

PEDAGOGY

Effective Teaching Strategies for Low-Skilled Students

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Abstract

This study described the strategies used by expert teachers to instruct low motor skill students in physical education classes. The method was extensively pilot tested. Eleven physical education teachers took part in the study. Data were collected via observations, field notes, interviews, and nonstructured informal interviews. Two major themes emerged during the data analysis. First, specific teaching skills are important to facilitate low-skilled students' success, with subthemes of (a) teachers paying attention to low-skilled students' motor skill deficiencies and (b) teachers creating an accepting environment for low-skilled students. Second, teachers structure authentic performances in which low-skilled students can successfully participate, with subthemes of (a) teachers continually modifying game play with no scores, no winners, and everyone working together and (b) teachers recognizing decisions about equipment selection and usage for low-skilled students. The results can inform how teachers develop lessons for low-skilled students.

Teachers' effective instructional strategies are a vital component in the learning process. The strategies in physical education class can be planned, assessed, and carried out by the teacher so students acquire basic motor skills. These strategies can increase motor skills

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through the organization of instruction and assessment of students by their physical education teacher (Strand & Bender, 2011). Effective strategies can increase fundamental motor skills and may give students a foundation for participating in lifelong physical activity (McKenzie & Lounsbery, 2014), as well as increase their chances for optimal health (Van Beurden et al., 2003).

Motor skills are especially important for students in elementary school, as this is where they learn the basis for all future movement skills and physical activities (National Association for Sport and Physical Education, 2013). We know that the variables of effective instruction promote motor skill development when they are used by teachers, but we know less about how teachers are actively planning and utilizing strategies in their teaching for students at all motor skill levels. Considerable evidence shows that variables in effective instruction such as time on task, appropriate practice trials, clarity, class structure, accountability, and skill progressions have a positive effect upon motor skill acquisition (Silverman, 2005; Silverman, Kulinna, & Crull, 1995; Solmon, & Lee, 1996).

Student skill level is another component that affects the learning process. Silverman and Subramaniam (1999) concluded that the learning process is influenced by attitude, and low-skilled students with a positive attitude will want to work harder to learn activities in physical education. Mastering new skills in physical education, however, is not something that low-skilled students expect (Portman, 1995). When they feel helpless, with no control or power over their own enjoyment, their affect is negatively impacted (Subramaniam & Silverman, 2002). Their attitude changes when they experience success (Carlson, 1995; Ennis, 1996).

Teachers should provide students with successful experiences and set optimally challenging tasks. They can do this by incorporating variables such as time on task, appropriate practice trials, clarity, class structure, accountability, and skill progressions into their effective instruction (Silverman, 2005; Silverman et al., 1995; Solmon & Lee, 1996), to help create motor skill tasks that low-skilled students can do successfully. By improving students' motor skills, teachers can increase student efficacy and students' desire to continue with the motor skill tasks that they are learning (Ferrer-Caja & Weiss, 2000).

There is also a distinct need for teachers to develop strategies to instruct individual low-skilled students (Rink, 2003), because these students avoid physical skills and become even lower skilled (Hopple & Graham, 1995; Silverman, 2005). If the level of difficulty of the motor skills increases too quickly, low-skilled students may not be able to progress or execute the skills (Byra & Jenkins, 2000; French et al., 1991). These students may then not participate in physical activity, because they are excluded by their more adept classmates (Portman, 1995), and their physical education experience will not be positive (Subramaniam & Silverman, 2002; Carlson, 1995; Hopple & Graham, 1995). When their skill increases, their enthusiasm for the activity increases and their experiences become positive (Ennis, 1996). By employing effective strategies, teachers can help low-skilled students develop their motor skills more fully (Silverman et al., 1995). The ability to make decisions helps to form instruction and is a necessary tool for the teacher (Griffey & Housner, 1991) and low-skilled students to learn.

Exhibiting empathy is often overlooked, with teachers facing large class sizes as well as curricular concerns. Creating a learning environment that leads students to perceive it as nonthreatening and challenging is important (Koka & Hein, 2003), especially for low-skilled students who feel alienated and threatened. While these concerns might be valid, if teachers were to follow the strategy of having empathy for students in the class, especially low-skilled students, they could help them to develop motor skills and to have a sense of belonging (Noddings, 2005). To create this sense of belonging, teachers can care for individual students. Effective teachers are expected to carry out an ethic of care in teaching physical education (Owens & Ennis, 2005). Physical education classes offer many opportunities for teachers to demonstrate caring behaviors toward their students (Ravizza & Stratton, 2007).

