers over a child not only in height, but also in perceived intelligence and status. Therefore, children see adults as an intimidating authority figure. Consequently, a child must act in a certain way (i.e., give the right answers, be on their best behavior, etc.). In an interview setting, the negative valence created by the researcher can be minimized by sitting at the same height of the children during the interview, talking in "kid's language," laughing with them, reassuring them that there are no wrong answers, and getting to know them by "hanging out" with them beforehand. A negative valence cannot be minimized when a written questionnaire is used because wrong and right answers are expected when an adult is administering the test. Furthermore, questionnaires assume that all children can read and understand the questions (Parker, 1984).

Summary

Interviews with children are used as a reliable way for researchers to gather important information about the subjective world of children. Conducted properly, significant and important insights, such as those discussed earlier in

this chapter, can be gained. Interestingly, the vehicle of interviewing children has not been used frequently in the field of physical education. It was the intent of this study to gain a more thorough understanding of children's thoughts and feelings as they related to their throwing experiences. As Parker (1984) stated, "What we know and do not know about children ought to have a real impact on how we go about educating them" (p. 18).

CHAPTER III

Methodology

The primary purpose of this study was to gain a deeper understanding of childrens' thoughts, feelings, and perceptions concerning their experiences with the skill of throwing. A secondary purpose was to determine if children were able to cognitively identify the correct qualitative components (cues) that form a mature throwing motion. Therefore, a combination of both interpretive (or qualitative) and quantitative research methods was used to satisfy the purposes of this study. These methods are described in the following sections.

Setting

Two elementary schools from two different counties served as data collection sites for this study. Since one of the guiding questions for this study concerned how children from two different programs would talk about their throwing experiences, it was thought that it would be important to talk with children from two schools that had physical education programs that were different in their approach and philosophy. Therefore, a school was chosen that had a "skill theme" driven curriculum (Graham, Holt/Hale, & Parker, 1993). This type of an approach advocates teaching the basic skills

(e.g., throwing, striking, rolling, balancing) that make up our sports, recreational, dance and gymnastics activities. The other school, in contrast, had a program typically referred to as a "traditional" approach to teaching physical education. This type of approach typically involves children in a lot of sports and game playing (e.g., basketball, baseball, Dodgeball). These approaches are quite dissimilar in their overall philosophy and content. The fact that these two schools differed in other ways (e.g., the number of days they had physical education, different class sizes, and differing gym spaces to teach in) was coincidental. A complete and detailed description of these physical education programs is provided in Chapter Four.

Participants

A total of 54 children enrolled in the fourth and fifth grades served as the participants in this study. Twenty-eight children represented Eckland Elementary and 26 represented Pendelton Elementary. The process used to select these participants is described below.

Selection of Participants

All children in the fourth and fifth grades at both schools were given a permission slip to be signed by a parent or guardian (see Appendix A). Only those children returning

signed slips and who were enrolled in their school for the entire year were eligible for the study. Children of "higher throwing skill ability" and children of "lower throwing skill ability" were identified by the physical education teachers. Since both physical education teachers involved in this study had been teaching for a considerable amount of time, it was appropriate to trust their decisions regarding the ability levels of their children. According to the literature, the accuracy of teacher's ratings of children's abilities has been found to be reliable (Weiss & Horn, 1990). Weiss and Horn (1990) concluded "that there is enough evidence to suggest that teachers' ratings can be a reliable means of obtaining objective measures of performance" (p. 258). Other research has also used teacher rankings as a means of rating ability level (Portman, 1992).

The physical education teachers at each school were asked to classify their students into three categories of throwing ability--the higher ability (or best) throwers, the average throwers, and the lower ability (or poorest) throwers. They placed approximately one-third of the children in each category, and were told that the categories did not have to be evenly divided for every class. (i.e., some classes may have many more higher skilled throwers than lower

skilled throwers). They were advised to use the one-third designation as a guide and not as an absolute standard.

After collecting the signed permission slips the children were grouped into the three categories based on the classifications of the physical education teachers. The higher-skilled and lower-skilled throwers who became participants in the study were then selected at random from the permission slips that were returned. It was hoped that 16 higher-skilled and 16 lower-skilled throwers would be able to be selected from the pool of permission slips gathered. However, due to a low number of returned permission slips by some of the classes only 14 lower and higher ability throwers were selected at Eckland Elementary. Fourteen lower skilled and 12 higher skilled throwers were selected at Pendelton. Children who were categorized as average throwers were not included in this study, although for ease of administration and to foster good public relations, they were asked to complete the permission slips. Selected children were asked verbally if they wanted to participate in the study. All of the children that were selected verbally agreed and they became interviewed participants for the study. It was pure coincidence that 28 of the participants were girls and 26 were boys. (See Appendix B for more a thorough description of

how children were selected and a schedule of when they were interviewed)

Design

In order to comply with the purposes of this study, a research design that combines both qualitative and quantitative research methods was adopted. According to LeCompte and Goetz (1982), research using combinations of data collection strategies provide more complete and complex data than uni-modal designs. The qualitative methods, employing interviews and field notes as data collection sources, served as the primary data gathering devices for this study. A written test was also used to ascertain the children's understanding of the overhand throw. These two methods are explained in the following section.

Qualitative Design

Qualitative research techniques were used for the primary design of this study. Otherwise known as an interpretive approach to collecting data, this method has become increasingly used in the current literature (Bain, 1985; Bondy, 1990; Erickson, 1986; Graham, Hopple, Manross, & Sitzman, 1992; Griffin, 1985; Hopple, 1994; Martinek & Griffith, 1994; Placek, 1984; Sanders, 1993). This design allows the researcher to obtain a "deeper," richer

understanding of what is taking place in a particular research setting (Fine & Sandstrom, 1988; Locke, 1989) through participant observations, field notes, and interviews.

This study used formal and informal interviews as the primary source of data collection. The use of interviews, which allows for probing, permitted the researcher to gain a greater and more thorough understanding of the people and events of the setting being studied. Information concerning perceptions, attitudes, feelings, and knowledge were made more accessible through the individual interviews. This information could not have been gained by using other research methods, such as questionnaires or surveys (Parker, 1984).

Quantitative Design

A written paper-and-pencil test comprised the quantitative design portion of the study. This test was taken by all of the fourth and fifth grade children at both schools. It was designed to elicit the cognitive throwing knowledge of the children. (See Appendix J for a detailed explanation of this test.)

Data Collection

Children's interviews comprised the primary data source for this study. In addition, data were collected by way of a written test taken by the children, interviews of the physical education teachers at both schools, two classroom teachers at each school, and the principals at each school. Field notes regarding participant and regular observations, formal interviews, and informal conversations with the participants also comprise a section of the data collection.

A videotape of one physical education lesson at each school and curriculum guides were collected in order to further describe the physical education programs. Procedures for collecting these data are explained below. (See Appendix D for a list of data collection sources)

Children's Interviews

Children's interviews took place in small groups during their regularly scheduled physical education classes (Lawson, et al., 1982; Ford, 1989; Hopple, 1994; Sanders, 1993). Based on the pilot work that was done in preparation for this study, the decision was made to interview two children of similar ability simultaneously. The pilot experiences revealed that children, when paired with another child of similar ability, tended to answer questions independently of

answers previously given by the other child. The interviews took place in an area outside of the gymnasiums during the children's regularly scheduled physical education class. They took approximately 30 minutes to complete. The interview setting, as well as the interviewing techniques, followed the protocol set forth by Parker (1984), Tammivarra and Enright (1986), and Measor (1985). This permitted the children to be as comfortable as possible during the interview, thus allowing for unthreatening conversation between the children and the researcher. Positive and negative valence was minimized by meeting previously with the children, by participating in several of their classes, engaging in small talk with them prior to the interview, and by sitting and talking at their level during the interview (Tammivarra & Enright, 1986). (See Appendix E for the list of children's interview questions; see Appendix F for explanation of set up).

Teacher and Principal Interviews

In addition to the children's interviews, teacher and principal interviews were conducted in order to further supplement already accumulated data for the purpose of data triangulation (Denzin, 1970). Both physical education teachers were formally interviewed shortly after all the

children's interviews were completed (see Appendix G for guiding questions). These interviews focused on gaining insights about their teaching background, the schools they taught in, the programs they had built, the children they taught, the curriculum they followed, their knowledge of throwing, and specific questions were asked about how they taught throwing in their classes.

Formal interviews were conducted with a fourth and a fifth grade classroom teacher at Pendelton Elementary and two fourth grade teachers at Eckland Elementary. These interviews focused on the perceptions these classroom teachers had about the physical education program and their insights about what their children said and thought about their physical education experiences. Selection of these teachers was done randomly. These formal interviews were audiotaped. (see Appendix H)

A formal interview was also completed with the principal of each school. Interviews with the principals focused on gaining information about their feelings concerning the physical education program. These interviews were also audiotaped (see Appendix I).

Written Test

A paper-and-pencil written test was administered to the

children prior to the interviewing sessions. This written test, administered by the researcher during a regularly scheduled physical education class, was taken by all of the fourth and fifth grade children at both schools. Children were asked to write down what they believed to be the proper biomechanical steps to follow when throwing a small ball using the overhand technique. They were prompted by the researcher telling the children to pretend he was in their class, and that he didn't know how to throw a ball using the proper overhand form. The researcher then asked what things the children could tell him that would make him throw the ball more correctly and with more force. The children then wrote their answers using paper and pencils. They were informed that they could either list their answers or write the answers in paragraph form. (See Appendix J for a detailed explanation of this test.) Answers were collected and then analyzed. (Appendix C explains the scoring procedures.)

This test was an adapted version of the paper-and-pencil test described by Graham (1992). The test was completed at the beginning of the fourth and fifth grades physical education classes and took approximately 15 minutes to administer.

A table that showed the comparison between the scores of the children at both schools was used to report the mean scores of the children's answers. The mean scores of the higher and lower skilled children, boys and girls, and fourth and fifth graders were depicted in this table.

Videotaping of Children's Interviews

Videotapes of the children's interviews were made in addition to the audiotaping of these interviews. This was done as a backup measure in the event that problems arose with the tape recording equipment.

Field Notes of the Researcher

Field notes were taken during the initial participant and regular observations at each school. Field notes were not recorded during the interview portions of this study (i.e., the children's or teachers interviews). These notes were used to more accurately describe each of the schools programs. Most of the notes were jotted down in the field and then elaborated on in the evening in a journal.

Videotaped Throwing Lessons

One throwing lesson was taught by each physical education teacher to one of the fourth or fifth grade classes that was involved in the study. This lesson was conducted and videotaped following the completion of the children's

interviews. Each teacher was asked to teach these fourth or fifth graders what they considered to be a "normal" throwing lesson. These videotaped lessons were used in the physical education interview as a catalyst for questions that directly related to explaining how they taught throwing in their respective programs. These videotaped lessons were also helpful in describing the characteristics of these two particular physical education programs.

Data Analyses

The following section describes how the collected data were analyzed. Data analysis procedures for all interviews and the written test are described below.

Interviews

All interviews were analyzed using ethnographic guidelines as set forth by Bogdan and Biklen (1982), Erickson (1986), and Spradley (1979, 1980). All of the interviews and field notes were transcribed using The Ethnograph (Seidel & Clark, 1984). This program prints out the transcription of the interviews using only half of the width of the page and it numbers each line of interviews. This large margin area on the right side of the page contained notes that referred to the transcribed interviews on the left side of the page. This type of page format allowed for an easy and thorough line-by-

line analysis of the interviews.

After all information was transcribed, initial assertions were formed. Assertions, for the purposes of this study, were defined as statements that represented the common themes or responses gained through the interviews with the children. These assertions were formed by comparing common patterns, traits, or similarities across the children's interviews (Erickson, 1986). The data sources (interviews, written tests, and field notes) were analyzed to locate confirming and disconfirming evidence that either supported, modified, or negated the initial assertions. These newly-formed assertions became the framework for the results and discussion sections of this paper. The "sketch pad" approach of physically handling this data (Graham et al., 1992; Hopple, 1994) was used to organize this large amount of data.

The "sketch pad" approach, a systematic way of cutting and pasting, was done by taking the confirming evidence (such as pertinent quotes or information that supports an idea or belief as suggested by the data) and pasting that evidence on either the side labeled "confirming" or on the side labeled "disconfirming." After the evidence was gathered and pasted under the appropriate sections, the assertions, written on the top of the page, were distinguished as being confirmed or

disconfirmed. The paper was then written using this pad and it's contents as a guide.

Written Test

Each written test was analyzed and evaluated by comparing a modified list of identified critical components (cues) of throwing (Kelly, et al., 1989; MEAP, 1981; Seefeldt, 1979; Stroot & Oslin ,1993; Ulrich, 1985; Wickstrom, 1983) with the responses written by the children.

Selection of throwing biomechanical cues

The critical components of throwing have been identified and utilized in a number of different studies that focused it's purpose's on the skill of throwing (Kelly, et al., 1989; Stroot & Oslin, 1993; Wickstrom, 1983). After seeing that the throwing cues used in these studies were similar, a modified (just slightly in terms of how they were written) composite list of those cues was adopted for the purposes of this study. The final list was comprised of the following cues:

1. Turn opposite side towards the target.
2. Extend throwing arm behind head.
3. Step forward with the foot opposite of throwing arm.
4. Follow-through.

All answers of the fourth and fifth grade paper-and-pencil tests were then compared to this list and a final score was

assigned to each child's paper. For example, "1" point was awarded for having one of the correct components written down and a "0" was recorded for a missing or incorrect answer. An example of an incorrect answer can be seen when one child wrote "if you throw with your right hand, put your right foot forward." This was an incorrect response and was scored a "0." The best overall score a child could achieve was a "4". (See Appendix C)

Summary

The primary purpose of this study was to gain a more thorough understanding of children's thoughts, feelings, and perceptions concerning the skill of throwing. A secondary purpose was to find out what children knew cognitively about the critical cues of throwing. In order to meet these goals, a combination of both qualitative and quantitative research methods were employed. By employing children's interviews as the primary data source, a true and meaningful understanding emerged concerning children's knowledge, feelings, and perceptions about their world as it exists in their physical education class and, in particular, about the skill of throwing.

CHAPTER IV

Results and Discussion

The purposes of this study were: (1) to gain a greater understanding of children's thoughts and feelings about the skill of throwing; (2) to learn what these children knew about the qualitative components (i.e., the cues) that form a mature overhand throwing motion. The following section presents these findings as guided by these purposes.

For ease of reading the following results portion of the study is divided into two sections: the first section, entitled "Physical Education Program Portraits," sets the stage for the latter section by describing in detail the physical education programs that were represented in this study (Pendelton and Eckland Elementary Schools). Section two, entitled "Data Analysis Results: The Children's Story," reports the actual thoughts, feelings, and perceptions the children had about their throwing experiences and how those related to their particular physical education settings. Six assertions, detailing the children's thoughts and knowledge, provide the framework for that section.

Section One--Physical Education Program Portraits

A portrait of the two schools physical education programs are drawn because of the differences in the way each

program was designed, implemented, and taught. These two teacher's curriculums and delivery of the content were vastly different; their pedagogical methods were different; and their discipline expectations and strategies were different. Detailed descriptions of these differences along with other information regarding the specific school settings (e.g., description of the gyms these teachers taught in, the number of children attending each class, the number of days the classes met, the available equipment for use in class, the teachers background and philosophy, are then described). (See Appendix K for further characteristics of both programs.) Included also is a depiction of a "typical 30 minute class period" at each school. These portraits were developed from my observations, interviews with the physical education teachers, and the children's interviews.

A Portrait of Pendelton's Physical Education Program

Pendelton Elementary was a grade K-5 school located in a suburban setting in the state of Virginia. It had been recognized as a Virginia Demonstration Health and Physical Education Program for approximately 16 years at the time of the study. Joe had been an elementary physical education specialist for 19 years, the past 16 years had been spent teaching at Pendelton. Children participated in physical

education class for 30 minute time periods, twice a week, with class size averaging approximately 22 children. The children attending Pendelton were characterized as middle to upper income families (FN71-73). This last bit of information was gained from the interviews conducted with the physical education teacher, two classroom teachers, and the principal.

Children attending physical education class came to a fairly small gymnasium (size of a smaller than regulation size basketball court) that was bounded by three smooth walls that were very close to the edge of the court. The fourth wall contained doors that led to the equipment room and Joe's office. The equipment room was well maintained, organized with similar types of equipment stored in boxes or hanging on the walls, and appeared to be adequate for every child to have an individual piece to practice with. Joe's small office was neat, organized and uncluttered. The acoustics in the gym were good due to the smallish size of the gym.

Upon arriving at the gym the children were typically greeted by Joe who welcomed them with a smile at the door. There was friendly, quiet chatter among the children as they took a seat in front of Joe as a full class. After some cordial exchanges between Joe and some of the children, he explained his objective(s) (i.e., cues that related to the

content area being presented such as "step with opposite foot" when throwing) for the day, explained the first task (i.e., "get a ball and throw at the target on the wall") answered any questions that arose, and then sent the children out to start practicing the initial task.

During the first part of the lesson the children were usually involved in a warm up that lasted approximately five minutes. This warm up usually was some sort of game (e.g., Tunnel Tag, Snake in the Grass, I See...) designed to raise the children's heart rate and provided a total body warm-up. I can attest for this because I was quite tired after a game of Tunnel Tag during one of my participant observation days.

The main part of the lesson was when all of the children practiced a certain skill (i.e., throwing, catching, dodging) for approximately 20 minutes. Typically, each child had one or two pieces of equipment and they practiced tasks alone or with a partner. Many times the children practiced by striking or throwing their equipment to the wall or they hit back and forth with a partner. Sometimes both of these practice situations took place simultaneously during a lesson. For example, in one lesson dealing with striking with paddles, each child had a paddle and a foam ball and some children were striking to the wall alone while some children worked in

pairs designing their own games. During my observations, I noted how crowded it was in the small gym for this type of practice to be occurring, but the children, remarkably, adapted nicely to this condition. (FN 51-54)

Joe's behavior during this "practice" period was usually that of a very attentive coach. He went around the room and provided skill feedback to individual children regarding their performance, changed tasks for some children, redemonstrated a task for some children, and stopped the entire class from time-to-time to provide whole group demonstrations. During these practice periods I particularly took notice of how simple and straightforward his skill feedback was to all of the children (FN 39-43). He limited his skill feedback to only one or two biomechanical cues during a class period. For example, he would instruct the class about the cue of "stepping with the opposite foot" or "turning sideways" when throwing or striking a ball to the wall. He then asked the children to practice tasks that elicited those particular biomechanical cues. He preferred not to give them a lot of information at once. He called this teaching "one cue at a time." (PJ 415-416) This technique was something he had adopted just a short time ago.

I recently made a decision to limit the number of things I was going to try to teach and that decision was made based on the fact that I see the kids only twice a week. That would be 72 times a year--that is only 36 hours, if you don't miss class for various assemblies and field trips. You have to make a choice between giving them a dusting of a lot of things or throw that idea away and make a decision that I'm going to focus on these things and I made the decision to focus on just a few things.

(PJ1-12)

The children noticed his clarity and focus. Joshua said "he (Joe) gives very good instructions. Takes it all step by step. He doesn't tell you all the instructions at once so you might forget one and not do that well and drop a beanbag or something." (P465-470)

During my observations of Joe's teaching, I was struck by how quiet and orderly the children were. Joe rarely raised his voice above conversation level. If he did, it was to stop the entire class of activity. Joe had few children who were off-task and therefore, off-task behavior was rarely observed. The majority of the children were very attentive during most class periods. They listened intently during Joe's instructional periods and followed his directions to

the letter. (FN 31-33)

Following the main practice part of the lesson, Joe had the children put their equipment away neatly and quickly and he proceeded into the last part of the lesson--closure. During this two to four minute sitting period, Joe posed several open-ended questions to the children trying to glean what they may have learned during the class period. Mary and Joshua, two fifth graders, described closure and practicing "one cue at a time" this way:

Me: You said he talks to you after class. You come over and you sit down and talk about what?

M: We review what we learned. Like the step--the technique. Usually we work on one thing in throwing.

Me: What do you mean?

J: Like your step through.

