

## PEDAGOGY

# Effect of a Physical Education Teacher's Age on Middle School Students' Perceptions of Effectiveness and Learning

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## Abstract

*This study examined the effect of a physical education teacher's apparent age on middle school students' learning and perceptions of the teacher. Two hundred seventy-three middle school students were randomly assigned to view one of two virtually identical films of swimming lessons taught by the same teacher. During the young-appearance lesson (YAL), the teacher taught as his usual and relatively young self. During the middle-aged lesson (MAL), he was made to look older by a makeup artist. After viewing their assigned lesson, students completed an examination covering the content of the lesson and a questionnaire about their perceptions of the teacher. Inferential statistical tests revealed that students who watched the YAL learned more from the teacher and perceived the teacher more favorably. These results support a sociological explanation of how and why students respond to and learn from physical education teachers of different ages.*

A small number of sport pedagogy researchers have explored the effect of a teacher's appearance on physical education (PE) students' learning and perceptions of the teacher. Initial studies of this

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nature suggested that teachers' appearance, preference, and clothing influenced students' perceptions of teachers' instructional ability (Chaikin, Gillen, Derlega, Heinen, & Wilson, 1978; Feshbach & Feshbach, 1972; Landers & Landers, 1973; Molloy, 1975). During subsequent studies, researchers explored the effect of the appearance of teachers' body fat on students' perceptions and learning (Dean, Adams, & Comeau, 2005; Melville & Maddalozzo, 1988; Thomson, 1997). For example, in their seminal study within this line of work, Melville and Maddalozzo (1988) randomly assigned high school students to watch one of two identical films of the same PE teacher lecturing on health and fitness. In the first film, the teacher was his usual slim and fit appearance. In the second film, the teacher wore a fat suit that gave him the appearance of being unfit. Having viewed one of the films, students completed a set of questions about their perceptions of the teacher's pedagogical skill and took an examination of the health and fitness content presented by the teacher. In line with the findings of other research (Dean et al., 2005; Thomson, 1997), students who viewed the fat film had a lower perception of the teacher's skill and scored lower in the content exam than those who viewed the fit film. Using a similar design, McKown, Brusseau, Burns, and Galli (2019) discovered that fourth-grade students were more active during lessons taught by a female teacher when she was her usual slim self than when she wore a fat suit. For sixth-grade students, however, the results were reversed.

Also employing a similar design to Melville and Maddalozzo (1988), Bryant and Curtner-Smith (2008, 2009a, 2009b) explored the effect of a PE teacher's disability on students' learning and perceptions of the teacher's ability. In this series of studies, elementary, middle, and high school students were randomly assigned to watch a film of a teacher teaching swimming as able-bodied or from a wheelchair as apparently having a disability. The elementary students learned more from the film in which the teacher appeared in a wheelchair than from the film in which the teacher appeared able-bodied, but had similar perceptions of the teacher's effectiveness regardless of the film watched (Bryant & Curtner-Smith, 2008). At the middle school level, there were no differences in learning or perceptions of the teacher's ability between students who watched the film in which the teacher appeared in a wheelchair and the film

in which the teacher appeared able-bodied (Bryant & Curtner-Smith, 2009a). High school students also had similar perceptions of the teacher's skill regardless of the film viewed. However, high school students who viewed the film in which the teacher appeared able-bodied scored significantly higher on the content examination than those who watched the film in which the teacher appeared in a wheelchair (Bryant & Curtner-Smith, 2009b). The authors suggested that, collectively, these results indicate that students are socialized into believing that physical activity, sport, and PE are for and should be taught by persons with fit and able bodies (Bryant & Curtner-Smith, 2008, 2009a, 2009b).

In this study, we aimed to build on past research suggesting that a teacher's appearance influences the results of their instruction and how they are perceived by students. Given that the average age of public school teachers in the United States is 42.5 years and 56% of them are over the age of 40 (Snyder, de Brey, & Dillow, 2016), there is a need to ascertain whether teachers' apparent age mediates students' perceptions of teachers' effectiveness. The purpose of this study, therefore, was to examine the effect of a PE teacher's apparent age on middle school students' learning and perceptions of the teacher.

