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Students' Perspectives on Direct, Peer, and Inquiry Teaching Strategies

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It was the purpose of this study to examine students' perspectives on three teaching strategies. Seventy middle school students were interviewed, and they rank ordered the strategies. A constant comparison process guided the interview data analysis, while the rank order data were analyzed via descriptive statistics and a Friedman Analysis of Variance by Ranks. Two key concepts that influenced students' perspectives on the effectiveness of the teaching strategies were their conceptions of the affective dimensions of each strategy and their knowledge beliefs.

Key words: teaching strategies, student perspective, learning, physical education

A single class of students is anything but singular. Rather a "single" class is actually a diverse collection of students that vary widely in many attributes. How does a teacher effectively reach the broad spectrum of students in such a class? Lasley and Matczynski (1997) contend that "only teachers who utilize a variety of instructional models will be successful in maximizing the achievement of all students" (p. 29). Relatedly, Berliner (1986) suggests that expert teachers use a range of instructional strategies based on the task and learners' needs.

A number of theorists have discussed the range of instructional approaches available for use by teachers. In their classic text, Joyce and Weil (2004) describe over 20 different approaches to teaching, grouped into four types: information processing, social interaction, focus on the individual, and behavior modification. Other theorists (e.g., Gunter, Estes, & Schwab, 2003) suggest different groupings of teaching styles, but also provide a wide variety of styles that teachers should consider. Within physical education, the oldest and most widely known formal system of instructional frameworks is Mosston's Spectrum of Teaching Styles (Mosston & Ashworth, 2002), which has been in use for over 30 years. Although the details of all these approaches to organizing and describing different teach-

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ing options vary, there are basic principles that unite them all: a) there are many ways to teach, b) all are valuable, and c) the decision to use a method is based on a variety of factors.

These different instructional approaches can be confusing, as they go by many names, such as models, strategies, and styles. Metzler (2000) provides an overview of the differences in terminology:

> Methods, strategies, styles, and models differ mainly in scope. A method, strategy, or style is typically used for one or a few short-term learning activities and outcomes and then gives way to another method, strategy, or style. A model is designed to be used for an entire unit of instruction and includes all of the planning, design, implementation, and assessment functions for that unit. (p. 12)

For consistency in this paper, we will use the term *teaching strategy,* as it best reflects the short-term learning scenarios described in the methods section.

Much of the theoretical and research focus on teaching strategies has been on teachers' knowledge and use of the various strategies, or on student learning outcomes (e.g., Gillies, 2004; Kulinna & Cothran, 2003). Certainly these teacher-focused studies are valuable and necessary, for teachers are the instructional leaders of a class. What has been largely overlooked, however, are the other and majority members of a class: the students. With the exception of student "products," the measured learning outcomes in various teaching environments, the student has been largely absent from teaching-strategy research.

This is a critical oversight, as current conceptualizations of student learning focus on the influential, constructivist nature of student cognition and the meaning that students assign to their experiences (Phillips, 1995). Nicholls (1992) goes so far as to suggest that students are educational theorists who are actively interpreting and influencing the learning environment. When the teaching-learning process is viewed from this constructivist perspective, one must assume that teachers and students may not assign the same meaning to classroom events since the individual relies on prior knowledge and experiences to interpret new information. For example, a middle school teacher with 20 years' experience likely looks forward to a day's lesson using a peer strategy, and has high hopes for positive learning outcomes for this year's class—hopes based on prior experiences with similar classes and content. In contrast, first-year students at the middle school may approach the same lesson with a mix of emotions. Some may be thrilled, some may be confused, and others may believe the strategy will not work based on their own, different prior experiences. Research has supported this constructivist approach with consistent findings that students and teachers frequently hold different class conceptions. The two groups vary on curricular goals (Cothran & Ennis, 1998), conceptions of good teaching (Beishuizen, Hof, van Putten, Bouwmeester, & Asscher, 2001), fun in physical education (Garn & Cothran, in press), and views on class power (Cothran & Ennis, 1997).