M: Yeah, like stepping. Really turning sideways. So we will talk about that. At the end we will review how you do that and what you do when you do that. (P269-283)

The above depiction represents a fairly accurate description of how many of the physical education classes proceeded at Pendelton while I was there. I asked Joe in our interview (which took place after the children's interviews)

if I had witnessed a fairly true representation of what typically took place in his physical education classes. He replied "You are seeing what goes on. You've been here long enough to know what happens. Your observations are good." (PJ 300-302)

Joe's curriculum generally can be described as a "skill theme approach" (Graham, et al., 1993) and this was the curriculum he had followed for a number of years. The skill theme approach is characterized as having children practice themes such as striking, throwing, catching, rolling, etc. These basic skills are used in individual and team games/sports, dances, and gymnastic routines. Individual practice, group work, and small-sided games are the norm for practice situations during physical education class. Joe did not involve the children in "units" of instruction. Instead, he taught using "reoccurring themes" (Graham, 1992; Graham, et al., 1993). For example, children might work on the skill of throwing for eight days over the course of a year. However, these lessons of throwing instruction were not consecutive. The teacher may teach throwing for two days in September, revisit the skill again for three days in December, and complete the eight scheduled days with three days of throwing instruction in February. Mary and Joshua,

fifth graders, explained reoccurring themes this way:

J: Then we will do a whole new subject.

M: Sometimes we kinda stay on the same thing for a little bit. Sometimes we skip around.

Me: What do you mean by subject or the same thing? Give me an example.

J: Throwing and then we go to like basketball or something. (P238-248)

Large team games, governed by official rules and regulations, were not played or taught in this program, however Joe characterized his program in his own words.

I would describe the program as being one that is focused on certain skill themes and movement concepts and a program that is structured, a program that is basically skill themes concept vs. the program where the children are learning to play games. (PJ244-249)

My impressions of Joe's physical education program were ones of a high degree of organization with a definite intent on children learning the biomechanical cues of several skills. Joe ran a "tight ship" and the children were involved in a very structured class. "When Joe said "Stop" to the children, it was like a morgue in there. All balls were down and eyes were on Joe," is what I wrote in my field log. (FN

62-63) However, this structure did not appear to diminish the fun the children were having in many of the classes I observed. My impressions about a punting lesson depicted this.

Every child had a ball and was running around and punting when they felt like it. I mean balls were all over the place. They were having a blast! I even asked some of the children if they were having fun and they emphatically said "yes!" (FN24-28, 35-36)

Portrait of Eckland's Physical Education Program

Eckland Elementary, the other school in the study, was a grade 1-7 school located in a rural setting in the state of Virginia. Similar to Pendelton, it had also been recognized as a Virginia Demonstration Health and Physical Education Program for the past four years at the time of the study. Lisa had been an elementary physical education specialist for 13 years in which all but one had been spent teaching at Eckland. In contrast with Pendelton, children had physical education class daily with class sizes that averaged approximately 50 children. The reason for such large classes was that two grades attended physical education class at the same time, not always the same grade. For example, a fourth and fifth grade might be combined for one 30 minute period.

Due to this large class size, a full time aide was employed to assist the physical education teacher. The aide had been assisting Lisa for the past 11 years. The children enrolled at Eckland were characterized as coming from primarily middle income families (PL51-53). This last bit of information was gained from my interviews with the physical education teacher, two classroom teachers, and the principal.

Molly, the aide, was classified as a paraprofessional and did not have a degree or background in teaching physical education. She had learned about teaching physical education "on the job" and her main responsibilities included assisting the physical education teacher with teaching, setting up and taking down gym equipment, and keeping score. She occasionally taught half of the class by herself according to Lisa. I did not witness this during my visits. Lisa described Molly's responsibilities.

She is my assistant and we can divide up into groups.

She knows enough about what's going on to take half a group of them (children) as long as I let her know what we are doing. (EL1-4)

Lisa and Molly communicated frequently during class periods. They seemed to enjoy each other's company and children responded to each one equally when they had

questions and/or concerns. They were very much a team and the children appeared to understand this. I was impressed with the energy they had to contend with such large classes (FN112-114). In contrast to Joe's curriculum, in which he used one book's curriculum outline as a guide, the physical education curriculum at Eckland was one Lisa primarily designed herself. With the help of several books, and many "child tested" activities of her own, Lisa designed a curriculum that she felt comfortable with and had been using for a number of years. In fact the entire district had adopted her curriculum. She organized the content into instructional "units." These units consisted of traditional sports such as basketball, football, baseball, or soccer and on some occasions she taught units that dealt with recreation and/or leisure time activities such as bowling, badminton, or shuffleboard. These units usually lasted between 1-4 weeks for each topic. During a typical fourth or fifth grade unit, for example, the first week was spent teaching the children about the basic skills. This week was described by Lisa as having children practicing throwing a ball to a target on the wall or through a tire, or they practiced kicking a ball to a partner. During this practice, Lisa said she helped the children perform the proper

biomechanical cues (i.e., side to target, foot pointed to target) through the use of feedback and demonstration. This week was very similar to the way Joe taught during my observations. During my visits at Eckland, I rarely witnessed this type of practice situation. The second week was devoted to having the children play what Lisa called lead-up games (i.e., 2 vs. 1, 3 vs. 2). The remaining portion of the unit (usually one or two weeks depending on the unit length) was designed to let the children play a full regulation game (i.e., 5 vs 5 basketball, 11 vs. 11 soccer, or a regulation softball game). The main deviation from this pattern occurred on Fridays. Lisa set this day aside for what she termed "class choice day." The children were allowed to vote for their choice of activity on Fridays and their usual choice was a game called War Ball (a dodging and catching elimination game involving all of the children split into two evenly numbered teams). When asked what I would see if I came by their physical education class unannounced, almost all of the children told me "War Ball!--every Friday."

Lisa's "unit" approach and the offering of so many traditional games was quite a contrast to the individual skill practice program Joe offered at Pendelton. Although Lisa incorporated some skill practice into her program

(primarily during the first week of a unit and with grades K-2), games were more prominent in her curriculum. She believed that game play kept the children more interested and therefore less bored. As Lisa put it, "I would say more with the elementary age we work more on the lead-up games that incorporate the skills. The children get embarrassed plus they get bored if you are just doing skills" (EL164-168). In addition to the lead-up games, Lisa's children were involved in many elimination type games (e.g., War Ball and Jump the Brook). Joe's program, in contrast, never had children involved in games in which children were eliminated.

Lisa's curriculum content, approach, and the manner in which she ran her everyday lessons were quite a contrast to that of Joe's lessons and approach. This can be surmised from the following description of a typical 30 minute physical education class at Eckland.

Physical education class typically began in the hallway where children of two classes (e.g., one fourth and one fifth grade class, or two classes of the same grade) waited in separate lines for Lisa and Molly to finish with the previous class and/or to complete conversations with the classroom teachers (typically about what children were being held out of physical education that day to finish up other homework).

The hall atmosphere was usually noisy and rather chaotic. Children routinely picked at each other and were always switching lines to try to confuse the teachers. In addition, they typically yelled questions randomly at both Lisa and Molly concerning what activity they were going to be doing that day. Lisa did not inform the children of the topics until both classes were quiet (she usually counted to three when she meant business). The announcement of such topics as War Ball, Sideline Basketball, or Track and Field, was met with a mixture of either loud cheers or jeers. The noise was not discouraged immediately. If it took too long then another count to three took place. This scene was in definite contrast to the quiet lines of children that met Joe at his door at the beginning of class.

The children then entered the rather large sized middle school gym (containing just one basketball court), which was a large space for elementary-aged children. Joe's gym, in contrast, was much smaller. The gym had smooth walls on three sides and rolled up bleachers on the other wall. Fitness test scores of the children from the past year, a ropeskiipping club list of names, and various other posters adorned these walls. Lisa's office and equipment room were at the far end of the bleachers. An inspection of the equipment room

revealed a very different one in comparison to Joe's. Whereas Joe's was well organized and equipment was stored in individually marked boxes, Lisa's equipment room was in disarray during my visits there (FN333-334). Equipment was scattered throughout the room and even spilled over into her office, which was also a bit on the unorganized side. The amount of equipment available was difficult to categorize, however it did not appear to be enough supply for a majority of the children to practice with their own piece of equipment.

The acoustics in the gym were very poor due to the size and height of the gym. Joe did not have this problem in his gym.

Once inside the gym, the children took a seat in their assigned squad lines (about 8 lines with 6 children in each line), roll was taken privately, and then calisthenics (e.g., toe touches, push ups, cross overs, leg lifts, running in place) began. Interestingly, the calisthenics weren't really lead by anyone. Lisa just called them out and then counted. All of the children seemed to know which ones to "perform" without explanation or demonstration. (During my time at Pendelton calisthenics were not performed.) This portion of Lisa's lesson took approximately 8-12 minutes to complete and

was described in my notes as loud, unorganized, and time consuming (FN401-404). Most children did not perform any of the exercises correctly, when they even attempted any of them. Many children talked and joked with their neighbors, several children were jumping on the sidewalls attempting to be "spiderman," several engaged in gymnastics stunts such as cartwheels and round-offs, and some of the class just sat through the exercises pretending to be engaged in them. The noise level was still quite high during this time period, due to the children's chatter and the teacher's shouting of cadence (usually 10 repetitions) for the particular exercises being performed. Again this noise didn't seem to annoy anyone but me.

After calisthenics were completed the children proceeded into the main part of the lesson. In contrast to Joe, Lisa did not have the children gather as a group in front of her to explain the days lesson. Instead, she shouted across the gym as the children "sat" in their squad lines. She usually explained some sort of game or recreational activity they were going to be involved in. The games of Warball, Sideline Basketball, and Leap the Brook were played most often, with an additional unit of track and field, and a couple of days spent on leisure time activities (i.e., bowling, badminton,

shuffleboard, four-square). No specific objectives were set forth for the children to focus on during the period as was done by Joe at Pendelton.

During the main portion of the lessons, Lisa's behavior was quite different from that of Joe's. She performed duties that were similar to that of a referee's. She stood off to the side and made sure the proper children were eliminated in games that involved elimination, enforced rules when needed, chatted with Molly a great deal, and did a lot of yelling and general encouraging to many of the children. She had a bull horn but she did not use it during my visits. The only time I witnessed her providing skill feedback to individual children was during one short demonstration on how to throw a regulation-sized and weighted shot put during the track and field unit. This episode took place in the gym before going out to work on a number of different track and field events (e.g., hurdles, long jump, high jump). She gathered all of the children in front of her and showed them the proper way to throw this heavy shot put. She told them not to throw it like a baseball and demonstrated the mechanics of the stance, the upper body rotation, and the actual release and follow through. In other words, she went over all of the proper mechanics of the throw. This lone incident was similar to

Joe's instruction at the beginning of a lesson. However, Joe, in all likelihood, probably would have focused on only one or two biomechanical principles for the children to focus on (e.g., release ball at target and/or follow through). This was one of the biggest differences between Lisa's and Joe's teaching. Instruction and skill feedback were much more prevalent at Pendelton than at Eckland. Molly's activities during my observations were keeping score, setting up pins, fixing and picking up hurdles, or she engaged in casual talks with Lisa or some of the children.

After the main activity was completed the children were usually told the score of the game (this anticipatory moment was the only time it was quiet), and after chants by the winning team of their classroom teacher's name (done to celebrate victory), they lined up to exit class. Several arguments typically ensued after the announcement of the game scores. On one occasion a full fledged fight between two seventh graders concerning a final score occurred in the hall. The children then returned to their classrooms and Lisa and Molly greeted their next class. Formal closure, as was witnessed in Joe's classes, did not occur during my visitations.

My impressions of the gym classes conducted at Eckland were in quite a contrast to that of Pendelton. As opposed to the quiet, structured classes at Pendelton, the classes at Eckland appeared chaotic, games were played almost exclusively, skill feedback was scarce, and all of the classes were extremely noisy.

I had ringing in my ears as I left the gym. It was louder than an exciting basketball game. With both teachers whistles screeching every few minutes, coupled with the continuous screaming by the kids and teachers, I was deaf at the end." (FN154-161)

This description of a typical class period at Eckland was scripted through the use of my observations and further developed with the interviews of the teachers and children. I questioned Lisa in our interview (which took place after the children's interviews) about whether or not she thought I had seen a fairly true representation of her teaching and physical education program in the month or so that I had been there. She replied: "Yes, I think so. It was pretty normal." (EL91-93)

The following section, entitled "Section Two-The Children's Story," explains all of the children's thoughts and feelings about the skill of throwing. Several assertions

frame the story the children told of their throwing experiences inside and outside of their school physical education programs.

Section Two--Data Analysis Results: The Children's Story

Before disclosing what the children thought, felt, and knew about the skill of throwing, it is important to note that the data gathered for Section Two was gathered primarily by the researcher following a fairly structured interview format (see Appendix E). Typically, the interview started with the same initial two questions and then a familiar order of questions followed. Of course no two interviews were alike, but after careful analysis, it was detected that many of the same questions were answered by several of the children.

Six assertions emerged that framed and organized the childrens' thoughts, feelings, and knowledge about the overhand throw. Assertions for this particular study were defined as statements that represented common or similar responses of the interviewed children (Garcia, 1994; Graham, et al., 1991; Hopple, 1994). They were formed by reading the children's interviews several times, code words were then formulated to represent common data passages in the interviews, and then those passages were cut-and-pasted under

the appropriate assertions. This procedure was similar to the protocols suggested by Bogdan and Biklen (1982) for handling large amounts of qualitative data. A detailed account of the exact procedures used to arrange and handle the data for the study is provided next.

After reading the interviews numerous times, I wrote down what I thought to be nine assertion statements that best represented what a majority of these children said about throwing. (This was easily accomplished because I knew the content of the interviews very well since I conducted and transcribed all of them.)

These statements were then written on the left hand page of a large artists sketch pad that was purchased to help organize and handle the large amounts of data collected (Graham, et al., 1991). Underneath that statement I wrote the school name "Pendelton." On the right page of the pad I wrote the name "Eckland." I then cut-and-pasted the transcribed passages of the children's interview's that best related with the written assertion at the top of the page. This was easily done because I had marked the transcriptions with identifying words that represented the assertions. For example, Assertion One entitled "The children at both schools said throwing was an important skill to learn," was marked with the word

"importance" in the margin close to a quote that represented "importance." Quotes and statements from the children at Pendelton were pasted under the word "Pendelton" and the quotes of the children at Eckland were pasted under the word "Eckland." Dividing the quotes of the children by schools was necessary because I knew there were going to be assertions that represented the differences between the thoughts, feelings, and knowledge of the children at the two different schools. See Figure 1 for an example of how the artist's sketch pad was set up.

Nine original assertions were written. After pasting the written transcribed statements of the children under the appropriate assertions, they were re-read and analyzed. An assertion was kept if there was enough data to support the assertion and it was relevant to the purposes and guiding

Assertion 1:	
<u>Pendelton</u>	<u>Eckland</u>
Supporting Quotes	Supporting Quotes
p. 1	p. 2

Figure 1. Example of artist's sketch pad.

questions of the study. Often times this was done by counting the number of children's quotes that supported the assertion. If the amount of data was minimal and/or did not support the assertion it was deleted. Only one assertion was deleted due to a lack of supporting evidence. Two other assertions were combined. That left six assertions to portray the children's thoughts, feelings, and knowledge about the skill of throwing. The sketch pad guided the writing of the results section of this study.

The first three assertions emerged because almost all of the children at both schools shared similar thoughts or

feelings regarding a certain topic or question. These assertions are titled "Universal Assertions." The remaining three assertions are titled "Individual School Assertions." These three assertions differ from the first three in that they provide a contrast between the thoughts and feelings of the children at each individual school. The children at Pendelton shared different thoughts and feelings about the skill of throwing as compared to their counterparts at Eckland. These differences appeared to be linked to the differences found in the contrasting physical education programs and teaching approaches the children had been exposed to.

The following section describes each of these six assertions. Liberal use of children's quotes are used to further embellish these descriptions. This was done to permit the reader to gain insights into the children's stories as opposed to the researchers interpretations. A discussion of these results follows.

Universal Assertions

Assertion One: The children at both schools said throwing was an important skill to learn.

Almost every child responded with an immediate "yes" when asked if throwing was an important skill to learn. Of

the 54 children interviewed 49 agreed that it was an important skill for everyone to learn. However their reasons supporting this opinion were varied. The following section describes the five reasons why they thought throwing was such an important skill to learn.

Reason One: Throwing was an important skill to learn because more games could be played (e.g., baseball, softball, soccer, basketball, football, etc.). Playing in "regular" (non professional) sports or games, playing professional team sports, or playing with friends during leisure time were the types of activities mentioned most.

The evidence supporting this reason was overwhelming. Most children, including boys, girls, and the lower and higher skilled, held playing organized, leisure, or professional sports in high regard--and the skill of throwing was important because, first and foremost, it enabled them to participate in a wide range of different sports and games. They were very cognizant of the numerous games and activities that involved the skill of throwing. Frank said "it is important to learn to throw because in almost all sports you have to throw except soccer. Soccer you just have to throw it only if you are in the goal. In football, you throw the

ball." (P351-355) Brian added "if you don't know how to throw, you can't play sports." (P218-219) Diane understood how limiting not knowing how to throw could be as well.

Me: Is it important for boys and girls to learn how to throw?

D: Yeah, because if they want to be able to play baseball, softball, or football, they have to learn how to throw or they won't be able to play that much.

Me: Why won't they be able to play that much?

D: Because usually at games you have to be able to throw. (E137-148)

Many children also expressed an interest in becoming professional athletes and throwing well was one of the most important ingredients for reaching that lofty career goal. Boys and girls differed in their opinions on this subject however. The boys clearly showed more of a desire to become professional athletes. In fact, 13 boys (five from Pendelton and eight from Eckland) expressed a serious interest in a professional career in a throwing sport. Interestingly, not all of these boys were the higher skilled throwers. Several lower-skilled throwers had similar aspirations. A conversation with Mark and Carl, two higher-skilled throwers, revealed their desires.

Me: Are you going to use throwing when you are older?

Both: Yeah, I want to become a major league baseball player.

Me: Both of you want to be?

C: I want to play college football.

M: I want to be a pitcher for a major league team. Or a catcher. When you are a catcher you need a strong arm and when they steal second base you can try and get them out. (E432-449)

Marshall and Doug, highly skilled throwers, also spoke of their professional sports ambition.

Me: Are you going to use throwing later in life?

Ma: Yes, I wanna play baseball in college or the pros.

Me: Baseball?

Ma: Yeah, I wanna work on that.

Me: What about you Doug?

D: If I don't get a job I enjoy, I can see myself playing baseball.

Me: Gonna play pro ball, heh?

D: Yeah, forget college, I'll go all the way to the pro's. (P622-634, 647-657)

Girls, on the other hand, typically mentioned just playing "regular" sports and/or games such as baseball, football, and basketball. None of the girls specifically mentioned themselves being interested in a professional "throwing" sport. For instance, none of them said they wanted to be a "professional baseball player." The "highest" aspiration any of them admitted to was a desire to play on a high school basketball team (E379-384).

Being a member of any team, however, arose in many of the conversations. Almost all of the children, regardless of gender or skill level, stated it was a must to be able to throw well to be a member of any of team (professional or otherwise). The children expressed a real desire to be part of a team--especially a successful one. Adam wished he was a better thrower so he could have been on a team.

Me: Would you like to be a better thrower?

A: I would because I want to play basketball and volleyball--a lot of the ball games. I just wanna be a better thrower so maybe one day I can be on a team.

(E319-323)

The children also recognized that if throwing skills were poor (according to most of the children this meant not throwing accurately, with little power, or using improper

mechanics) then you probably weren't going to be on a team-- especially a successful one. When asked if it was important to learn to throw properly Adam responded emphatically "Yes, definitely, because if you don't know how to throw then you won't be really that good at baseball. Because if you can't throw to first base then you won't get the man out. And then you would be on a really stinky team." (P511-519)

Knowing how to throw well wasn't just tied to the children's interest in professional or youth league sports. Several mentioned it was an important skill for involvement in leisure time activities with friends. Mary and Joshua discussed having fun without being a professional athlete.

Me: You said something about church.

M: Yeah, you could play with just any team. Doesn't have to be pro--could be just for fun.