Paying close attention to the progress, ability, and anything that could affect the performance of low-skilled students could be important in improving their experience in physical education (Portman, 1995). Teacher cognition, described as thought processes, influences teacher strategies. Cognition or thoughts may govern action (Roberts, 1992). Teachers hold many thought processes while making decisions about practice, engagement time, level of difficulty,

planning, and reflection on lessons, progressions, and concentration on class structure. Understanding the decisions that effective teachers make regarding strategies is an important first step in improving instruction for low-skilled students.

The way effective teachers structure practice, so that students receive appropriate practice, is paramount in motor skill acquisition. The more teachers provide for appropriate student practice, the more learning that occurs. There is a relationship between student achievement and the way teachers structure tasks (Silverman et al., 1995). Students' individual differences are shaped by teachers controlling the instructional strategies (Rink, 2003). It is valuable to learn how teachers who are effective with low-skilled students decide what strategies to use with them.

Studying successful teachers can provide insight into how they instruct low-skilled students. This insight may help teachers to optimize their own teaching methods. Low-skilled learners can have a larger capacity for gains in motor skills than high-skilled learners do (Subramaniam & Silverman, 2002). How teachers think, plan, and structure practice is important as teachers adapt a lesson to individual students (Rink, 2003). Although ample evidence points to which variables assist students to attain motor skills in physical education (Ennis, 1996; Griffey & Housner, 1991; Portman, 1995), there is little documentation about which strategies teachers employ (Riskowski, 2015), as well as what thinking processes they utilize, to elicit this learning.

The purpose of this study was to describe and compare the strategies teachers use to teach low motor skill students in physical education classes. By examining strategies of successful physical education teachers, we can acquire knowledge that could help other physical education teachers optimize their teaching methods and increase their instructional effectiveness with low-skilled students.

Method

This qualitative study employed observations, recorded structured interviews with teachers, field notes, and informal interviews to uncover the strategies that successful teachers use with low-skilled students. Prior to the study, rounds of pilot testing to frame

and support procedural decisions were completed. Each method is further explained.

Pilot Testing

Three rounds of interviews and observations were done with five teachers in urban and suburban schools in the Greater New York area. All five teachers were selected based on professional recommendations. An open-ended interview guide was developed via guidelines for interview techniques (Marshall & Rossman, 2015; Seidman, 2012), with reference to other qualitative research studies on low motor skill students in physical education (Carlson, 1995; Hopple & Graham, 1995), for an analysis of the instructional strategies teachers used with these students. The goal of the interviews was to investigate teacher cognition and effective strategies. During pilot testing, the interviews were digitally recorded, and the researcher revised interview questions, terminology, and the question sequence.

Observations also were piloted by the researcher as a nonparticipant in the naturalistic observation of physical education teachers in the gymnasium or on sport fields. The teachers wore a microphone on their lapel, which enabled the researcher to hear the teacher. During the observations, field notes also were recorded. Based on the method of formatted descriptive notes, the column on the left side of the page focused on teachers' strategies and the column on the right side consisted of comments representing the researcher's interpretations about the teachers' behavior.

Procedures

Participants. Eleven fourth- and fifth-grade teachers from public elementary schools located in suburbs of New York volunteered for the study (see Table 1). All of the participants were state certified, taught physical education for at least 5 years, and were selected based on recommendations from teacher educators, awards they received, or peer referrals. Teachers had class sizes between 20 and 25 students, and all used a multiactivity curriculum, predominantly with skill-focused lessons. Informed consent was obtained from the physical education teachers after institutional review board approval and prior to interviews and observations being conducted.

