LEARNING TO THROW IN PHYSICAL EDUCATION CLASS
What I Learned From Fourth and Fifth Graders

by Mark Manross

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

—Robert Fulghum

Have you ever wondered what your students think about your physical education class? In particular, have you ever wondered what they are learning? And not learning? Several years ago, I became interested in discovering answers to questions such as these. As part of my master's thesis, I found these answers by doing exactly what Mr. Fulghum advises—I asked the children! And, by golly, they had lots and lots of answers!

In this and the next two issues of TEPE, I will share some of the insights I gained through my conversations with fourth and fifth graders about their physical education classes and, in particular, what they were learning about the skill of...throwing. Yes, I know it sounds a little crazy, but I had in-depth conversations about overhand throwing with fourth and fifth graders. We talked about the mechanics of how to throw, how important it is to learn to throw, where they learned to throw, ways they liked to practice throwing, and what they did in their physical education classes in regard to throwing. I even listened to their advice about how their physical education classes could be improved so that students like themselves could become even better throwers. It was terrific!

To get started, I would like to explain how I conducted my thesis project. The remainder of this article will deal with background information, a description of the physical education programs, a description of the interview process, and a list of some of the questions I asked.

BACKGROUND AND JUSTIFICATION

There are several reasons why I chose the particular skill of throwing as the topic of conversation. First, I thought throwing would be a skill most children would have already been exposed to (e.g., in physical education class, at recess time, playing throwing games with friends or family at home, playing throwing games in formal games like Little League), and therefore, any younger I chose to speak with would have something to share about his or her throwing experiences. Second, there is an abundance of research on the skill of throwing (Halverson & Roberton, 1979; Stroot & Oslin, 1993; Wickstrom, 1983), which further illustrates its importance in physical education. Last, the NASPE National Standards clearly states that second-grade students should be able to "identify four characteristics of a mature throw" (NASPE, 1995, p. 20). Therefore, I was curious to know whether children in fourth and fifth grades could identify and discuss a mature pattern of throwing.

As for my decision to conduct interviews and some short written assessments with the children, these seemed the best ways to learn more about what I was interested in: gaining deeper insights into what children think, feel, and know about the skill of overhand throwing. Many other physical education studies have embraced this methodology too, as evidenced by the Students' Voices monograph in the Journal of Teaching Physical Education (Graham, 1995).

DESCRIPTION OF PE PROGRAMS AND SETTINGS

I thought the best (and most convenient) place to talk to children about throwing would be at their schools during physical education class. In order to get a range of opinions, I chose two physical education settings that were different in their approach to and philosophy of physical education. To this end, I found one program that used the Skill Theme approach to physical education and another that relied on a more traditional curriculum. (Note: To ensure anonymity, pseudonyms are used for all schools, teachers, and children.)

PENDELTON ELEMENTARY (SKILL THEMES APPROACH)

Pendleton Elementary is a K–5 school, and the teacher had been an elementary physical education specialist for 19 years. Children had physical education class for 30-minute periods, twice a week, with class sizes averaging about 22 children. Pendleton had a Skill Theme-based curriculum (Graham, Holt/Hale, & Parker, 1998), which means the teacher spends a great deal of time teaching basic skills such as throwing, kicking, and balancing. The main part of each lesson typically consisted of children practicing skill tasks alone or with a partner using individual pieces of equipment. For example, in one lesson...
dealing with striking with paddles, each child had a paddle and a foam ball. Some children were striking to the wall, while other children worked in pairs to design their own games. During the lesson, the teacher provided feedback to all children but limited his comments to one or two biomechanical cues (i.e., "stepping with the opposite foot," "turning sideways to the target"). At the end of the class, the teacher gathered the children together for a brief review of the "cues for the day."

Eckland Elementary (Traditional Approach)

Eckland Elementary is a Grade 1–7 school; the teacher had been an elementary physical education specialist for 13 years. Children at Eckland had physical education class daily, with two classes of the same grade attending a single physical education class. Class size averaged approximately 50 children. A full-time aide was employed to assist the physical educator. Eckland maintains a program most would consider traditional. Children participate in low-organized sports and games, the content of which is organized around instructional units consisting of traditional sports such as basketball, football, baseball, and soccer. Units last 1-4 weeks for each topic. Based on the teacher's description of a typical fourth or fifth-grade unit, the first week is spent teaching the children the basic skills of the activity. The second week is devoted to playing lead-up games (e.g., 2-on-2 basketball). The remaining portion of the unit is reserved for full-regulation game play (e.g., 5-on-5 basketball).