J: Yeah, you could make up a league with lots of your friends.

Me: And that is good?

M: Yes

Me: To be in a league, to throw, and be on church leagues and stuff...Why is that important?

J: It is just fun. When you go into a league, it is not for money or nothing--it is mostly for fun. (P476-495)

Todd added "throwing can be something to do for fun. Like, not organized baseball, but like football with a lot of friends. Like baseball in the streets." (P237-245)

Reason Two: Throwing was an important skill to learn because you could avoid being embarrassed when playing games.

Many of the children interviewed were active in games that involved throwing--especially baseball. For some reason baseball was the sport they alluded to most when giving examples about their own throwing experiences. Many children had experience in youth baseball leagues, had played it in physical education, or they played their own designed baseball-like games in the yard with parents and friends. The sports of football, basketball, and "physical education" games such as War Ball and Prison Dodgeball were the other sports mentioned by a small number of the children.

In baseball, as well as some of the other sports they mentioned, one of the interesting things the children discussed was the importance of being a competent thrower during a game. Many of the children were aware of the differences between "poor" and "good" throwers. They remarked that good throwers helped teams win by successfully completing throws to first and home base, were identified as mostly pitchers, catchers, and quarterbacks, and they felt

good about their status on the team. Poor throwers, conversely, let teams down because of off-line or weak throws to a base, couldn't throw the ball across the plate for strikes, or they couldn't complete a pass to an open receiver. The children told me that poorer throwers, therefore, weren't chosen to be on teams and were chastised in certain situations (e.g., making a mistake on the ball field that costs you a run, not being chosen for a team in physical education class). Joshua and Mary discussed the embarrassment some children might face because of poor throwing skills.

Me: Is it important for children to learn how to throw correctly?

J: Yeah, cause if someone asks if you wanna pitch, but you don't know how to throw, how are you going to pitch?

M: It would be kind of embarrassing.

J: Yeah embarrassing.

Me: Why would it be embarrassing?

M: If someone asked you to throw and you couldn't throw, it would be embarrassing. (P325-348)

Although the terms "self esteem" and/or "self concept" did not come out of the children's mouths during the interviews, it appeared that they felt it may be affected if

a person didn't throw well during games. Evidence of this surfaced on a few occasions during the interviews.

Sandy: Well, the pitcher has to pitch the ball and if they don't know how to throw the ball you are in trouble.

Me: What kind of trouble?

Sandy: You won't be able to pitch and everybody gets down on you. (P240-250)

Jack added "if you don't know how to throw and they make you pitcher and you aren't getting any strikes, they (the other children) are going to be really mad because you did that" (P469-474). It was striking the number of stories children had to tell about either themselves or others being picked on because of not being able to throw well. Those feelings arose on the ball field and in physical education class. Me: You get picked on in gym class?

Both: Yeah.

Brian: People get picked on if you can't throw--there is this one boy, he always can't throw the football and others say what in the world is wrong with you?

Richard: Yeah, he can't seem to get his grip down and when he throws it just goes, whoosh, all over the place.

Me: Have you ever been picked on because you couldn't throw?

Richard: Yep. If I'm playing football and I don't throw a ball well, they get on me. (E339-360)

Other children shared stories about classmates in physical education class who were poor throwers. The following account concerning a game of War Ball, as told by Carl, reflected this.

C: There is this girl, she will always give the ball to me because she doesn't want to get out.

Me: Why does she do that?

C: Maybe she doesn't want to be called a weenie.

Sometimes she will stand back in the corner and she will get out on purpose. (E390-405)

On the other hand, according to several children, if you had the prerequisite skills to play a game successfully it may enhance a person's self concept and make a person feel proud of themselves. Elaine explained this eloquently using her own soccer skills as an example.

E: You have more fun in sports if you know how to throw. You just feel prouder. You feel more proud.

Me: Explain that to me. What do you mean?

E: I play soccer. I feel good if I'm dribbling up the soccer field and then I make a goal. So, dribbling helps me make a goal and then I feel better that I know how to dribble. (P346-357)

Reason Three: Children found throwing an important skill to learn so they could teach their own children how to throw.

This was an interesting and unexpected answer gained through the analysis of these interviews. Several of these children held the opinion that they were going to have to teach their own children how to throw. They certainly were thinking about and planning for their future! Erica and Jane's comments reflected what several of their classmates expressed.

Me: Are you going to use throwing when you are older?

J: Yeah.

Me: How? Why?

J: Well, I would like to teach my kids how to throw properly.

E: If they went to a certain school and they wouldn't teach them the right way then they wouldn't get their correct form.

J: If they were five and they wouldn't go to school yet and they played T-ball and they didn't know how to

throw, then we could teach them. (P663-684)

Reason Four: Throwing was an important skill to learn at a young age because of the difficulty associated with learning the skill at an older age.

The children provided some fascinating insights into when they thought persons should learn how to throw. Many believed that it was important for them to learn it now--when they were young. If they had to learn at an older age, they believed it would be almost impossible to grasp the proper throwing techniques or at least it would take a lot longer to learn. Erica relied on "proven facts" to support this opinion.

Me: So, if kids aren't learning how to do step, turn, and side, do you think they are going to be good throwers when they are older?

E: Well, there are proven facts it is easier if you learn it when you are at the young age. It is harder when you are an adult because you have been used to this (other) way. (P257-267)

Sally and Christine provided examples taken from their own experiences about the advantages of learning things (including throwing) at an earlier age. They chose interesting analogies to illustrate their thoughts.

S: It's like the languages. If you learn how to say a word, lets say in pretend--in French. It is a really difficult word. There would be more of a chance of you saying it correctly and learn it better if you learned it young instead of when you were older.

Me: Learning languages at a younger age would help you do what?

S: It would help you learn it better. And it is the same as throwing.

Me: Same with throwing?

C: I sort of agree with that. If you learn something at an earlier age then you are better at it as you get older because you have had practice. Like if you were playing a musical instrument...Like I just started flute. You gotta learn how to put your fingers in the correct position and you have to learn to do all that ...then later on if I get into the band I won't have to worry about having to learn exactly how to play the flute. It's sorta like throwing. If you throw at an early age and you start playing something at an early age then you will get a head start for later. That is probably what most of the pro football and baseball players do. They learn how to throw at an early age,

they learn how to catch at an early age, so they know how to do it later. (P277-323)

Dana further illustrated the importance of learning throwing at a young age when she was asked if children who were uninterested in learning to throw should have to learn it anyway. She responded "they may like baseball later on in life or football and then they will be saying why didn't I learn that back then?" (P615-618)

Reason Five: Knowing how to throw well is important in other situations that have nothing to do with sports or games. For example, it is important in defending oneself from an attacker, certain careers require it, and everyday life demands it on occasion.

According to several children, there were other times the skill of throwing became important. Apparently the importance of throwing extended beyond the lines of the playing field! Charlie said it was important to know throwing so you could defend yourself against a crazed attack dog. The following quotes revealed his views as well as some of the other children's thoughts relating to throwing in potential life threatening situations:

Charlie: "If a man eating Doberman came up on them and they had a humongous rock, they would need to know how to

throw the rock." (P725-726)

Linda: "Because you might be in danger and you might have to throw a rock or something to keep safe so you would have to know how to throw." (E192-195)

Amy: "If someone was following you, you could throw something at them." (E162-163)

Some career implications were also revealed. According to some children throwing was an important skill for paperboy's (or girl's), teachers, and firemen. Charlie testified to the importance of being a good throwing fireman; "If there is a fireman they might need to throw the hose or they might need to throw an axe to somebody and they don't wanna throw the axe wrong because it can cut somebody's arm off. (P249-255) Missy added that teachers need to know how to throw "because if the kids don't know how to do it, then it is up to you to teach it." (P513-515) Some even testified that in everyday life you have to throw. Christine explained:

If I find somebody's car keys in the parking lot, I could throw their car keys to them. If my mom was late for a meeting and she didn't have her car keys and I knew where they were, I'd go get them and throw them to her. (P612-621)

To summarize, the topic of importance was something the children spoke about openly and easily. It can be seen that they thought throwing was a very important skill for everyone to learn. They revealed a number of interesting reasons why they found it such an important skill to learn. Most reasons related to throwing well in games, sports, or physical education settings, whereas other reasons simply related to everyday life experiences. Some anecdotes and explanations were amusing and some poignantly reflected upon their own and their friends embarrassing experiences as they related to throwing. Most importantly, their answers furthered our insights about their world and thoughts on this important subject. Assertion Two, reported next, continues the children's throwing story by revealing how these children thought they were going to improve their throwing performance.

Assertion Two: Children feel that practicing alone and/or with a friend is the best way to learn to throw.

When queried about how they would improve their throwing performances all of the children said they would "practice!" Sandy's reply was typical of all of their answers.

Me: If you wanted to be a really good thrower, how would you go about it?

S: Practice.

Me: What do you mean by practice? What would you do?

S: Practice every day because practice makes perfect.

(P693-699)

The most common ways to practice, according to these children, was either alone or with just one or two other friends. Surprisingly, only one child mentioned playing games as a means to improving throwing skills.

The most popular way for these children to practice was by themselves. This was typically accomplished by throwing a ball (usually a softball, baseball, or tennis ball) to a wall. Sherri told me she got better at throwing by "practicing at her house with a ball just throwing it at the wall." (E361-363) Holly said "you get a ball at the mall and you go home and then you side, step, and turn and make sure you don't break a window when you are throwing against the wall." (P705-711) Mark further elaborated on this theme of throwing the ball to a wall by telling how he got better at throwing.

It was my first year of T-ball and I had a real weak arm and I couldn't throw, so I went home and I got this

tennis ball and I got my glove and I just kept on throwing it (the ball) up against the wall. (E84-91)

Dana also practiced by throwing to a wall and she added an interesting explanation as to why she did this.

Me: How do you go about practicing throwing?

D: Sometimes I go to the park and the tennis courts and throw the tennis ball up against the wooden wall.

Me: Why do you do that?

D: I do that like in the summer. You can still practice in the summer. In summer you aren't in school, so you can practice. Then, maybe you'll be better for next year. You'll be more prepared. (P530-549)

Throwing to a wall wasn't the only way the children practiced throwing by themselves. Some mentioned that they practiced throwing a ball at targets such as a tree or garage door, some threw at targets in physical education class, some threw a ball to their dog, some threw rocks to skip across a lake or pond, and one lone child practiced throwing a flower spinner (she called it her frisbee) in her back yard. This was the only child to say she practiced throwing with something other than a round ball. (All other children usually mentioned a baseball, softball, or tennis ball--that is, when they actually identified what type of ball it was.

Most just referred to a "ball.").

Only a few children reported practicing throwing with friends, parents, siblings, or relatives. Allen recounted practicing with his uncle.

Me: How did you learn throwing?

A: I learned throwing from my uncle George. We would be throwing back and forth, like in a triangle, and he wouldn't let us go until we caught one. I was the first one to catch one.

Me: What did that teach you about throwing?

A: To keep on practicing. (E63-73)

Reports of playing catch with friends to get better at throwing were rare although Mark, Randy, and Amy all enjoyed this type of practice after their homework was completed (E298-307, P606-610). Connie practiced throwing on occasion while she was babysitting.

Me: How do you practice throwing?

C: I play catch and then when I help with my mother babysitting, I throw little balls with my little brother Peter. (E306-308)

In addition to asking them to reveal how they practiced their throwing skills, some children were also asked to give suggestions to how poor throwers could improve their throwing

skills. Again, their answers were to have them "practice." Their practice suggestions were similar to the practice situations they partook in. "How would you help a friend that was a really poor thrower get better at throwing?" was the question I typically posed to the children. Amy's response was to "have them throw a softball to the wall." (E307-308) Other children suggested throwing with a friend (i.e., playing catch) or throwing at targets in the yard (i.e., garage door or a tree). A few of them also suggested that someone should show them how to throw. They often suggested a coach, a parent, a friend, or even themselves to do this. Interestingly, the physical education teacher was not mentioned. Randy neglected to mention the physical education teacher.

Me: How do we get poor throwers to be good throwers?

R: Try to get them out everyday like for 15-20 minutes until they get tired of practicing and show them how to throw.

Me: Who needs to show them?

R: Parents, friends, their coach. (E237-249)

Some children suggested helping them with one or two of the biomechanical cues that form the skill of throwing. Amy suggested that "a friend should show them how to hold the

ball." (E437) Doug even suggested that they "turn their side to the target and just throw it." (P403-404).

In summary, although these children practiced throwing in somewhat different situations and they had contrasting advice for helping the poor thrower, it was clear that they agreed that plenty of individual practice was the key to becoming a good thrower. The playing of games, at least according to most of these children, was not a popular choice for obtaining good throwing skills.

Assertion Three: The children understood what was helpful (or not helpful) in their physical education classes.

Many of the interviewed children provided some fascinating insights about how they were learning (or not learning) throwing in their physical education class. In many instances it appeared that they analyzed carefully what they did (and did not do) in their physical education class. Although many of the children were content with the throwing activities they did in class, many (especially the highly skilled throwers) voiced concerns about some of the things they believed should be changed. These proposed class and curriculum changes, in their estimation, would help them learn more about throwing and therefore, physical education

class would be enjoyed more. This was the first time a substantial difference was found between how the lower and higher skilled children viewed throwing in their physical education class. These differences, along with the concerns they had about their programs and their proposed changes are shared next. The children of Eckland voiced their opinions first.

Eckland

The first problem some of the children at Eckland identified was the lack of time they spent practicing throwing. Several said they exhausted much of their physical education time playing throwing games and several mentioned their dislike of this. According to several children (both higher and lowered skilled throwers), they would have enjoyed receiving more throwing instruction and practicing throwing would have been nice also. Some of the children said that throwing practice and instruction were neglected at times in their program. When asked if they talked about how to throw in their gym class, Tommy, a higher skilled thrower, said "Nope, not since I have been here (at Eckland). I have been here since kindergarten and they (Lisa and Molly) haven't taught us about throwing." (E256-258) Similar thoughts were expressed by other children. Linda, a lower skilled thrower,

agreed with Tommy, and she too wished they would have done more work on throwing during class.

Me: Do you ever talk about throwing in physical education class?

L: Not really.

Me: Do you wish she (Lisa) would teach you how to throw?

L: Yes.

Me: Why?

L: So I could throw better. (E376-389)

Jeff, Matt, and Carl (one lower and two higher skilled throwers respectively) were all asked if their physical education teacher spent time in physical education class teaching them how to throw. All three responded "No." (E288,185,470) Lucy, a lower skilled thrower, also said she hadn't learned much about throwing in gym class but she thought it would be a good place to do it.

Me: Are there other places to learn about throwing other than from your father and cousin?

L: School.

Me: Where would you learn how to throw at school?

L: Physical education teacher.

Me: Have you learned to throw from your physical education teacher?

L: No, but I guess you could. (E221-231)

Boredom was the other topic of concern that arose from the interviews of the children at Eckland. Many expressed boredom with playing throwing games such as War Ball and Sideline Basketball repeatedly. This was especially true of the lower skilled throwers. Linda, a lower skilled thrower, revealed her thoughts about game boredom (and more) in our conversation.

Me: Do you like the games you play in class?

L: I like some of them, but I'm getting really tired of War Ball because we play it every Friday and I am always getting hurt.

Me: Getting hurt?

L: Yes, we use sponge balls, but sometimes you get knocked in the head anyway. (E226-240)

Another conversation with Lucy and Jeff, lower skilled throwers, disclosed their apparent irritation of having to play War Ball on a daily basis.

Me: What is your favorite game in gym class?

L: Jump the Brook.

J: Can't think of the name. We play it almost every day...War Ball, that's it.

Me: Do you like that game?

L: I don't really care for it because everyday we have to play it. (E393-408)

In addition to the boredom associated with playing War Ball everyday, some children disclosed that fellow classmates disliked the game for other reasons. Randy said that many of his friends didn't like it because "we play it almost every Friday and they don't like it because they always get out (eliminated from the game)." (E381-386)

These two concerns (boredom and lack of time devoted to learning more about throwing) led several of the children into discussions about suggested changes for their classes. Interestingly, the children's suggested changes were almost all the same--change the structure of the class to include more throwing practice time and cut down on the amount of time devoted to throwing games. To accomplish this, they thought it would be a great idea to spend time at the beginning of class practicing throwing (about 10 minutes was the popular time period choice) and the remainder of the class time would be spent playing a game that used the skill of throwing. These suggestions were offered by both higher and lower skilled throwers. Joseph, a higher skilled thrower, was asked if he wanted to learn more about throwing in gym

class and he said "Yeah, and then we can play our game."

(E786-790) When I gave them a choice between practicing throwing a ball to a wall during physical education class or playing War Ball during class, Jeff and Lucy, lower skilled throwers, both chose throwing to the wall for a short period of time and then playing a game.

Me: Would you rather practice throwing a ball to a wall or would you rather play War Ball?

J: I would like to be throwing the ball against the wall because when you grow up you are going to want to play baseball and you should take at least 10 minutes of your gym class to learn how to throw a ball.

L: I guess against the wall. I think if you don't know how to throw the ball it would be good practice and then after 10 minutes is over then you can play War Ball.

Then you would know how to throw the ball. (E445-461)

Mark and Carl, higher skilled throwers, recommended splitting the class so they could have a choice of what type of activity they wanted to be involved in. They suggested having the poorly skilled throwers practice and/or play in one area of the gym while the remaining children practiced and/or played in another area. This suggestion arose during our conversation about poorer skilled throwers they knew who

didn't like games like War Ball because they were eliminated so often.

Me: What if you aren't a very good thrower and you keep getting out all of the time? Do you think they like War Ball?

C: I don't think they do.

M: I don't think people do if they can't throw good.

Me: So what can we do with them?

C: Let them play on their own. They can go to a separate place in the gym and they can play something else. We got two gym teachers. Why doesn't one teach one group how to throw and the other teach the other group? (E409-430)

Many of the children at Eckland had definite opinions about what they would like to be doing in their physical education classes. Of course, not all of the children responded or agreed with their aforementioned friends proposed changes. Some were perfectly content with what they were doing in gym class (especially the higher skilled throwers) or they offered no opinion. Many of the children who tendered specific opinions, however, suggested the above stated changes.

Other than these changes, however, the children at Eckland did not advance many other opinions about what took place in their physical education classes. They spoke at length about the games they played--especially War Ball. They gave thorough explanations of the game. Otherwise, their answers tended to be short in length and non-descriptive. Most of their answers stayed within the focus of my questions and they elaborated only on eliminating boredom through the reduction of playing games such as War Ball and adding more throwing skill practice.

Pendelton

Interestingly, the children at Pendelton wanted similar changes made to their program. In particular, they also wanted boredom eliminated and those who offered alternatives provided the same solution as their counterparts at Eckland. However, they had to change the opposite problem than the children at Eckland--they wanted less throwing practice and wanted more time for game play.

This request for more game play was generally desired by the higher skilled children. Mary and Joshua, higher skilled throwers, discussed the lack of game playing time they were allowed in physical education class.

Me: Do you play games in gym class?

M: No, we just work on the skills. Like we throw but we never play a game, so we can't use our skills in a game.

Me: So you don't get to play games like baseball?

J: In all of the six years I have been here we have not played baseball or basketball once. (P623-627, 664-665)

Mary continued by explaining one of the reasons she wanted to play a game was because "it was good to have time to work together and we don't really get to do that." (P747-749)

One of the main reasons they wanted to play games was because of the boredom they associated with the amount of practicing they did in class. When asked if they liked what they were doing in gym class with throwing, several lower and higher skilled throwers admitted "no, it is boring." (P163, 319, 183) When asked if it got boring throwing the ball to the wall all of the time Erica, a lower skilled thrower, said "sometimes." (P333) Joshua, a higher skilled thrower, added "we have been practicing everything for so long. Like we will practice 30 minutes everyday on throwing. I mean everyday just about?" (P761-766) Interestingly, one highly skilled thrower, Doug, compared not being allowed to play games to not being promoted. "It's like we can't get promoted anywhere. We have to stay on the same thing (skill

practicing)." (P774-776)

A possible reason for the higher skilled throwers tedium was due to this similar type of practice they participated in sports leagues (i.e., Little League Baseball). They perceived themselves to be beyond this continual type of practice and therefore, they desired more of a challenge in physical education class. This challenge, according to them, would be provided if they played games. The advantages of games, as I understood them, was that it allowed them to work on two skills (e.g., throwing and batting, catching and running) at the same time. Just focusing on throwing using "side, step, and turn" while throwing with a partner or alone to a wall was not an interesting challenge for them. Brian would have preferred playing Prison Dodgeball (something they did with their classroom teacher on occasion) in class because he could "work with the two skills of dodging and throwing." (P656-657) Todd reflected similar thoughts by wishing they would play whiffle ball in physical education class. "Because then you aren't just working on throwing--you'll be working on other skills and that will give you more practice" (P587-590) was how he explained it.

