Influence of a physical education teacher’s disability on middle school pupils’ learning and perceptions of teacher competence

Lance G. Bryant  Arkansas State University

and

Matthew D. Curtner-Smith  University of Alabama

Abstract
Limited research has investigated the problems encountered by physical education teachers who have disabilities and instruct able-bodied pupils. The purpose of this study was to examine the influence of a physical education teacher’s disability on middle school pupils’ perceptions of the teacher’s competence and their learning. Participants were 201 7th and 8th grade pupils (age range 12 to 16 years). They were randomly assigned to watch one of two videotaped swimming lessons. These lessons were identical except that in the first lesson the teacher taught from a wheelchair (WCL) while in the second she was able-bodied (ABL). Immediately following the watching of their assigned lesson, pupils completed a questionnaire asking them about their perceptions of the teacher’s competence and an examination over lesson content. Inferential statistical tests revealed that there were no significant differences in the perception and examination scores of those pupils who viewed the WCL and the ABL. These results provide further support for a sociological explanation of how and why pupils of different ages respond to and learn from physical education teachers with a disability.

Key-words: disability • influence of disability • physical education • pupils’ learning and perceptions

Research in the field of sport pedagogy has yielded a modest amount of literature that has assessed the impact of physical educators’ physical appearance on their effectiveness and pupils’ learning. The finding of research conducted in classroom settings in the 1970s that teacher competence, dress, appearance and preference influenced pupils’ perceptions of teachers’ instructional effectiveness (Chaikin et al., 1978; Feshbach and Feshbach, 1972; Landers and Landers, 1973; Molloy, 1975) was the catalyst for sport pedagogy researchers studying the influence of physical education (PE) teachers’ appearance, in terms of body composition, on pupils’ perceptions of
teacher competence and learning of content (Dean et al., 2005; Melville and Maddalozzo, 1988; Thomson, 1996). These studies indicated that secondary school pupils perceived slimmer and apparently fitter teachers as more effective and learned more from them.

Much progress has been made in the last 20 years documenting the difficulties pupils with disabilities face and their need for inclusion in regular PE classes. However, relatively little research has been conducted focusing on the difficulties faced by PE teachers who themselves have disabilities and teach ‘able-bodied’ pupils. Conventional and well-meaning wisdom (e.g. see Johnson, 1985; Spencer, 1998; Wilmore, 1982) and the studies reviewed in the preceding paragraph suggest that in order to be effective PE teachers must ‘look the part’ and appear ‘fit’, whole and healthy. These sentiments and findings, then, suggest that PE teachers who have a disability might face difficulty in terms of dispelling negative perceptions about their competence and their ability to facilitate pupil learning. As the second in a series of studies investigating the effectiveness of PE teachers who have a disability, the purpose of the research described in this paper was to examine the impact of a PE teacher’s disability on middle school pupils’ perceptions of the teacher’s competence and their learning.

**Theoretical Perspectives and Hypotheses**

To date, studies of the influence of teacher appearance on pupils’ perceptions and learning have usually not been theory driven. Without a well-developed perspective to draw from, we constructed an eclectic theoretical framework to guide the present study and the others in the series. Initially, taking a critical perspective, we reasoned that doing this kind of research might reveal the degree to which pedagogically skillful PE teachers with a disability might be disadvantaged and less effective than able-bodied PE teachers with the same level of expertise due to factors beyond their control. Results of such research could then be drawn on in an effort to change this state of affairs.

Next, we developed two alternative hypotheses which might explain how and why pupils across a range of ages learned from and responded to PE teachers with a disability. To begin with, drawing heavily from the work of Martinek and his associates (Martinek, 1981; Martinek et al., 1982; Trouilloud et al., 2002) which revealed the significant impact pupils’ attractiveness had on the quality of teacher–pupil interactions and the perceptions PE teachers had of individual pupils, we took a psychological/developmental perspective. Specifically, by reversing Martinek’s ‘Pygmalion effect’, we hypothesized that older, relatively mature high school pupils would have come to accept PE teachers with a variety of bodies and so learn more from those who were disabled and perceive them more positively. Conversely, younger, relatively immature elementary school pupils would not be ready to accept a PE teacher with a disability who broke convention and did not fit
the model that they had come to expect. From this perspective, therefore, elementary pupils would be more likely to perceive PE teachers with a disability negatively and learn less from them.