Clearly, these two programs were quite a contrast. I wondered if the children's opinions would be as different as their physical education programs. Do children in dissimilar physical education programs think and speak differently about the skills they learn?

The Students and the Interview Process

Interviews were conducted during physical education class in a room away from the gym. As a result of this schedule, none of the interviews lasted longer than 30 minutes. The interviews were videotaped and audio-taped for later analysis. Children were interviewed in pairs in the hopes that they would feel more comfortable. In addition, all of the children knew me fairly well, as I had spent several days at each school participating with them in their physical education classes.

The interviewees' throwing ability ranged from high to low according to estimates made by their teachers. The selection process thereafter was based on the number of returned parent permission slips. (To read a detailed description of this process, see the original document at <http://www.chre.vt.edu/dfour>.) In the end, 14 higher-skilled and 12 lower-skilled throwers were interviewed at Pendelton, while 14 higher-skilled and 14 lower-skilled throwers were interviewed at Eckland. Twenty-eight of the participants were girls, and 26 were boys. Higher-ability throwers and lower-ability throwers were interviewed together.

The Interview Questions

Highlighted here is a list of the questions that I asked in the interviews. As with any conversation, not all interviews and questions were exactly the same, but I asked most of these questions in a majority of the interviews. After the children stated their answers, I often asked them to explain what they meant. To obtain an even clearer understanding, I sometimes asked children to demonstrate their answers.

Were children able to articulate the correct biomechanical cues for throwing? From whom did they say they learned the skill of throwing? Did their physical educator make the top 10 list? Did they think it was important to learn to throw? Did the children in one program respond differently to these questions than the children in the other program? How would the children in your classes respond to these questions?

Stay tuned for the next two articles in this series, as answers to these and other questions will be revealed!

Mark Manross is Executive Editor of the award-winning website, PE Central <http://pe.central.vt.edu>. Among his other accomplishments, Mark received the Outstanding Doctoral Student Award at Virginia Tech last year and has authored a number of articles for TEPE.

References


Learning to Throw in Physical Education Class: Part 2
The Results

by Mark Manross

In Part 1 (TEPE, Vol. 11, No. 1) of this three-part series, I described how I went about collecting data from fourth- and fifth-grade students concerning their thoughts, feelings, and knowledge about the overhand throw. In particular, I wanted to discover if they thought throwing was an important skill to learn, where and from whom they said they learned to throw the most, if they knew how to articulate the correct throwing form, and if they had any thoughts about how they were learning (or not learning) how to throw in their physical education programs. To obtain insights about these (and other) questions, students from two very different physical education programs were interviewed. This article begins to share some of the findings as a result of these interviews. Before sharing the findings, I review the setting and procedures.

Brief Review of Methodology and Participants

A total of 54 students were interviewed from two schools. Twenty-six students were from a school in which they were involved in a physical education program that used the Skill Theme approach. This approach advocates students practicing individual skills such as throwing, kicking, and striking. The other 28 students were from a program identified as traditional in nature. The approach used by this teacher had students involved in lead up games in “units” that eventually progressed to full-sided, regulation games (e.g., basketball, football).

Students were interviewed in pairs during their physical education classes at their respective schools. (For a more thorough description, see Part 1 of this series published in the January 2000 issue of TEPE.)

Findings

After numerous readings of the student interviews, six assertions (i.e., themes) emerged that provide the framework for this and the last article in this series. These were formed because a majority of the children at both schools shared similar thoughts or feelings regarding a certain question or topic. The first three assertions are: (a) All of the students agreed that throwing is an important skill to learn; (b) children felt that practicing alone and/or with a friend is the best way to learn to throw; and (c) the children understood what was helpful (or not helpful) in their physical education classes.

Assertion #1: All of the students agreed that throwing is an important skill to learn.

When asked if the skill of throwing is important to learn, almost all of the interviewed students at both schools responded with a resounding yes. However, their reasons for this answer varied.