Other children had additional reasons for wanting to play more games in class. A couple of children thought that

playing a game such as baseball would force Joe to take them outside. (Joe never taught outside because of the time constrictions and the outside distractions [e.g., recess of other classes going on and/or construction company behind building too loud and distracting]).

Lastly, it was mentioned that it would be better to play a game because the type of practicing they did (all of the children with a ball playing catch or throwing to the wall) was not appropriate for the small gym space they had. According to Brian, playing a game would give them more practice because "that gym in there, well, everybody's throwing a ball and it's going everywhere cause the gym is to small." (P599-602)

Interestingly, the children's proposed cure for this perceived boredom was identical to the cure (solution) prescribed by the children at Eckland--practice throwing at the beginning of class and then play a game that involved throwing. This change was proposed by many children regardless of gender or skill level. Elaine, a lower skilled thrower, suggested classes that "mixed in throwing skills with something else like a game or something." (P329-334) Doug, Mary, and Joshua, all higher skilled throwers, suggested curriculum changes. Doug proposed "three-fourths of

the year could be Prison Dodgeball and one-fourth the activity things like the skills." (P762-765) He reasoned "that by now we have gone through throwing for six years and we've pretty much mastered it, but we still end up doing the same thing." (P766-770) Mary proposed having the beginning of the year set aside for practice. "I think at the beginning of the year we should go over the skills and then at the end of the year we should get to start playing some actual games," was her actual suggestion. (P768-772) One way to accomplish this was to have the children vote on a game they wanted to play. Joshua elaborated on his idea.

Instead of taking the gym time of everybody, one day have everyone vote on which sport they would like to play. At the end of the year or at the end of the week we could get to take one day off from work and play that game. (P808-812)

As was mentioned earlier, these proposed changes were identical to the proposed changes provided by the children at Eckland. However, unlike the children at Eckland (who did not further elaborate on their proposed changes), the children at Pendelton thought about these changes after stating them and some discussed the possible implications these changes would have for some of their classmates--in particular their lower

skilled classmates. This type of reflection and reasoning did not surface in the conversations I had with the children at Eckland. Some of the children at Pendelton thought about the implications their changes had and, therefore, they amended their original thoughts and suggestions to some degree.

For example, Mary and Joshua were both straightforward and vocal about their desire to play more games in class but they were the first to admit that this change may pose problems for some of their classmates. After both mentioning an eagerness to play a game of baseball in lieu of a normal "practice" class, they balked for a minute to think about the ramifications of their wish. Joshua said "I know why we can't play because some of the people (their classmates) in there don't know how to throw and they don't have a glove in the first place." (P696-701) He further added other reasons why a game of baseball would be impractical for the entire class.

Some may know how to throw because we have been practicing, but I'm sure a lot of them wouldn't know how to catch and bat and the other stuff so you would be standing there and never get an opportunity to bat.

(P736-742)

Mary recognized the limited time available for game play in their physical education class when she stated "Playing a

game does take time and we only have 30 minutes and it takes 5-10 minutes to get organized in teams so we'd need more like an hour for class." (P714-717) One child seemed to show an understanding of why they practiced so much in class. Jack, another highly skilled thrower, acknowledged throwing practice was kind of boring but he acknowledged that by practicing "you will know how to throw when you are older." (P533-544)

In summary, the children of both schools held interesting views about what they were doing in their physical education class. If they were to give advice to their teachers they might suggest changes that would allow them to practice throwing at the beginning of class and then apply this practice in a game situation during the second half of the class. While some children wanted change in the structure of their 30 minute class periods others suggested rearranging the curriculum. Revealed for the first time was a contrast in how the lower and higher skilled throwers felt about throwing in their classes. Several of the higher skilled wanted to play (or continue playing) games whereas many of the lower skilled were fairly content with what was happening in class. The clear suggestion, however, was that most of the children wanted more of a balance between

practice and game play.

Assertion Three brings to a close the assertions that revealed the "universal thoughts" of the children at both schools. The remaining story is told using three additional assertions. These assertions emerged because of the vastly different stories the children had to share about what they knew about the mechanics of the overarm throw, and their opinions about how and where they were learning these techniques. These assertions, revealed in the next section, are referred to as "Individual School Assertions."

Individual School Assertions

One of the purposes of this study was to discover what children knew about the skill of throwing. Could children in the fourth and fifth grades identify some of the biomechanical cues that typically made up the overhand throw? Two methods of data collection were used to answer this question: 1) a written paper-and-pencil test was taken by all of the fourth and fifth grade children at both schools; and 2) a portion of the children's interviews allowed them to explain and demonstrate what they knew about the overhand throw. The results gathered from these two data collection techniques are shared next.

Written test results

The written test was administered to all of the fourth and fifth grade children at both schools. It was administered after spending a few days observing the children and prior to the interviews (see Appendix L for calendar of when data collection events took place).

All of the fourth and fifth grade children were asked to write down the steps they believed made up the overhand throwing motion. To aid in eliciting this information, they were asked "to pretend that I could not throw very well and I wanted to get better so I could throw a ball a long way using good form." (For an explanation of this testing procedure refer to Appendix J) The children wrote their suggestions and they were collected.

Assertion Four: The "skill theme approach" (Pendelton) seemed to help children learn more about the overhand throw than did the "traditional" approach (Eckland).

The results of the written test revealed a vast difference between the throwing knowledge of the fourth and fifth grade children at Pendelton and Eckland. This was not only true for the children interviewed, it was true for all of the fourth and fifth grade children at both schools. (For a complete description of how the test was scored refer to

Appendix C.)

The following sections report on both the written results and the interviews. Included in this second section is a description of how the higher and lower skilled written answers differed in quality and description at Pendelton, but not at Eckland. Finally, the results of what the children discussed in their interviews concerning the biomechanical throwing cues is provided.

Written test results-all fourth and fifth grade children

Almost all of the fourth and fifth grade children at Pendelton identified at least two of the biomechanical components that made up the skill of throwing. The two most commonly identified by the children at Pendelton were "step with the opposite foot," and "turn your side to the target." "Arm way back" was another popular answer.

Further analysis of the answers given by all of the children at Pendelton revealed that eight children earned perfect scores of "4" on their tests, while only 16 children scored a "0." Little difference was found between the answers of the boys and girls. (Table 1)

In contrast, most of the fourth and fifth grade children at Eckland had a difficult time identifying even one throwing

component. When they did have an answer the most common was "aim at the target."

Further analysis of the Eckland tests revealed that only one child earned a score better than a "1." Thereby, none of the children at Eckland earned a perfect score of "4" and 83 children scored "0's" on their tests. These data were in complete contrast to the data collected at Pendelton. As was the case at Pendelton, little difference was found between the answers of the boys and girls.

Table 1 reveals the average scores of the written tests taken by all of the children at Pendelton and Eckland. These results include the answers of the interviewed children.

Written test results-the interviewed children

Analysis of the written test scores of the interviewed

Table 1

Mean Written Test Scores of All The Fourth and Fifth Grade Children at Both Schools

	Pendelton (<u>n</u> =187)	Eckland (<u>n</u> =118)
All Children Tested	1.98	.31
Boys	2.01 (93)	.27 (62)
Girls	1.95 (94)	.34 (56)

Note. Perfect Score = 4

children yielded similar results to the reported results of the test scores of all of the children. The interviewed children at Pendelton knew more of the throwing components as compared to the interviewed children at Eckland. These results proved interesting because the interviewed children included the identified "higher" and "lower" skilled throwers. It was hypothesized at the beginning of this study that the "higher" skilled throwers at both schools would score fairly high on this test. This hypothesis held true at Pendelton, but failed to hold true for the children at Eckland. Table 2 illustrates the average scores earned on the written test of the children interviewed.

Of the results detailed in Table 2, one stood out and warranted further discussion. This result was the difference

Table 2

Mean Written Test Scores of the Interviewed Fourth and Fifth Grade Children

	<u>Pendelton</u> (<u>n</u> =25)	<u>Eckland</u> (<u>n</u> =25)
All Interviewed Children	2.52	.44
(LS) Children	2.15 (13)	.38 (13)
(HS) Children	2.92 (12)	.50 (12)
(LS) 4th grade	1.83 (6)	.17 (6)
(HS) 4th grade	2.75 (4)	.40 (5)
(LS) 5th grade	2.43 (7)	.57 (7)
(HS) 5th grade	3.00 (8)	.57 (7)
All 4th grade	2.20	.27
All 5th grade	2.73	.57
All Boys	2.58 (12)	.38 (13)
All Girls	2.46 (13)	.50 (12)

Note. "N" doesn't equal 26 and 28 children respectively because a few of the interviewed children were absent on the day of the test.

found between the lower and higher skilled answers of the interviewed children. Not only did the numerical analysis bear out the higher skilled children's more thorough understanding of the throwing cues, further analysis (done by

simply reading the answers) revealed that the quality and descriptiveness of the higher skilled written answers was more detailed and correct as compared to the lower skilled children's answers. These differences are shared next.

Differences between higher and lower skilled answers of the interviewed children (Pendelton only)

After reading and scoring the written tests of the children interviewed it was apparent that the higher skilled children at Pendelton wrote more and offered more descriptive answers. No difference was detected between the written answers of the higher and lower skilled children at Eckland.

The higher skilled children at Pendelton, for instance, typically wrote clear, descriptive answers of the cues they identified. For example, many wrote "step with the foot opposite of throwing arm" instead of just writing "step" or "step with foot." Some of the higher skilled even wrote additional components such as detailing how to "aim properly" or they explained different "gripping" techniques. A few even explained the "wind up" and "follow through" phases of throwing. For example, a couple of them wrote a description of how the "other leg comes over the top of the other leg after the release of the ball." Figure 2 shows an example of this answer.

The lower skilled children at Pendelton, in contrast, were less descriptive with their answers. They used fewer words to describe the throwing components. For example, some wrote "side," "step," and/or "turn" to represent some of the throwing components. On several occasions they wrote this as one component (i.e., "side, step, and turn"). This non-descriptive answer left room for interpretation, whereas many of the higher skilled answers did not. The interviews were helpful in this regard because they allowed the lower skilled children to explain these components. Figure 2 shows an example of the differences between the higher and lower skilled throwers written answers at Pendelton.

In addition to these findings, analysis of the written tests also revealed immense differences between what the children at Pendelton knew about throwing as compared to the children at Eckland. These results are shared next.

Written test results-differences found in throwing knowledge between children at Pendelton and Eckland

Repeated readings and analysis of the written test answers provided a clear picture of the differences between what the children at Pendelton and Eckland knew, and wrote about, the skill of throwing. The written answers of the children at Eckland showed a minimal understanding of the

Higher skilled

1. side to the target
2. step with the foot opisite your throwing arm
3. arm all the way behind you
4. bring your arm over the top & throw

Lower skilled

1. Side to the target
2. Bring arm behind you
3. Turn
4. Step
5. Throw

Figure 2. Examples of written tests completed by one higher and one lower skilled thrower at Pendelton Elementary School.

skill of throwing. Even the identified higher skilled throwers struggled with writing any informative and/or knowledgeable answers. In many instances, the lower skilled children at Pendelton were found to be more accurate and descriptive than any of the children's written answers at Eckland. Figure 3 provides an example of this difference. These examples best represent a typical answer given by the children at each school.

In addition to the written test given to gain an understanding of what these children knew about the skill of throwing, the first part of each of their interviews allowed them to verbally demonstrate their throwing knowledge. The children were also asked to physically demonstrate their answers. A more detailed description of how this portion of the interview was conducted is provided next. The results gained via using this interview format follows.

Format and Procedures Followed for Throwing Questions
Presented at Beginning of Interviews

The analysis of the written tests were very useful in determining what these children initially knew about the skill of throwing. However, relying simply on the results of this test could be misleading. For example, did the children at Eckland misunderstand the throwing scenario that I

Pendelton

1. stand side to the target
2. step with your opposite foot your throwing with
3. take the ball far back
4. Your hand should end on the opposite leg
5. Your feet should both be at the target at the end
 - a. side
 - b. step
 - c. turn
6. shoulders should be level

Eckland

1. Mark you need to raise your hand back
2. Mark then you need to throw

Figure 3. Examples of completed written tests by the children at Pendelton and Eckland.

presented them? Was there a difference between the intelligence level of the children at the two schools? Maybe there was a difference in writing ability between the children at the two schools? Many of these questions entered my mind after observing the rather large discrepancy in the scores achieved on the written test by the children of Pendelton and Eckland Elementary.

Fortunately, the interview format used for this study helped answer some of these questions. The beginning of each interview allowed the children to describe, in their own words, what they knew about the skill of throwing. Each interview began with the following situational question: "I am getting ready to teach some first graders how to throw, what would be one thing that you would have me tell them so they could become really good throwers." After listening to their suggestions they were asked to demonstrate and/or further explain what their answers meant. (This was accomplished by using the interview technique of "playing dumb" (Tammivarra & Enright, 1986). For example, if a child responded that first graders would be better throwers if they "stepped with their opposite foot," my response was "what does stepping with the opposite foot mean?" They then explained their answers. My conversation with Charlie, a

Pendelton student, illustrated this technique.

Me: What would be one thing that I could tell first graders to become really good throwers?

C: You put your side to the target and you step and throw.

Me: What do you mean by side?

C: Let's say I was throwing to wall. You put your side like this (demonstrating putting his left side to target) and you step with this foot.

Me: What does side mean?

C: The side of your leg...like this (demonstrating).

Me: Do you always step with that side facing target?

C: No, if you are left handed you step with this side.

You're always stepping with the opposite foot. (P18-55)

In addition, as Charley did in the above example, many of the interviewed children were also asked to physically demonstrate their answers. Typically, I asked them to demonstrate during their verbal explanations. Sometimes, however, they demonstrated after their verbal explanations. For example, after listening to Doug explain "following through" I asked him to demonstrate this.

Me: You are going to have to show me "follow through" because I don't understand that at all (playing "dumb").

D: It's like you are throwing it...(he gets up to demonstrate). You can't stop here (demonstrating stopping the arm too early). You have to bring it like this (demonstrating arm all the way through to other side of body) so you are ready to catch the ball if the hitter hits it. (P162-175)

Conducting the interviews as explained above allowed the children to fully explain what they knew about the skill of throwing. A detailed discussion of the results gathered as a result of these interviews is shared next.

Differences found between throwing knowledge as reported in the interviews of the children at both schools

The answers given in the interviews about knowledge of the throwing cues fully supported the earlier reported written test results. This solidified my hunches that the children at Pendelton had a better understanding of the overhand throwing motion as compared to the children at Eckland.

The answers given by the children at Pendelton, like their written test answers, were correct and descriptive. Additionally, several answers that were not identified on their written tests were introduced, explained and demonstrated. For example, many of the children at Pendelton

(especially the higher skilled) spoke about how they thought it was important for the first graders to aim and throw with accuracy and power. To be accurate and powerful they typically suggested "stepping with the opposite foot" and "turning your side to the target." Some suggested "following through." My conversation with Todd and Brian illustrated these suggestions.

Me: Todd can you think of another thing to help the first graders?

T: When you are throwing "step with the opposite foot."

Me: What do you mean by that?

T: When you are throwing, to get more power, you step towards the target with the opposite foot.

Me: Brian, do you have anything else?

B: Follow through.

Me: Follow through? What do you mean by that?

B: When you throw, you should bring the other foot over.
(demonstrating this at same time)

Me: Why do you do that?

B: More power!

Me: Anything else?

B: Bring your arm back.

Me: Why?

B: To get more speed on the ball. (P63-135)

The discussion of the accuracy and power components were typically not answers included on their written tests but they were an important part of their verbal answers.

The children at Pendelton, as revealed in the above conversation with Brian and Todd, spent several minutes of the interviews providing detailed explanations of the throwing cues. (The average transcribed length of the throwing discussion portion for the interviewed children at Pendelton was 2.65 pages.) They seemed to genuinely enjoy sharing their throwing knowledge. This was especially true of the higher skilled throwers.

The lower skilled children corroborated their written test answers, however, they were less descriptive. On several occasions, they used the phrase "side, step, and turn" to describe the throwing motion. Andrea's answer shared a typical lower skilled answer.

Me: What would be one thing that I could tell first graders to become really good throwers?

A: Side, step, and turn. That is what Mr. P. (physical education teacher) calls it for short. (P54-56)

Many of the lower skilled throwers at Pendelton were able to explain and demonstrate each of these components. For example, "step" was often explained and demonstrated to mean "step with the opposite foot of the hand you throw with." My conversation with Sandy revealed what she meant by "step."

Me: What would be one thing that I could tell first graders to become really good throwers?

S: Side, step, and turn on the opposite foot.

Me: Side, step, and turn. Let's start with "step." What does that mean?

S: You step with your opposite foot.

Me: The opposite foot of the hand that you throw with?

S: Yes.

Me: What hand do you throw with?

S: Right.

Me: So what foot are you stepping with?

S: Left. (P48-69)

Although their answers lacked some of the description and clarity of their higher skilled classmates, they still demonstrated a thorough understanding of the throwing components. They just needed more prompting and probing from the researcher to illustrate their knowledge.

Probing and prompting questions were also used in my

conversations with the children at Eckland also. In contrast to the interviews with the children at Eckland, the children at Eckland seemed to be stumped by the hypothetical question posed at the beginning of the interview. They rarely gave an immediate answer to a question. On numerous occasions I had to wait for them to think about an answer. During these pauses I tried to encourage answers. "Remember they know nothing. Any help from you would be great," and "don't worry about right and wrong answers," were a couple of the prompts I used to elicit answers. Waiting in silence for a few seconds was typical of almost all of the Eckland interviews. The answers, if any were given after the pause, were typically non-descriptive and showed little understanding of the cues that form the overhand throw. In a couple of interviews I had to come back to the question because the children had no answer at all. My interview with Mark and Carl, higher skilled throwers illustrated this.

Me: What is one thing I could teach first graders so they would become really good throwers.

(Extended pause)

Me: Anything you want to suggest is fine. What can I help them with? They really want to be good throwers. They just don't know how to do it.

(Extended pause)

Me: Carl? Nothing?

C: No.

Me: Mark?

Ma: Nope.

Me: Can't think of anything? O.K. Let's do this. If you think of something let me know at any time during our conversation. New question. Is it important for kids to learn how to throw? (E7-33)

Other children simply stated "I don't know" to my question. This answer was never given at Pendelton! The children at Pendelton usually had an immediate answer and the answer was typically a throwing component such as "step with opposite foot" or "turn side to target."

When the children at Eckland did give answers they were, again, non-descriptive and showed little understanding of the throwing motion. My conversation with Connie, a higher skilled thrower, illustrated what she "learned" in gym class about throwing.

Me: What have you learned in gym class about how to throw?

C: You need to be able to "see good" and have "a strong arm." You need to do a lot of things. (E534-539)

Unfortunately, she did not elaborate on the "things" when prompted.

Other answers to the first question by the children at Eckland were "get a good grip," "get in front of the target," "make sure you aren't scared," "bring arm behind shoulder," and "pretend there is a 7'7' giant in front of you." Tonya and Charlotte's interview showed another typical example of how the beginning of an interview at Eckland proceeded.

Me: What would be one thing that I could teach first graders that would help them become really good throwers?

(Extended pause)

C: Hold the ball right in front of you.

Me: O.k. lets say that you are throwing at that wall way down there what do you mean by that?

C: Get lined up in front of the target.

Me: Could you show me what you mean? Is there a certain way you need to line up in front of it?

C: Sorta like straight so you are looking at it (demonstrating).

