Impact of a Physical Education Teacher’s Disability on Elementary Pupils’ Perceptions of Effectiveness and Learning

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The purpose of this study was to examine the impact of a physical education teacher’s disability on elementary school pupils’ learning and perceptions of the teacher’s competence. Participants (N = 113) were randomly assigned to view one of two virtually identical videotaped swimming lessons. In the first lesson, the teacher was able-bodied (ABL) while in the second, she taught from a wheelchair (WCL). Following the viewing of their assigned lesson, pupils completed an examination over lesson content and a perception questionnaire regarding the teacher. Results showed that pupils who viewed the WCL scored significantly higher on the technique portion of the examination than pupils who watched the ABL. There were no significant differences between the perceptions of either group.

There is a very small body of research in the sport pedagogy literature that has examined the influence of physical education teachers’ appearance on pupils’ learning and their effectiveness as a pedagogue. Based on the findings in the 1970s that teacher appearance, competence, preference, and attire influenced pupils’ perceptions of their ability to teach (Chaikin, Gillen, & Derlega, 1978; Feshbach & Feshbach, 1972; Landers & Landers, 1973; Molloy, 1975), sport pedagogy researchers began to look at the effects of physical education teachers’ appearance, in terms of body fatness, on pupils’ learning of content and perceptions of teacher competence (Dean, Adams, & Comeau, 2005; Melville & Maddalozzo, 1988; Thomson, 1996).

The most often cited of these studies was conducted by Melville and Maddalozzo (1988). These researchers showed one of two virtually identical videotapes of a physical education teacher presenting exercise concepts to two randomly assigned groups of high school pupils. The only difference between the two vid-
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Tapes was that in one the instructor appeared “fit and trim” while in the other he appeared overweight and unfit because he wore a “fat suit.” Following the pupils’ observation of either videotape, the researchers assessed their perceptions of the teacher’s competence and the degree to which they learned the health-related concepts presented in the videotapes. Results of this study, like those conducted in other secondary school settings by Dean et al. (2005) and Thomson (1996), revealed that the pupils perceived the teacher as less effective and learned less from him when he was overweight.

To date, most of the work done by those who do research in adapted sport pedagogy has either focused on the plight of pupils with disabilities or investigated teachers’ attitudes about instructing pupils with disabilities (e.g., Hodge & Jansma, 2000; Rizzo & Kirkendall, 1995; Rizzo & Vispoel, 1992). Relatively little work has examined the difficulties faced by physical education teachers who themselves have disabilities and teach “able-bodied” pupils. An extrapolation from the aforementioned body of research on teacher appearance suggests that physical education teachers who have a disability might be in for a particularly difficult time in terms of fighting negative perceptions of their competence and their ability to promote learning among their pupils. As one of a series of studies investigating the effectiveness of physical education teachers who have a disability, the purpose of the research described in this paper was to examine the influence of a physical education teacher’s disability on elementary school pupils’ learning and perceptions of the teacher’s competence.

Theory and Hypotheses

The research on the effects of teacher appearance on pupils’ learning and perceptions has, to date, been largely atheoretical. With no obvious framework to draw from, the theoretical perspective that guided the current study and the others in the series was eclectic. First, we took a critical perspective. Our motivation for conducting the research was to unearth the degree to which physical education teachers with a disability were disadvantaged and ineffective through no fault of their own and, if necessary, to suggest means by which this state of affairs could be rectified.

Second, we developed two possible and alternate hypotheses, which might explain how and why pupils of different ages responded to and learned from physical education teachers with a disability. On the one hand, drawing from the works of Bandura (1986, 2002), Oliver (1990), Thomson (1997), Michalko (2002), Gergen and Gergen (2003), and Coakley (2007), we took a sociological perspective, the key features of which were that pupils’ beliefs about what physical education teachers should look like and how they should act were socially constructed. Specifically, we hypothesized that older high school pupils, having been subjected to mainstream societal views about the body, physical activity, and sport for a relatively long period of time would be more likely to perceive physical education teachers who have a disability in a negative light and learn less from them. Conversely, younger elementary school pupils, having not yet been socialized into believing that physical education, physical activity, and sport were for “whole” and “fit” bodies, would be more likely to perceive physical education teachers who have a disability positively and, hence, learn more from them.
On the other hand, we took a psychological/developmental perspective, particularly drawing from the seminal work of Martinek (1981) and his associates (Martinek, Crowe, & Rejeski, 1982; Trouilloud, Sarrazin, Martinek, & Guillet, 2002) that highlighted the influence of pupils’ attractiveness on physical education teachers’ perceptions of them and the quality of teacher-pupil interactions. Specifically, in a reversal of Martinek’s “Pygmalion effect,” we hypothesized that younger relatively immature elementary pupils would not be ready to accept a physical education teacher with a disability who broke convention and did not fit the model that they had come to expect. Elementary pupils, from this perspective, would be more likely to perceive physical education teachers with a disability negatively and learn less from them. By contrast, relatively mature high school pupils would have learned to accept physical education teachers with a variety of bodies and so perceive those who were disabled more positively and learn more from them.