Specific to teaching style research in physical education, little is known about students' perspectives on various teaching strategies, and what little is known is specific to Mosston's Spectrum (Mosston & Ashworth, 2002). Cothran, Kulinna, and Ward (2000) found that college-aged students held differing views on the fun,

motivational, and learning aspects of different strategies. Cai (1997) reported that college student reactions to teaching styles were influenced by the subject matter of the class in which they were enrolled. In another college-based study, Boyce (1992) found that even though the command style was superior for skill acquisition, over 50% of the students reported not liking the learning environment.

It was the purpose of this investigation to explore middle school physical education students' perspectives on direct, peer, and inquiry teaching strategies. This study is significant because understanding students' perspectives on teaching strategies is critically important, yet little information about their views exists. Examining students' perspectives may provide insights into class practices to which students are most amenable, therefore potentially increasing the likelihood of student learning. As Cullingford (1991) noted, "Their [students'] views deserve to be taken into account because they know better than anyone which teaching styles are successful, which techniques of learning bring out the best of them . . ." (p. 2). Additionally, to understand teacher decision making and strategy use within the context of a class, one must examine student reactions to various teaching strategies. Vaughn, Schumm, Niarhos, and Daugherty (1993) suggest that students are actively shaping the classroom with their preferences and act ". . . in many subtle and not so subtle ways, and these preferences likely influence teaching procedure" (p. 108). Teachers who are planning changes in their teaching strategies can be better informed as to the potential positive and negative responses to a new strategy, thus increasing the chances of successful pedagogical change.

Method

Overview

This study involved interviews with students about direct, peer, and inquiry teaching strategies. Researchers described the three approaches and students responded to a series of questions about each of the three scenarios and then rank ordered their preferences. The purpose of the investigation was to explore physical education students' perspectives on teaching strategies and was not an attempt to identify a "best" way to teach. Rather, the purpose was to explore students' perspectives on various aspects of each strategy, with a goal of learning more about students' views on teaching and learning.

Participants

The Research Team. This study was conducted by a research team consisting of two pedagogy faculty members and seven physical education teachers pursuing graduate degrees. At the time of the study, all the graduate students were enrolled in a course on research on teaching in physical education. One goal of the course was to provide the students with research experiences related to the course topic. So in addition to content knowledge related to the course topic, the graduate students also studied interviewing techniques and had extensive practice with interviews as part of the class. The two faculty members were experienced researchers, and one served as the instructor for the course.

Student Participants. Student participants in this study were 70 middle school students (21 in sixth grade, 25 in seventh grade, and 24 in eighth grade) ranging in age from 11 to 14 years ($M = 12.33$, $SD = 1.02$). They were enrolled in a variety of schools representing seven school districts (one large urban district and six smaller suburban districts) from a large metropolitan area in the United States. There were 26 boys and 44 girls who participated in this project. They reported their ethnicity as Caucasian ($n = 48$), African-American ($n = 14$), Asian-American ($n = 5$), Arab-American ($n = 1$), Hispanic ($n = 1$), or other ($n = 1$). Before initiating the recruitment process, permission was gained from the university's institutional review board, school districts, principals, and physical education teachers. After permission to recruit was granted, students were asked to participate by a researcher who attended the students' classes. Informed consent was received from the students and their parents.

Data Collection

Scenario Development. Prior to data collection, a short physical education class scenario was written to represent lessons using direct, peer, and inquiry strategies (see Appendix). These scenarios were based on Metzler's (2000) description of the three instructional models. Clearly, a short scenario is unable to convey the full theoretical complexity of each teaching strategy; however, a lengthy and full description of each approach would also be problematic. We attempted to reach a balance between keeping the instrument a manageable length for middle school students' attention span and adequately representing key aspects of each of the three ways of teaching. Basketball was chosen as the content of the lessons since it was the unit most likely to have been experienced by the students. A three-panel illustration representing each scenario was also developed to provide a visual representation of each type of lesson. After development, the scenarios and illustrations were sent to three pedagogy specialists who: a) had public school experience using various teaching strategies, b) had university teaching experience with pre-service teachers in courses about teaching strategies, and c) were familiar with the Metzler (2000) text. All three experts agreed that the scenarios and illustrations were realistic and valid representations of the teaching frameworks.