Me: O.k. thanks Cindy. Tara, do you have anything?

(Extended pause)

T: Well, you could tell them to keep their mind on throwing the ball.

Me: Can you explain that more?

T: If you are thinking about a boy that you like then you might miss the target.

Me: Thanks Tonya. Charlotte do you have anything else?

C: Not really. (E7-66)

Table 3 contains the contrasting answers given by the children at both schools on the interviews.

In contrast to the children at Pendelton, this portion of the interview was short and took little time to complete.

Table 3

Sample List of Children's Suggestions For Becoming a Good Thrower

Answer	No. of Times Stated
<u>Pendelton</u>	
Turn your side to the target	17
Step with the opposite foot	15
Arm Way back	10
Aim at target	9
Follow through	3
Step through with other foot	2
Let elbow lead	1
Twist body at waist	1
Bring arm straight over-not sidearm	1
<u>Eckland</u>	
Get straight in front of target	4
Hold ball with tight grip	3
Bring hand back behind shoulder	3
Follow through	2
Try your best	2
Don't know	2
Practice	2
Don't be scared of the ball	2
Take a forward step	2
Throw hard	2
Aim at target	2
Don't strain arm	2
Try to throw sidearm	1
Hold your hand straight	1
Work on stance	1
Don't throw hard	1
Pretend it is hot object	1
Don't get nervous	1
Keep mind on throwing	1
Make sure they see good	1
Have a strong arm	1
Keep eye on ball	1

In fact, an average of 1.68 pages of text was used to complete this portion of the interview with the children at Eckland. It also seems significant that, in contrast to Pendelton, there was no apparent difference between the answers of the higher and lower skilled children. All of the children at Eckland struggled with identifying pertinent throwing help for the first graders.

In summary, children's knowledge of throwing was gathered using two different tools. One tool was a written test, the other was an interview. An analysis of the data clearly revealed that the children at Pendelton possessed a more thorough understanding of throwing as compared to the children of Eckland.

Who then do these children attribute their throwing knowledge to? Are they learning about throwing from their physical education teachers? Have coaches, friends, or parents had an influence on their throwing knowledge? Maybe the skill of throwing develops naturally? Assertion Five reveals where these children said they learned the most about throwing.

Assertion Five: The children at Pendelton attributed their throwing knowledge to their physical education teacher while the children at Eckland learned from

other sources.

After the children discussed and demonstrated their throwing knowledge they were all asked where they learned this information (this was typically the second question asked during the interview). Specifically I asked them "Where did you learn the throwing stuff you just mentioned?" Again, the answers given at Pendelton and Eckland were quite different. The answers are described next, starting with Pendelton.

Pendelton

Although many of the children at Pendelton gave several people credit for teaching them about throwing, Joe (their physical education teacher) was mentioned most often as a main source of throwing knowledge. "Dad" and "coaches" were the second and third most popular choices of people they attributed their throwing knowledge to. (Refer to Table 4 for a detailed account of the other people they mentioned as throwing sources). Several of the higher skilled even gave Joe credit for teaching them a lot about throwing. This was surprising because it was thought at the onset of the study that the higher skilled would have attributed more of their throwing knowledge to their coaches or maybe their Dads. Doug, a higher skilled thrower, revealed how important Joe

was in our conversation.

Me: Do you like the throwing things you do in class?

D: Yeah. I wouldn't be throwing the same if I cut out one of the three things I said (he earlier had mentioned his coach, parents, and physical education teacher as his main throwing learning sources). If I cut out physical education I wouldn't be the same. If I cut out the coach I wouldn't be the same. If I cut out the parent I wouldn't be the same. (P496-501)

As Doug did, the higher skilled children typically mentioned more than one person as a learning source for throwing. No more than three people were mentioned in one answer however. Their coach and Dads were the other most mentioned sources.

Me: Where did you learn all of that stuff about throwing?

M: I learned some of it from Joe, some from my baseball coach, and some from my Dad. (P196-200)

Charlie, a higher skilled thrower, attributed most of his throwing knowledge to his coaches (who just happened to be his Dad). He also said Joe taught him some things about throwing. He specifically spoke about a "cue" that Joe helped him with.

Me: Where did you learn all of that stuff about throwing?

C: My Dad. He's the coach of my baseball team so he's the one who taught me how to throw. And Joe also taught me some of it.

Me: What did Joe teach you?

C: About the "side to the target." I was always throwing with my front (demonstrating his chest) to the target.

Me: Did learning about "side" help you?

C: Yes. (P143-165)

The lower skilled children at Pendelton, on the other hand, almost exclusively attributed their throwing knowledge to Joe. Joe was usually the first name mentioned when asked where they learned the most about throwing. Their additional choices were typically relatives (e.g., brother, cousin, Dad). These choices were usually added later in the conversation. Frank and Andrea said they learned from Joe.

Me: Where did you learn all of that stuff about throwing?

Both: Joe.

F: Yeah, he taught us all of this. (P135-143)

The consensus among the children at Pendelton was that Joe, their Dad, or coach taught them the most about throwing.

Only a few children attributed their throwing knowledge to other people outside that circle of people.

Eckland

The children at Eckland, in stark contrast, attributed their throwing knowledge to everyone but their physical education teacher. In fact only one child mentioned their physical education teacher as the person who taught them about the skill of throwing. They attributed their throwing knowledge to a variety of different people. Unlike the majority of children's answers at Pendelton, there was no consensus of answers. In fact 13 different people were cited by the children at Eckland. Dad's, coaches, and/or friends were the most popular. (Table 4) Their physical education teacher was conspicuously absent. Charity and Jake said they learned throwing from their families and coaches.

Me: Where did you learn that stuff about throwing?

C: Mostly my cousins and my family.

J: T-ball and my Dad. Actually the coaches. (E110-113)

Two of the children at Eckland, at least at this juncture of the interview, said they learned to throw by "watching others." This was an interesting answer because, although they were the only two children to give this answer immediately after my question, several other children brought

this answer to my attention deeper into the interview. By their own admission, many of the children relied on their observational skills to help them learn how to throw. My conversation with Richard and Brad, higher skilled throwers, revealed this.

Table 4

Children's Answers Concerning Whom They Attributed Their Throwing Knowledge To

<u>Pendelton</u>	
Physical Education Teacher	19
Dad	10
Coaches	7
Brother	1
Previous PE teacher	1
Other people	1
Neighbor	1
Cousin	1
<u>Eckland</u>	
Dad	11
Coaches	7
Friends	4
Watching others	2
Brother	2
Don't know	2
Watching ball games	1
No one	1
Sister	1
Family	1
Cousin	1
Myself	1
Physical Education Teacher	1

Me: Where did you learn all of the stuff you just mentioned about throwing?

B: I watch baseball games.

R: Baseball games. And by just watching people and when I was little my step dad would teach me how to throw.

Me: Where would you say you learned the most about throwing?

R: Probably from just watching people. (E112-134)

Jeff, a lower skilled thrower, said he learned some of his throwing techniques by "watching my friends throw." (E218-219) He apparently used this type of "observational learning" when learning how to throw a football.

Me: Who taught you how to throw a football?

J: When we go outside in gym I usually didn't play with Martin and Jay, but now I do.

Me: Who taught you that then?

J: Martin and Jay, I just watched them play out there in the field. (E240-256)

Randy, a lower skilled thrower, said he learned about throwing from watching War Ball while he sat on the sidelines.

Me: Do you ever practice throwing in gym class?

R: Sometimes, whenever we play War Ball.

Me: Whenever you are playing War Ball you are practicing throwing?

R: Yeah.

Me: How do you do that if you are always out?

R: You just watch. When you are out you watch somebody that is going to be throwing. (E546-561)

Charity, a lower skilled thrower, even said she had learned some throwing things by watching the football players while she was cheerleading.

C: I'm a cheerleader. I watch the football players.

Me: What do you watch them do?

C: How they go like this and they get the ball and go like that (demonstrating how they get their arm back after receiving the ball from center). (E115-123)

Several other children discussed learning other games and sports from observing. Amy and Michelle, lower skilled throwers, discussed how they learned to play Ping Pong in gym class. They did not attribute their learning to their physical education teacher.

Me: What did you learn about Ping Pong in the gym the other day?

M: To try to hit it on the table.

A: Yeah, not on the floor.

Me: How did you hit it on the table and not the floor?

A: Hit it real softly.

Me: How did you hit it real softly?

A: Well, if you are real close to the net, just take your racket and tap it lightly and just barely touch it.

Me: Who told you that? How did you learn that?

A: We just watched. (E439-460)

Lucas and Carrie, lower skilled throwers, said they learned basketball by watching television.

Me: Where did you learn to play basketball?

C: Watching T.V.

L: I watch basketball on T.V. (E121-123)

In summary, the interviewed children at Eckland said they learned to throw in a variety of ways. Their physical education teacher was mentioned only once. Subsequently, many of them seemed to rely on watching others to learn how to throw.

Their answers were immensely different from the answers given by the children at Pendelton. Not one child at Pendelton mentioned anything about learning throwing (or any other games or sports) from observing others. The majority of

the children at Pendelton attributed their throwing knowledge to Joe, their physical education teacher.

In addition to attributing most of their throwing knowledge to their physical education teacher, many of the children at Pendelton also had positive things to say about how they were learning to throw in their physical education class. In particular, they described the feedback that Joe gave in class as an important part of their learning to throw properly. This is further explained in Assertion Six--the final assertion.

Assertion Six: The children at Pendelton learned throwing as a result of the skill feedback they received from their physical education teacher, whereas the children at Eckland only mentioned learning to play new games in their physical education class.

As mentioned in Assertion Three the children at Pendelton were cognizant about how they were learning how to throw. According to the children at Pendelton, Joe regularly provided specific throwing feedback when teaching them how to throw. This skill feedback was popular with all of the children at Pendelton, regardless of skill ability or gender. They reported they were glad that they were being taught in

this manner.

The children at Eckland, in contrast, did not mention or describe any instances of receiving throwing skill feedback from their physical education teacher. They said they learned how to play games and exercises in physical education class.

The description of how these children learned throwing are described next starting with the reports the children of Pendelton.

Pendelton

The children at Pendelton provided numerous accounts of how much they learned from Joe about throwing mechanics and they attributed this learning directly to his consistent use of skill feedback. They often mentioned how Joe came around and helped them individually with their throwing skills. Cassandra, a lower skilled thrower, discussed this in our conversation.

Me: What do you do in gym class to work on those things (referring to the throwing components she mentioned)?

C: We throw the balls and he will come around and if we are doing something wrong he tells us and he will try to help us with it. (P212-218)

Erica, also a lower skilled thrower, added that "He (Joe) helps us if we are doing something just a little bit

wrong. Like if we aren't extending our arm back enough then he will come up to us and tell us to put it back a little further." (P791-799)

Jason also elaborated on how Joe gave him throwing skill feedback in class and he added how he felt about receiving positive comments about his throwing.

Me: What does he say to you in class while you are throwing?

J: Remember to keep your side to the target. He said it at least ten times every class. He'll walk around the room and if he sees you're not doing something quite right he'll come up to you and show you what you're doing wrong and how you can improve it. He'll stay there a while and watch you to make sure you're doing well.

Me: Oh really?

J: Or he might come up to you and compliment you if you're doing real well.

Me: What does compliment mean?

J: He'll come up and say how well you're doing.

Me: What does he say?

J: "That's a pretty good throw Jay. Very good."

Me: Do you like that?

J: Yeah, it makes you feel good. Makes you want to keep going. (P299-332)

Adam joined the conversation with Jay, and they discussed further how they benefitted from Joe's throwing help.

Me: You said Joe taught you about throwing.

Both: Yeah

Me: What did he help you with?

J: Helped me on following through and keeping my side to the target.

Me: And you talk about that in gym class?

J: Yeah, a lot. When we throw just about every time he repeats it (referring to the cues).

Me: He repeats it huh? Is it good that he repeats it?

J: Yeah, so we don't forget.

A: Yeah, so we can learn it. So you'll remember every single time. So in the summer when you join a sport with throwing you can remember to throw better. We won't be in school any more and we won't have him to repeat it anymore. (P237-282)

Mary and Joshua, higher skilled throwers, remembered when Joe made up "throwing cue signs" (cards that had the throwing cues written on them) to help them and their partners remember the important parts of the throw.

Apparently the children were giving each other feedback about their throwing performance utilizing the cards to remind them of the throwing cues. They mentioned the importance of receiving specific feedback as opposed to general feedback.

Ma: We had signs like "good arm back" and "good step to the target."

Me: Did you like that?

J: Not exactly really fun but it was O.K.

Ma: We would like say "good something..." or like "good step to the target."

Me: Is that important?

Both: Yes.

Me: Why not just say good?

Ma: Because there is a lot of stuff in the throw and you may get your arm back good but you may not follow through good.

J: See, if you step with the wrong foot and you did good on everything else, how are you going to tell them that they did bad?

Ma: You said you did good, I mean, that could mean good on some stuff but bad on one thing. (P567-598)

Mary and Joshua also mentioned how important it was for Joe to review the throwing cues they worked on for the day at

the end of class.

Me: What kind of questions does he ask at the end of class?

J: How we learned today? What was the main part of the class today?

M: After each class we go and sit down and talk about what we learned.

Me: Do you like that?

Both: Yeah, cause it helps us remember and then the next time he'll ask us what we did last time. (P222-236)

In addition, Missy, a lower skilled thrower, noticed how he "added steps on" to what they had already learned. Me: Where did you learn all of those cues for throwing?

M: Joe.

Me: And how did you learn all that from Joe?

M: Every year he sort of added things on. Sometimes we just practice on one skill when we've just learned it, then he'd add on some new steps.

Me: I don't know if I follow that. Can you give me an example? What do you mean by adding on?

M: Like each year he taught us another step into it.

Me: What would a step be?

M: When you have your "arm back."

Me: And then what do you mean by adding on then?

M: Giving us the next step. Like telling us next to "step with your opposite foot" and then "follow through." (P148-181)

Further evidence of learning from Joe's individual throwing feedback emerged during my conversations with two children who had been enrolled at Pendelton for only one year. This was the first year they had Joe as their physical education instructor. Both children mentioned how different Joe's physical education class was in comparison to their previous physical education experiences. Erica, a lower skilled thrower, related how she learned "the right way to throw" from Joe.

E: This is my first year here and before I came here I had no idea...I knew how to throw but it was not anything like what they do here. I don't remember how I threw but it wasn't like "taking steps" and "aiming" and stuff like that. So, it definitely helped me to learn the right way to do it. (P172-179)

Jason, another of Joe's first year students, discussed the differences between the "throwing compliments" he received from Joe as opposed to the lack of compliments he

received from his previous physical education teacher.

J: Compliments from the teacher keeps me throwing. Like I remember in my old gym class I was throwing really well and my gym teacher just walked around and she wouldn't compliment me. And I just got tired of throwing. I mean, there wasn't much point to it. (P336-343)

The children at Pendelton had many positive things to say about the way they were learning to throw from Joe. Both the lower and higher skilled children seemed to learn and enjoy from the helping feedback he gave to them about their throwing performances.

The children at Eckland shared very different accounts of how they were "learning" throwing. Their thoughts are shared next.

Eckland

The children at Eckland, in contrast, didn't seem to learn about the mechanics of throwing in physical education class. They said they learned new games and exercises in their physical education class. They didn't mention specific skill feedback from their teachers as a means to helping them learn how to throw. This may be a reason why only one of the

children attributed their throwing knowledge to their physical education teacher.

When asked directly about how they practiced or learned throwing in their physical education class, some had affirmative answers but their discussion centered around the games and sports they played in class. They never mentioned specific skill feedback, as revealed in this conversation with two higher skilled throwers.

Me: Do you ever practice throwing in gym class?

Both: Yeah.

Me: When?

C: During Warball.

M: I do when I play baseball. I mean football where you play quarterback. But I really don't like playing quarterback. (E310-320)

Lucas and Carrie, lower skilled throwers, said they learned about throwing basketballs but did not elaborate on how they accomplished this.

Me: Do you ever learn how to throw in gym class?

L: Yes.

Me: How do you do that Lucas? What do you learn about?

L: You learn how to shoot baskets and how to throw at the batter and stuff.

Me: Carrie, what do you think? Do you do anything in gym class to learn how to throw?

C: Throwing basketballs. (E451-468)

Joseph, a higher skilled thrower, said he only learned about throwing when the class threw the shot put in the track and field unit.

Me: Do you ever talk about how to throw properly in gym class?

J: Not really. Not unless we are throwing outside or when we get a real piece of equipment like the heavy ball (the shot put). She will show us how to throw that. (E331-338)

Charlotte, a lower skilled thrower, added relays as something they did in class that involved throwing.

Me: Do you ever do anything with throwing in gym class?

C: Yes, Sideline Basketball and War Ball.

Me: Are there other things you do?

C: Run relays, but I don't know any more. (E348-355)

In addition to asking the children at Eckland what they specifically learned about throwing in class, I asked several children if they came to physical education class to learn in general. My intentions behind asking such a question were to provoke a conversation from the children of Eckland about

what they did in class as it related to throwing. My planned questions were receiving minimal response, so I thought a different question would offer them another avenue of discussion.

Again, most responses to this "general" question were about learning new games and sports. Jeff and Lucy, lower skilled throwers, reflected about learning new games in their physical education class.

Me: Do you come to gym class to learn?

Both: Yeah.

J: Yeah, to learn how to do stuff.

Me: Like what?

L: Well, you might have a new game and you might learn to play it. Everybody might not know how to play it and they might want to do it so you can learn how to play that new game. (E258-273)

Carl, a higher skilled thrower, responded that he came to gym class to learn sports and "get an education."

Me: Do you come to gym class to learn?

C: To learn and play, because in gym class you get an education and learn more. You get an education to learn how to do sports and then if you didn't have gym class you wouldn't know that much about sports. (E491-500)

Unfortunately, Carl did not elaborate on what he meant by an "education" nor did he specify what he was learning about sports. Dianne, a lower skilled thrower, said "In a way, yes, I do come to gym class to learn and, in a way, no." She continued by saying "I come to gym class to play and learn. The learning part is the way they teach us about the rules of the games." (E459-462) Allen and Tommy, higher skilled throwers, said they only learned in gym class "a couple of times."

Me: Do you come to class to learn?

T: A couple of times.

Me: Can you remember what you learned on those couple of times?

T: No.

A: It teaches you how to do exercises and feeling good about yourself. (E346-356)

Other responses to this question about general learning in gym class revealed that several children weren't quite sure what they were learning in their physical education class. Linda, a lower skilled thrower, responded to the question of whether she came to class to learn or not by saying "I don't know. Maybe to learn a new game sometimes? Maybe a

new exercise? I don't know." (E413-415) Tonya and Charlotte, lower skilled throwers, weren't quite sure either. Me: Do you come to gym class to learn?

T: I really don't know. You sorta come to learn new games.

Me: Do you go to math and science class to learn?

Both: Yes.

Me: So, do you learn anything in gym class?

C: Probably, but I don't know what. (E469-484)

In summary, it was clear that the children at Pendelton learned specific things about the throwing motion from their physical education teacher. They learned this primarily from the specific throwing feedback they received in class. This feedback was enjoyed by almost all of the children that were interviewed.

In contrast, several children at Eckland said they were learning things in physical education class but they said they learned about new games and exercises. Nothing was mentioned about skill feedback from their physical education teacher. In addition, several children were unsure about what they were learning in physical education class. A few of them mentioned that physical education class would be a good place

to learn about throwing.

Discussion of Results

The discussion of these results will focus first on the possible explanations for the vast differences found between the throwing knowledge of the children at the two different schools. Secondly, some comments will be made about the concern the researcher had for the lack of throwing knowledge exhibited by the children at Eckland and lastly, a discussion of the enjoyment the researcher had in conducting the interviews is included.

One of the reasons for the vast differences in the throwing knowledge exhibited by the children at Pendelton and Eckland may be due to the way in which the children were taught by their physical education teacher. After all, the children at Pendelton had physical education only two days per week as opposed to the children at Eckland who had physical education class every day. Both had specialists teaching them and each class met for 30 minutes. Based on that program information alone, one would guess that the children at Eckland would have been able to write and discuss more about throwing than they did.