One stated reason was that it enabled the students to participate in a lot of different games or sports. Frank said, “It is important to learn to throw because in almost all sports you have to throw.” Brian added, “If you don’t know how to throw, you can’t play sports.” Being on some kind of sports team was important to many of the students regardless of skill proficiency or gender. They agreed you have to be able to throw well to be a part of any team. Adam articulated that he wanted to become a better thrower so he could play basketball and volleyball and a lot of other “ball” games. “I just wanna be a better thrower, so maybe one day I can be on a team,” he stated. Although many of them talked about the importance of throwing well in the context of organized sports, some talked about how important throwing was for participation in other, informal throwing games. Todd stated, “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.”

A second reason the students thought it was important to learn to throw was to avoid being embarrassed when playing games that involved throwing. Throwing well allowed them to be successful and thereby avoid disappointing their teammates.

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

Researcher: What kind of trouble?

Sandy: You won’t be able to pitch, and everybody gets down on you.

Although they related many stories of poor throwers letting others down during organized games and sports, they discussed these feelings in the context of physical education class as well.

Researcher: You get picked on in physical education 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 all over the place.

Researcher: 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.

A discussion with Carl about War Ball in his physical education class illustrates this as well.

Carl: There is this girl. She will always give the ball to me because she doesn’t want to get out.

Researcher: Why does she do that?

Carl: 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.

Being embarrassed during any type of game play was not fun for them, but succeeding because of well-developed skills made them feel good. Several children noted that if you had the prerequisite skill proficiency for any sport, you could feel good about yourself.

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

Researcher: Explain that to me.

Erica: 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.

The third and last reason they thought it was important to learn how to throw was so they could teach their own children how to throw. This certainly was an interesting and unexpected answer. Erica and Jane’s comments reflect what several of their classmates expressed.

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

Jane: Yeah.

Researcher: How? Why?

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

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

Jane: If they were 5, 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.

Assertion #2: Children felt that practicing alone and/or with a friend is the best way to learn to throw.

All of the children interviewed certainly were in agreement that “practicing” was the best way to get better at throwing. Sandy’s reply was typical to my question asking them to tell me how they would go about improving their throwing skills.

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

Sandy: Practice.

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

Sandy: Practice every day because practice makes perfect.

Interestingly, the students said the best way to practice was either alone or with a friend or two. Only one student said playing games was the best way to get better at throwing. The most popular way was to practice by themselves. Holly said, “You get a ball at the mall, 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.” Sherri told me she got better at throwing by “practicing at her house with a ball, just throwing it at the wall.” Mark improved his throwing for his T-ball team in this manner as well.

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 just kept on throwing the ball up against the wall.

This type of answer was even given when I asked them to give suggestions as to how “poor” throwers could improve their throwing skills. Amy’s response was to “have them throw a softball to a wall.” Other children suggested throwing with a friend or throwing alone at targets in the yard. A few of them even mentioned that someone should show them how to throw. They suggested that a coach, a parent, or a friend do this. The children did not suggest the physical educator as evidenced by this conversation I had with Randy.

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

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

Researcher: Who needs to show them?

Randy: Parents, friends, their coach.

Practicing throwing by yourself or with a friend was the best way to get better at throwing according to these students.

Assertion #3: The children understood what was helpful (or not helpful) in their physical education classes.

The children provided some fascinating insights about how they were learning (or not learning) throwing in their physical education classes. Although many children were content with the throwing activities in physical education class, many voiced concerns about some of the things they believed should be changed. These proposed class changes, in their estimation, would help them learn more about throwing and, therefore, physical education class would be more fun.

Children at Eckland (traditional approach) identified lack of time to learn how to throw to be a problem. Several said they used much of their physical education time playing throwing games and mentioned their dislike for this. They stated they would have enjoyed receiving more throwing instruction and practice. When asked if
they talked about how to throw in their gym class, Tommy said, “Nope, not since I have been here. I have been here since Kindergarten, and they haven’t taught us about throwing.” Other children expressed similar thoughts. Jeff, Matt, and Carl were all asked if their physical educator spent time in physical education class teaching them how to throw. All three responded no. Lucy also said she hadn’t learned much about throwing in her traditional gym class.

**Researcher:** Where would you learn how to throw at school?

**Lucy:** Physical education teacher.

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

**Lucy:** No, but I guess you could.

In addition to game play not being helpful to children at Eckland, students also expressed boredom with playing throwing games such as War Ball and Sideline Basketball. Some children were especially irritated at having to play War Ball on a daily or weekly basis. Linda expressed her irritation by stating, “I’m really getting tired of War Ball because we play it every Friday.”