By contrast, extrapolating from the works of Bandura (1986, 2002), Oliver (1990), Thomson (1997), Michalko (2002), Gergen and Gergen (2003), Smith and Sparkes (2005), and Coakley (2007) and based on the understanding that pupils’ beliefs about what PE teachers should look like and how they should act were socially constructed, we took a sociological perspective. Specifically, we reasoned that younger elementary school pupils would be more likely to perceive PE teachers who have a disability positively and, hence, learn more from them than older high school pupils because they had not yet been socialized into believing that PE, physical activity and sport was for ‘whole’ and ‘fit’ bodies. By contrast, older high school pupils would be more likely to perceive PE teachers who have a disability in a negative light and learn less from them due to being subjected to mainstream societal views about the body, physical activity and sport for a relatively long period of time.

Since middle school represented a halfway point in pupils’ maturation and exposure to societal views, within the psychological/developmental hypothesis, we theorized that middle school pupils would show less bias against PE teachers with a disability than elementary pupils but more than high school pupils. Conversely, within the sociological hypothesis, we theorized that middle school pupils would show more bias against PE teachers with a disability than elementary pupils but less than high school pupils.

The results of the first study of our series (Bryant and Curtner-Smith, 2008) provided support for the sociological explanation of how and why pupils learn from and respond to PE teachers with a disability. In this study, a group of elementary pupils who watched a videotape of a PE lesson taught by a teacher in a wheelchair (i.e. she appeared to have a disability) scored significantly higher on one portion of an examination over lesson content than another group of pupils who observed a videotape of the same teacher teaching the same content without the wheelchair (i.e. she appeared to be able-bodied). Moreover, trends in the data suggested that elementary pupils perceived the teacher more favorably when she taught in the wheelchair.

The goal of the present study was to provide data which would either support or refute the sociological explanation of how and why pupils responded to and learned from PE teachers with a disability. As far as possible, then, the study was a replication of the original.

**Method**

**Participants**

Participants were 201 (69 boys, 132 girls) 7th and 8th grade pupils attending three middle schools in two rural towns in the southeastern United States. These schools
were selected because they were representative of the middle schools in this region in which many of our department’s graduating teachers were employed. The three schools had predominantly low to middle class catchment areas. Pupils ranged in age from 12 to 16 years. Approximately 62 percent were Caucasian and 34 percent were African American. The pupils and their parents agreed to take part in the study in congruence with the authors’ institutional review board policy on human subjects.

Lessons

In line with the design and methods employed by Melville and Maddalozzo (1988) and our (2008), we developed a single 20-minute PE lesson plan on subject matter appropriate for middle school pupils. We chose swimming as the subject matter for the lesson because of its comparative uniqueness, technical emphasis, potential to hold pupils’ attention, and the probability that the pupils would have low levels of swimming content knowledge and skill before the study commenced. Specifically, the lesson we designed was aimed at teaching pupils the basic techniques and strategies of breaststroke. Tasks we listed in the plan were warm-up activities; drills and practices which facilitated pupils’ learning the breaststroke leg-kick, arm action, body position, breathing, and full stroke; and a closure during which pupils were questioned about the techniques and strategies covered in the main portion of the lesson. As well as listing these tasks, we also included key phrases and cues within the lesson plan.

After six 90-minute sessions of practice with and discussion of the lesson plan, the final version of the lesson was taught to the same set of 10 pupils in a 25 meter pool on two occasions by a Caucasian female sport pedagogy graduate student. Both lessons were videotaped. The graduate student had participated on her university wheelchair basketball team as the one able-bodied player permitted and was an expert swimming instructor.