Interviews. Students were interviewed by a member of the research team. All interviews started with a short introduction that emphasized that there were no right or wrong answers in this interview and that the researcher just wanted to know what students thought about different ways of teaching. It was also emphasized that although the examples were from basketball, the content could be any part of physical education. An interview guide (Patton, 2002) was used to structure the conversations, which lasted from 20 to 40 minutes. Students were read each scenario and shown its accompanying illustration. They were then asked about their perceptions about this way of teaching physical education. All students responded to all three strategies and strategies were presented in a counterbalanced manner across participants. As a final question, students were asked to rank order the three strategies with regard to the best way to teach physical education and to explain why they ordered the strategies in that manner. This last question was designed to

double check students' earlier responses, as well as to provide an opportunity to compare and contrast the three strategies.

Data Analysis

Rank Order Data. Descriptive information participants provided about themselves, along with their ratings of the three teaching strategies from best to worst (i.e., 1 = best to 3 = worst) for teaching physical education, were analyzed using quantitative methods. Descriptive statistics were calculated on the demographic information. Ranking data were also recoded to create variables representing the frequency each strategy was chosen. These new variables (i.e., direct, peer, inquiry) were used to determine the characteristics of the strategies. A *t*-test was conducted to determine if differences existed in the frequency of rankings by gender, as well as an Analysis of Variance (ANOVA) to investigate differences in frequency of rankings by grade level. A Friedman Analysis of Variance by Ranks was also conducted to see if there was an inherent order in the rankings of teaching strategies among the students.

Interviews. The conversations were recorded and later transcribed. The interview data were analyzed using constant comparison and analytic induction methods to identify and extract common themes across participants (LeCompte & Preissle, 1993). The data analysis process began with each of the graduate students working alone to develop a list of initial themes with supporting data. Those initial themes were shared, discussed, reviewed, and compared to the data. Themes specific to individual or small groups of students were eliminated and the discussions and data review focused on themes that cut across a majority of the participants. The faculty member who also served as instructor of the course engaged with and guided the students in these discussions. After the graduate students finalized their initial list of themes, these analyses and all data were shared with the second faculty member. After reviewing all the materials, additional discussions and thematic revisions occurred between the two faculty members, with the end result being the themes presented in this paper.

Several measures were taken to insure the trustworthiness of the data collected. Triangulation of data sources was provided by comparing the rank order data to interview responses. Data from different schools in different settings and students representing different grade levels were also compared. Additionally, the use of multiple researchers provided for multiple perspectives and a system of checks and balances on data interpretation. Repeated re-analysis of the data occurred to search for negative cases that might offer alternative conceptions to emerging themes.

Results

The results of this study should be interpreted cautiously because students had not actually experienced all three styles in class settings. Given that caveat, the results of this study still support the conception of students as active, influential class participants and learners who can provide key insights into their own education. Students' rankings and interview responses supported personal theories of

education that were influenced by their perceptions of the affective climate of each strategy as well as their views about knowledge.

Rank Order of Scenarios

The *t*-test investigating differences in top-ranked teaching strategies by gender suggested that boys and girls had similar frequency of rankings for the teaching strategies. The ANOVA results were similar, with no significant grade level differences in frequency of rankings. The number of times each teaching strategy was ranked first, second, and third is presented in Table 1. The Friedman Analysis of Variance by Ranks was not significant, suggesting that there was no underlying order to the rankings. Average rankings for the strategies (ranging from 1 = best to 3 = worst) were: Direct $M = 1.86$, $SD = .80$; Peer $M = 2.03$, $SD = .84$; and Inquiry $M = 2.11$, $SD = .81$.