This study was informed by the same theoretical perspectives originally employed by Bryant and Curtner-Smith (2008, 2009a, 2009b). These authors hypothesized that one of two competing and oppositional perspectives explained why students reacted to and learned from PE teachers in the ways that they did. First, drawing from the work of a number of scholars (Bandura, 1986, 2002; Coakley, 2007; Gergen & Gergen, 2003; Michalko, 2002; Oliver, 1990; Smith & Sparkes, 2005; Thomson, 1997), Bryant and Curtner-Smith (2008) used a sociological perspective, which suggests students' beliefs regarding the ideal appearance of a PE teacher are socially constructed. From this perspective, because high school students have been socialized into the prevailing societal belief that sport, physical activity, and PE are for young people, they will be more likely to perceive older PE teachers negatively and learn less from them, whereas they would view younger physical educators positively and learn more from them. Conversely, the sociological perspective suggests that elementary school students will be less likely to be biased against older

teachers and more likely to learn from them, as elementary school students have not yet been subjected to the same degree, intensity, and amount of negative socialization as high school students.

Second, this study reversed the “Pygmalion effect” described by Martinek and his associates (Martinek, 1981; Martinek, Crowe, & Rejeski, 1982), which revealed that more physically attractive students were viewed and treated more positively by teachers than were less attractive students, and found the *psychological/developmental perspective* suggests that high school students will be less likely to be biased against older teachers and learn from them. This is because they are relatively mature and realize that PE teachers of all ages can be effective. By contrast, the psychological/developmental perspective suggests that elementary school students, being relatively immature, will be less likely to accept older teachers, perceive them to be less effective, and so learn less from them.

Middle school is midway between elementary and high school, and Byrant and Curtner-Smith’s (2009a) sociological perspective suggests that middle school students will be more biased against older teachers and learn less from them than will elementary school students, but less biased against them and learn more from them than will high school students. In contrast, Bryant and Curtner-Smith’s (2009a) psychological perspective suggests that middle school students will regard older physical educators less positively and learn less from them than will high school students, but more positively and learn more from them than will elementary school students.

Pedagogical research on the influence of teachers’ age on students’ perceptions of teachers’ effectiveness outside PE has suggested that the sociological perspective is more accurate than the psychological/developmental perspective. This work has revealed that college, middle school, and elementary school students favor being taught by younger teachers (Arbuckle & Williams, 2003; Goebel & Cashen, 1979; Joye & Wilson, 2015; Peterson, 1980; Sohr-Preston, Boswell, McCaleb, & Robertson, 2016). Further support for the sociological perspective is provided by much of the research on perceptions of age and aging in general. This work has indicated that a bias against older individuals is evident in very young children and becomes stronger as they age (Corbin, Kagan, & Metil-Corbin, 1987; Couper, Donorfio, & Goyer, 1995; Fullmer, 1984; Laney, Wimsatt, Moseley, &

Laney, 1999) and enter adolescence (Carstensen, Mason, & Caldwell, 1982; Kastenbaum & Durkee, 1964; Sum, Emamian, & Sefidchian, 2016). Furthermore, research has also indicated that children, adults, and youth often regard older individuals negatively (Corbin et al., 1987; Laney et al., 1999; Levy, 2003; Saxena & Shukla, 2016) and have a preference for younger looking faces (Burt & Perrett, 1995; Ebner, Riediger, & Lindenberger, 2010; Kiiski, Cullen, Clavin, & Newell, 2016; Langlois et al., 2000; Todorov, Olivola, Dotsch, & Mende-Siedlecki, 2015).

In the one study conducted in PE to date, Pennington, Curtner-Smith, and Wind (2019) found that elementary students were more positive about and learned more from a PE teacher younger in appearance than a PE teacher older in appearance. Without further study of older students, Pennington, Curtner-Smith, and Wind (in press) suggested that these findings could be used to make a case in support of any of Bryant and Curtner-Smith's (2008, 2009a, 2009b) competing theoretical perspectives.

## Method

### Participants

Participants were 273 students from the sixth (ages 12 to 13 years), seventh (ages 13 to 14 years), and eighth (ages 14 to 15 years) grades attending two middle schools in the southern United States. The students came mainly from families of low socioeconomic status. The schools selected were representative of public middle schools in the region. Before the study began, the students and their parents signed assent and consent forms.