The videotaped lessons were identical with one exception. In the first lesson, the graduate student taught from a wheelchair (wheelchair lesson: WCL), and, thus, gave the impression that she possessed a physical disability. In the second lesson (able-bodied lesson: ABL), however, she taught as an able-bodied teacher. This involved her walking along the side of the pool as she managed, organized, instructed, motivated and provided technical feedback to the pupils. In congruence with the research designs employed by Melville and Maddalozzo (1988) and our (2008), the graduate student was employed as the instructor in both the WCL and ABL to ensure internal validity of the present study was strong.

Credibility, Quality, and Similarity of Lessons

We established the credibility of the lessons by requesting that one expert physical educator with a disability and one able-bodied expert PE teacher view them prior to data collection. The experts were of the opinion that the quality of instruction
provided by the teacher in both lessons was of a similarly high standard and that her performance in the WCL was believable.

We also assessed the degree to which the lessons were similar in terms of type and quality of instruction by utilizing three systematic coding systems. Initially, we coded both lessons for the type and number of major tasks taught by the teacher and the percentages of time pupils spent in each of these tasks. Next, we coded both lessons for the percentage of time the pupils spent engaged in skill learning and the percentages of time the teacher spent in five managerial and five instructional behaviors by employing the Physical Education Teacher Assessment Instrument (PETAI) (Phillips et al., 1986). Lastly, we coded the lessons with the Instrument for Identifying Teaching Styles (IFITS) (see Curtner-Smith et al., 2001) for the percentages of time spent by the pupils and teacher in management and each of eight reproductive and productive styles of teaching described by Mosston (1981).

The results of the coding are provided in Table 1. They confirm that the lessons were virtually identical. Moreover, they indicate that the teacher provided a high level of instruction. Specifically, the teacher spent a relatively large portion of time instructing and relatively little time managing. Further, in congruence with her goals, the teacher mainly employed the practice and reciprocal styles of teaching and pupils were engaged in skill learning for a high percentage of time. Finally, the majority of the tasks in which the pupils engaged were aimed at teaching them techniques and strategies.

**Procedure**

**Lesson observation**

Pupils were randomly assigned to observe the videotape of either the WCL or the ABL. In particular, pupils were labeled ‘1’ or ‘2’ by the first author as they returned their signed consent forms. Number 1s formed the WCL group and number 2s, the ABL group. We were comfortable that both groups were homogeneous, since both groups included African Americans, Caucasians, females, males and pupils from the 7th and 8th grade. Within each school, videotaped lessons were shown in separate rooms and simultaneously. The size of the groups which observed the videotaped lessons during one sitting ranged from 5 to 14. Before watching their assigned lesson, pupils were told that they would be asked to complete a short questionnaire about the PE teacher who taught the lesson immediately after its conclusion. In addition, they were informed that they would be given a short examination over the content covered in the lesson. Pupils were also assured that the questionnaires and examination would be anonymous.

**Content examination**

Immediately after watching their assigned lesson, pupils completed a written examination over the strategies and techniques taught by the teacher they had observed (see Appendix A). The written examination was similar in format to that
used by Melville and Maddalozzo (1988) and Bryant and Curtner-Smith (2008). The examination consisted of 12 multiple-choice questions. Six questions were on the subject of strategies related to swimming and six questions were concerned with the techniques of swimming. The examination was assessed for content validity by three experts in sport pedagogy. Examinations yielded three scores. The number of correct responses for strategy questions, the number of correct responses for technique questions, and the number of correct responses in total were recorded for each pupil.