Although there was no statistical significance related to the teaching strategy ranking, that does not mean that students did not see the strategies differently. Their interview responses revealed a variety of perspectives on the strategies, with the two most powerful influences being the student views of: a) the affective climate of each strategy and b) beliefs about knowledge.

Effective or Affective?

The first key consideration in students' perspectives on the three teaching strategies was how students viewed the affective climate of each class. This is in contrast to most theoretical and teacher discussions of strategies, in which selection of a strategy is based on educational, not necessarily affective, outcomes. Alex explained the tension between the two perspectives:

> I'd rather learn more than have fun and talk. Most middle schoolers probably want to have fun at this age, and maybe learning isn't as important to them. I think learning is more important, but having fun is like a higher priority than learning for most kids.

As Alex noted, the positive or negative affective evaluation of the three strategies was primarily based on perceptions of fun. What made each of the classes fun, or not fun, however, differed and was very socially driven. A related dimension was that of public display of skills.

Table 1 Students' Rankings of the Teaching Models

Ranking	Direct *f* (valid %)	Peer *f* (valid %)	Inquiry *f* (valid %)
1	26 (39.4)	22 (33.3)	18 (27.3)
2	23 (34.8)	20 (30.3)	23 (34.8)
3	17 (25.8)	24 (36.4)	25 (37.9)

Fun. The more social aspect of peer instruction made it a clear fun favorite for many of the students. Julia explained:

> I like being with my friends, and I like helping them, and I like them helping me. I just like communicating with them and everything. It's more like a fun type thing like you know, like have fun. We would enjoy it a lot more, and they know that we would and we would probably listen more because we would have a little more freedom.

Erika agreed. "It's always fun working with your peers you know, because it's your friends and everything instead of working directly with the teacher. It's just more contact with people your own age and being able to do stuff with them." Nick offered a more succinct response: "It would be fun because you can talk, and it's better than doing it yourself."

Working together, however, was not automatically fun, as students worried about what would happen if forced to work with someone other than friends. Nathan explained:

> It [fun or not] depends on who they're paired with. If they're with a friend it would be a fun class but if they're paired with somebody else they don't get along with then I don't think it would be that fun of a class for them.

John predicted what could happen if non-friends were paired together: "If students get paired up with people they don't like then probably you'll get fights like somebody just going around like I am doing it right and stuff like that, and they be going back and forth." Luke also thought arguing was more likely. "If the person kept saying you are not doing this right and you are not moving your arms the right way, it would make the people frustrated, and they would get mad, and they could start getting into a fight."

With the inquiry strategy, most fun comments focused on the opportunity to engage in active, creative movement. Nick appreciated the active approach:

> You get to move around and I think most kids have more fun when they're active in a class than when they're less active. Each person in this class is active. A lot of people would rather be active than listen to lectures on how to like pass the ball because they are bored when they're listening to lectures, but then when they're playing they get to move around more.

Mike agreed. "It'd be fun because everyone is doing something. Since we have our academic classes before this, you've been storing up all this energy and you want to get it out." Amber liked the individualized options. "It'd probably be fun because you get to do it your own way. It doesn't matter if it's wrong or not because there's no right or wrong 'cause you're just doing it by yourself."

In contrast to peer and inquiry strategies, the direct strategy was credited with having good learning, but less fun, potential. Sharonda described the prevailing view about this strategy: "It's probably not as fun as the other ones, but you would learn more 'cause you were just concentrating and you're not getting distracted. You'd be more focused, might not be as fun, but they'll be focusing more maybe." Alyssa shared a similar perspective: "I don't think it would be a ton of fun, but I would like it because you are learning at the same time while you are doing it."

Some students did think the direct strategy was fun because it would lead to more skilled performance. Kirby claimed, "I think it would be fun because you know, you get to learn how to do the skill, and then you get to practice it and practice it and get better at it. It makes you a better player." Kayla acknowledged that the long term learning benefits would eventually pay off in fun. "In the beginning it might be boring to you, but then at then end it will start getting fun because you will be better at it."