Students attending the first school were 64.30% Caucasian, 27.20% African American, 7.30% Hispanic, 0.60% Asian, 0.40% multiple ethnicities, and 0.10% Native American. The two male PE teachers at the school were 42 and 33 years of age, respectively. PE class sizes at the first school ranged from 30 to 45 students. Students at the second school were 4.80% Caucasian, 86.30% African American, 6.50% Hispanic, 1.60% multiple ethnicities, and 0.80% Asian. The male PE teacher working at the school was aged 33 years. PE class sizes at the second school ranged from 20 to 40 students. The traditional multiactivity curriculum model with a range of traditional and nontraditional sports and physical activities was employed at

both schools. Neither of the schools included swimming in their PE curriculum.

## Lessons

From the protocol employed by Bryant and Curtner-Smith (2009a), a 20-min lesson on the techniques and strategies of breaststroke that was appropriate for middle school students was developed. In line with Bryant and Curtner-Smith's (2009a) rationale, swimming was selected as the lesson content because of the likelihood that the students would have had little experience of swimming and swimming instruction and because of its technical nature. Consequently, we believed that the content would be of interest to the students. Components of the lesson were a warm-up; a number of practices and drills aimed at teaching breaststroke leg kick, arm action, body position, breathing, and full stroke; and a closure during which students were asked questions concerning strategies and techniques taught in the lesson. Cues and key phrases used by the teacher were included in the lesson plan.

The first author, a certified water safety and swim instructor, taught the lesson to 10 students twice in the same 25-yd pool. During both lessons, he organized, presented tasks, and provided feedback to the students from the side of the pool. The lessons were identical with one exception. During the young-appearance lesson (YAL), the first author taught as he normally appeared—a relatively young, clean-shaven, 28 year old (see left photograph of Figure 1). In addition, he wore attire normally associated with younger physical educators (i.e., knee-length black shorts, tennis shoes, and a short-sleeved collared shirt). Prior to teaching the middle-aged lesson (MAL), however, the first author was aged by a theatrical makeup artist (see right photograph of Figure 1). The aging process took approximately 60 min. Phase 1 involved the application of a primer layer of foundation, scar wax, and latex to the first author's neck and face, which altered the texture and shape of the bridge of his nose and his jawline. Phase 2 involved crow's-feet being added to the corners of the first author's eyes and shadows created under his cheekbones and eyes. Within Phase 3, fake liver spots were added to the first author's forehead, nose, chin, and cheeks, and blush was added under his cheeks so as to discolor his skin. Additionally, the first author was bearded for the MAL and gray streaks were added to his hair

and beard. Finally, during the MAL, the first author wore clothing commonly associated with older physical educators (i.e., full length khaki trousers, tennis shoes, and a long-sleeved collared shirt).



**Figure 1.** Teacher appearance in the young-appearance lesson (left photograph) and middle-aged lesson (right photograph).

### Lesson Credibility, Quality, and Similarity

Lesson credibility was established by asking the students in the study, who watched either the YAL or MAL, to state what they believed the age of the teacher they observed to be. These data were compared via an independent  $t$  test. The mean age of the teacher according to the students who watched the YAL was 30.88 years old ( $SD = 6.02$ ), while his mean age according to the students who watched the MAL was 49.05 years old ( $SD = 10.29$ ). The  $t$  test revealed that these ages differed significantly,  $t(271) = -24.73$ ,  $p < 0.001$ . Lesson quality was assessed qualitatively by a panel of three sport pedagogy experts, who watched the films of the YAL and MAL and indicated that the teacher had good content knowledge, was pedagogically skilled, and was enthusiastic to the same degree in both films.

The degree to which the YAL and MAL were similar was established via the protocol developed by Bryant and Curtner-Smith (2009a). This involved coding the lessons with three systematic observation instruments. First, the number, type, and duration of instructional tasks in which students engaged in either film were noted. Second, the lessons were coded with the PE teacher assessment instrument (Phillips, Carlisle, Steffen, & Stroot, 1986) to establish the percentage of time in which the students engaged in

skill learning and the teacher engaged in five instructional and five managerial behaviors. Third, the YAL and MAL were coded with the instrument for identifying teaching styles (Curtner-Smith, Hasty, & Kerr, 2001), an interval recording instrument that estimates the percentage of time in which teachers use each teaching style originally described by Mosston (1981) or engage in managerial activity.