**Table 1** Percentages of time spent by the teacher and 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>36.76</td>
<td>34.43</td>
</tr>
<tr>
<td>Response presentation</td>
<td>4.55</td>
<td>4.16</td>
</tr>
<tr>
<td>Monitoring</td>
<td>45.45</td>
<td>49.05</td>
</tr>
<tr>
<td>Performance feedback</td>
<td>3.34</td>
<td>2.77</td>
</tr>
<tr>
<td>Motivational feedback</td>
<td>5.48</td>
<td>5.55</td>
</tr>
<tr>
<td>Beginning/ending class</td>
<td>0.80</td>
<td>0.50</td>
</tr>
<tr>
<td>Equipment management</td>
<td>0.80</td>
<td>1.39</td>
</tr>
<tr>
<td>Organization</td>
<td>2.67</td>
<td>2.14</td>
</tr>
<tr>
<td>Behavior management</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Total instruction</td>
<td>95.72</td>
<td>95.96</td>
</tr>
<tr>
<td>Total management</td>
<td>4.28</td>
<td>4.03</td>
</tr>
<tr>
<td>Engaged skill learning time</td>
<td>53.92</td>
<td>54.75</td>
</tr>
</tbody>
</table>

| IFITS       |         |         |
| Reproductive Styles |         |         |
| Style A (Command) | 0.00    | 0.00    |
| Style B (Practice) | 66.67   | 70.00   |
| Style C (Reciprocal) | 28.21   | 25.00   |
| Style D (Self-Check) | 0.00    | 0.00    |
| Style E (Inclusion) | 0.00    | 0.00    |

| Productive Styles |         |         |
| Style F (Guided Discovery) | 0.00    | 0.00    |
| Style G (Divergent) | 0.00    | 0.00    |
| Style H (Going Beyond) | 0.00    | 0.00    |
| Management        | 5.13    | 5.00    |

| Task Analysis  |         |         |
| Warm-up       | 7.40    | 6.92    |
| Leg kick      | 23.15   | 22.75   |
| Arm action    | 22.09   | 22.00   |
| Breathing     | 18.49   | 24.37   |
| Full stroke   | 20.36   | 18.62   |
| Closure       | 8.51    | 5.34    |
Perception questionnaire

After completing the content examination, pupils were required to answer a short questionnaire (see Appendix B). Again, this questionnaire was similar in format to the one used by Melville and Maddolozzo (1988) and Bryant and Curtner-Smith (2008). The questionnaire included a total of six statements. Two asked about the pupils’ liking for the teacher, two were concerned with the pupils’ perceptions of the teacher’s competency in terms of her mastery of content, and two were aimed at discovering the degree to which pupils thought that the teacher was a positive role model. Pupils were asked to respond to these statements on a Likert-type scale. Specifically, they were required to indicate whether they strongly agreed (scored 5), agreed (scored 4), were uncertain (scored 3), disagreed (scored 2), or strongly disagreed (scored 1) with each statement. These five possible responses were illustrated by pictorial images of facial expressions to assist the pupils. The questionnaire was also evaluated for content validity by the three sport pedagogy experts. Scoring of the questionnaires involved summing the responses to the two statements on liking the teacher, content mastery, and role modeling. Therefore, each questionnaire produced three scores which ranged from 10 to 2.

Evaluation of reading level

The content examination and the perception questionnaire were evaluated using the Flesch-Kincaid Reading Level test (Kincaid et al., 1975) and the Flesch Reading Ease test (Flesch, 1951). The former rates text by assessing the American grade level for which it is appropriate. The latter rates text on a 100-point scale. The lower the score, the harder it is to understand the text. These evaluations produced a Flesch-Kincaid grade level score of 3.2 and a Flesch reading ease score of 86.7 for the content examination and a Flesch-Kincaid grade level score of 5.4 and a Flesch reading ease score of 73.6 and for the perception questionnaire. It was, therefore, assumed that the 7th and 8th grade pupils in the study would be able to read and comprehend the two documents.

Data analysis

Content examination data

Descriptive statistics (means and standard deviations) were computed for all 12 questions in the content examination for each group (i.e. those pupils who watched the WCL and those who watched the ABL). Descriptive statistics were also computed for each group for the six questions on strategies and the six questions on techniques. A $2 \times 2$ (teacher disability level $\times$ 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 or not pupils learned more or less about swimming in general and swimming strategies and techniques when watching the WCL or ABL. Since this was
the second study in an exploratory line of research, in congruence with the thoughts of Henkel (1976), the level of significance for this and other inferential statistical tests in the study was established at \( p < .10 \).