These two concerns (boredom and lack of time devoted to learning more about throwing) led several of the children into discussions about suggested changes to their classes. 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, children suggested spending time at the beginning of class practicing throwing and the remainder of the class playing a game that used the skill of throwing.

Interestingly, the children at Pendleton (skill theme approach) wanted similar changes made to their program. In particular, they wanted more interesting activities, and those who offered alternatives provided the same solution as the children at Eckland. However, they were reacting to the opposite problem: They wanted less throwing practice and more throwing game play. Mary and Joshua discussed the lack of game playing time in their physical education class.

**Researcher:** Do you play games in gym class?

**Mary:** 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.

**Researcher:** So you don’t get to play games like baseball?

**Joshua:** In all of the 6 years I have been here, we have not played baseball or basketball once.

One of the main reasons they wanted to play games was because of the boredom they associated with the large amount of skill practicing they did in class. The Pendleton children’s proposed cure for this problem was identical to the solution prescribed by the children at Eckland—practice throwing at the beginning of class and then play a game that involved throwing.

However, unlike the children at Eckland, the children at Pendleton discussed the possible implications these changes would have for some of their classmates. For example, Mary and Joshua were both 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 mentioned 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 (classmates) in here don’t know how to throw, and they don’t have a glove in the first place.” Mary agreed by saying, “Playing a game does take time, and we only have 30 minutes and it takes 5 to 10 minutes to get organized in teams, so we’d need more like a hour for class.”

As you can see, the children at both schools were very cognizant of what was going on in their physical education classes. Their suggestions for improvement of the classes is to strike a balance between practice and game play.

**Conclusion**

These three assertions revealed the “universal thoughts” of the children interviewed at both schools. The next and last article of this series shares the remaining three assertions. These assertions emerged because of the vastly different thoughts and feelings the children had to share about what they knew about the mechanics of the overhand throw, and their opinions about how and where they were learning these techniques. Did the children at Eckland (traditional program) or Pendleton (skill theme program) know more about the mechanics of the overhand throw? To whom did the children give the most credit for teaching them the overhand throw? Did their physical educators make the list?

Stay tuned for the details to these and other insights in Part 3 of this series.

Mark Manross is the Executive Editor of the award-winning website, PE Central <pe.central.vt.edu>. Among his other accomplishments, Mark received the Outstanding Doctoral Student Award at Virginia Tech last year and has authored a number of articles for TEPE. To view the entire thesis from which this article was derived, go to <http://www.chre.vt.edu/dfour>. [PDF]

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**Quality Physical Education:**

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Learning to Throw in Physical Education Class: Part 3
The Results Continued

by Mark Manross

Part 3 of this series about my discussions with fourth and fifth graders concerning their thoughts, feelings, and knowledge about throwing bring us a conclusion to the findings of the project. In the second article (TEPE, Vol. 11, No. 2), the first three findings were presented in the form of assertions. These assertions were “universal” in nature, meaning a majority of the children interviewed (54 in all) from both schools shared similar thoughts about the questions I asked. As a reminder, the first three assertions were:

1. All of the children agreed that throwing was an important skill to learn.
2. Children felt that practicing alone and/or with a friend was the best way to learn to throw.
3. The children understood what was helpful (or not helpful) in their physical education classes.

This article shares the last three assertions, which in contrast to the first three assertions, reveal the differences between what the children had to share about the mechanics of the overhand throw, and their opinions about how and where they were learning these techniques. These individual school assertions are:

4. The “skill theme approach” (used at Pendelton school) seemed to help children learn more about the overhand throw than did the “traditional” approach (used at Eckland).
5. The children at Pendelton attributed their throwing knowledge to their physical education teacher, while the children at Eckland learned from other sources.
6. The children at Pendelton suggested they learned to throw as a result of the skill feedback they received from their physical education teacher, whereas the children at Eckland did not mention feedback.

Each of these assertions is described in more detail below.

Assertion #4: The “skill theme approach” (Pendelton) seemed to help children learn more about the overhand throw than did the “traditional” approach (Eckland).