Table 1 shows the results of this coding. The results indicate that the lessons were virtually identical and the instruction provided was of high quality. Specifically, the teacher spent most of his time instructing and relatively little time managing students and the students were engaged in skill learning for a high percentage of time. In addition, the teacher primarily employed the practice style of teaching, which was appropriate given the focus of the lesson on skill and strategy learning. Finally, the majority of the tasks in which the students engaged were aimed at enhancing that students' breast-stroke technique and their understanding of related strategies.

## Procedure

**Lesson observation.** Students were randomly assigned to view the film of either the YAL or MAL. This was accomplished by alternately labeling the students a 1 or a 2 when they returned their assent and their parents' consent forms. Number 1s observed the YAL and number 2s the MAL. Groups of 20 to 40 students assigned to view either film did so simultaneously in separate rooms. Before watching their designated film, students were told that immediately following the viewing, they would be asked to complete a short questionnaire regarding their perceptions of the teacher in the film and a short examination on the content of lesson.

**Content examination.** Directly after viewing the film of their assigned lesson, students took the same short written examination developed by Bryant and Curtner-Smith (2009a) on the techniques and strategies taught during the lesson (see Appendix A). This examination had previously been evaluated as having high content validity (Bryant & Curtner-Smith, 2009a). The examination included 12 multiple-choice questions with six specific to swimming techniques and six to swimming strategies. The scores recorded from the examinations for each student were (a) the number of correct answers from the six technique questions, (b) the number of correct answers

**Table 1**

*Percentages of Time Spent by the Teacher With His Students  
in Various Behaviors, Teaching Styles, and Tasks  
During the Young-Appearance Lesson and Middle-Aged Lesson*

| <b>Instrument</b>                                | <b>YAL</b> | <b>MAL</b> |
|--|------------|------------|
| Physical Education Teacher Assessment Instrument |            |            |
| Planned presentation                             | 38.89      | 39.88      |
| Response presentation                            | 7.54       | 7.50       |
| Monitoring                                       | 41.86      | 38.71      |
| Performance feedback                             | 0.99       | 1.14       |
| Motivational feedback                            | 3.77       | 2.95       |
| Beginning/ending class                           | 4.37       | 6.54       |
| Equipment management                             | 0.00       | 0.00       |
| Organization                                     | 2.58       | 3.28       |
| Behavior management                              | 0.00       | 0.00       |
| Total instruction                                | 93.06      | 90.82      |
| Total management                                 | 6.94       | 9.18       |
| Engaged skill learning time                      | 42.28      | 43.35      |
| Instrument for Identifying Teaching Styles       |            |            |
| <i>Reproductive Styles</i>                       |            |            |
| Style A (Command)                                | 0.00       | 0.00       |
| Style B (Practice)                               | 96.00      | 95.36      |
| Style C (Reciprocal)                             | 0.00       | 0.00       |
| Style D (Self-Check)                             | 0.00       | 0.00       |
| Style E (Inclusion)                              | 0.00       | 0.00       |
| <i>Productive Styles</i>                         |            |            |
| Style F (Guided Discovery)                       | 0.00       | 0.00       |
| Style G (Divergent)                              | 0.00       | 0.00       |
| Style H (Going Beyond)                           | 0.00       | 0.00       |
| <i>Management</i>                                | 4.00       | 4.64       |
| Task Analysis                                    |            |            |
| Warm-up  | 9.51       | 8.73       |
| Leg kick   | 23.54      | 22.45      |
| Arm action                                       | 20.17      | 24.53      |
| Breathing  | 28.66      | 27.04      |
| Full stroke                                      | 12.92      | 11.43      |
| Closure  | 5.20       | 5.82       |

from the six strategy questions, and (c) the number of correct answers in total.

**Perception questionnaire.** On finishing the content examination, students were required to respond to a six-statement questionnaire concerning their perceptions of the teacher in the film they had watched. The questionnaire was originally developed by Bryant and Curtner-Smith (2009a) with the goal of discovering the extent to which students (a) liked the teacher, (b) believed the teacher was competent, and (c) viewed the teacher as a positive role model (see Appendix B). Again, Bryant and Curtner-Smith (2009a) established that the questionnaire possessed high content validity.