To make these results even more intriguing, more program information that should have helped the children at Eckland

was gathered through my interviews with the physical education teachers. When asked how many days she had spent on throwing instruction with her fourth and fifth graders Lisa said "We have 180 days and I'd say out of that there's a good 100 that the children are actually throwing." (EL709-711) She obviously not only counted how many days she focused on teaching and practicing throwing she included all of the days that they were involved in a throwing activity (i.e., War Ball) Unfortunately, I did not have her go back and count just the days she taught the overhand throw. The main thing is that her children, at least according to her calculations, were involved in a lot of activities that involved throwing. By looking at her curriculum guide I would assume she counted the days spent in throwing units such as basketball, football, and baseball. In addition games such as Sideline Basketball and War Ball would have been counted too since they may have been played so often (i.e., every Friday for War Ball).

When queried about how many days Joe had spent on throwing that year he said he had completed six lessons (i.e., days) with the fourth and fifth graders prior to the written test and the interviews. (PJ453-458) He arrived at this information by looking at his lesson plan book and

counted the number of days he had spent teaching the overhand throw. Of course there were other days that the children used throwing (e.g., throwing a ball in dodging activities, or throwing a frisbee), but he did not count those days because he did not focus on the biomechanical principals of the overhand throw.

Additional information that led me to believe that teaching practices had something to do with the vast differences shown in throwing knowledge between the children at both schools was the fact that the last throwing lesson conducted with the children at Pendelton occurred approximately two months prior to the interviews. The last "formal" throwing unit the children at Eckland were involved in occurred approximately four months prior to data collection. That unit was a basketball unit.

These factors led me to believe that Lisa may have not spent enough time actually teaching the children about the cues that form the overhand throw. Maybe a few too many days were spent having the children involved in games that involved throwing (i.e., War Ball every Friday). Although I only observed several lessons during my time there, there remains the possibility that not only did the lessons I observe lack a clear focus and objectives, but maybe this

type of "structure" was typical of the entire year. Perhaps clearly stating lesson objectives and purposes to lessons would have helped her children perform better on the written test and interviews. Providing more skill feedback, as Joe did (according to his children anyway), surely would have helped the children remember the throwing cues better.

Obviously the children at Pendelton remembered a lot about throwing and they didn't see Joe nearly as much, but they attributed their throwing knowledge to him--even the highly skilled throwers. Clearly stating objectives in class along with using lots of skill feedback may have it's advantages. Some of the results obtained in this study seemed to support this notion.

In defense of Lisa, her large class sizes may have also contributed to the difference in throwing knowledge between the children at the two schools. Lisa had to teach between 40 and 50 children per class period every day of the week. Although she did not mention this concern in her interview, she did refer to it a couple of times during our informal conversations (FN199-201). This notion is consistent with the research literature that has reported that teachers teaching large classes typically have to teach differently. Fishman & Tobey (1978) found that large classes (more than 40 students)

received less augmented feedback from teachers as compared with small and medium-sized classes (p. 58). They also found that handling classes of this size (40 or more) required a considerable amount of organizational skill, administrative skill, and that a great deal of time and effort need to be made so most of the children in class got a chance to participate in the activity being presented (Fishman & Tobey, 1978). The burden of handling such large classes on a daily basis may have accounted for Lisa's lack of skill feedback and therefore explained her children's lack of throwing knowledge.

Another possible reason may have been a difference, at least for the written test, in writing ability between the children at the two different schools. During my analysis of their written tests I noticed quite a difference in the quality of writing. The children at Pendelton were much neater and clearer in their writing. Maybe the majority of the children at Eckland had poorer writing skills and that may answer why their answers were less descriptive and incomplete.

Too, the differences in the throwing knowledge revealed in the interviews could have been in part related to my presence. The children at Pendelton may have felt more

comfortable with me since they had seen me a couple of times before the study had started. Maybe my interviewing techniques weren't as good at Eckland. This is something I did not feel at the time, but it is possible. If anything, I thought that the children at Eckland were more comfortable during the interviews than the children at Pendelton. The effect of researcher presence is something that often occurs in naturalistic research (Graham, et al., 1991; Hopple, 1994). Hopple (1994) speculated that her presence during her interviews with children about fitness testing may have affected the results in a minimal way.

Regardless of the possible reasons for the differences in throwing knowledge between the children at the two different schools, it remains that the children at Eckland knew very little about the skill of throwing. This result is very disturbing. Will this lack of knowledge affect these children later in life? Will some of them possibly not choose to engage in the throwing opportunities that may present themselves as they move into adulthood (i.e., softball leagues, football pick-up games, throwing with a friend or parent in the park)? Are these children on the way to becoming "physically undereducated?" Perhaps Lisa needed to be asking similar questions.

Setting aside my disappointments in the results uncovered about the lack of throwing knowledge exhibited by the children at Eckland, I would like to discuss the good things that I felt about interviewing all of these children. Regardless of the results rendered by this study, it was indeed a joy just to have the opportunity to speak with all of these children.

Venturing into the world of the 54 nine and ten year old children of this study proved to be a worthwhile and rewarding experience. Listening to children speak honestly and openly about their throwing experiences revealed interesting, insightful, and important data. However, no matter how important the data were, the experience of listening to these children discuss the various aspects of throwing and other related topics was just plain enjoyable. These children had much to say and most were not shy in expressing their opinions.

At the onset of this study one of the purposes was to finish a research project to earn a degree. This was going to be accomplished by speaking to children. After completing the first interview I knew this study was going to be more than just a research project to finish a degree. Engaging in open and honest conversations with all of these children allowed

me to gain a clearer understanding of the world of 54 children in their physical education classes.

One of the important things gained by using interviews to gather data was that I felt I received honest answers about what they were learning in physical education class as it related to throwing. The data also indicated a great difference between what the children at these schools knew about the skill of throwing. These results were important and served the purposes of my study. Perhaps these results will have an impact on the teaching practices of some teachers (Bondy, 1990).

More importantly however interviewing these children may have allowed me to make a few children feel more important about themselves for a few minutes. Interviewing children who seldom were asked to share their opinions about what was happening in their classes seemed to empower some children. They often spoke enthusiastically about the many topics they were queried about. The look in some of their eyes and their body actions when our discussion centered on a topic they enjoyed talking about was wonderful to observe. Many of them went from being quiet and motionless to being animated with small bursts of enthusiasm. Jason's animation when he discussed the compliments he received from Joe during a

lesson comes to mind quickly. He rose to his knees and started moving his hands to make his points. During the pilot project which was conducted prior to these interviews, one of the teachers asked me to interview a child who was having a rough week in her class as well as in the classroom. "He just wasn't feeling good about himself" his teacher told me. I can only hope that my interest in his thoughts and opinions helped him in some small way. These children, although not stated in words, seemed to be saying with their body motions and explanations, "thanks for inquiring about my opinion."

In summary, there could be a variety of reasons as to why such a vast difference was found between the children's throwing knowledge. The most plausible reason, in the opinion of this researcher, was the way in which these children were taught throwing in their physical education classes. The children at Pendelton were offered clear objectives (i.e., cues), were taught these objective using reinforcing skill feedback, and these objectives were reviewed in a closure segment conducted at the end of the lesson. The lessons at Eckland, in contrast, were typically filled with game play, non-directed teaching, and little verbal reinforcement was offered about throwing during the games. This lack of direction and focus was thought to be directly related to the

non-responsive and typically incorrect throwing answers of the children during their interviews or on their written test. The lack of throwing knowledge shown by the children at Eckland proved to be a disturbing result to the researcher. Regardless of this finding however, interviewing these children was indeed a joy.

CHAPTER V

Conclusions, Implications, and Recommendations

This study sought to discover what children thought and knew about the overhand throw. Fifty-four children involved in two different physical education programs at two different schools were interviewed and tested to discover this information. In addition, interviews were conducted with their physical education teachers, some classroom teachers, and observations and field notes were kept by the researcher. As a result of analyzing this data, several results were discovered. From these discoveries certain conclusions and implications can be made. The following section details these conclusions and implications. Concluding statements will be stated first; implications for teachers and for further research will be presented thereafter.

Conclusions

For the schools, teachers, and children that comprised the sample for this study the following conclusions seem justified:

1. Children believe throwing is an important skill to learn.
2. Children believe the way to become a better thrower is to practice.

3. Children have valuable insights about helpful teaching practices.

4. The "skill theme" approach, as implemented by Joe, was more effective than the "traditional" approach, as taught by Lisa for teaching the overhand throw.

5. Children who regularly play a variety of games that include throwing are unable to describe and demonstrate how to throw, simply as a result of playing these games.

6. Children learn to throw from a variety of people, including their physical education teacher.

Implications for Physical Education Teachers

The results of this study have some important implications for those who are responsible for teaching children's physical education. These implications take the form of suggested teaching practices that are similar to those used by the physical education teacher at Pendelton. After all, the children in this program were intelligent about the throwing cues, liked how they were learning throwing, and they attributed their throwing knowledge to their physical education teacher. The children at Eckland, in contrast, showed little knowledge of the overhand throw and rarely mentioned any teaching practices that benefitted their throwing knowledge.

The findings of this study are certainly not generalizable to other programs and teaching situations. Only 26 children spoke of their experiences in the "skills theme program" that Joe had built. It would be inappropriate to make sweeping suggestions based on such a small number of opinions. The following suggested teaching implications need to be kept in that perspective as they may not succeed in any other situation other than the one they were studied in. These implications are shared next.

The first implication from the results of this study concerns the teaching practice of only presenting a small amount of information (i.e., cues) to children in class. Joe focused his lessons on only one or two cues per class period. He called this teaching technique "teaching one cue at a time." (Graham, 1992) (For a more complete description of this teaching method see the beginning of Chapter Four.) Many children described how he did this in class and they said they not only benefitted from it, they seemed to enjoy it. This type of teaching, in which "information overload" is avoided, may have helped the children at Pendelton because of the clarity of purpose involved in each lesson. For example, they were asked to practice tasks that involved "stepping with the opposite foot." This may account for the ease in

which almost all of them (regardless of gender or skill ability) demonstrated and explained their throwing answers on the written test and in the interview sessions. The amount of retention they had concerning the skill of throwing was remarkable.

Several texts have suggested this teaching strategy (Buschner, 1994; Graham, 1992; Graham, et al., 1993). Recent research has also reported positive results from teachers who have cut down on the amount of information taught during physical education classes (Peebles, 1994; Masser, 1987, 1993). Peebles (1994) decided to focus on teaching the skill of throwing "one cue at a time." After pretesting her third, fourth, and fifth graders she took the next five weeks to teach the cues of throwing one at a time. Her posttest revealed a large improvement in their throwing performance and in their cognitive recall of the cues of throwing. This type of teaching is something she planned to continue with in the future (Peebles, 1994).

Another teaching implication may be the value found in having a set structure for class periods. Joe used a similar class structure for most of his thirty minute classes. The beginning was comprised of an introduction that clearly stated the objective (i.e., cue) of the lesson. Tasks were

then presented and practiced while Joe reinforced his objectives through skill feedback, and in the last few minutes of class Joe reviewed the objective(s) during closure. The three portions of this class structure were all mentioned by many of the children in their interviews. This type of class structure seemed to have a positive influence on the children he was teaching. Many of the children said that this type of teaching allowed them to remember the throwing cues over the summer or when Joe wasn't around. The lower skilled said they enjoyed and benefitted greatly from each of these parts of the lesson.

Again, many researchers and authors have advocated using a set structure for classes that incorporates these teaching practices (Buschner, 1994; Graham, 1992; Mustain, 1990; Rink, 1985; Seidentop, 1993). Recently, Human Kinetics Publishers introduced a program (The American Master Teacher Program) that also advocates these teaching practices and structure.

The use of specific throwing skill feedback was another teaching practice that Joe incorporated in his teaching. The children at Pendelton exhaustingly and enthusiastically explained their enjoyment and appreciation of the large amounts of specific throwing feedback they received from Joe when they were in class. Even the higher skilled children

acknowledged the importance of Joe's individual throwing feedback. The children at Eckland never mentioned feedback as a means of helping them learn throwing. They also never gave credit to their teacher for teaching them anything about throwing. They did mention that they wanted to learn more about it and physical education would have been a great place to learn.

The positive influence Joe had on his children by using specific feedback is consistent with the literature that supports using feedback during lessons (Boyce, 1991; Fishman & Tobey, 1978; Gallahue, 1993; Graham 1992; Rikard, 1992; Rink, 1985; Seidentop, 1993). In addition, it is encouraging because no research has concluded that feedback alone is directly related to skill performance or knowledge. Unfortunately, researchers who have studied feedback in actual physical education settings have had a difficult time isolating whether it was the teacher's feedback or it was the children's practice that improved performance. The results of this study should prove encouraging to those who believe that teacher feedback is indeed a key component to the learning of motor skills.

Another implication for teachers concerns the balance of game-playing and practice in classes and in curriculums. The

children at both schools were adamant about having more of an even balance between just practicing skills and/or just playing games. Physical educators may want to design units, class periods, or curriculums so there are opportunities for children to participate in both. In either case, provide children with clear reasons as to why they are practicing or playing.

The last implication, as a result of this research, concerns the value of using a teaching approach that is developmentally appropriate (COPEC, 1992). Such an approach is the "skills theme approach" which Joe used to guide his teaching. This approach suggests using all of the aforementioned teaching strategies. It also advocates structuring the curriculum around teaching themes (as opposed to units), does not have children involved in large group games unless they are ready, stresses using a progression of tasks that goes from easier to complex, and also suggests using assessment tools to see if children are learning in physical education class. Most of these strategies seemed to be present in Joe's teaching. They were either observed by me first hand or the children discussed them in their interviews. The only curriculum guide Joe used to guide his teaching was the text Children Moving by Graham, Holt/Hale,

and Parker (1993) and this text is grounded in the principals of developmentally appropriateness. The results of the written tests and the conversations I had with this small group of children may suggest that, for throwing at least, this type of teaching approach is advantageous.

The "traditional approach" to teaching physical education, as used by Lisa at Eckland, may not be the most advantageous approach to use if one is teaching for throwing retention. In many ways the types of practices she used were not developmentally appropriate (COPEC, 1992) (i.e., children playing large group games that involved elimination, etc.). The results clearly indicated that the children at Eckland had a difficult time identifying any of the critical throwing components whether it was verbally or in writing. Perhaps it is time to question this type of approach as it relates to long term retention for the motor skill of throwing.

Other research and authors have found using an approach (such as the "skills theme approach") that offers children the opportunity to practice and receive instruction about their performance yielded positive results (Gallahue & Ozmun, 1989; Masche, 1970). Gallahue and Ozmun (1989) stated that "environmental conditions that include opportunities for practice, encouragement, and instruction are crucial to the

development of mature patterns of fundamental movement." (p. 230). Miller (as cited in Gallahue & Ozmun, 1989) found that an instructional program in skill development was more effective than a free-play program. She concluded this as a result of the findings of her study of 3 to 5 year olds in which she facilitated the learning of motor skills (through teaching) with some children and not with others. Unfortunately, the children at Eckland may not have been involved in this type of environment as evidenced through my observations and the interviews I conducted with these children.

In summary, several implications for teaching physical education were revealed in the above section. Most were suggestions that were a result of the positive influence that Joe had on his children. Strategies such as teaching a minimal number of motor skill cues in a lesson, using closure and introductions, and using specific skill feedback during the lesson were suggested by the children as being important and advantageous strategies for learning the skill of throwing. Further implications were drawn that questioned the use of the "traditional approach to teaching physical education" as it related to the retention of learning the skill of throwing.

Recommendations for Future Research

The direction of this research was driven by the thoughts and feelings of children. As a result of the findings of this study it therefore seems appropriate to suggest some recommendations for future research.

The first place to start would be to recommend replicating this study. Unfortunately, not many studies in physical education are replicated. Wouldn't it be interesting to see if the results of this study held true for the same two approaches to teaching physical education in another part of the country?

Another avenue of study would be to talk with children about other content areas such as dance or gymnastics. There is a perception that boys don't like to participate in dance activities. Is this really true? If so, why is this? Wouldn't it be fascinating to talk to fourth and fifth grade boys about their feelings about dance? Do boys from programs that teach dance differently value and enjoy it more? It may also be interesting to compare and contrast boys and girls feelings about dance.

In addition to gaining insights about children's thoughts about certain content areas it would also be interesting to gain a deeper understanding of the thoughts

and feelings children have about physical education in general. Are children enjoying physical education classes? Do higher and lower skilled children view physical education in the same way? What do they like and/or dislike about how they are being taught? If they had the opportunity would they change the way they were being taught? Answers to these questions can easily be gained by simply taking the time to speak with children.

These types of questions do not have to be posed solely to elementary aged children. The thoughts of students in the middle and high school are just as important. A wealth of interesting data could be gained by talking to secondary students in physical education. How do they feel about "dressing out" for class? How do they feel about boys and girls participating in the same activities? Where does physical education fit in terms of importance? Why do they value or not value it? If they had the opportunity what classes would they offer?

All of these suggested future research avenues are geared toward gaining information about physical education from the children's viewpoint. Each year thousands of students are taught in our gymnasiums. Unfortunately their voices are rarely accounted for in our literature. As this

study did, insightful and important results about the world of physical education can be garnered by simply following Mr. Fulghums advice:

"Ask the children, because they know."

References

- Amato, P. R. & Ochiltree, G. (1987). Interviewing children about their families: A note on data quality. Journal of Marriage and the Family 49: 669-675.
- Anderson, W. & Barrette, G. (Eds.). (1978). What's going on in gym: Descriptive studies of physical education classes. Monograph 1: Motor Skills--Theory Into Practice.
- Bach, R. (1970). Jonathan livingston seagull: A story. New York: MacMillan Company.
- Bain, L. (1985). A naturalistic study of students' responses to an exercise class. Journal of Teaching in Physical Education, 5, 2-12.
- Bogdan, R. & Biklen, S. (1982). Qualitative research for education: An introduction to theory and methods. Boston: Allyn and Bacon.
- Bondy, E. (1990). Seeing it their way: What children's definitions of reading tell us about improving teacher education. Journal of Teacher Education, 41(4), 33-45.
- Boyce. A. (1991). The effects of an instructional strategy with two schedules of augmented kp feedback upon skill acquisition of a selected shooting task. Journal of

Teaching in Physical Education, 11(1), 47-58.

Buschner, C. (1994) Teaching children movement concepts and skills: Becoming a master teacher: Champaign, IL: Human Kinetics Publishers.

Carpenter, T. P., Fennema, E., Peterson, P. L., Chiang, C. & Loef, M. (1989). Using knowledge of children's mathematics thinking in classroom teaching: An experimental study. American Educational Research Journal, 26(4), 499-531.

Commins, N. C. & Miramontes, O. B. (1989). Perceived and actual linguistic competence: A descriptive study of four low-achieving Hispanic bilingual students. American Educational Research Journal, 26(4), 443-472.

Council on Physical Education for Children. (1992). Developmentally appropriate physical education practices for children: A position statement of the Council on Physical Education for Children (COPEC). Reston, VA: National Association for Sport and Physical Education.

Denzin, N. K. (1970). The Research Act. Chicago: Aldine.

Erickson, F. (1986). Qualitative methods in research on teaching. In M.C. Wittrock (Ed.), Handbook of Research on Teaching (3rd ed., pp. 119-160). New York: MacMillan.

- Fine, G.A. & Sandstrom, K.L. (1988). Knowing children: Participant observation with minors (Sage University Paper Series on Qualitative Research Methods, Vol. 15). Beverly Hills, CA: Sage.
- Fishman, S. & Tobey, C. (1978) Augmented feedback. In W.G. Anderson & G. Barrette (Eds.), What's going on in gym: Descriptive studies of physical education classes. Motor skills: Theory into practices, 1 [Special Monograph], 51-62.
- Ford, M. (1989). Students perceptions of affective issues impacting the social emotional development and school performance of gifted/talented youngsters. Roeper Review, 11(3), 131-134.
- Frank, M., Graham, G., Lawson, H., Laughery, T., Ritson, R., Sanborn, M. & Seefeldt, V. (1991). Physical education outcomes: A project of the National Association for Sport and Physical Education. Reston, VA: National Association for Sport and Physical Education.
- Fulghum, R. (1990, September). A bag of possibles and other matters of the mind. Newsweek, pp. 88-92.
- Garcia, C. (1994). Gender differences in young children's interactions when learning fundamental motor skills.