Table 1
Teacher Information

Teacher	Teacher teaching experience (years)	Teaching experience at present school (years)	Grades taught	Teaching focus
Cathy	25	25	4 th and 5 th	Lacrosse Steeplechase Field hockey
Fiona	30	20	5 th	Dancing Cross country
Heather	33	33	4 th and 5 th	Football
Hoover	12	8	4 th and 5 th	Basketball
Humarie	14	7	4 th and 5 th	Tennis Badminton Baseball
Jay	30	10	4 th and 5 th	Baseball
Jonny	20	8	4 th and 5 th	Gymnastics
Kacey	22	21	4 th and 5 th	Baseball Kickball Skipping
Moira	14	10	4 th and 5 th	Floor hockey
Portia	11	7	4 th	Dancing Cross country
Quinn	28	18	4 th and 5 th	Hurdle jumping Baseball Juggling

Interviews. Each physical education teacher participated in one semistructured interview, generally between 45 and 60 min in length, that occurred after the first two observations and before the last two observations. The researcher probed with additional questions to further explore the teachers' experiences and instruction of

the lessons (Rubin & Rubin, 1995). The researcher used the interview guide to obtain teachers' perception of skill level and strategies used in their teaching.

The first section of the guide was the introduction, which explored the teachers' training and background. The second section was the perception of skill level, including questions such as "How do low-skilled students have a special way of participating and learning in the class?" and "How do you help low-skilled students in your class?" The final section included questions on the perception of the strategies used, such as "How do you adjust your teaching so that students with different skill levels can learn the motor skills?" "If a student is low skilled, how does that influence the way you teach them?" and "Describe a unique strategy that you developed for a student." Every interview was digitally recorded and transcribed, and notes were also taken by the researcher (Seidman, 2012).

Observations and field notes. The observed physical education classes consisted of motor skill activities and took place in gymnasiums and/or on sport fields. There were two observations of each physical education teacher before their interview and two observations after their interview. At that time, field notes were taken. The researcher was a nonparticipant observer in the naturalistic observations and was situated to have a full view of the physical education teacher in the gymnasium or on the field. The teachers wore a microphone on their lapel, which enabled the researcher to hear the teacher at all times.

The teachers were told that the researcher would be observing them teaching motor skills to all skill levels. Before the class observations, the teachers would identify the students that they considered as high and low skilled in the motor skill being taught in the lesson. The students who were not indicated were considered moderate skilled.

The researcher focused on the strategies the teachers used with the identified low-skilled students to enable them to correctly practice the motor skill. Other students who were observed having difficulties with the motor skill were classified as low skilled for data collection, even if the teacher did not initially identify them.

Nonstructured informal interviews. After every observation, the researcher asked the physical education teacher informal

questions about the observed class to clarify any uncertainties. The researcher directed the teacher's attention to identifiable moments of interactions with low-skilled students. This was an opportunity for the researcher to ask about the activities in the class and about her observations of the students' motor skills in those activities and to ask questions regarding the teacher's instruction.

These informal interviews were carried out after the observation, whether directly after class, while walking to the teacher's next class, or in the physical education office between classes. The nonstructured informal interviews were digitally recorded and immediately transcribed.

Data analysis. The interviews, observations and field notes, and nonstructured informal interviews were transcribed. Cases regarding each teacher's strategies were constructed after an extensive examination of the data (Patton, 2014). Low-skilled students with difficulties in motor skills were identified through the teachers' assessment of skill level. Teachers' responses to strategies instructing those motor skills were also identified and specifically categorized. The ways teachers taught and interacted with low-skilled students were then compared to the teachers' responses to interview questions.

The data were analyzed via NVivo 8 (QSR International, Victoria, Australia) for themes and categories in each teacher's interviews. Every teacher's themes were then compared to each other, for the possibility of establishing patterns. Using descriptive field notes and interview transcripts, the researcher was able to identify themes that addressed the research questions. The themes included elements common between teachers and those that emphasized differences between the teachers.

Constant comparative analysis highlighted differences in the teachers being observed (Glaser & Strauss, 2007). Comparisons allow for themes, variations, and refinement of variations found in the data (Patton, 2014). The constant comparative method involved a systematic examination of the emergent themes about the specific strategies that teachers used with low-skilled students.

Trustworthiness and credibility. After transcribing the interviews, the researcher contacted each physical education teacher who participated in the study to do a member check. Each teacher discussed his or her transcript, reviewed his or her interview, and the

conclusions reached. The teachers offered clarifications if necessary. Any suggested changes were implemented immediately.

The trustworthiness of the conclusions was increased through triangulation (Patton, 2014; Seidman, 2012). The sources were interviews, observations, field notes, and informal interviews. The researcher used negative case checking to check for alternate themes or patterns. In this study, no negative cases were found.