Two statements in the questionnaire were designed to ascertain students' perceptions of the teacher's likability, two regarding their perceptions of the teacher's competence, and two regarding their perceptions of the teacher as a role model. Students responded to each statement on a Likert-type scale and noted whether they strongly agreed (5), agreed (4), were uncertain (3), disagreed (2), or strongly disagreed (1) with each statement. Each of these choices was illustrated with drawings of facial expressions to help the students. The questionnaires were scored by summing the responses to the two statements on likability, competency, and role modeling. Each questionnaire thus produced three scores ranging from 10 to 2.

**Evaluation of reading level.** The degree to which the content examination and perception questionnaire were appropriate for use with middle school students has been assessed by Bryant and Curtner-Smith (2009a). Specifically, both documents were assessed with the Flesch-Kincaid reading level test (Kincaid, Fishburne, Rogers, & Chissom, 1975) and the Flesch Reading Ease test (Flesch, 1951). The former indicates the United States school grade level for which text is appropriate. The latter indicates how easy it is for students to comprehend text on a 100-point scale, a higher score indicating greater ease. For the content examination, these tests produced a Flesch-Kincaid grade level score of 3.2 and a Flesch Reading Ease score of 86.7. For the perception questionnaire, the tests yielded a Flesch-Kincaid grade level score of 5.4 and a Flesch Reading Ease score of 73.6. Therefore, it is assumed that the sixth-, seventh-, and eighth-grade students in this study were able to comprehend the content examination and perception questionnaire.

## Data Analysis

**Content examination.** Descriptive statistics (means and standard deviations) were calculated for all 12 questions in the content examination for each group (i.e., students who watched the YAL and those who watched the MAL). Descriptive statistics were also calculated for each group for the six questions on techniques and the six questions on strategies. Whether students learned more or less about swimming in general and swimming techniques and strategies when viewing the YAL or MAL was ascertained through a  $2 \times 2$  (Teacher Age  $\times$  Content Area) repeated-measures analysis of variance test with paired-comparison  $t$  test follow-ups in which the Bonferroni method was used to control for multiple comparisons. As this line of research is in its infancy, following Henkel (1976), the level of significance for this and other statistical tests in the study was  $p < .10$ .

**Perception questionnaire.** Descriptive data (means and standard deviations) were also calculated for the three categories on the perception questionnaire (i.e., likability, competence, and role modeling) for each group (i.e., students who viewed the YAL and MAL). Whether there were significant differences between the perceptions of students who viewed the YAL and the MAL was determined through independent  $t$  tests, in which the Bonferroni method was again employed to control for multiple comparisons.

## Results

### Content Examination

Table 2 shows descriptive data for the content examination. Regardless of the film the students watched, their performance over the entire examination and on the two content areas (i.e., techniques and strategies) was of moderate quality. The analysis of variance test revealed a statistically significant, but small, effect for teacher age,  $F(1, 271) = 10.39$ ,  $p = 0.01$ ,  $\eta^2 = 0.04$ , indicating that students who watched the YAL outperformed those who viewed the MAL over the entire examination. There was no significant effect for content area,  $F(1, 271) = .324$ ,  $p = 0.570$ ,  $\eta^2 = 0.001$ , or interaction between teacher age and content area,  $F(1, 271) = 1.97$ ,  $p = 0.16$ ,  $\eta^2 = 0.07$ .

**Table 2**

*Scores on the Content Examination and Perception Questionnaire by Students Who Viewed the Young-Appearance Lesson and Middle-Aged Lesson*

| Group                        | YAL      |           | MAL      |           |
|------------------------------|----------|-----------|----------|-----------|
|                              | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Content Examination          |          |           |          |           |
| Total score <sup>a</sup>     | 7.93     | 1.94      | 7.18     | 1.98      |
| Technique score <sup>b</sup> | 3.99     | 1.21      | 3.68     | 1.18      |
| Strategic score <sup>c</sup> | 3.94     | 1.23      | 3.49     | 1.37      |
| Perception Questionnaire     |          |           |          |           |
| Liking for the teacher       | 8.35     | 1.50      | 7.76     | 2.06      |
| Mastery of content           | 8.06     | 1.78      | 7.51     | 2.09      |
| Positive role model          | 6.77     | 2.66      | 5.89     | 2.79      |

<sup>a</sup>Possible 12 points. <sup>b</sup>Possible 6 points. <sup>c</sup>Possible 6 points. <sup>d</sup>Likert scale (strongly agree, 5; strongly disagree, 1).