- Research Quarterly for Exercise and Sport, 65(3), 213-225.
- Gallahue, D. & Ozmun, J. (1989). Understanding motor development (3rd ed.). Madison: Brown & Benchmark.
- Gallahue, D. (1993). Developmental physical education for today's children (2nd ed.). Madison: Brown & Benchmark.
- Graham, G. (1992). Teaching children physical education: Becoming a master teacher. Champaign, IL: Human Kinetics Publishers.
- Graham, G., Holt/Hale, S. A., & Parker, M. (1993). Children moving: A teachers guide to developing a successful physical education program (3rd ed.). California: Mayfield.
- Graham, G., Hopple, C., Manross, M., & Sitzman, T. (1993). Novice and expert children's physical education teachers: Insights into their situational decision-making. Journal of Teaching in Physical Education, 12(2), 197-214.
- Graham, G., Metzler, M., & Webster, G. (1991). Specialist and classroom teacher effectiveness in children's physical education: A three-year study [Monograph]. Journal of Teaching in Physical Education, 10(4), 321-426.

- Griffin, P. (1985). Boys' participation styles in a middle school physical education team sports unit. Journal of Teaching in Physical Education, 4, 91-99.
- Halverson, L.E., & Roberton, M.A. (1979). The effects of instruction on overhand throwing development in children. In K. Newell & G. Roberts (Eds.), Psychology of Motor Behavior and Sport-1978. Champaign, IL: Human Kinetics, pp. 258-269.
- Halverson, L., Roberton, M. A., & Langendorfer, S. (1982). Development of the overarm throw: Movement and ball velocity changes by seventh grade. Research Quarterly for Exercise and Sport, 53, 198-205.
- Hoffman, S.J., Imwald, C.H., & Koller, J.A. (1983). Accuracy of prediction in throwing: A taxonomic analysis of children's performance. Research Quarterly for Exercise and Sport, 54, 33-40.
- Hopple, C. (1994). What children think, feel, and know about physical fitness testing. Unpublished masters thesis, Virginia Polytechnic Institute and State University, Blacksburg.
- Kelly, L., Reuschlein, P., & Haubenstricker, J. (1989). Qualitative analysis of overhand throwing and catching

- motor skills: Implications for assessing and teaching. Journal of the International Council for Health, Physical Education and Recreation, 25(4), 14-18.
- Lawson, H., Lawson, B., & Stevens, A. (1982). Meaning and functions attributed to elementary physical education. Canadian Association for Health and Physical Education Journal, 48(4), 3-6.
- LeCompte, M.D. & Goetz, J.P. (1982). Ethnographic data collection in evaluation research. Educational Evaluation and Policy Analysis, 4, 387-400.
- Lee, A., Landin, D., & Carter, J. (1992) Students thoughts during tennis instruction. Journal of Teaching in Physical Education. 11(3), 256-267.
- Locke, L. (1989). Qualitative research as a form of scientific inquiry in sport and physical education. Research Quarterly for Exercise and Sport, 60(1), 1-20.
- Martinek, T. (1983). Creating golem and goleta effects during physical education instruction: A social psychological perspective. In T. Templin & J. Olson (Eds.), Teaching in Physical Education (pp. 59-70). Champaign, IL: Human Kinetics.
- Martinek, T.J., & Griffith III, J.B. (1994). Learned

- helplessness in physical education: A developmental study of causal attributions and task persistence. Journal of Teaching in Physical Education, 13(2), 108-122.
- Masche, K. (1970). Effects of two different programs of instruction on motor performance of second grade students. Research Quarterly, 43(3), 407-411.
- Masser, L. (1987). The effects of refinement on student achievement in a fundamental motor skill in grades K through 6. Journal of Teaching in Physical Education, 6(2), 174-182.
- Masser, L. (1993). Critical cues help first-grade students' achievement in handstands and forward rolls. Journal of Teaching in Physical Education, 12(3), 301-312.
- Measor, L. (1985). Interviewing: A strategy in qualitative research. In R. Burgess (Ed.), Strategies of Educational Research: Qualitative methods (pp. 55-77). Philadelphia, PA: Falmer.
- Metzler, M. (1985). An overview of academic learning time research in physical education. In C. Vendien & J. Nixon (Eds.), Physical Education Teacher Education (pp. 147-152). New York: Wiley.

- Michigan Educational Assessment Program (MEAP) (1981).
Assessment Administration Manual: Physical Education.
Lansing, MI: State Board of Education.
- Mustain, W. (1990). Are you the best teacher you can be?
Journal of Physical Education, Recreation, and Dance,
61(2), 69-73.
- National Association for Sport and Physical Education.
(1992). The Physically Educated Person. Reston, VA:
NASPE.
- Nelson, K. R., Thomas, J. R., & Nelson, J. K. (1991).
Longitudinal change in throwing performance: Gender
differences. Research Quarterly for Exercise and Sport,
62(1), 105-108.
- Parker, W.C. (1984). Interviewing children: Problems and
promise. Journal of Negro Education, 53(1), 18-28.
- Peebles, J. (1994). First steps and helpful hints. Teaching
Elementary Physical Education, 5(3), 7,9.
- Pieron, M. & Graham, G. (1984). Research on physical
education teacher effectiveness: The experimental
teaching units. The International Journal of Physical
Education, 9-14.
- Placek, J. (1984). A multi-case study of teacher planning

- in physical education. Journal of Teaching in Physical Education, 4, 39-49.
- Portman, P. (1992). The experience of low-skilled students in public school physical education: The significance of being chosen last. Dissertation Abstracts International, 53, 1854A. (University Microfilms No. DA9233134).
- Ratliffe, T. & Ratliffe, L. (1990). Examining skill development in physical education classes: Science on a shoestring. The Physical Educator, 47(1), 37-47.
- Rikard, L.G. (1992). The relationship of teachers' task refinement and feedback to students' practice success. Journal of Teaching in Physical Education, 11(4), 349-357.
- Rink, J. (1985). Teaching physical education for learning. St. Louis: Mosby.
- Robertson, M. A. (1978). Longitudinal evidence for developmental stages in the forceful overarm throw. Journal of Human Movement Studies, 4, 167-175.
- Robertson, M. A., & Halverson, L. E. (1984). Developing Children: Their Changing Movement. Philadelphia: Lee & Febiger.
- Rogers, D. L. (1987). Encouraging extended conversations

- with young children. Day Care and Early Education
(Fall): 23-27.
- Sanders, S. (1993). Kindergarten children's initial experiences in physical education. Unpublished doctoral dissertation, Virginia Polytechnic and State University, Blacksburg.
- Seefeldt, V. (1979). Developmental motor patterns: Implications for elementary school physical education. In G.C. Roberts & K.M. Newell (Eds.), Psychology of Motor Behavior & Sport-1979 (pp. 315-323). Reston, VA: AAHPERD.
- Seidel, J.V. & Clark, J.A. (1984). The Ethnograph: A computer program for the analysis of qualitative data. Qualitative Sociology, 7, 110-125.
- Seidentop, D. (1991). Developing teaching skills in physical education (3rd ed.). California: Mayfield.
- Spradley, J. (1979). The ethnographic interview. New York: Holt, Rinehart & Winston.
- Spradley, J. (1980). Participant observation. New York: Holt, Rinehart & Winston.
- Stroot, S.A., & Oslin, J.L. (1993). Use of instructional statements by preservice teachers for overhand throwing

- performance of children. Journal of Teaching in Physical Education, 13(1), 24-45.
- Tammivarra, J. & Enright, D. (1986). On eliciting information: Dialogues with child informants. Anthropology & Education Quarterly, 17, 220-238.
- Ulrich, D. (1985). Test of Gross Motor Development. Austin, TX: Pro-Ed.
- Weiss, M.R. & Horn, T.S. (1990). The relation between children's accuracy estimates of their physical competence and achievement-related characteristics. Research Quarterly for Exercise and Sport, 61(3), 250-258.
- Wickstrom, R. (1983). Fundamental Motor Patterns (3rd ed.). Philadelphia: Lee & Febiger.
- Wild, M. (1938). The behavior pattern of throwing and some observations concerning its course of development in children. Research Quarterly. 9(3), 20-24.
- Yonemura, M. (1974). Learning what children know. Childhood Education (Nov./Dec.): 64-67.

Appendix A

Permission letter

March 18, 1991

Dear Parent or Guardian:

My name is Mark Manross. I am a graduate student at Virginia Tech studying elementary physical education. Recently, I have become interested in learning about how children feel about their physical education experiences. To accomplish this, I would like to talk with your child one day during the week of April 22, 1991. This letter seeks your approval to do so.

My conversation will focus on gaining insights into your child's perceptions, attitudes, and feelings concerning their physical education experiences. This conversation will take place in the cafeteria and will be completed during one of your child's regularly scheduled physical education classes. The conversation will be audiotaped and videotaped. These tapes will remain in my possession and will be held strictly in confidence. Furthermore, the names of your child, Eckland Elementary, and the teachers involved will remain anonymous during all aspects of the project. It is also important to mention that if your child wishes, he/she can stop participating in this project at any time.

If you approve of your child participating in this project, please fill out the form below and return the entire letter with your child to Mrs. Bowman by Friday, March 22, 1991.

If you have further questions regarding this project, please contact the school or call me at 703-552-1589 (home) or 703-231-4900 (work). I'd like to thank Mr. Matlin and Mrs. Bowman for their support of this project. If interested, I have left a copy of the questions I plan to ask the children with Mr. Matlin.

I am looking forward to talking with your child and I thank you in advance for your cooperation concerning this project.

Sincerely,

Mark A. Manross

Mr. Rod Matlin, Principal

Appendix B

Selection Process For Interviewed Children

The actual selection process of the children that were interviewed is described in detail in the following section.

The interview schedule that was followed by the researcher is included in this section also.

The Process

The physical education teacher at both schools identified all of the children in the fourth and fifth grade classes as either lower skilled (LS), average skilled (AS), or higher skilled (HS) throwers. This was done by going through the class roll book and identifying each child as "HS," "AS," or "LS." The physical education teacher then placed approximately one-third of the children in the class in each category. Therefore, a perfect division for a class of 24 children would have 8 children in every category. However, this did not occur, so the physical education teacher was asked to use the one-third number as a guide. This protocol was followed so the researcher could have a pool in the lower and higher skilled categories. Since every class has its own versions of higher and lower skilled children the physical education teacher was asked to take each class as they compared within that class. Thereafter,

the permission slips that were turned in were grouped into these 3 categories (HS, AS, LS). The average skilled children permission slips were set aside and the lower and higher skilled children's permission slips become the pool from which the children to be interviewed were chosen. This was done randomly. The children to be interviewed were then selected from these pools. The selected children were notified and asked verbally if they wanted to participate in the study. All of the selected children agreed to be interviewed.

Pendelton Elementary

There were eight fourth grade classes and eight fifth grade classes at Pendelton Elementary, so four students from each class were scheduled to be interviewed; two lower skilled and two higher skilled children. However, due to scheduling conflicts at the school that week, an inadequate pool from which to choose children from one of the classes, and a technical problem with the recording equipment, three of the interviews had to be canceled. Therefore only 26 children (12 higher skilled and 14 lower skilled) were interviewed. The children's interviews were completed in one week.

Physical Education Schedule

	<u>Mon.</u>	<u>Tues.</u>	<u>Thur.</u>	<u>Fri.</u>
8:00	4th-Emile (none)	4th-Gant (none)	4th-Emile (2 low)	----
8:30	4th-Darvin (2 high)	4th-Smith (2 high)	4th-Darvin (2 low)	4th-Gant (none)
9:00	5th-Banter (2 high)	5th-Kelly (2 high)	5th-Banter (2 low)	4th-Smith (2 low)
9:30	5th-Bremer (2 high)	5th-Jepen (2 high)	5th-Bremer (2 low)	5th-Kelly (2 low)
10:00				5th-Jepen (2 low)

How Total was Arrived At

The following is a class-by-class analysis of how the final total of 26 interviewed children was arrived at.

(4th Grade)

Emile - 2 low + 0 high = 2 (of those who returned slips)

Darvin - 2 high + 2 low = 4 (of those who returned slips)

Gant - 0 high + 0 low = 0

Smith - 2 high + 2 low = 4 (of those who returned slips)

(5th Grade)

Banter - 2 high + 2 low = 4 (of those who returned slips)

Bremer - 2 high + 2 low = 4 (of those who returned slips)

Kelly - 2 high + 2 low = 4 (of those who returned slips)

Jepen - 2 high + 2 low = 4 (of those who returned slips)

14 + 12 = 26 Total

Eckland Elementary

The same participant selection process that was used at Pendelton Elementary was also followed at Eckland Elementary. Again, due to an insufficient pool in one of the classes only 28 interviews were conducted. There were six fourth and fifth grade classes at Eckland. Classes met five days a week, and two classes at a time attended physical education class at the same time. These interviews took a week to complete. The following interviewing schedule was followed by the researcher. Fourth grade classes are highlighted in bold print.

Physical Education Schedule

	<u>M</u>	<u>T</u>	<u>W</u>	<u>TH</u>	<u>F</u>
10:10-10:40	5th(2L)	5th	5th(2H)	5th	5th(2L)
	4th	4th(2H)	4th	none	4th
10:40-11:10	5th(2H)	5th(2L)	5th(2H)	5th(2L)	5th(2H)
	5th	5th	5th	5th	5th
11:10-11:40	4th(2L)	4th(2H)	4th(2L)	4th(2H)	4th(2L)
	4th	4th	4th	4th	4th

Appendix C

Written Test Scoring Key

Accepted Answers

The numbered answers are the throwing cues that have typically been identified in the literature (Graham, et al., 1993; Kelly, et al., 1989; Stroot & Oslin, 1993). If a child wrote this type of an answer (e.g., "step with the foot opposite of the throwing hand," "Turn opposite side towards target") they earned a point. Typically, however, this complete of an answer was not written. Therefore, shorter answers were accepted. The following key provides a sample of the answers that were accepted as correct answers. Not all of the accepted answers are listed.

1. Turn opposite side towards the target.

Other answers: "Side," "Turn Side," "Side to Target," "Stand a little sideways," "Aim your shoulder at target," "Other hip to wall"

2. Extend throwing arm behind head.

"Arm Way Back," "Ball To Ear," "Pull your arm back," "Rare back," "Put arm over your head," "Hand over shoulder"

3. Step with the foot opposite of throwing arm.

"Step," "Step to target," "Put other foot in front," "Step hard"

4. Follow-through.

"Follow through to target," "Follow the ball through,"
"Should end on opposite leg when done," "Move your arm
forward and let go"

This key was adhered to strictly by the researcher when grading the papers. A perfect score of "4" was not an easy score to achieve. If there was a borderline answer, it was not awarded a point. If an answer was unreadable, due to poor penmanship, no points were awarded. A misspelled word or poorly written (i.e., poor grammar) sentence or paragraph did not effect an answer as long as it was decipherable. For example, one child wrote "Sept with other foot" as an answer. This was interpreted as meaning "Step with other foot" and it was awarded a point. Another child wrote "Step with your opisit footy." This was interpreted as "Step with your opposite foot" and this answer scored a point. As in these and other instances, if a correct answer was discernable, readable, and correct appropriate points were awarded.

After scoring the tests, two other throwing experts were asked to score the test based on their expertise and the written explanation provided above. The qualifications of these experts were that they had both completed motor

development classes in which they examined the skill of throwing in depth. They had both planned and taught lessons that presented the biomechanical cues of throwing to children. In addition, each were familiar with the text entitled Children Moving by Graham, Holt/Hale, & Parker (1993) which illustrates the cues that form the overhand throw.

Each expert was given the written explanation of how to score the tests, a copy of only the interviewed children's written test, and a calculator. Each one of them read and scored their tests separately. After they tabulated the averages they were asked to switch tests and perform the same computations on those tests.

After comparing the results of the two experts it was found that they were in almost complete agreement with each other and with what I had tabulated. (Only the averages of all of the interviewed children's tests were compared. See Table 3 for those averages). After completing the numerical analysis, a discussion of their subjective thoughts concerning the tests was held. Both experts agreed that the children of Pendelton knew much more about the skill of throwing and they both thought that the children at Pendelton had been in a physical education program that had children

coming to class five days a week.

Appendix D

DATA COLLECTION SOURCES

Pendelton Elementary

Field Notes

* One day actively participating in regularly scheduled fourth and fifth grade physical education classes. Three days of regular observations. Written reflections completed after visitations.

Written Paper-and-Pencil Test

* All fourth and fifth grade children (187 children)

Videotape of Physical Education Teachers Throwing Lesson

* One throwing lesson taped

Children's Interviews

- * 26 children interviewed
- * 14 lower skilled throwers
- * 12 higher skilled throwers

Physical Education Teacher Interview

* One interview with physical education teacher

Classroom Teachers Interviews

* One interview with two classroom teachers

Principal Interview

* One interview with principal

Written Records of Physical Education Teacher

* Lesson Plans & Curriculum Guides

Eckland Elementary

Field Notes

* Four days actively participating in fourth and fifth grade physical education classes. Four additional days of regular observations. Written reflections completed after visitations.

Written Paper-and-Pencil Test

* All fourth and fifth grade children (118 children)

Videotape of Physical Education Teachers Throwing Lesson

* One throwing lesson taped

Children's Interviews

- * 28 children interviewed
- * 14 lower skilled throwers
- * 14 higher skilled throwers

Physical Education Teacher Interview

* One interview with physical education teacher

Classroom Teachers Interviews

* One interview with two classroom teachers

Principal Interview

* One interview with principal

Written Records of Physical Education Teacher

* Lesson Plans & Curriculum Guides

Appendix E

Guiding Questions For Children's Interviews

The following questions were used to guide each interview.

1. I am getting ready to teach some 1st graders how to throw a ball. What is one thing about the skill of throwing that you would have me tell them so they can become really good throwers?

Note: After the children stated their answers, I had them explain their answers. For example, if a child said "step with opposite foot" I asked them to explain that answer so I had a very clear understanding of what they meant. To obtain a clearer understanding many children were asked to demonstrate their answers.

2. You sound like you know some things about throwing. My first graders will appreciate your help. Where did you learn all of this?

NOTE: Every interview began with these two questions.

3. Is throwing an important skill for you or your friends to learn? Is it important for adults to learn? Why?

4. If you wanted to improve your throwing skills how would you go about it?

5. Is there a "right" and "wrong" way to throw?
6. Do you ever practice your throwing skills in your physical education class or outside of class? If so, how do you do it?
7. If I were to stop by your gym class on a day you were doing things that involved throwing skills, what would I see? Where would you be and what would you be doing?
8. How do you feel about how you are learning how to throw in your physical education class? What changes would you make if you could?
9. Do you know anybody that is a poor thrower? How do you think they feel? Why do you think they are poor? What advice would you give them to get better? How could we get them interested in becoming a better thrower?
10. What is your favorite game that involves the skill of throwing? Why do you like this game? Where did you learn it?
11. Do you think you will use the skill of throwing when you are older?
12. I've talked to several boys and girls of your age who don't think throwing is very important to learn. Why do you think they said that?

13. How would you rate yourself as a thrower? Would you say you are a good, average, or not-so-good thrower? Why did you choose this category? How did you get to be this way? Would you like to improve?

Appendix F

Interviewing Procedures and Set Up for Children's Interviews

The interviewing session was divided into two distinct parts; the first being the videotaping of the children's throwing performance and the second being the actual sit-down interview. The following section describes the procedures and set ups for both of these parts. Included in these descriptions are how the videocamera and audio cassette recorders were positioned to capture all of the responses of the children. Two diagrams (Figure's 4 and 5) are included in description to further depict how the interviewing area was set up.

Part 1: Videotaping of Children's Throwing Performance

In order to get both children in the frame of the camera the children threw from tape on the floor that was staggered, therefore one child was throwing from a slightly greater distance (about 22') as opposed to their partner who was closer to the wall (about 20'). The videocamera was positioned so it was shooting the sides of the children. It was not set up behind or in front of the children. It was positioned approximately 20' from the children and focused so both children's entire throwing motion was captured on film.