Public Display of Skill. How students viewed the public display of skill for low-skilled students also influenced their affective evaluation of the strategy. Julia claimed that low-skilled students would not like the direct teaching strategy because:

> They're getting kind of like they have to do it right in front of the teacher, so they might not like to do it because they might not give a lot of effort. Because if the kids are put on the spot so if they don't know how to do it or if they didn't catch on then they might, like, not want to show it.

Alex also noted the potential negative feelings low-skilled students might have:

> It might not be fun if you weren't doing it the correct way, and they don't think that they're part of the group then. They'd see how everyone else was really good, and he or she would be the only one who wasn't doing it the correct way. He probably feels really different because he probably would be frustrated and feel, I don't know, like laughed at by other people.

The public display of skill was more limited in the peer setting, and therefore it was a more attractive setting for some students. Emily explained, "You wouldn't have to worry about showing off and stuff. You can just practice it in your own way, and you don't have to like worry about other people looking at you if you mess up." Nathan claimed that working with friends would lessen some students' anxiety:

> Most kids like working with partners. Like my friend Lindsey, she doesn't like being taught. She's more comfortable with her friends than with the teacher, so like when she works with partners, when she works with a friend, if they point out a mistake she feels more comfortable and she won't like get upset or anything. She knows that they won't tell anyone if she doesn't know how to do it.

Students were divided on whether inquiry was a positive social climate for the display of skills. Some students felt that the strategy was positive because everyone was doing something and it could be different. Emily saw the teaching strategy positively. "I like it because you can go at your own pace, and you don't have to feel that you have to be better than anyone else, and it's just kind of like your own little thing that you're doing." Jessica agreed. "You're all doing the exercise so you don't pay attention to everyone, and if you mess up no one's going to really notice." In contrast, another group of students thought the freedom to display different skills might be viewed negatively. Cara explained, "Some kids could feel left out if they couldn't do the things how other people could, and they could try hard but they couldn't do it at all. They would feel left out." Similarly, Lindsey said,

"A lot of kids don't have a lot of skills. They might feel sad because they can't do what other kids are doing and just might be jealous."

Knowledge

A second key influence on students' perspectives was their conceptions of knowledge. Three different views related to who had the necessary knowledge to promote learning were: a) the teacher as sole source, b) special students, and c) students as independent learners.

Teacher as Sole Source. For some students, a traditional conception of knowledge transmission led by the teacher was seen as the only effective instructional practice. Melinda described why she preferred direct instruction:

> You can get the material down and get it into your brain because you're seeing it and then doing it yourself, and someone is telling you who has the really trained eye. You're getting the material back from the person who really knows the most about it, learning the material from the person who knows the most, and that's the best way to learn.

Tim agreed that the teacher was the knowledge authority:

> I think it [direct instruction] is good because the teacher knows what they are doing, and if a student doesn't know what they are doing the teacher can help you. The teacher is acting out for you and he has probably done this a number of times and it really helps to have someone who knows what they are doing to teach you, because when you are learning it, you don't know what you are doing.

This group of students was very concerned about learning to move the "right" way and learning to move the right way could only happen with the teacher directly guiding learning. Students were therefore concerned that learning could not occur in inquiry or peer settings. Tana described why she thought inquiry was not a good way to teach physical education:

> Experimenting would be fun, but you couldn't exactly learn. 'Cause you couldn't like do it like you were supposed to. You could mess up unless she told you exactly what to do. If you did it by yourself you could learn it wrong. Some people are like bad at it, and if they thought it was right then maybe they wouldn't be right and they would always do it that way.

Emily agreed that the inquiry strategy was not a good idea. "People, they wouldn't know if it was right or wrong by themselves. They could be doing it wrong and they wouldn't know."