Feedback was requested from a peer reviewer, a coauthor. After the conclusions were drawn, the peer reviewer was given all the transcripts and field notes. The peer reviewer was familiar with the literature in low-skilled students practicing motor skills. She reviewed and critiqued the researcher's interpretation and theme categorization, in addition to commenting extensively on the findings as they emerged from the study (Marshall & Rossman, 2015; Seidman, 2012). This process took place over several cycles as transcripts were reviewed, discussed, and disagreements resolved.

Researcher background. The first author did the primary data collection and analysis. She has a background as a teacher, as a teacher educator, and as a high-skilled competitive athlete. While she conducted this research, she was mindful of her motor elitism to ensure that she checked her bias.

Results

Two major themes emerged during the data analysis process. The first theme was that specific teaching skills are important to facilitate low-skilled students' success. This theme had two subthemes: (a) teachers paying attention to low-skilled students' motor skill deficiencies and (b) teachers creating an accepting environment for low-skilled students. The second theme was that teachers structure authentic performances in which low-skilled students can successfully participate. This theme also had two subthemes: (a) teachers continually modifying game play with no scores, no winners, and everyone working together and (b) teachers recognizing decisions about equipment selection and usage for low-skilled students.

Specific Teaching Skills Are Important to Facilitate Low-Skilled Students' Success

The physical education teachers were observed instructing high-, moderate-, and low-skilled students in various motor skills to

modified games. The physical education teachers took time to specifically work with the low-skilled students during class time. The teachers helped the low-skilled students to develop motor skills in two specific ways: (a) by paying attention to low-skilled students' motor skill deficiencies and (b) by creating an accepting climate for low-skilled students.

Teachers pay attention to low-skilled students' motor skill deficiencies. A primary way that teachers engaged low-skilled students in the motor skill was identifying them by name and continuing to use the students' names throughout the lesson. Teachers used students' names when they provided instruction, corrections, or encouragement during performance in the motor skill.

Hoover, a teacher, felt that adding their names got the low-skilled students' attention and then it motivated them. In one observation when he taught a lesson on shooting, a boy was having difficulty shooting the basketball into a basket. To get his attention and focus, Hoover called out the boy's name and told him, "Just slow your steps down to shoot, and you will be more successful than if you rush everything." The student paid attention and listened to his teacher, slowed down and carefully aimed the ball, and it went right in.

Moira also used the students' names when she complimented or provided corrective feedback. She **believed** that calling their names is "an effective teaching practice" because it "reinforces cues and gives positive attention to low-skilled students" who have trouble doing their motor skills. When other low-skilled students saw that "the teacher [was] paying attention to a student, they also [wanted] that attention. One way to do that is to please the teacher by staying on task." Heather also felt that calling her students by their individual names encouraged their "wanting to please [her] and perform" the motor skill.

The teachers called all of their students by name on a consistent basis, to make corrections or to give positive reinforcement on their performance of a motor skill. They felt that knowing their students' names was important, especially for the low-skilled students, so that no one felt forgotten or pushed aside, but rather included, in the class. In her interview, Moira pointed out that she uses their names and "[tends] to gravitate more towards the low-skilled kids . . . to

help them out . . . and . . . show them how to get involved in the activities.”

After using the students’ names, the teachers would guide them by identifying motor skill deficiencies and recommending solutions. The teachers gave their attention to the low-skilled students by noting their specific issues with a motor skill and concentrating on fixing the problems. Generally, the teachers would break the motor skill down so that the low-skilled students could understand the structure and sequence of the newly introduced task. The teachers made the motor skill clear by taking the time to explain the exercise for the low-skilled students.

Jonny was working with a student who was afraid of the vault in a gymnastics unit. He was supervising his physical education class in a gymnastics unit, when a fifth grade girl was about to do the vault. She ran up to the vault, stopped, and did not jump. The teacher told her to stand in front of the vault on the springboard and then to put her hands on the handles and jump up and down to become familiar with the equipment. He then told her to do the same thing, but now to jump up, keep her hands rigid, and land on the vault with her knees. The girl performed the task correctly. The teacher then told her to run up and do the same thing, jump and land on the vault on her knees, as before, and he would be spotting her. She did it and then got back in line. When she came up the next time, the teacher told her not only to land on her knees but also to pull her legs through, over the vault, and land on the ground. She ran up to the vault, jumped, stopped on it, had her hands on the handles, propelled her knees over the vault as she kept them tight to her chest, and successfully landed over the vault. Jonny mentioned, “Basically what it is, is just slowing things down, breaking things down step by step for the low-skilled students.” This strategy was effective for a student who was not able to put together all the steps involved in the vault as quickly as some of her classmates, without more attention or explanation.