The camera position did not change for the entire interview. It remained in the same position, therefore a camera operator was not used.

After the children completed throwing the five yarn balls they were asked to sit on carpet squares that were in direct line with the cameras focus. The children sat with their back to the camera. The researcher sat on a carpet square facing the camera. The children were asked to sit with their back to the camera because the interview called for them to stand again and demonstrate parts of their throwing performance. If they were facing the camera the researcher would be in the way. In addition, it was hoped by making the camera that much more invisible it would lessen any inhibitions the children were having about being interviewed. (See Figure 4 for a pictorial representation of this set up)

Audiotaping of children's interviews

Both the camera and a cassette recorder served as audiosources for the interviews. The external microphone for the camera and the cassette recorder were placed on a small towel between the children and the researcher. This towel helped improve the sound quality by muffling the scratches made when sliding the microphone closer to the children. The children were asked to speak clearly and loudly during the

interview. If the researcher noticed that this was not occurring the microphones were moved closer to the child speaking and the child was asked to speak louder. (Figure 5 depicts this set up)

All of the video and audio cassettes were labeled after each interview noting the date, time, names of children interviewed, grade level, throwing ability level, classroom teachers name, and school name.

Steps Followed for Video and Audio Taping Sessions

The following steps were followed for the interview sessions with the children. These procedures started with the children and I walking into the interviewing area.

1. Both children were greeted in a friendly manner and I then re-introduced myself and explained what we were going to be doing for the next 30 minutes.

2. As we walked into the interview area I engaged the children in "small-talk" (e.g., how is day going, I like your t-shirt). Hopefully, this made the children feel comfortable and relaxed.

3. I asked the children to stand behind one of the taped spots on the floor that faced the wall they would be throwing to. The children were about arms length apart from each other and one child was about two feet behind the other. The box of

yarn balls was on floor between them.

4. I had the children choose a yarn ball to throw to the wall.

5. The children were asked to throw the yarn ball towards the wall the best and as hard ("try to knock the wall over") as they could. I also reminded them that this was not a contest and they should take their time and throw the best that they could. I told them that "it was not a race." The children threw a total of five yarn balls apiece. 6. The yarn balls were retrieved by the children and returned to the box.

7. They then picked up a carpet square to sit on for the actual interview. We sat in a triangle formation around the audio recording equipment. The children sat with their backs to the videocamera while I faced the camera.

8. I then explained what we were going to talk about for the next 30 minutes and let them know the reasons for audio and videotaping the interview. This is what I said:

"As you remember, I am interested in learning more about what you do in physical education class and in particular what you do with throwing. I need to tape record this because I am talking with a lot of children and I can't remember everything you say. Is that O.K. with you?" After their

response (all agreed it was O.K.), I reminded them to speak loudly enough so all of their answers could be heard and it would be recorded properly. I also asked them to stay close to the recording instruments.

9. The children were then told that they could discontinue the interview at their convenience during the half hour. This is what I told them:

"If you are uncomfortable with what we are talking about at any time during the interview you are welcome to go back to your gym class. That is just fine with me."

10. The interview then began. (See Appendix for interview questions)

11. At the completion of the interview, I thanked both children for speaking with me, wished them a good day, and sent them back to their physical education class.

12. In between interviews, I either changed cassettes for the camera and the tape recorder, labeled the completed tapes and cassettes, and/or changed batteries in the equipment that needed it.

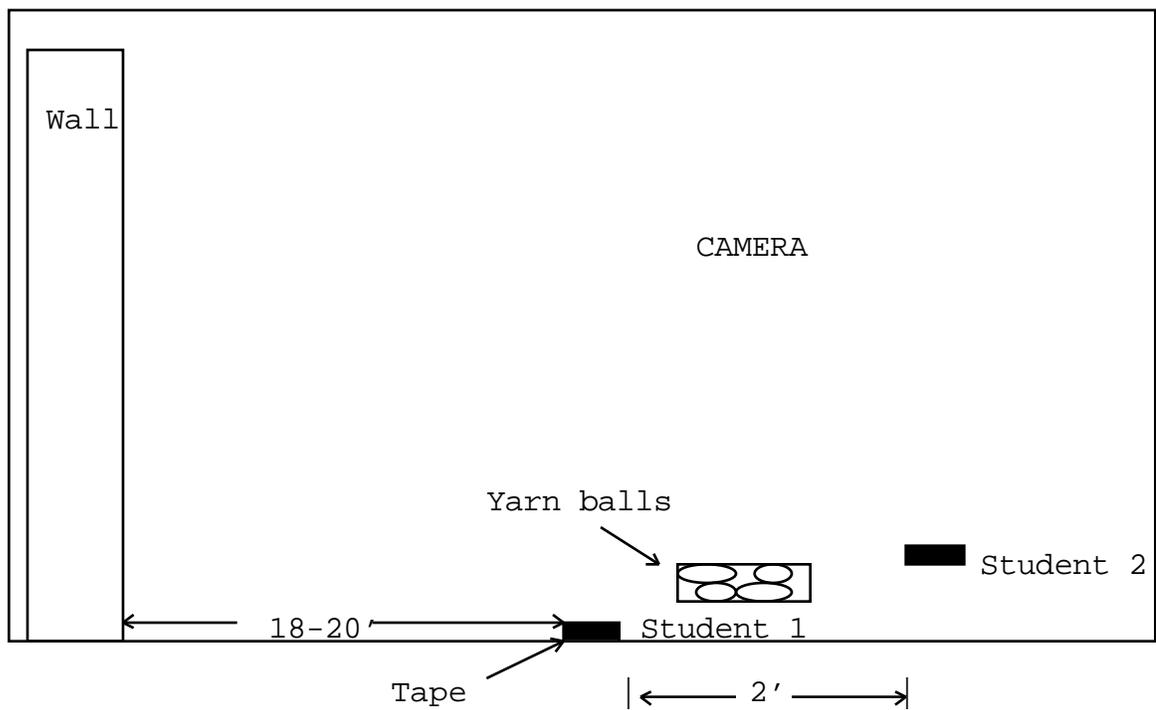


Figure 4-F. Set-up diagram for children's throwing portion of interview.

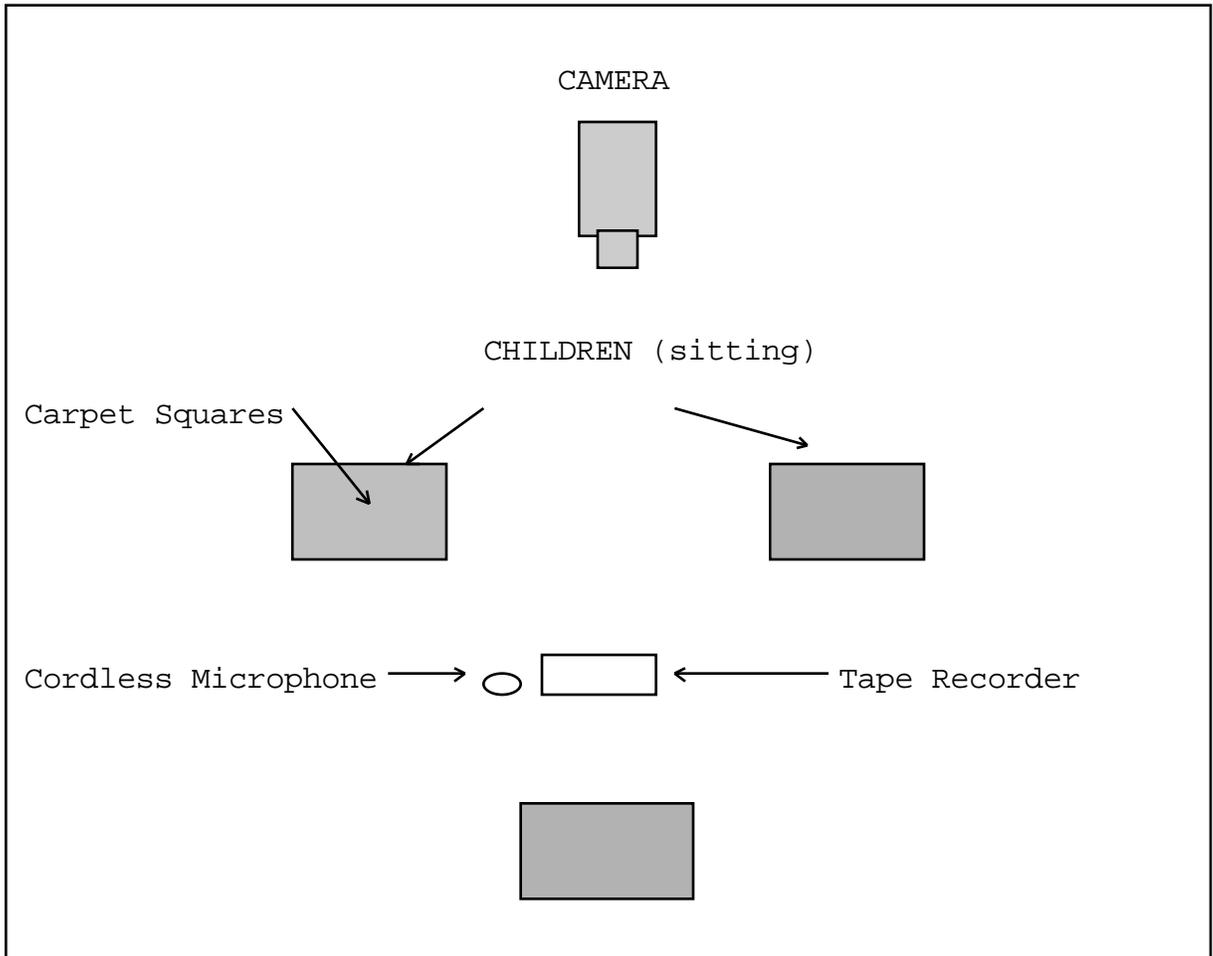


Figure 5-F. Overhead view of set-up of children's interviews.

Appendix G

Guiding Questions For Interview of

Physical Education Teachers

These questions were asked to these teachers after they had taught a lesson on throwing and after all other interviews were completed. Probed first were their thoughts concerning the lesson they just taught (some questions were based on my observations), and then there were general queries related to the topics of how they deal with throwing in there overall program and that was followed by questions regarding their teaching situations, backgrounds, and philosophies.

Probing questions concerning throwing lesson:

1. Is this what a typical throwing lesson looks like when I'm not present?
2. How did you feel about how the lesson went? Would you do anything differently? Do you think the children learned anything?
3. Did my or the cameras presence affect your teaching in any way?
4. Probe about specific parts of the lesson. Why did you choose to do this in this situation? Inquire about lesson content (e.g., introduction/warm up, main part of lesson,

closure).

5. When was the last time you taught throwing to the classes that I interviewed?

Specific questions concerning how they taught throwing

1. Is the content area of throwing an important part of your program? Where does it fit? How many days do you typically spend on throwing throughout a school year?

2. How do you go about teaching throwing to your children? What exactly do you teach them? Is throwing a part of a unit?

3. What do you teach your children about throwing (i.e., qualitative components, game related situations)? How did you know this information?

4. Do you feel there is a right and wrong way for children to learn how to throw? Explain your answer.

5. Is it important for your children to leave your program knowing the "proper" way to throw?

6. Do you feel your children are learning how to throw because of what you are teaching them? Where do you think your children are learning how to throw?

7. I have talked with some of your children about throwing. Where do you think they are saying they are learning to throw?

General questions:

1. How long have you been teaching physical education at this school and for your career? Where did you get your degree?

2. How many days a week do children come to physical education class? How long are your scheduled classes? How many classes a day do you have? Do classroom teachers have to teach physical education on any remaining days?

3. Overall, how would you characterize your physical education program? What type of program do you have (i.e., skill development, fitness related, game play, cooperative).

4. Do you have any specific goals for your children? What do you want them to learn?

5. What resources do you feel guide your philosophy and program? How did you learn about these?

6. What do you think of this study? Do you think talking with kids can tell me about what actually goes on in this physical education class? Do their responses interest you? Do you find them valid responses? Do you ever talk with your children about their thoughts and feelings concerning your program?

7. Has this study affected you at all in terms of how you have taught? Did I see a pretty close representation of

what life is like in this physical education setting?

8. How did you go about choosing the lower and higher skilled children for this study? Explain your decision making process.

9. How do you feel about the support you receive from the staff at this school?

10. How do you feel about the facilities in which you teach? Do you have an adequate amount of equipment?

Appendix H

Guiding Questions For Classroom Teacher Interview

1. How long have you been teaching at this school? Have you ever had to teach physical education at this school or any other school?

2. How do you feel about physical education as a subject in general? Is it important for children to have? Why or why not? Do you equate recess and physical education with having the same purposes?

3. Overall, what is your impression of the physical education program at this school? Do you find it an important part of the educational process for your children to be involved with?

4. How do the children feel about their experiences in physical education class? Do they like physical education? Do they talk about what they do in physical education class? Do they ever talk about anything new that they learned?

5. What do you think their favorite and least favorite activity is?

6. What activities are most talked about? Do they come back to the classroom excited about what they did? Do they have trouble settling down after class? Have you had to settle arguments concerning game play on a regular basis?

7. Do you ever keep kids out of physical education class for not finishing assignments or for misbehavior?

8. Do you ever attend physical education class to observe your children? If so, what have you noticed? Do you feel good about what you are observing?

9. Do you teach physical education to your children on days they don't have physical education? If so, what activities do you do with them? Where did you learn these? If not, what would you teach them if you had to teach physical education?

10. Do you communicate with the physical education teacher? Do you ever combine classroom experiences with physical education experiences or has the physical education teacher ever tried to combine the two?

11. Have the children talked about my interactions with them--what I have talked about with them. Have they enjoyed talking with me. Do they talk about our conversation?

Appendix I_

Guiding Questions For Principal's Interview

1. How long have you been principal at this school?
2. What are your thoughts or feelings about physical education in general? Is it important? Why?
3. Is the physical education program here an important part of the educational program? Why or why not? Does the staff and parents support it?
4. How do you feel about this program? Why do you feel this way? What do you feel its strengths and weaknesses are? How would you characterize the program?
5. Do you get a chance to visit the gym often? Do you and the physical education teacher get a chance to talk about what happens in the gym very often?
6. How do you think the children feel about what happens in physical education class? Do they like it? Are they learning anything?
7. Are there special events that involve physical education (i.e., gym show, field day)?
8. Is it important for children to have physical education? What specific evidence do you have that allows you to know that?

9. Characterize the schools population in terms of socioeconomic status.

10. Do you get many inquiries about physical education from parents or classroom teachers?

Appendix J

Procedures Followed When Administering the Written Paper-and-Pencil Test

The following procedures were followed when administering the paper and pencil test. This test took approximately 15 minutes to administer. It was administered prior to the week of the children's interviews. All children (with the exception of the children who were absent) in the fourth and fifth grades took the test.

1. Blank sheets of 8.5" x 11" paper were passed out to the children along with enough pens and/or pencils for each child.

2. The children were then asked to spread out so they could take the test on their own. Hopefully this prevented cheating.

3. Children were then requested to write their name, grade, gender, age, and classroom teachers name in the upper right hand corner of the paper.

4. After getting their attention I presented them with the following scenario. During this time I had a small ball in my hand (whiffle or yarn ball) and was standing behind a line on the gym floor.

"My name is Mark. Imagine I was a student in your class and I don't know how to throw a ball. I mean I am really bad at throwing. The teacher asks us to throw this ball all the way over at that target (wall across the gym). There is no way I can do that very well. I was wondering what you could tell me to help me throw better. What hints would you give me that would help me throw the ball properly and with a lot of force? Please don't yell any answers out. Write your answers on the paper you have in front of you. You can make a list or write it out in paragraph form. For example, you could write "Mark, you need to..." Take your time and think about it. I am interested in knowing what you know about throwing--that's all. Write as much as you know about throwing correctly. Don't be upset if you don't write a lot--just write what you know. Some of you might have lots of suggestions for me while some others may have only a few. That is fine. It is not a competition. Please, do your own work. After you are through, turn your paper in to me or your teacher and return pencils to the container. Thanks so much for helping me out."

(It is important to note that during this "demonstrating" I did not throw the ball nor did I act like I was going to throw the ball. I stood with my belly button facing the target and just held the ball throughout the entire

explanation.)

NOTE: Before issuing the written test I found out if there were any children who could not complete the test because of extenuating circumstances (i.e., broken writing arm, learning disability that affected understanding or writing ability, handicapping situation). These children were allowed to orally take the test with the extra teachers that were available.

5. I fielded questions cautiously and carefully made sure I did not lead them toward an answer.

6. I, as well as the other teachers present, walked around during the test to further discourage cheating.

Appendix K

Program information about both schools

Eckland Elementary (grades 1-7)

Data collected: April 22-26

Teachers: Lisa-13 years teaching at that school
Mary-11 years as Lisa's aide, paraprofessional
with no physical education degree

Physical education stats: Class meets 5 days a week with
Lisa and Mary, 30 minute class periods, average class
size was approximately 45 children (double classes),
Demonstration school for physical education

Curriculum: Follows self-designed curriculum guide, covers
material using units (1-3 weeks in length), uses practice-
lead up games-full game sequence during those units, Fridays
are free choice days for students

Facilities: Middle school sized gym, poor acoustics, large
outdoor teaching area

Equipment: Adequate for their needs according to teachers

Days devoted to throwing activities that school year: 100

Last time children involved in throwing lesson: December,
1990 (approximately 4 months prior to interviews)

Student population: Middle income parents

Classroom teachers: Not responsible for teaching physical
education

Pendelton Elementary (Grades K-5)

Data collected: April 15-19

Teacher: Joe-19 years teaching at that school

Physical education stats: Class meets 2 days a week with
Joe, classroom teachers responsible for other 3 days,

30 minute class periods, average class size of approximately 20 children, Demonstration school for physical education

Curriculum: Uses the "skill theme approach" for teaching content, revisits skill themes instead of using unit approach

Facilities: small basketball sized gym, outdoor area not suitable because of noise from construction site next door,

Equipment: adequate for their needs with exception of small teaching area indoors

Days devoted to throwing lessons that school year: 6

Last time children involved in throwing lesson: February, 18, 1990 (approximately 2 months prior to interviews)

Student population: Middle-upper income parents

Classroom teachers: Responsible for physical education instruction on remaining 3 days of week, involved children in games such as Prison Dodgeball

Appendix L

Data Collection Events Calendar

Pendelton

March

5--Initial meeting with Joe and met and talked with Asst.

Principal--informally observed classes.

11--participated in classes; dodging--letter to asst.

principal.

12--participated in classes; dodging

18--Permission slips handed out by Joe

20--permission slips due to joe

26--Paper and Pencil Test; Observed classes

April

15-19--Interviewed children

29--Videotaped Joe teaching a throwing lesson--5th grade

working on quick release; Interviewed Joe afterwards.

Eckland

Jan.

22-Initial visit at Eastern. Observed 4th/5th grades playing

Crab Soccer

March

8--Initial meeting with Lisa, Observed classes doing all

sorts of game things.

12--Brought letter, observed only for awhile, met with principal.

13--Participated in 4th/5th grade classes--did recreational stations (VB, Shuffleboard, bowling, four square, badminton)

19--Participated in classes--more recreational stuff; handed permission slips out.

22--Permission slips were due back--I was not there.

April

9--Participated in classes--track and field (shot put, high jump, hurdles)

11--Participated in classes--track and field cont.--gave paper and pencil test.

22-26--Interviewed children for week (22-26)

24--Interviewed 2 classroom teachers

30--Videotaped Lisa teaching a throwing "lesson"--War Ball; Interviewed Lisa immediately after

VITA

Mark Allen Manross was born in Fredericksburg, Virginia on the second of August, 1963. After attending schools in Vermont and West Virginia, he completed his undergraduate degree at Shepherd College. Graduating with a Bachelor of Arts in Physical Education, he went on to teach elementary physical education and work in Retail before entering graduate school.



In 1989 he enrolled at Virginia Tech to obtain a Masters of Science in Health and Physical Education. He then accepted a position at the University of Wisconsin-Madison where he taught for three years in the Department of Kinesiology. He is currently residing in Madison, Wisconsin where he is an assistant manager at a shoe store.