**Method**

**Participants**

The participants in the study were 113 (63 females, 50 males) 4th and 5th grade pupils attending three elementary schools in two rural towns in the southeastern United States. These schools were chosen because they were representative of the public elementary schools in this region in which many of our students were employed.

The age range of the pupils who participated in the study was 9–12 years. The vast majority of them came from low to middle income homes. According to the schools’ principals, approximately 52% of the pupils attending the three schools were African American and 46% were Caucasian. The principals also noted that many of the pupils’ parents were moderately educated with approximately half possessing a college degree. All participants had previously been taught physical education by an able-bodied teacher. Thirty (26.55%) pupils, however, indicated that they had had a friendship with someone in a wheelchair, while 40 (35.40%) pupils reported having a family member in a wheelchair. The pupils and their parents consented to their participation in the study in line with the authors’ institutional review board policy on human subjects.

During physical education lessons at the schools, pupils in the lower grades were normally taught a conservative form of movement education focused on developing fundamental movement skills. The upper grades were usually taught the skills and strategies of games and sports within the multiactivity curriculum model. Typical of the area, class sizes were large and often consisted of the whole grade, which obviously had a detrimental impact on pedagogical quality.

**Videotaped Lessons**

Following the design and methods employed by Melville and Maddalozzo (1988), a single 20-min physical education lesson plan on content deemed appropriate for elementary pupils was developed. Swimming, which was not part of the physical education curriculum at the three schools, was chosen as the subject matter for the lesson because of its technical nature, its relative uniqueness and potential to
maintain pupils’ interest, and the likelihood that the pupils would have low levels of swimming skill and content knowledge prior to the study. Specifically, the lesson was designed to teach pupils the basic techniques and strategies of front crawl. Tasks included in the plan were warm-up activities; practices and drills designed to teach pupils the front crawl leg-kick, arm action, body position, breathing, and full stroke; and a closure in which pupils were asked questions about the techniques and strategies they had just been taught. As well as outlining these key tasks, the lesson plan also included a considerable amount of scripting of key phrases and cues.

Following considerable practice with and reworking of the lesson plan, a Caucasian female sport pedagogy graduate student taught the final version of the lesson in a 25 m pool on two occasions to the same set of 10 pupils while being videotaped. The graduate student was an expert swimming instructor and also participated on her university wheelchair basketball team as the one able-bodied player permitted.

Both videotaped lessons were identical with one exception. In the first lesson, the graduate student taught as an able-bodied teacher (able-bodied lesson, ABL) and walked up and down the side of the pool as she organized, managed, instructed, and gave feedback to the pupils. During the second lesson (wheelchair lesson, WCL), however, she taught from a conventional wheelchair, giving the impression that she had a physical disability. In both lessons, the graduate student appeared to be a professional and fit teacher. She taught wearing identical attire appropriate for physical education. Specifically, she wore a t-shirt, tracksuit trousers, and tennis shoes.

**Lesson Credibility, Quality, and Similarity**

Lesson credibility was established by asking one able-bodied and one expert physical educator with a disability to view the two videotaped lessons. Both experts indicated that they believed that the teacher’s performance in the WCL was believable and that the quality of instruction in both lessons was of a similarly high standard. They commented, particularly, on the ability of the teacher to maintain a considerable “pace” during the lessons as she moved through the planned tasks and noted that she had succeeded in constructing an atmosphere that was both welcoming and focused on learning.