Teachers create an accepting environment for low-skilled students. The physical education teachers established a learning environment in which students at all levels of skill, including low-skilled students, were accepted and taught. They created a supportive climate for the low-skilled students by setting up an environment

of acceptance in which no low-skilled students would feel excluded or rejected. They established an inclusive class setting that was devoid of teasing and incorporated the high-skilled students to accept the class climate and work with the low-skilled students. Teachers strived to include the participation of high-skilled students as mentoring partners for the low-skilled students.

The teachers cultivated a challenging environment that kept the high-skilled students interested in practicing a skill and that did not accept bullying or teasing. Although Quinn said her “[high-skilled students] are pretty respectful of others and their skill levels,” if she observed “the high-skilled students being disrespectful of the low-skilled students, she stops [that behavior] right there.”

In Jay’s class, a girl became unruly and began to speak out. Jay immediately went over to her and reiterated the class rules. But it was the other students who surrounded her, supported the rules the teacher stated, and calmed her down. Then after class, Jay spoke about

the social piece. They’re so willing and . . . ready to learn about friendship, about getting along with one another, not bullying. So in physical education, we cover all those areas—the social aspect, the personal aspect, the physical aspect, [and] respecting each other and the kids who are not as skilled as [you are].

When seeing any teasing, the teachers dealt with it immediately. Jonny thought that his school was

like utopia; it’s a perfect society. It’s different here. . . . They don’t hurt [low-skilled] students with nasty comments [and] words. And [the low-skilled students] don’t talk about avoidance in physical education. . . . We work on the students [and] talk to them if they are mean.

“If I catch the high-skilled students putting the low-skilled students down, I’ll have a private talk with that kid,” explained Jay. “I’ll go over what I expect from him in class, which is to use his high skills to help the low-skilled kids.”

Moira wanted her high-skilled students “thinking about personal social responsibility, rather than always focusing on the skills.” She

had developed compliment cards, which she gave to students at the end of the class

if they did something extra special as far as their effort levels go. If they really went above and beyond what was expected of them, I would tell them what they did and announce their name and give them a compliment card.

She said that she's "gotten really good feedback from the parents with these also." An example might be that "a low-skilled kid fell down during the game, and rather than the high-skilled kid wailing him with a ball, he lends his hand to let [the kid] get up and go back into position before they started playing again." She said that she "holds off and makes it a very special award" for the students.

Another way of creating an accepting environment for the low-skilled students, to help them become part of the class, was partnering them with the high-skilled students. Fiona believed that the partnering integrated the low-skilled students into the climate. She said, "We would get a really high-skilled kid and ask them to be that [low-skilled] person's partner on that day" for the advantage of both skill levels. Cathy said the high-skilled students "enjoy . . . the responsibility . . . and the teaching role." This also assimilated the low-skilled students, and they could take part in the motor skills.

Quinn noted that a "low-skilled student had a hard time throwing a strike to the batter and batting correctly." The low-skilled student barely threw the ball around the plate, but "the high-skilled student could hit it, because he . . . knows how to hit and . . . how to hold a bat. He has better eye-hand coordination." Then "when the lesser skilled [girl] gets up [to bat], the higher skilled [boy] is able to throw a strike" for the batter to hit. Her former low-skilled partner also had trouble throwing strikes for her to hit. Quinn added,

So there's more success both ways [for the students]. When the lesser skilled throws to the higher skilled, that's more challenge for him to be able to hit a ball that's low or high, or outside or inside. And [the low-skilled girl] is also more successful. The students get to work together, and they both improve.

According to the teachers, the high-skilled students would guide the low-skilled students in the activities almost immediately upon partnering. Moira started a program at her school called Guardian Angels. In the program, “the high-skilled students are partnered up with somebody who is low skilled and needs help.” The high-skilled students receive “specific instructions on how they can help [the teacher] teach [the low-skilled student].” This all started when

I was teaching [the students] skills, and I needed help. I asked them, who would like to help? We’ll call you the Guardian Angels. And the kids went berserk. They couldn’t wait to help. They were so excited, and as soon as they came in, they would go over, sit next to [the low-skilled students], and . . . help tremendously, because immediately the kids felt like they had a friend . . . someone that they . . . could trust and rely on.

