The Effect of Brailling and Physical Guidance on the Self-Efficacy of Children who are Blind

Megan E. O'Connell
The College at Brockport

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THE EFFECT OF BRAILLING AND PHYSICAL GUIDANCE ON THE SELF-EFFICACY OF CHILDREN WHO ARE BLIND.

A Thesis
Presented to the
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Of the Requirements for the Degree
Master of Science in Education
(Physical Education)

By
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# TABLE OF CONTENT

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGEMENT</td>
<td>3</td>
</tr>
<tr>
<td>TABLE OF CONTENT</td>
<td>4</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>7</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>8</td>
</tr>
<tr>
<td>LIST OF APPENDICES</td>
<td>9</td>
</tr>
</tbody>
</table>

## CHAPTER

1. **INTRODUCTION**
   - BACKGROUND OF THE STUDY                                           | 10   |
   - STATEMENT OF THE PROBLEM                                          | 12   |
   - HYPOTHESIS                                                         | 12   |
   - PURPOSE OF THE STUDY                                               | 12   |
   - DEFINITION OF TERMS                                                | 12   |
   - ASSUMPTIONS                                                        | 14   |
   - DELIMITATIONS                                                       | 14   |
   - LIMITATIONS                                                        | 14   |

2. **LITERATURE REVIEW**
   - UNIQUENESS OF CHILDREN WHO ARE VISUALLY IMPAIRED                  | 15   |
   - SUCCESSFUL EXPERIENCES FOR INDIVIDUALS WHO ARE BLIND              | 15   |
   - PHYSICAL FITNESS AND MOTOR PERFORMANCE FOR CHILDREN WITH VISUAL IMPAIRMENTS | 17   |
   - ORIENTATION AND MOBILITY                                           | 18   |
   - CONFIDENCE, SELF-CONCEPT, AND SELF-ESTEEM IN CHILDREN WITH VISUAL IMPAIRMENTS | 19   |
   - OPEN AND CLOSED SKILL                                              | 21   |
   - SELF-EFFICACY                                                      | 22   |
   - ENHANCING SELF-EFFICACY                                            | 23   |
   - SELF-EFFICACY RELATED TO PHYSICAL ACTIVITY                         | 25   |
   - MODELING                                                           | 27   |
### 3. METHODS AND PROCEDURES

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARTICIPANTS AND SETTING</td>
<td>33</td>
</tr>
<tr>
<td>PERMISSION</td>
<td>33</td>
</tr>
<tr>
<td>ANALYTIC INSTRUMENT</td>
<td>33</td>
</tr>
<tr>
<td>TRAINING</td>
<td>34</td>
</tr>
<tr>
<td>INTERVENTION</td>
<td>35</td>
</tr>
<tr>
<td>COUNSELOR JOURNALS</td>
<td>35</td>
</tr>
<tr>
<td>VALIDITY</td>
<td>36</td>
</tr>
<tr>
<td>RELIABILITY TEST RETEST</td>
<td>36</td>
</tr>
<tr>
<td>DATA ANALYSIS</td>
<td>36</td>
</tr>
<tr>
<td>COMPARING PHYSICAL GUIDANCE AND BRAILLING PRETEST AND POSTTEST</td>
<td>36</td>
</tr>
</tbody>
</table>

### 4. RESULTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUMMARY OF INTERVENTION</td>
<td>37</td>
</tr>
<tr>
<td>BRAILLING AND PHYSICAL GUIDANCE PRETEST POSTTEST RESULTS</td>
<td>37</td>
</tr>
<tr>
<td>PAIRED T-TEST RESULTS</td>
<td>39</td>
</tr>
<tr>
<td>BRAILLING VS. PHYSICAL GUIDANCE PRETEST AND POSTTEST RESULTS</td>
<td>40</td>
</tr>
<tr>
<td>OVERALL SOURCES OF EFFICACY</td>
<td>41</td>
</tr>
<tr>
<td>SOURCES OF EFFICACY</td>
<td>41</td>
</tr>
<tr>
<td>RELIABILITY</td>
<td>44</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>44</td>
</tr>
</tbody>
</table>