The degree to which the two videotaped lessons were similar in terms of type and quality of instruction was also assessed by utilizing three systematic coding systems. First, both lessons were coded for the number and type of primary tasks presented by the teacher and the percentage of time spent by pupils in each of these tasks. Second, the lessons were coded with the Physical Education Teacher Assessment Instrument (PETAI; Phillips, Carlisle, Steffen, & Stroot, 1986) for the percentage of time the teacher spent in five instructional and five managerial behaviors and the percentage of time the pupils spent engaged in skill learning. Finally, the lessons were coded with the Instrument for Identifying Teaching Styles (IFITS; see Curtner-Smith, Hasty, & Kerr, 2001) for the percentage of time spent by the teacher and pupils in each of eight direct and indirect teaching styles originally described by Mosston (1981) and management.

Results of this coding are shown in Table 1. They indicate that the lessons were, indeed, virtually identical. In addition, they suggest that the teacher provided
high quality instruction. Specifically, the teacher spent very little time managing and great deal of time instructing. Moreover, pupils were engaged in skill learning for a high percentage of time, the teacher used three main teaching styles that were congruent with her goals (practice, reciprocal, and guided discovery), and the bulk of the tasks in which the pupils engaged were designed to teach techniques and strategies.

Table 1  Percentages of Time Spent by the Teacher With Her Pupils in Various Behaviors, Teaching Styles, and Tasks During the WCL and ABL

<table>
<thead>
<tr>
<th>Instrument</th>
<th>WCL</th>
<th>ABL</th>
</tr>
</thead>
<tbody>
<tr>
<td>PETAI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planned presentation</td>
<td>36.13</td>
<td>38.53</td>
</tr>
<tr>
<td>Response presentation</td>
<td>8.00</td>
<td>3.62</td>
</tr>
<tr>
<td>Monitoring</td>
<td>43.87</td>
<td>45.06</td>
</tr>
<tr>
<td>Performance feedback</td>
<td>1.07</td>
<td>1.39</td>
</tr>
<tr>
<td>Motivational feedback</td>
<td>7.07</td>
<td>7.09</td>
</tr>
<tr>
<td>Beginning/ending class</td>
<td>0.40</td>
<td>1.11</td>
</tr>
<tr>
<td>Equipment management</td>
<td>0.53</td>
<td>0.70</td>
</tr>
<tr>
<td>Organization</td>
<td>3.07</td>
<td>2.64</td>
</tr>
<tr>
<td>Behavior management</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Total instruction</td>
<td>96.13</td>
<td>95.69</td>
</tr>
<tr>
<td>Total management</td>
<td>3.87</td>
<td>4.31</td>
</tr>
<tr>
<td>Engaged skill learning time</td>
<td>52.48</td>
<td>52.17</td>
</tr>
</tbody>
</table>

IFITS
Reproductive Styles
Style A (Command)         | 0.00  | 0.00  |
Style B (Practice)        | 65.79 | 65.71 |
Style C (Reciprocal)      | 23.68 | 22.86 |
Style D (Self-check)      | 0.00  | 0.00  |
Style E (Inclusion)       | 0.00  | 0.00  |

Productive Styles
Style F (Guided Discovery)| 5.26  | 5.71  |
Style G (Divergent)       | 0.00  | 0.00  |
Style H (Going Beyond)    | 0.00  | 0.00  |
Management                | 5.26  | 5.71  |

TASK ANALYSIS
Warm-up                   | 6.75  | 6.83  |
Leg kick                  | 19.61 | 21.40 |
Arm action                | 16.94 | 19.30 |
Breathing                 | 27.48 | 26.15 |
Full stroke               | 21.08 | 19.86 |
Closure                   | 8.14  | 6.46  |
Procedure

Lesson Viewing. Pupils were randomly assigned to watch the videotape of either the ABL or the WCL. Specifically, pupils were labeled “1” or “2” by the first author as they returned their signed consent forms. Number 1s formed the ABL group and number 2s, the WCL group. Since both groups included females, males, African Americans, Caucasians, and pupils from the 4th and 5th grade, we were comfortable that they were homogenous.

Both videotaped lessons were shown simultaneously in separate rooms within each school. Group size for videotape viewing ranged from 8 to 16. Prior to viewing their assigned lesson, pupils were told that following its conclusion, they would be given a short examination over the content covered in the lesson and asked to complete a short questionnaire about the physical education teacher who taught the lesson. They were also informed that the examinations and questionnaires would be anonymous.