The low-skilled students relied on the high-skilled students to help them learn the new skill. The low-skilled students were observed participating in class.

Teachers Structure Authentic Performances in Which Low-Skilled Students Can Successfully Participate

The physical education teachers would design authentic performances to encourage students’ learning. They would organize these performances (a) by modifying game play so that games would be played with no scores, no winners, and everyone working together and (b) by recognizing decisions about equipment that the low-skilled students selected and used. The students could use certain equipment to help them accomplish the motor skill.

Teachers continually modify game play with no scores, no winners, and everyone working together. If a game was played, it would be a modified game, with no score and no winners, or all the teams winning, and the students working together. The teachers wanted the low-skilled students to be included and to be successful at the motor skill being taught. The teachers were concerned that in other schools the low-skilled students were sometimes excluded in game play because they did not have the skill to play. Teachers did not want that to occur in their gymnasiums, so they worked hard to

restructure game play so that the low-skilled students then experienced success.

Teachers redefined game play by structuring games so that everyone could participate. Kacey explained that the immediate typical reaction from “high-skilled students” is “Can we play a game? Can we play a game?” In the observed class, Kacey tried to get them to understand that “it’s not all about the game, so . . . they have to accept that they can’t always have their shining moment.” The teachers believed that when students did not play full games in physical education classes, it was a “great equalizer.”

Other teachers also believed in redefining games. Hoover said that his students were pretty low skilled in the sport skills, so he “might not get to games, because [his students] are not even close . . . to be able to play a game of basketball.” In his case, he “gears [his class lesson] toward what he has,” that is, motor skills with no scores and no winners. Heather and Cathy taught motor skills, and when their students were able to execute the skills, they played lead-up games. The low motor skill students were observed being able to practice their motor skills with the class.

Cathy said that teaching the skill before the lead-up games excited her class. The students were then observed playing some sideline lead-up games. In the interview, Cathy stated, “I will call out three girls. Two will be attack, and one will be defense. We try to . . . learn how to pass and dribble and shoot at the goal, but very, very simple.” She

sets up . . . a lead-up game situation of three versus two, so they learn to pass to the open player . . . do back passes, and to shoot [when there is an] angle to [take a shot]; we’ll try to teach all that.

By being skillful, the low motor skill students could participate in a redefined game. Jonny said the teachers “want [their low-skilled students] . . . to feel comfortable. If [they] can demonstrate that [they] can do [the motor skill], then [they] can try this.” The low motor skill students could then continue practicing “that for a little while, and then we’ll make another modification, and then so they have something [new to try] in front of them, something to look forward to, and something to [move] on to.” Kacey stated that in her program

the emphasis is no competition. We don't keep score here. I don't even own a scoreboard. Over the years we've created a program where the kids feel safe, and they don't mind asking for help, and because the emphasis isn't on competition, they don't feel self-conscious when they get up at bat or something.

She added, if the low motor skill students feel “confident with some good skill . . . they will participate.”

The teachers felt that experiencing success in motor skills was important for the low motor skill students. According to Humarie, if the low motor skill students did not experience success in the motor skills, they “shut down”:

They won't want [to] play the next couple times they come to class. They may come unprepared, because they know that they won't have to play [games] . . . I tend not to have too many of those kids, because I'll try to [make them] feel successful.

Heather thought that the low motor skill students showed “a willingness to stay with [the modified games] . . . because of the success” they experienced in practicing their motor skills.

When low motor skill students have success, Quinn emphasized,

giving them a challenge that's reachable, giving a step by step [plan of] what they can reach, so as soon as they find success, you challenge them with the next step. It keeps them going, but they have to find success in order to step ahead, otherwise if they keep getting knocked down, they're not going to want to be challenged . . . keeping it moving, keeping it positive, and having them find success [will] make it successful for them.