Peer lessons were seen more positively than inquiry because many students thought working with others would be fun. But the same concerns about who had the right knowledge to guide learning were also present with peer instruction. Josh explained:

> It might be fun, but you wouldn't learn anything. That would be fun to be with your friends and stuff but you wouldn't really do anything right because

> the person, the coach, might not know how to do it so she's telling the person that's trying to do the move the wrong things. If your partner doesn't know, then you don't know how to do it either. You'd never get anywhere.

Alex agreed that although peer was fun, it was not a good way to learn:

> I thought it was fun, but I probably didn't learn as much as I should have from the real coach. If the person you're partnered with isn't that good and they are trying to teach you, they probably would lead you in the wrong direction and get you to be even worse than you are. The students would have fun, but they wouldn't learn as much because what if their partner wasn't really that good in sports and the other person was really good and so the really good person would probably be pulled down to the same level.

Students who held the view of the teacher as the primary knowledge provider were very critical of the teacher's role in peer and inquiry strategies. For example, Tana said, "I don't think this one [peer] is a good idea because the teacher really wouldn't be doing their job. They are the ones that are supposed to be teaching and not leaving it up to the students to do it." Brandon concurred. "You're the teacher and you should help your student, not have the other people do it." Julia suggested students would even react negatively to the teacher's different role. "The teacher really doesn't do anything and the kids would kind of get mad and they'll probably get really disrespectful." Similar poor outcomes were predicted by Jason with inquiry:

> It wouldn't be like going to a class because the teacher isn't really teaching you anything. I wouldn't teach this way because I don't want kids to feel like mad at me because I'm teaching them the role to play. They'd probably think I was a horrible teacher and I don't even teach them the correct way, and they would probably hate you for the rest of their life.

Jessica focused on what the teacher should be doing in contrast to the teacher's role in inquiry strategy teaching:

> I really don't feel the teacher is teaching. She might be explaining or asking the question like you read, but she's not really teaching how you supposed to and how to do it and the best ways to do it. It takes time to teach something, and just asking how to do it isn't a good way to teach. I think every teacher should sit down and show how to do it and give people a visual about it.

Special Students. A second perspective on knowledge was that special students, those with high skill, might have the knowledge to be successful with teaching strategies other than direct instruction. Lindsey thought peer would work well as long as the partner groups had a skilled person in it:

> Let's say you were partnered up with someone who has experience, and you weren't so good. You could get it from an experienced player so you could get better. But if you weren't that good and I wasn't that good, then that'd be bad.

Cara agreed:

> If the low-skilled person was, like, the coach then the person telling them what they were doing wrong, they might, the high-skilled one might not learn as much. But I think the lower skilled person would learn more from the higher skilled person.

Students also reported some value for the inquiry strategy, if students were skilled. Nathan stated, "I think high-skilled kids would like this better. They don't always mess up, and they would know what to do." Mike agreed that high-skilled students could be successful with the inquiry strategy:

> I think it might be good in some ways, but maybe not be in others. It would be a good way because it helps kids think for themselves. Most people who have a higher skill level would probably like this way because it's a lot more independent. I think it might not be a good way because some kids maybe with a lower skill level might not exactly know what to do. Not many kids would know a bunch of moves and all that stuff to do without a little help from maybe teachers or other students.

Independent Learners. A third view of knowledge was that students did have the ability to learn from a variety of strategies and that learning was not directly dependent on the teacher or special groups of students. Lucas preferred the inquiry strategy because:

> I think it's a good way for kids to learn. I mean, it gets the mind thinking in a good way and then they kind of like do it at their own pace. I think it is better than just the teacher saying just this is what you do and you go do it. I think it gets your mind motivated and that gets you motivated so I think it would be fun.

Alyssa liked the active nature of an inquiry approach:

> I think this would be good. They usually make us sit there and lecture you, like "So try this and this and this," and then they are talking too much and then they don't let you get a chance to try it. But if they just simply ask you and then you go on to then do it that would be good because you are thinking about it, and you are more focused, and it gives you a chance to try it.

