

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 brings to a conclusion 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 misunderstand 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.

3 The final part in a series examining the way children learn a basic motor skill.

TABLE 1—Mean Written Throwing Test Scores of All Fourth and Fifth Graders

Subjects	Pendelton (skill theme) (n = 187)	Eckland (traditional) (n = 118)
All children tested	1.98 (n = 187)	0.31 (n = 118)
Boys	2.01 (n = 93)	0.27 (n = 62)
Girls	1.95 (n = 94)	0.34 (n = 56)

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 Pendelton 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 Pendelton 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 Pendelton gave an "I don't know" response, and their answers were immediate. When the children at Eckland did give answers, they were nondescriptive 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 Pendelton were more knowledgeable about throwing than the children at Eckland.

Assertion #5: The children at Pendelton 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 Pendelton 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 Pendelton 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 Pendelton 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

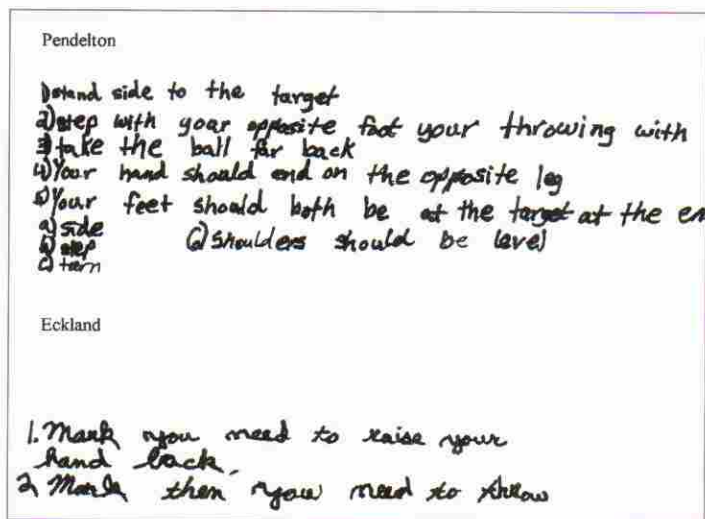


Figure 1—Examples of completed written tests by the children of Pendelton and Eckland Elementary.

TABLE 2—Children’s Suggestions for Becoming a Good Thrower

Answer	Number of times stated
Pendelton (skill theme)	
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
Eckland (traditional)	
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

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.

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

Pendelton–Skill Theme approach (n = 26)	
Physical education teacher	19
Dad	10
Coaches	7
Brother	1
Previous PE teacher	1
Others	1
Neighbor	1
Cousin	1
Eckland–Traditional approach (n = 28)	
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

Note. Some children named more than one individual.

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 Pendelton 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. Hopefully more physical education researchers will follow Robert Fulghum's advice: "Ask the children, because they know."

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