Teachers recognize decisions about equipment selection and usage for low-skilled students. Teachers used equipment in different sizes, shapes, weights, and textures based on their experience with low-skilled students. Humarie was observed when one of her low-skilled students was having trouble serving a tennis ball after learning the skill. The student told her teacher that her racket

was too heavy. So the teacher went and exchanged her racket for a lollipop racket. Humarie repeated all the steps of the serve to the girl, had her practice her toss, and even had her swing without the ball. Humarie mentioned after class, “Once she got the correct racket, she could perform all the steps necessary to serve the ball.” She stated, “I change [the equipment] for the students, so they can be successful in their skills and comfortable with it.” She added about low-skilled students,

Almost every class I will change equipment for a student. I make it clear to them that there is nothing wrong about using different equipment. They know that if they can do the skill with the equipment I give them, they can then do the skill with the equipment that the rest of the class is using.

In another of Hoover’s classes, two boys who were low skilled and were partnered up were having a lot of difficulty with the chest and bounce passes. Both passes would often end up at the knees of the receiver. The teacher initially tried to get them to pass the balls harder. But then he got them a smaller and lighter ball. He told the boys,

Try doing both passes with this smaller ball. You’ll both be able to work on doing the passes correctly without worrying about the heaviness of the ball. Learning the correct form is the most important thing, because you could put that form to use with any ball.

The ball reached each boy with much more force than before and was easier to catch because now it arrived at waist height. The boys were able to pass with a ball that made them successful. Appropriate equipment allowed more opportunities for the low-skilled students to learn and practice the new motor skills.

Teachers instructed their classes that it was important to have equipment exchange. Heather did not make it known to the class that the students with different equipment were the low-skilled ones: “I am careful about telling the entire class that I will arbitrarily pick students to try different equipment that we are considering for future use.”

When given the choice, low-skilled students chose equipment on their own. During an observation, Quinn's class was given a choice between using beanbags or scarves in a juggling exercise. After initially choosing the more difficult beanbags, a couple of low motor skill students asked to exchange their beanbags for scarves. After the students practiced with the scarves, juggling became easier for them, and soon they switched back to the beanbags on their own.

Discussion

The strategies that teachers use to teach low motor skill students in physical education can influence what students do in the gymnasium. This study shows a sequential and succinct method of various strategies used for low motor skill students. Expert teachers using strategies with low-skilled students have not been examined in the literature. While the literature explores various elements that contribute to effective teaching, it does not focus on the strategies that can be transferred to instruction in physical education.

These strategies that teachers used in this study allow for effective motor skill development. These motor skills may be an important link in students' future physical activity (Stodden et al., 2009). For some low motor skill students, the physical education class in which they are involved is their main, and sometimes only, source of being physically active. This is especially important for low motor skill students as it has been shown that they have different experiences in physical education (Carlson, 1995; Silverman, 2005). Therefore, understanding the various instructional strategies necessary for low motor skill students can prove useful in laying an important foundation for effective motor skill acquisition.

As this study shows, changing the level of difficulty of the task to meet the needs of the students is an effective instructional tool (Rink, 2003). Students of various skill levels and potential for achievement should master each skill level before progressing (French et al., 1991). How the class is taught will affect whether students learn motor skills (Silverman, 2005). The learning of tasks can be adapted to the characteristics of the students. This is especially important when practice progressions are inappropriate for students, as there is a possibility of regression in their motor skill performance (Silverman, 1990). When teachers incorporate strategies that allow individual

differences, the chance for success increases for low motor skill students (Silverman, 2005).

While the literature shows that skill progressions are important, especially for low motor skill students who might not understand the steps to complete the skill, teachers often overlook these skill progressions. A common mistake in physical education is for teachers to move students too quickly into games, before they have sufficient practice (Bernstein, Herman, & Lysniak, 2013; Bernstein, Phillips, & Silverman, 2011). Students may be more successful at motor skills if complexity is gradually increased, because they become more competent at their tasks (Silverman, 2005). As this study shows, teachers proactively provided strategies for simple to complex progressions. Paying close attention to the progress, understanding, ability of low motor skill students, and anything that could affect their performance could be important factors in improving physical education for them (Portman, 1995). This strategy may allow the low motor skill students to achieve appropriate practice and progress in their motor skills.

One way that appropriate practice was promoted was through modified equipment usage options that allowed a strategy to differentiate instruction while supplying appropriate practice opportunities. This attention to the modification of equipment kept the students actively participating and acquiring skills throughout the lesson. As appropriate practice trials have been shown to be related to achievement (Silverman et al., 1995), the implementation and strategic use of modified equipment during instruction for low-skilled students enhances practice, and teachers in this study used it often.