## Perception Questionnaire

Table 2 also shows descriptive data for the perception questionnaire. Both groups of students reported the teacher to be a good role model, liked him, and assessed him as being competent. The independent *t* tests revealed that the students who watched the YAL liked the teacher significantly more than did those who viewed the MAL,  $t(271) = 2.65, p < 0.01$ . In addition, the students who watched the YAL perceived the teacher to be a more positive role model,  $t(271) = 2.66, p < 0.01$ , than did those who saw the MAL. However, the students who watched the YAL did not perceive the teacher to be more competent,  $t(271) = 2.29, p = 0.023$ , than did those who saw the MAL.

## Discussion

The most important findings of this study were that the students who watched the YAL learned more from and had a higher regard for the teacher than did those who watched the MAL. These results

are discouraging, as they suggest that the students were adversely influenced by the age of the teacher in the MAL. In addition, the results of this study are similar to those of most of the earlier studies on the influence of a PE teacher's appearance of body fatness (Dean et al., 2005; Melville & Maddalozzo, 1988; Thomson, 1997) and one of the studies on the effect of a PE teacher's appearance of disability (Bryant & Curtner-Smith, 2009b). Recall that these studies showed that students' learning and perceptions of the teacher were adversely affected by teachers who appeared to be overweight or to have a disability.

Coupled with the results of Pennington et al. (2019), who examined the influence of a PE teacher's age on elementary students' learning and perceptions, the results of this study appear to support the sociological explanation of how and why students at different levels of schooling react to teachers of different ages. Recall in the earlier study, elementary students also learned more from and more favorably perceived the younger version of a PE teacher. More encouragingly, a cross-sectional comparison of the results of that earlier study and this study suggests that the bias against older teachers does not grow more extreme by the time students reach middle school. Perhaps this indicates that most of the negative socialization that students encounter happens at a young age, when students are persuaded that sport, physical activity, and PE teaching are for young people. Such a conclusion would be strengthened if a replication of the study, a third time at the high school level, again yielded similar results.

More positively, it may also be that the pattern of responses by students to older PE teachers is not linear or the exclusive result of either sociological influences or psychological development as suggested by Bryant and Curtner-Smith's (2008, 2009a, 2009b) competing theoretical perspectives. Rather, it may be that students are socialized into a bias against older physical educators from elementary through middle school, but as they mature in the high school years they learn to reject their earlier biases. Again, further study at the high school level would help to confirm or refute this hypothesis.

Regardless of how high school students regard older and younger PE teachers and the degree to which they learn from these PE teachers, the main implication of this study is that age is a topic to

which middle school students need to be exposed. Specifically, and as also suggested and implied by others (Class & Knott, 1982; Kiiski et al., 2016; Korthase & Trenholme, 1983; Levy, 2003), teachers of all subjects might do more to counter negative connotations and stereotypes of older people in general and those who participate in and teach physical activity in particular.

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## Appendix A






### Content Examination

| Please Circle   |
|---|
| Your Sex :    M    F  |
| Your Grade:    7 <sup>th</sup> 8 <sup>th</sup>  |
| Your Age :    13    14    15  |
| Please Circle the Correct Answer from the Videotape   |
| 1.    The body position in the breaststroke should be?<br>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?<br>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?<br>a) Arms    b) Legs    c) Hands    d) Head  |
| 4.    The leg movement in the breaststroke mirrors what shape?<br>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?<br>a) 10 inches    b) 12 inches    c) 20 inches    d) 30 inches  |
| 6.    One type of kick used in the breaststroke is?<br>a) Dolphin    b) Wedge    c) Whip    d) B or C   |
| 7.    When swimming the breaststroke, you can save energy by?<br>a) Gliding through the water    b) Pulling hard    b) Kicking hard    c) Closing your eyes   |
| 8.    You can swim a longer distance if you?<br>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?<br>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?<br>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?<br>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?<br>a) Sleep well    b) Give you an advantage    c) Prevent cramps and injury    d) Get noticed by the coach                                       |

## Appendix B

### Perception Questionnaire

|  |
|--|
| Please Circle                                  |
| Your Sex :    M      F                         |
| Your Grade:    7 <sup>th</sup> 8 <sup>th</sup> |
| Your Age :    13   14   15                     |

|  | Strongly Agree  | Agree   | Neutral   | Disagree  | Strongly Disagree   |
|--|---|---|---|---|---|
| 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.     |   |   |   |   |   |