A peer approach was also appreciated by students with this knowledge perspective. Erika explained why she thought peer instruction was good: "I think the teacher might do this because they want to be more hands off and mentally fill the children's minds to help them learn how to play the game instead of just taking over." Jalet noted the learning advantage the coach would have in peer:

> I think it would be more effective for the coach because they are seeing the mistakes that you are making and trying to teach you. As the coach you'd get to see all the errors and what they are doing, and trying to teach them how to correct it so it will help it themselves when they start doing it. They'll

> probably notice what they are doing wrong because they are thinking about what they told the other person.

Karina also saw advantages. "The coach might see something that the teacher doesn't so it's like two people teaching one kid. The other people might even have a better way of doing it than the teacher does."

Students who subscribed to this view of knowledge also thought that students might sometimes even be better at sharing knowledge. Jessica suggested:

> Teenagers sometimes have a tendency to not listen to adults when they actually say it, but if a kid, you know, tells them how they are doing or how better to move then they actually listen and try to like try the ideas that they give them.

She went on to add, "Like my friend Brittany, she doesn't always understand how it's said. If I or someone else she knows lets her know what she is doing wrong, she better understands from what the teacher is saying." Nick agreed. "Kids really more listen to other kids than they do to adults."

Discussion

As discussed earlier, the purpose of this study was not to determine a best way to teach, but rather was to provide teachers with insights into students' perspectives on different teaching strategies. These students reported concerns and preferences and offered points of reflection from which teachers can consider possible student reactions to strategy use. Their reports also offer guidance on future needed research.

There were no significant differences in the rank order of the styles. This is in contrast to student survey results indicating that teacher-centered strategies were generally viewed more positively by students than student-centered strategies (Cothran et al., 2000). Like the college students in the Cothran et al. (2000) study, however, students' perspectives varied as to the relative merit of different teaching strategies. Familiarity with and teachers' beliefs about the use of strategies may also influence students' beliefs about the appropriateness of different strategies (Kloosterman, Raymond, & Emenaker, 1996). One significant limitation of this study was that not all students had experienced all three styles. Even when they reported having experienced a strategy, their descriptions of that experience revealed they likely had not experienced the full potential of the strategy. Future research is needed to examine the relationship between student experience with and perspectives on strategies. Cothran et al. (2000) found such a link with college students, but also were limited in their ability to verify that the students had actually experienced the style as theorized. Only when students have had repeated experience with a variety of styles and researchers have taken a long-term examination of students' lived experiences during those learning experiences can we be more confident that we truly understand the student experience.

The importance of affective perceptions of teaching strategies is consistent with prior research that revealed having fun and working with friends consistently rate near the top of students' goals for their classes (e.g., Allen, 1986; Cothran &

Ennis, 1998). Those same goals influenced these students' discussions about the merits and challenges of these three strategies. These results related to peer strategies lend support to Byra and Marks' (1993) findings on the reciprocal style of teaching, where they reported students gave more feedback to friends and were more comfortable when working with friends than non-acquaintances. Perhaps teachers should let students pick partners when using peer strategies. Knowing that many students were worried about working with non-friends in peer instruction suggests that effective teachers might explain why students can benefit from working with different people, provide quality task sheets to guide feedback, as well as provide instruction on coaching skills and conflict resolution. Rotating partners frequently to allow for a chance to work with both friends and non-friends would also help alleviate student concerns.

With regard to direct instruction, acknowledging that many students do not find direct instruction fun should lead teachers to consider modifications that might enhance the appeal of this approach. Emphasizing that increased skill will eventually pay off in fun activity, and including other lesson components that might make direct instruction more fun, such as music during some tasks, or creative approaches to information delivery, are possibilities. Teachers selecting a direct strategy might also consider the inclusion style from Mosston's Spectrum (Mosston & Ashworth, 2002), wherein students choose a level of difficulty when performing a given skill. Alternately, the use of multiple instructional strategies in the same lesson can balance the strengths and weaknesses of each strategy as perceived by students. The key for instructional success is finding ways to combine the students' affective needs with the teachers' instructional needs rather than seeing them as oppositional goals.