**Perception questionnaire data**

Descriptive data (means and standard deviations) were computed for each of the three categories on the perception questionnaire (i.e. liking the teacher, content mastery, role modeling) for each group (i.e. pupils who viewed the WCL and ABL). Independent \( t \)-tests, in which the Bonferroni method was again employed to control for multiple comparisons, were then computed to ascertain whether or not there were significant differences between the perceptions of pupils who watched the WCL and the ABL.

**Results**

**Content examination**

Descriptive data for the content examination are displayed in Table 2. The table reveals that regardless of the videotaped lesson pupils watched, performance on the test tended to be mediocre for both the content areas (i.e. strategies and techniques) within the test and the test as a whole among pupils who viewed the WCL or ABL.

The analysis of variance test results indicated that there was not a significant main effect for teacher disability level (F (1, 199) = .001, \( p = .972 \)) or content area (F (1, 199) = .892, \( p = .346 \)). Likewise, the results revealed that there was not a significant interaction between disability level and content area (F (1, 199) = .378, \( p = .539 \)).

**Table 2** Scores on the content examination and perception questionnaire by pupils who viewed the WCL and ABL

<table>
<thead>
<tr>
<th>Group</th>
<th>WCL</th>
<th>ABL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td><strong>Content Examination</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Score(^a)</td>
<td>6.60</td>
<td>1.91</td>
</tr>
<tr>
<td>Technique Score(^b)</td>
<td>3.28</td>
<td>1.21</td>
</tr>
<tr>
<td>Strategic Score(^b)</td>
<td>3.32</td>
<td>1.20</td>
</tr>
<tr>
<td><strong>Perception Questionnaire(^c)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liking for the Teacher</td>
<td>8.00</td>
<td>1.69</td>
</tr>
<tr>
<td>Mastery of Content</td>
<td>7.65</td>
<td>1.59</td>
</tr>
<tr>
<td>Positive Role Model</td>
<td>7.00</td>
<td>2.03</td>
</tr>
</tbody>
</table>

\(^a\) possible 12 points; \(^b\) possible 6 points; \(^c\) Likert scale (strongly agree 5, strongly disagree 1; points range from 10 to 2).
Perception questionnaire

Descriptive data for the perception questionnaire are also displayed in Table 2. These data reveal that pupils who watched both the WCL and the ABL liked the teacher a great deal, thought that her mastery of content was excellent, and were of the opinion that the teacher was a positive role model. The independent $t$-tests indicated that pupils who watched either the WCL or ABL did not differ significantly in their perceptions of the teacher in terms of liking her ($t(199) = .903, p = .368$), evaluating her mastery of content ($t(199) = 1.017, p = .310$), or regarding her as a positive role model ($t(199) = .607, p = .545$).

Post-hoc power analysis

In order to discover the effect size that could be detected within the study, a post-hoc power analysis was carried out. For each measure, we used the sample size, pooled standard deviations, and an alpha level of .10 for a power of .80. For the total content examination score, results indicated that we could detect a difference between means of 0.34. For the strategic and technique scores on the content examination we could detect differences between means of 0.21 and 0.21 respectively. Finally, for the perception questionnaire, results revealed that we could detect differences between means of 0.29 (liking of the teacher), 0.28 (content mastery), and 0.36 (role model).

Discussion

The main finding of this study was that the middle school pupils learned as much about the basic techniques and strategies of breaststroke from watching the WCL as they did from watching the ABL. Furthermore, their perceptions of the teacher were similar and very positive regardless of whether she appeared to possess a disability or be able-bodied. These results, then, are encouraging given that they indicate that the pupils in the study did not have any kind of bias against the teacher when she taught in a wheelchair.