In addition to the interviews, a paper and pencil written test (Graham, 1992) was given to all the fourth- and fifth-grade children at both schools. Children were asked to write what they believed to be the proper biomechanical steps to follow when throwing a ball for distance using the overhand technique. Children were prompted by the researcher who told them to pretend he was in their class and that he did not know how to throw a ball using the proper overhand form. The researcher then asked the children what they needed to do with their bodies to successfully hit a target that was far away. They wrote down their answers. The purpose of this was to see what the children knew about the biomechanical cues that form the overhand throw. The test was completed by 187 children at Pendelton and 118 children at Eckland.

The analysis revealed that almost all of the fourth- and fifth-grade children at Pendelton identified at least two of the biomechanical components that typically form the skill of the overhand throwing motion (see Table 1). The biomechanical throwing cues used as criteria were: (a) “turn opposite side towards the target”; (b) “extend throwing arm behind head”; (c) “step with the foot opposite of throwing arm”; and (d) “follow through.” These were chosen based on the texts and literature that has listed appropriate throwing cues (Kelly et al., 1989; Seefeldt, 1979; Stroot & Oslin, 1993; Ulrich, 1985; Wickstrom, 1983). The two most commonly identified by the children at Pendelton were “step with the opposite foot” and “turn your side to the target.” The third most popular response was “arm way back.” Further analysis of the answers given by all of the children at Pendelton revealed that 8 children earned perfect scores on their tests, while only 16 children scored a zero.

In contrast, most of the fourth- and fifth-grade children at Eckland had a difficult time identifying even one throwing component. When they did, the most common was “aim at the target,” a component not identified in the literature reviewed for this article. Further analysis of the Eckland tests revealed that none of the children earned a perfect score. In fact, only one child earned a score better than 1 (out of 4), and 83 children scored zeros.

The analyses of the written tests were useful in determining what these children knew about the skill of throwing. However, simply relying on the results of this test could be a bit misleading. For example, the children at Eckland might have misunderstood the throwing scenario presented to them for the written test, or there could have been a difference in the writing ability between the children at Eckland and Pendelton. These and other reasons are important to consider when interpreting the results.
TABLE 1—Mean Written Throwing Test Scores of All Fourth and Fifth Graders

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Pendleton (skill theme) (n = 187)</th>
<th>Eckland (traditional) (n = 118)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All children tested</td>
<td>1.98 (n = 187)</td>
<td>0.31 (n = 118)</td>
</tr>
<tr>
<td>Boys</td>
<td>2.01 (n = 93)</td>
<td>0.27 (n = 62)</td>
</tr>
<tr>
<td>Girls</td>
<td>1.95 (n = 94)</td>
<td>0.34 (n = 56)</td>
</tr>
</tbody>
</table>

Note: Perfect score = 4.0.

Interviews with the children further explored their understanding. The first part of the interviews allowed children to discuss their knowledge of the overhand throwing cues. Answers given during this part of the interview fully supported the written test results. The children at Pendleton had a better understanding of the overhand throwing motion than the children at Eckland. The following exchange illustrates this point.

Researcher: Can you think of another thing to help the first graders throw better?
Todd: When you are throwing step with the opposite foot.
Researcher: What do you mean by that?
Todd: When you are throwing, to get more power, you step towards the target with the opposite foot.
Researcher: Brian, do you have anything to add?
Brian: Follow through.
Researcher: Follow through? What do you mean by that?
Brian: When you throw, you should bring the other foot over. [He demonstrates.]
Researcher: Why do you do that?
Brian: More power!
Researcher: Anything else?
Brian: Bring your arm back.
Researcher: Why?
Brian: To get more speed on the ball.

Brian and Todd were higher-skilled throwers according to their teachers. Although the responses of the lower-skilled children at Pendleton lacked some of the description of their higher-skilled classmates, they still demonstrated a solid understanding of the components that form the overhand throwing motion.

Researcher: 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. S. [PE teacher] calls it for short.

In contrast, all of the children interviewed at Eckland seemed to be stumped by the questions. The children at Eckland rarely gave an immediate answer as evidenced by this exchange between the researcher and two “higher-skilled” throwers.