The second factor in students' perceptions of teaching strategies was their epistemological beliefs (what students believe about knowledge and knowing). Students' conceptions of knowledge in physical education seem to parallel much of the general education findings related to epistemology. It is important for us to understand these epistemological beliefs, as "what students think knowledge is and how they think they know have become critical components of understanding student learning" (Hofer, 2001, p. 354). Although this investigation was not initially focused on epistemological models, there are interesting parallels between these findings and Baxter Magdola's (1992) Epistemological Reflection Model.

Although Baxter Magdola's (1992) model was based on work with college students, these middle school students seemed to share similar epistemological conceptions. There were students whose knowledge beliefs were similar to Baxter Magdola's Stage 1, Absolute Knowing. These students saw the teacher as the sole and legitimate provider of knowledge, and they were very critical of teaching strategies that moved the teacher from the center of the knowledge transmission process. Students who saw highly skilled students as potentially valuable sources of knowledge were also likely operating at this stage, as knowledge was viewed as the domain of experts, whom others must have access to in order to learn. Similarly, there were some students who appeared to hold beliefs congruent with Stage 2, Transitional Knowing. Learners in this stage concede that authorities do not know everything all the time. Peers start to influence conceptions of knowledge in this stage. The third group of students, those who believed that peers and/or self could be valuable in learning, may fall in Stage 3, Independent Knowing. The fourth

and final stage is Contextual Knowing, where independent thinking remains the most important aspect of truth, and independent thought takes place in the context of knowledge.

Caution must be taken in interpreting these epistemological parallels, as it was not the purpose of this study to document knowledge beliefs in younger aged students. The parallels, however, are intriguing and worthy of future study. It may also be a worthy use of teachers' time to think about how to promote student independent thought and learning and to decrease reliance on the teacher as the sole source of knowledge. Using student-centered strategies like inclusion, guided discovery, and divergent discovery (Mosston & Ashworth, 2002) may be one way to prompt such growth.

The introductory paragraph to this paper included the following quote from Lasley and Matczynski (1997): "Only teachers who utilize a variety of instructional models will be successful in maximizing the achievement of all students" (p. 29). We would like to suggest a modification of their recommendation: "Only teachers who utilize a variety of instructional models, *and who understand how their students view and react to those models*, will be successful in maximizing the achievement of all students." This study is a first step toward helping teachers achieve that promise.

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Appendix

Teaching Scenarios

Direct Instruction. In this physical education class, the teacher shows and tells students how to move the best way. This teacher showed the class how to do a lay-up and the important things the students needed to know about it. Then students practice to make sure they can do the skill. If everyone did it the right way, all students would look a lot alike. The teacher walks around and helps students and lets them know how they are doing. At the end of class the teacher might tell everyone what the class did well and what they will work on next time.

Peer Instruction. In this physical education class, students help each other learn. The class might start with the teacher showing everyone the three things they need to know about how to do a good pass in basketball. Students then get a partner and practice passing the ball against the wall. One partner is the mover and the other partner is the coach. The coach's job is to help the mover get better by telling them what they're doing right or wrong. The teacher walks around and helps different groups. If a mover isn't doing something right the teacher will talk to the student coach and help them see what their partner needs to do better. The teacher wants the coach to tell their partner how they're doing. After a few minutes, the partners switch jobs and the coach gets to be the mover. At the end of class the teacher asks the partners to tell each other what they learned about passing the ball and how to be a good coach.

Inquiry. In this physical education class, the teacher starts the class with a question, "How can you get away from a defender?" Students dribble around the gym and try out different ways they could get away from the defense. When the students have tried different ways to move, the teacher asks them another question. In this class the teacher said, "I saw some of you changing hands. Let's see how many ways we can change hands." Students think about the teacher's question and then try out different ways to dribble. The students do things at their own speed. At the end of this class, the teachers might ask the students "How many of you were able to change hands and still control the ball?" The students raise their hands if they could.