Content Examination. Directly following the viewing of their assigned lesson, pupils completed a short written examination over the techniques and strategies taught in the videotaped lesson (see Appendix A). The format of this written examination was similar in design to that used by Melville and Maddalozzo (1988). There were a total of 12 multiple-choice questions on the written examination. Six questions were concerned with swimming techniques and six questions were about strategies related to swimming. Examinations were scored in three ways. The number of correct responses in total, the number of correct responses for technique questions, and the number of correct responses for strategy questions were recorded for each pupil. The examination was evaluated by three experts in sport pedagogy to ensure its content validity.

Perception Questionnaire. Having completed the content examination, pupils were asked to complete a short questionnaire designed to determine their (a) liking for the teacher, (b) perceptions of the teacher’s mastery of content, and (c) perceptions of the degree to which the teacher was a positive role model (see Appendix B). Again, this questionnaire was similar in design to the one used by Melville and Maddalozzo (1988). There were a total of six statements on the perception questionnaire. Two statements were concerned with the pupils’ liking for the teacher, two statements were concerned with the pupils’ perceptions of the teacher’s competency, and two statements asked the pupils about the degree to which they thought the teacher was a positive role model. Pupils responded to these statements on a Likert-type scale. Specifically, they were asked whether they strongly agreed (scored 5), agreed (scored 4), were uncertain (scored 3), disagreed (scored 2), or strongly disagreed (scored 1) with each statement. Pictorial images of facial expressions depicting the 5 possible responses were added to the perception questionnaire to assist the pupils. Questionnaires were scored by summing the responses to the two statements on liking the teacher, content mastery, and role modeling. Thus, each questionnaire yielded three scores ranging from 2 to 10. The questionnaire was also assessed by the three sport pedagogy experts for content validity.

Reading Level Evaluation. Both the content examination and the perception questionnaire were evaluated using the Flesch Reading Ease test (Flesch, 1951) and
the Flesch-Kincaid Reading Level test (Kincaid, Fishburne, Rogers, & Chissom, 1975). The former rates text on a 100-point scale. The higher the score, the easier it is to understand the text. The latter rates text by assessing the United States school grade level for which it is appropriate. These evaluations produced a Flesch reading ease score of 89.8 and a Flesh-Kincaid grade level score of 2.9 for the content examination and a Flesch reading ease score of 74.5 and a Flesh-Kincaid grade level score of 4.2 for the perception questionnaire. Thus, it was assumed that the 4th and 5th grade pupils in the study would have no problems reading and comprehending the two documents.

Data Analysis

Content Examination Data. Descriptive statistics (means and standard deviations) for all 12 questions of the content examination were calculated for each group (i.e., those pupils who viewed the ABL and those who viewed the WCL). Descriptive statistics were also calculated for each group for the six questions concerned with techniques and the six questions concerned with strategies. A $2 \times 2$ (teacher disability level x content area) repeated measures analysis of variance test was then employed with paired comparison t test follow-ups if necessary in which the Bonferroni method was used to control for multiple comparisons, to ascertain whether pupils learned more or less about swimming in general, and swimming techniques and strategies when viewing the ABL or WCL. Since this was an exploratory study and the first of its type, in line with the suggestions of Henkel (1976), the level of significance for this and other inferential statistical tests in this study was set at $p < .10$.

Perception Questionnaire Data. Descriptive data (i.e., mean scores and standard deviations) were calculated for each group (i.e., pupils who viewed the WCL and ABL) for each of the three categories on the perception questionnaire (i.e., liking the teacher, content mastery, role modeling). Independent t tests, for which the Bonferroni method was also used to control for multiple comparisons, were then calculated to determine if there were significant differences between the perceptions of pupils who viewed the ABL and the WCL.

Results

Content Examination

Descriptive data for the content examination are shown in Table 2. The table indicates that the pupils who viewed either videotape did not do particularly well or poorly on the entire test or on the two content areas (i.e., techniques and strategies) within the test.

Results of the analysis of variance test revealed significant main effects for teacher disability level, $F(1, 111) = 10.08, p = .00$ and content area, $F(1, 111) = 52.52, p = .00$. In addition, the results revealed a significant interaction, $F(1, 111) = 3.91, p = .05$. Inspection of Figure 1 indicates that this interaction was due to the differing influences of teacher disability level on technique and strategy scores.
The paired comparison t test follow-up analyses indicated that while there was no significant difference between the strategy scores of pupils who viewed either lesson, pupils who viewed the WCL scored significantly higher on the technique portion of the examination than pupils who watched the ABL ($p = .00$). Moreover, pupils who viewed the WCL scored significantly higher on the technique questions than they did on the strategy questions ($p = .00$). Similarly, pupils who watched the ABL scored significantly higher on the technique portion of the examination than they did on the strategy portion ($p = .00$).