Researcher: What is one thing I could teach first graders so they would become really good throwers.
[Extended pause]
Researcher: Anything you want to suggest is fine. What can I help them with? They really want to be good throwers.
[Extended pause]
Researcher: Nothing?
Carl: No.
Mark: Nope

Other children simply stated, “I don’t know” to the questions. Not one child at Pendleton gave an “I don’t know” response, and their answers were immediate. When the children at Eckland did give answers, they were non-descriptive and demonstrated little understanding of the overhand throwing motion. Connie, for example, when asked about throwing, stated, “You need to be able to see good and have a strong arm.” Table 2 contains the contrasting answers given by children at both schools when asked to describe suggestions for becoming a good thrower. Clearly, all of the children at Eckland struggled with the question. The interviews, along with the written test, suggest that children in the skill theme program at Pendleton were more knowledgeable about throwing than the children at Eckland.

Assertion #5: The children at Pendleton attributed their throwing knowledge to their physical education teacher, while the children at Eckland learned from other sources.

During interviews all children were asked, “Where did you learn how to throw?” The children at both schools supplied very different answers. Although many of the children at Pendleton gave several people credit for teaching them about throwing, their physical education teacher was mentioned most often as a main source of throwing knowledge. As indicated in Table 3, “Dad” and “coaches” were the second and third most popular choices. Further analysis revealed that the higher-skilled children at Pendleton typically mentioned more than one person as a learning source for throwing, although no more than three people were mentioned by any one child. Lower-skilled children at Pendleton almost exclusively attributed their throwing knowledge to their physical education teacher.

The children at Eckland, in contrast, attributed their throwing knowledge to everyone but their physical

![Figure 1](https://example.com/figure1.png)

Figure 1—Examples of completed written tests by the children of Pendleton and Eckland Elementary.
TABLE 2—Children’s Suggestions for Becoming a Good Thrower

<table>
<thead>
<tr>
<th>Answer</th>
<th>Number of times stated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pendelton (skill theme)</strong></td>
<td></td>
</tr>
<tr>
<td>Turn your side to the target</td>
<td>17</td>
</tr>
<tr>
<td>Step with the opposite foot</td>
<td>15</td>
</tr>
<tr>
<td>Arm way back</td>
<td>10</td>
</tr>
<tr>
<td>Aim at target</td>
<td>9</td>
</tr>
<tr>
<td>Follow through</td>
<td>3</td>
</tr>
<tr>
<td>Step through with other foot</td>
<td>2</td>
</tr>
<tr>
<td>Let elbow lead</td>
<td>1</td>
</tr>
<tr>
<td>Twist body at waist</td>
<td>1</td>
</tr>
<tr>
<td>Bring arm straight over-not side arm</td>
<td>1</td>
</tr>
<tr>
<td><strong>Eckland (traditional)</strong></td>
<td></td>
</tr>
<tr>
<td>Get straight in front of target</td>
<td>4</td>
</tr>
<tr>
<td>Hold ball with tight grip</td>
<td>3</td>
</tr>
<tr>
<td>Bring hand back behind shoulder</td>
<td>3</td>
</tr>
<tr>
<td>Follow through</td>
<td>2</td>
</tr>
<tr>
<td>Try your best</td>
<td>2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>2</td>
</tr>
<tr>
<td>Practice</td>
<td>2</td>
</tr>
<tr>
<td>Don’t be scared of the ball</td>
<td>2</td>
</tr>
<tr>
<td>Take a forward step</td>
<td>2</td>
</tr>
<tr>
<td>Throw hard</td>
<td>2</td>
</tr>
<tr>
<td>Aim at target</td>
<td>2</td>
</tr>
<tr>
<td>Don’t strain arm</td>
<td>2</td>
</tr>
<tr>
<td>Try to throw sidearm</td>
<td>1</td>
</tr>
<tr>
<td>Hold your hand straight</td>
<td>1</td>
</tr>
<tr>
<td>Work on stance</td>
<td>1</td>
</tr>
<tr>
<td>Don’t throw hard</td>
<td>1</td>
</tr>
<tr>
<td>Pretend it is hot object</td>
<td>1</td>
</tr>
<tr>
<td>Don’t get nervous</td>
<td>1</td>
</tr>
<tr>
<td>Keep mind on throwing</td>
<td>1</td>
</tr>
<tr>
<td>Make sure they see good</td>
<td>1</td>
</tr>
<tr>
<td>Have a strong arm</td>
<td>1</td>
</tr>
<tr>
<td>Keep eye on ball</td>
<td>1</td>
</tr>
</tbody>
</table>

**Assertion #6:** The children at Pendelton suggested they learned to throw as a result of the skill feedback they received from their physical education teacher, whereas the children at Eckland did not mention feedback.