In addition, the results of the current study contrast those of earlier studies of the influence of PE teachers’ appearance on secondary school pupils’ learning and perceptions of teacher competence (Dean et al., 2005; Melville and Maddalozzo, 1988; Thomson, 1996). Recall that these studies revealed that pupils were negatively influenced by teachers who looked overweight and did not fit their expectation of what a PE teacher should look like even though these teachers were as skilled as slimmer and apparently more fit teachers who were held in significantly higher esteem by the pupils.

Less positively, when compared and contrasted with the findings of the first study in the series (Bryant and Curtner-Smith, 2008) which examined the influence of a PE teacher’s disability on elementary school pupils’ learning and perceptions of teacher competence, it could be argued that the results of the current study provide further
evidence in support of our sociological hypothesis about how and why pupils of different ages learn from and respond to PE teachers with disabilities. Recall that the elementary pupils in that earlier study learned significantly more from the teacher when she was in a wheelchair while, in the current study there were no differences in learning or perceived competence between those pupils who watched the WCL and ABL. Viewed from a cross-sectional perspective, collectively these results suggest that, by middle school, pupils’ beliefs about PE teachers with disabilities may begin to shift and become less favorable due to societal influences which dictate that PE, physical activity, and sport are for apparently whole and fit bodies. Obviously, we make this conclusion extremely tentatively since, in order for it to be accurate, studies employing the same design at the high school level would have to show a continued deterioration in the impact of PE teachers with disabilities on pupils’ learning and perceptions of teacher competence relative to able-bodied teachers.

Moreover, it could be that a replication of the original (Bryant and Curtner-Smith, 2008) and current study at the high school level again indicates that pupils are not influenced by a PE teacher’s disability either negatively or positively. Such a finding would, in turn, lend support to our psychological/developmental hypothesis.

Implications, limitations, and future research

The most important practical implication of the study is that it suggests PE teachers with disabilities who possess good pedagogical skills are likely to be at least as effective with and as accepted by older middle school pupils as able-bodied teachers. Further, it suggests that administrators, principals, and school districts should have no reservations about hiring middle school PE teachers with disabilities. Likewise, sport pedagogy faculty in universities would also do well to strongly encourage recruits with disabilities to enter their PE teacher education programs.

At this point, it is important to acknowledge that this exploratory study was limited in a number of ways. For example, it involved a fairly small sample of low to middle class older middle school pupils which was largely comprised of girls. These pupils were required to view videotaped PE lessons rather than participate in them. In addition, it was assumed that the pupils in the study believed that the teacher had a disabling condition in the WCL. Further, the study was conducted in one region of the United States, investigated only one type of disability, and was concerned with only one content area, swimming. Finally, the fact that the study was carried out within the positivist paradigm meant that its design did not allow direct access to pupils’ actual feelings, thoughts, and perceptions about being taught by a teacher with a disability. Rather these feelings, thoughts, and perceptions were implied. Moreover, our positivist leanings meant that we were largely unconcerned with issues of power and voice. Although, as noted in the methods section, we consulted with an expert PE teacher who had a disability when establishing the credibility of the lessons the pupils viewed, we acknowledge that we were two able-bodied researchers who,
therefore, may not have been sensitive to some issues to which researchers with disabilities may have paid attention.

Further research in this line should be aimed at overcoming the limitations noted in the previous paragraph. For example, employing similar experimental designs, researchers could investigate the interaction of PE teachers with different disabilities with other factors such as content, gender, culture, and class. The suggestion here is that pupils may have different beliefs about and, hence, biases for and against PE teachers with disabilities when the teachers are male, when the teachers teach specific types of content, and when the pupils and teachers come from cultures and backgrounds that transmit different messages about disabilities, sport, physical activity, and PE. It should also prove useful for researchers to employ designs in which pupils experience being taught by PE teachers with and without disabilities. Such studies would obviously involve sacrificing some internal validity for gains in external and ecological validity.