**Perception Questionnaire**

Descriptive data for the perception questionnaire indicated that perceptions of the pupils in either group were similar (Table 2). Both groups liked the teacher they viewed in the videotapes, thought the teacher demonstrated mastery of content, and believed the teacher was a good role model; however, further analyses using independent t tests revealed that there were no significant differences between the perceptions of either group.

**Post-Hoc Power Analysis**

A posthoc power analysis was conducted to determine the actual effect size that could be detected in our study. During this process, we used the pooled standard deviations for each measure, the sample size, and an alpha level of .10 for a power of .80. Results revealed that for the total content examination score we could detect a difference between means of 0.49 and for the technique and strategic scores on the content examination we could detect differences between means of 0.33 and 0.29, respectively. Furthermore, for the perception questionnaire, results indicated that we could detect differences between means of 0.36 (liking of the teacher), 0.36 (mastery of content), and 0.48 (positive role model).
The most important finding of this study was that the elementary aged pupils were positively influenced by a physical education teacher who used a wheelchair. Specifically, and unexpectedly, pupils learned more about swimming from watching the WCL than they did from viewing the ABL. Moreover, the fact that there were no differences between the perception data of both the WCL and ABL groups suggested that the pupils were as positive about the teacher when she was in a wheelchair as when she was able-bodied.

Due to the paucity of research in this area, these findings provided beginning support for the first of our two alternative hypotheses about how and why pupils of different ages respond to and learn from physical education teachers with a disability. That is, they favored the sociological perspective over the psychological/developmental explanation. Specifically, the results suggested that the pupils in the study had not yet been socialized into believing that physical education, sport, and physical activity were only for whole, fit, and what society dictates are athletic bodies, and were more than prepared to accept a physical education teacher with a disability as credible. For the sociological perspective to be fully supported, however, similar studies of middle and high school pupils will have to show a gradual reversal in the pattern of results produced by the current study. That is, they will have to yield similar results to the research on the effects of physical education teachers’ body fatness on secondary pupils’ learning and perceptions of teacher competence (Dean et al., 2005; Melville & Maddalozzo, 1988; Thomson, 1996), which revealed a bias against fatter but equally skilled teachers.

Figure 1 — Scores on the content examination by pupils who viewed the WCL and ABL.

Discussion

The most important finding of this study was that the elementary aged pupils were positively influenced by a physical education teacher who used a wheelchair. Specifically, and unexpectedly, pupils learned more about swimming from watching the WCL than they did from viewing the ABL. Moreover, the fact that there were no differences between the perception data of both the WCL and ABL groups suggested that the pupils were as positive about the teacher when she was in a wheelchair as when she was able-bodied.

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Of course, it may be that future studies of middle and high school pupils yield results that are similar to those of the current study. If this were the case, it would indicate that society in general was not as focused on the perfect body, particularly in physical education, sport, and physical activity settings, as we had suggested in the introduction to this paper.

In its purest form, the sociological perspective suggests that elementary pupils would not have a bias against either able-bodied or physical education teachers with a disability. Why, then, did the pupils in the current study learn more from the teacher when she was in a wheelchair? The most plausible explanation that is congruent with the sociological perspective is that they admired her. While these pupils had not yet formed clear views on what a physical education teacher should look like, perhaps they were already beginning to understand that a physical education teacher with a disability defied convention and so, given that she had good pedagogical skills, were “rooting” for her and, consequently, paid close attention to what she taught. Of course, it is also possible that the pupils learned more from the teacher when she was in a wheelchair simply because this was a new and novel experience for them which elicited a more desirable response.

The main practical implication of the study is that physical education teachers with disabilities are likely to be at least as effective with and as accepted by older elementary pupils as able bodied teachers, providing they have good pedagogical skills. The suggestion is that school districts and principals should have no qualms about hiring elementary physical education teachers with disabilities. In addition, sport pedagogy faculty would also do well to strongly encourage preservice teachers with disabilities to enter their physical education teacher education programs.