Effective teachers are expected to carry out an ethic of care in teaching physical education (Owens & Ennis, 2005). As this study demonstrates, physical education classes can offer opportunities for teachers to demonstrate caring behaviors toward their students (Larson & Silverman, 2005; Ravizza & Stratton, 2007). This study highlighted several strategies that teachers can use to exhibit these caring behaviors. This is important because understanding the strategies that teachers use can augment teacher instruction, especially for students who do not feel cared for due to their lack of skill (Carlson, 1995; Portman, 1995). Giving rise to a caring gymnasium, interacting with students and having caring moments are important

parts of the low-skilled students' learning process (Noddings, 2005). Therefore, as a result of this study, we can see theories of caring being carried out successfully in physical education.

While teachers in this study showed students empathy, they also expected a level of accountability from the students they helped. The literature (Silverman et al., 1995) has shown that accountability is an important part of the teaching process. It refers to the way the teachers make sure students complete the task in physical education (Solmon & Lee, 1996). When students are held accountable, motor skill learning is more likely to take place. If the teacher does not hold the students accountable, learning is less likely chance to occur (Silverman et al., 1995).

This study showed successful strategies that teachers used to hold students accountable. Low motor skill students often do not understand how to improve in skill acquisition, because they lack that foundation. The strategies the teachers in this study used allowed them to embed accountability and keep their students on task, and these students remained active. These strategies can lay a foundation for these skills by creating a solid base of fundamental motor skills that can be applicable to various lifelong activities. When teachers educate their students, the chance of lifelong physical activity increases (Cothran & Kulinna, 2005). Therefore, it is important that educators incorporate the effective strategies that were found into practice. There would be important implications for research if we could ascertain not only the subject matter knowledge and instructional strategies but also the exact circumstances in which teachers could absorb that knowledge and put it into practice (Dodds, 1994).

In line with the research on teacher effectiveness (Rink, 2013), caring and empathy (Noddings, 2005), accountability (Solmon & Lee, 1996), skill progressions (Ferrer-Caja & Weiss, 2000), and modified equipment were important elements for these teachers to influence low motor skill students. During instruction, the teachers understood progressions in motor skills and worked to emphasize

them. From this study, it was apparent that teachers were taking active steps of applying content knowledge and strategies that allowed low motor skill students to be more successful and engaged with class tasks. A limitation of this study was that the teachers understood that their effective instruction was being observed; however, they did not know that the focus was on low-skilled students.

The teachers in this study reflected what the research on effective teaching suggests teachers can do to facilitate low motor skill students in developing motor skill. If all students are to learn, then strategies that improve their practice success and attitude must be used. Teachers can influence learning, and the results of this study suggest successful expert teachers plan and execute strategies that affect low motor skill students.

Recommendations for Teaching Strategies

Research has shown that low motor skill students do not often find success in physical education, but rather humiliation, isolation, and alienation. They avoid learning new motor skills, announce failure in advance, and feel helpless. This study, however, highlighted that expert teachers used strategies and found ways to help low-skilled students maximize their abilities and experience.

Expert teachers using strategies with low-skilled students have not been examined in the literature. When teachers incorporate these strategies that allow individual differences (see Table 2 for a list of strategies identified in the study), the chance of success increases for low-skilled students. These recognized teachers might serve as an example for how all teachers can incorporate some of these strategies into their instruction. Strategies such as creating a class environment in which all students are accepted, motor skill deficiencies are identified and improved, students are allowed to pick their own modified equipment, and tasks are created for individual success can be recommended in instruction of low-skilled students.

Table 2*Strategies Identified for Teaching Low-Skilled Students*

Theme	Strategies
Specific teaching skills are important to facilitate low-skilled students' success	Paying attention to low-skilled students' motor skill deficiencies
	Identifying low-skilled students and calling them by name
	Identifying motor skill deficiencies and recommending solutions
	Creating an accepting environment for low-skilled students
	Not allowing teasing of low-skilled students
	Partnering the high-skilled students with the low-skilled students
Teachers structure authentic performances in which low-skilled students can successfully participate	Teachers continually modify game play with no scores, no winners, and everyone working together
	Teachers redefine game play
	Success is experienced by low-skilled students in game play
	Teachers recognize decisions about equipment selection and usage for low-skilled students
	Teachers made equipment exchange an important part of physical education class
	Teachers involved the low-skilled students in equipment exchange

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