### 5. DISCUSSION

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIMILARITIES OF BRAILLING AND PHYSICAL GUIDANCE</td>
<td>46</td>
</tr>
<tr>
<td>PHYSICAL GUIDANCE WITHIN GROUP DISCUSSION</td>
<td>47</td>
</tr>
<tr>
<td>BRAILLING WITHIN GROUP DISCUSSION</td>
<td>49</td>
</tr>
<tr>
<td>BRAILLING AND PHYSICAL GUIDANCE PRETEST DISCUSSION</td>
<td>49</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>Physical guidance composite self-efficacy scores</td>
<td>38</td>
</tr>
<tr>
<td>1b</td>
<td>Brailling composite self-efficacy scores</td>
<td>38</td>
</tr>
<tr>
<td>2a</td>
<td>SPSS statistical analysis of paired t-test</td>
<td>39</td>
</tr>
<tr>
<td>2b</td>
<td>SPSS statistical analysis of un-paired t-test</td>
<td>40</td>
</tr>
<tr>
<td>3a</td>
<td>Pretest and posttest efficacious percentages for physical guidance</td>
<td>42</td>
</tr>
<tr>
<td>3b</td>
<td>Pretest and posttest efficacious percentages for brailling</td>
<td>43</td>
</tr>
<tr>
<td>Figure</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>1. Overall changes of self-efficacy from the pretest to posttest</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>2a. Comparison of pretest and posttest sources of efficacy influences for physical guidance</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>2b. Comparison of pretest and posttest sources of efficacy influences for brailing</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>3. Sources of efficacy overall percentages</td>
<td>44, 51</td>
<td></td>
</tr>
<tr>
<td>APPENDIX</td>
<td>DESCRIPTION</td>
<td>PAGE</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>A</td>
<td>INSTITUTIONAL REVIEW BOARD MATERIALS</td>
<td>67</td>
</tr>
<tr>
<td>B</td>
<td>CHILD CONSENT FORM</td>
<td>73</td>
</tr>
<tr>
<td>C</td>
<td>PARENT/GUARDIAN CONSENT FORM</td>
<td>75</td>
</tr>
<tr>
<td>D</td>
<td>CAMP ABILITIES INTERVENTION PACKET</td>
<td>77</td>
</tr>
<tr>
<td>E</td>
<td>SELF-EFFICACY QUESTIONNAIRE</td>
<td>84</td>
</tr>
<tr>
<td>F</td>
<td>RESEARCH SCRIPT FOR QUESTIONNAIRE</td>
<td>90</td>
</tr>
<tr>
<td>G</td>
<td>COUNSELOR'S JOURNAL</td>
<td>96</td>
</tr>
</tbody>
</table>
Abstract

Children who are blind experience deficits in fitness and motor skills (Lieberman and McHugh, 2001; Skaggs and Hopper, 1996; Skellenger, Rosenblum and Jaeger, 1997). In addition children who are blind possess low self-efficacy (Craft and Hogan, 1985). Skill level, opportunities and self-efficacy may increase with proper instruction. Children in general benefit from instruction, yet there is limited research on modeling techniques and self-efficacy for children who are blind. The purpose of this study was to compare the effects of brailling and physical guidance teaching techniques on the self-efficacy of children who are blind during goal ball skills. In addition, the study determined which sources of self-efficacy, proposed be Bandura (1997), had the greatest effect on the self-efficacy of the participants of the study.

The self-efficacy of children who are blind was analyzed using two different teaching methods for the sport of goal ball. Counselors in a one-week summer camp were paired with campers who are blind 1:1 and randomly assigned a teaching technique. Brailling and physical guidance both coupled with explanation were studied to determine whether or not they helped in increasing self-efficacy in goal ball skills and which one elicited a greater improvement. This study also analyzed the sources of efficacy. A pre posttest self-efficacy questionnaire (5 point Likert Scale) was used for the self-efficacy, open ended questions were used to determine sources, and counselor journals were also used in collecting information for the sources. Results determined that both brailling and physical guidance significantly (p< .05) increased self-efficacy scores. The results provide evidence that both brailling and physical guidance have an effect on the self-efficacy of participants who are blind. Both physical guidance and brailling significantly increased the participant's efficacious level within groups. Self-efficacy score differences (between pre and post-test) between physical guidance and brailling was not examined and it was not determined whether these pre/post test scores differences were significant. When looking at the statistical outcomes of brailling vs. physical guidance in pretest and posttest scores, the results reveal that there were no significant differences between physical guidance and brailling in pretest scores or posttest scores.

When analyzing the sources of self-efficacy, verbal persuasion and vicarious experience (Bandura, 1997) increased, past performance remained the same, and physiological state had no effect after the one week intervention was completed.