At this juncture, it is important to acknowledge that this exploratory study was limited in a number of ways. It involved a relatively small sample of older elementary pupils who viewed physical education lessons rather than experienced them first-hand, assumed that these pupils believed that the teacher had a disabling condition in the WCL, was conducted in one region of the United States, and investigated one type of disability. Moreover, its design did not provide access to pupils’ actual thoughts, feelings, and perceptions about being taught physical education by a teacher with a disability. Instead, these thoughts, feelings, and perceptions were implied. To overcome these limitations, as well as replicating the current study with younger elementary pupils and at the middle and high school level, future research in this line could also examine a range of disabilities that vary in severity. Moreover, replicating the study in different regions of the United States and in other countries with more liberal or conservative political and cultural attitudes toward persons with disabilities would obviously be of use in developing a more sophisticated theoretical understanding of how physical education teachers with disabilities are perceived by pupils and the extent to which they can impact pupils’ learning. Further, researchers could improve the ecological validity of the current study’s design if they required groups of randomly assigned pupils to be taught by physical education teachers with and without disabilities.

In addition, qualitative studies, particularly those aimed at revealing children’s thought processes as they view physical education teachers with disabilities or are taught by them would be of value. For example, researchers could gain valuable data by interviewing pupils about their perceptions of teachers with and without disabilities either individually or within focus groups. Further, they could employ
the stimulated recall, thinking aloud, or projective slide viewing methods (see Curtner-Smith, 2002) in which pupils watch videotapes or a series of slides of lessons taught by able bodied teachers or teachers with disabilities and are either asked to comment on what they see in their own time or are provoked to comment by questions from the researcher. For comparative purposes, it may also prove useful for researchers to use the critical incident technique (Flanagan, 1954) to gather data from pupils who are taught a series of physical education lessons or entire units of work by teachers with and without disabilities. This data gathering technique generally involves pupils providing a written description of one incident that occurred during a lesson that was particularly important as far as they were concerned as well as explaining why the incident was salient. Finally, researchers might gain useful data from older pupils by using a modified version of the life history design (see Curtner-Smith, 2002). The aim here would be to use a series of in-depth interviews designed to elicit individual pupils’ “life stories” and then to examine these stories for political, social, and historical influences on the pupils’ perceptions of physical education teachers with and without disabilities.

References


**Appendix A**

**Swimming Questions**

**Please Select**

Your Sex:  M  F

Your Grade:  4th  5th

Your Age:  9  10  11

**Please Circle the Correct Answer from the Videotape**

With your face in the water, the waterline should be

(a) just above your eyes  (b) completely over your head  (c) below your chin  
(d) level with your nose

One type of breathing used in the freestyle is

(a) trickle  (b) fast  (c) calm  (d) left
When the hand enters the water, it is known as what phase of the stroke?
(a) recovery    (b) power    (c) catch    (d) breath

The stroke in the freestyle mirrors what letter?
(a) C    (b) L    (c) X    (d) S

Kicks used in the freestyle should be
(a) 8-10 inches   (b) 12-18 inches   (c) 20-25 inches   (d) 28-30 inches

Kicking used in the freestyle should mainly come from your
(a) hip    (b) knees    (c) ankles    (d) toes

When swimming the freestyle, you can save energy by
(a) breathing more often   (b) breathing less often   (c) fast arm strokes   (d) slow arm strokes

You can swim a longer distance if you
(a) relax with slow arm and leg movement   (b) get a good night’s sleep   (c) kick hard   (d) breath more

To help you in racing, you can
(a) wear a swim cap   (b) take less breaths   (c) take more breaths   (d) kick really hard

Alternate breathing patterns (breathing on your right & left sides) will help you
(a) take calm and relaxed breaths   (b) see both sides of the pool   (c) not get a sore neck   (d) a, b, & c

Stretching your arm forward during the stroke will help you
(a) have strong strokes   (b) stay straight   (c) keep your whole body on the surface   (d) a, b, & c

Slow “warm up” swimming before racing will help you
(a) sleep well   (b) give you an advantage   (c) prevent cramps and injury   (d) get noticed by the coach
Appendix B
Video Questionnaire

Please Circle
Your Sex : M F
Your Grade: 4th 5th
Your Age : 9 10 11

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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</thead>
<tbody>
<tr>
<td>After viewing today’s video, please check the most appropriate response.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I liked the PE teacher who taught swimming in the video.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I liked how the PE teacher in the video taught swimming.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The PE teacher in the video knows a lot about swimming.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The PE teacher in the video is a swimming expert.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The PE teacher in the video makes me feel like swimming.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The PE teacher in the video makes me want to improve my swimming.</td>
<td></td>
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<td></td>
<td></td>
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</table>