Children at Pendelton provided numerous accounts of how much they learned from their teacher about throwing mechanics, and they attributed this learning directly to the teacher’s consistent use of skill feedback. Children often mentioned how the teacher came around and helped them individually with their throwing skills. For example, Erica, a lower-skilled thrower, stated, “He [the teacher] 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.” Jason further elaborates on this point in the following exchange.

**Researcher:** What does the teacher say to you in class while you are throwing?

**Jason:** 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.

The children at Eckland shared very different accounts of how they were “learning” throwing. Children didn’t seem to learn about the mechanics of throwing in physical education class from their teacher; instead, they said they learned new games and exercises. Carl, a higher-skilled thrower, responded that he came to gym class to learn sports and “get an education.” Allen and Tommy, higher-skilled throwers, said they only learned in gym class “a couple of times.” Linda, a lower-skilled thrower, responded, “I don’t know.

TABLE 3—To Whom Children Attributed Their Throwing Knowledge

<table>
<thead>
<tr>
<th>Pendelton—Skill Theme approach (n = 26)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical education teacher</td>
</tr>
<tr>
<td>Dad</td>
</tr>
<tr>
<td>Coaches</td>
</tr>
<tr>
<td>Brother</td>
</tr>
<tr>
<td>Previous PE teacher</td>
</tr>
<tr>
<td>Others</td>
</tr>
<tr>
<td>Neighbor</td>
</tr>
<tr>
<td>Cousin</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eckland—Traditional approach (n = 28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dad</td>
</tr>
<tr>
<td>Coaches</td>
</tr>
<tr>
<td>Friends</td>
</tr>
<tr>
<td>Watching others</td>
</tr>
<tr>
<td>Brother</td>
</tr>
<tr>
<td>Don’t know</td>
</tr>
<tr>
<td>Watching ball games</td>
</tr>
<tr>
<td>No one</td>
</tr>
<tr>
<td>Sister</td>
</tr>
<tr>
<td>Family</td>
</tr>
<tr>
<td>Cousin</td>
</tr>
<tr>
<td>Myself</td>
</tr>
<tr>
<td>Physical education teacher</td>
</tr>
</tbody>
</table>

*Note: Some children named more than one individual.*

education teacher (see Table 3). 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 people. Unlike the majority of children’s answers at Pendelton, there was no consensus of answers at Eckland, with 13 different people cited by the children. Their physical education teacher was conspicuously absent. Interestingly, some of the children (both high- and low-skilled) at Eckland seemed to rely on their observational skills to help them learn to throw. Brad and Richard, both high-skilled children, revealed that they learned to throw by “watching baseball games” and “probably from just watching people.” Randy, a lower-skilled thrower, said he learned about throwing from watching War Ball while he sat on the sidelines in physical education class.

Not one child at Pendelton mentioned anything about learning throwing (or any other games or sports) from observing others. Many of the Pendelton children also had positive things to say about how they were learning to throw in their physical education class. In particular, they described the feedback their teacher provided in class as an important part of their learning. Assertion six provides insights about this point.
Maybe to learn a new game sometimes? Maybe a new exercise? I don’t know.” Tonya, also low-skilled, did not seem to know either, when she stated, “I really don’t know. You sorta come to learn new games.”

The children at Pendleton said they learned about throwing from their physical education teacher, and they attributed this to the feedback they received in class. Several children at Eckland said they were learning a number of things in physical education class, but they discussed the learning of new games and exercises. Not once did they mention skill feedback from their physical education teacher as a learning catalyst for their throwing skills.

Conclusion

Who do your students say taught them the most about throwing? Would you, as their physical education teacher, be in the top five? Are your students able to identify and articulate the biomechanical cues that form the overhand throw? Do your students think throwing is an important skill to be learning and, if so, why? How do students respond to similar questions about other skills or concepts? Regardless of how you think your students will answer, taking time (or having someone else take time) to find out what students in physical education know and understand is worthwhile and a great learning experience. The children and teachers in this project were a joy to spend time with. As you can tell, they provide important insights about the world of physical education.

References


Acknowledgements

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