To offset the limitations inherent in positivist research designs, scholars interested in this line of research should also work within the interpretive paradigm. Qualitative studies aimed at revealing children's thought processes, feelings, biases, and emotions as they view PE teachers with disabilities in action or are taught by them would obviously be of value. In addition, studies which also feature the thoughts and feelings of PE teachers with disabilities should prove both enlightening for the researchers and empowering for the teachers. Such studies should also help to dispel the 'standard plots and dominant assumptions about disabled people' to which Smith and Sparkes (2005: 1100) referred. An array of qualitative techniques could be employed to gather data in such studies including formal and informal interviewing; participant and non-participant observation; critical incident writing (Flanagan, 1954); and thinking aloud, stimulated recall, and projective slide viewing protocols (see Curtner-Smith, 2002). In addition, there will obviously be a need to expand the theoretical frameworks which guide interpretive research of this kind. The work of Shilling (2003), for example, should prove useful in this respect.

Appendix A

Swimming Questions

<table>
<thead>
<tr>
<th>Please Circle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your Sex :</td>
</tr>
<tr>
<td>Your Grade:</td>
</tr>
<tr>
<td>Your Age :</td>
</tr>
</tbody>
</table>
### Please Circle the Correct Answer from the Videotape

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
</table>
| 1. The body position in the breaststroke should be?                     | a) Up and down  
b) On your stomach with legs and feet below the water  
c) On your back  
d) On your stomach with legs and feet above the water |
| 2. Breathing during the breaststroke should be done?                     | a) During the glide  
b) Just before your face goes into the water  
c) As soon as you face comes out of the water  
d) Any of the above |
| 3. Most of your power in the breaststroke comes from your?               | a) Arms  
b) Legs  
c) Hands  
d) Head |
| 4. The leg movement in the breaststroke mirrors what shape?              | a) Circle  
b) Square  
c) Triangle  
d) Straight line |
| 5. The arm stroke in the breaststroke should be no more than how many inches below the water? | a) 10 inches  
b) 12 inches  
c) 20 inches  
d) 30 inches |
| 6. One type of kick used in the breaststroke is?                         | a) Dolphin  
b) Wedge  
c) Whip  
d) B or C |
| 7. When swimming the breaststroke, you can save energy by?              | a) Gliding through the water  
b) Pulling hard  
c) Kicking hard  
d) Closing your eyes |
| 8. You can swim a longer distance if you?                                | a) Relax with slow arm and leg movement  
b) Get a good nights sleep  
c) Kick hard  
d) Breath more |
| 9. To help you in racing, you can?                                       | a) Wear a swim cap  
b) Relax and take less breaths  
c) Pull really hard  
d) Kick really hard |
| 10. Calm breathing patterns in breaststroke will help you?               | a) Conserve energy  
b) See both sides of the pool  
c) Swim further  
d) a, b, & c |
| 11. Gliding during the breaststroke will help you?                       | a) Have strong strokes  
b) Stay straight  
c) Keep your whole body on the surface  
d) a, b, & c |
| 12. 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

<table>
<thead>
<tr>
<th>Please Circle</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your Sex :</td>
<td>M</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your Grade:</td>
<td>7th</td>
<td>8th</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your Age :</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After viewing today’s video, please check the most appropriate response.

1. I liked the PE teacher who taught swimming in the video.
2. I liked how the PE teacher in the video taught swimming.
3. The PE teacher in the video knows a lot about swimming.
4. The PE teacher in the video is a swimming expert.
5. The PE teacher in the video makes me feel like swimming.
6. The PE teacher in the video makes me want to improve my swimming.

<table>
<thead>
<tr>
<th>Please Circle</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your Sex :</td>
<td>M</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your Grade:</td>
<td>7th</td>
<td>8th</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your Age :</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### References


Lance G. Bryant is an Assistant Professor in the Department of Health, Physical Education, and Sport Sciences at Arkansas State University.

Matthew D. Curtner-Smith is a Professor in and Head of the Department of Kinesiology at the University of Alabama.

Address for correspondence: Dr Lance G. Bryant, College of Education, Department of HPESS, Arkansas State University, PO Box 240, State University, AR, USA, 72467. [email: lgbryant@astate.edu]