Based on the results of the current study, the following conclusions can be made:

1. Modeling techniques for participants who are blind in goal ball, enhanced self-efficacy for the participants in both physical guidance and brailling groups.
2. Both physical guidance and brailling enhanced every participant’s self-efficacy. Although a stronger case was found with physical guidance, no significant differences were found between the two modeling techniques.
3. The sources of efficacy that influenced the participant’s self-efficacy the most were vicarious experience in the lead with 76%, past performance 54%, verbal persuasion 45% and physiological state accounted for less than 10%.
CHAPTER I
Introduction

Background of the study

"Perceived self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997a, p. 3). "People guide their lives by their beliefs of personal efficacy" (Bandura, 1997a, p. 3). This theory has been modeled in several studies related to confidence and the way that people perceive themselves (Bandura, 1997b). People's belief in their efficacy affects many actions they engage in, effort and time spent on tasks, the amount of time one will struggle with objects and failures, stress, and how they perform (Bandura, 1997b). Bandura's (1977) theory of self-efficacy compares the difference between the cognitive beliefs of an individual and the actual behavioral changes due to the beliefs that they have. When an individual produces certain outcomes in behavior, it is believed that cognitive states may be a leading factor in that behavior (Bandura, 1977).

When applied to motor and skill performance, self-efficacy is referred to as situation specific rather than overall performance (Bandura, 1997a). Psychomotor activity (referred to as skill in the present study) promotes beliefs in physical efficacy and therefore can increase skill performance. If a person believes that he or she has the capability to perform the skill, satisfaction and interest in the given activity will sustain (Bandura, 1997a). According to Bandura (1997a), an individual's efficacious beliefs change as a result of the task; If an individual has high self-confidence for a certain activity, one's efforts and attitudes toward the task will greatly affect the outcome; If one's perceived capabilities are strong about performing a task, chances that the individual will continue to perform are more likely; If one's perceived capabilities of the efforts to complete a task are weaker, the individual may not be as confident in completing the task. One's efficacious beliefs are critical in determining performance outcomes (Bandura, 1997a). Individuals with a strong sense of efficacy view challenging tasks more positively than individuals with low efficacious beliefs (Bandura, 1997a).

In this study the researcher will examine the role of teaching styles and sport participation in promotion of self-efficacy on participants who are blind. It is important for individuals to be able to perform a certain skill and understand how the skill can be executed. Modeling is a process in which observers attempt to reproduce the actions another person performs (Lirgg & Feltz, 1991). Modeling increases an understanding of what an individual needs to do. The theory of self-efficacy predicts that providing participants with modeling, guidance performance, corrective feedback, and self-directed mastery will foster development of skills and self-efficacy (Bandura, 1977). Once the understanding and concepts of skills are established, children with visual impairments and blindness have a mental picture to hold onto. In general, children know exactly what to do according to the model. As a result, performance increases, creating high efficacious beliefs for that child. Research supports the idea that individuals find success in learning new motor skills through observing models (Rosenthal and Bandura, 1978). According
to Bandura, (1997a) a motor skill can be learned through physical demonstration, pictorial, or verbal instruction that describes exactly how to perform the given activity. Bandura (1997a) identified proficient modeling as the most effective way of transmitting information about skills.

Children with visual impairments revert to using senses other than visual to complete a task. Providing safe environments, manipulating the environment, adapting the equipment, and stimulating auditory senses can enhance mobility for children with visual impairments (Schneekloth & Day, 1980). One way equipment modification can help stimulate the kinesthetic, tactile and auditory senses of children with visual impairments is to provide for better learning and understanding of movement for children with visual impairments (Skaggs & Hopper, 1996).

In general, to develop healthy, physically fit adults, all children need education in physical fitness, health, wellness, and lifetime sports and recreation (Ross, Lottes, & Glenn, 1998). Individuals with visual impairments have the same need for creative and spontaneous movements as their sighted peers (Hanna, 1986; Schneekloth, 1989; Sherrill, 1998). These experiences are equally important for individuals with disabilities but may be much more difficult. Karlsson and Bullington (1997) studied body experiences of 14 participants who were congenitally blind. These subjects believed the exercises were a positive experience with long lasting effects. They experienced a heightened sense of security, self-confidence, and well being, of all which favorably promote positive identity. These components benefit people who are blind helping them find their identity in the sighted world.

Studies have indicated that children with visual impairments have lower levels of fitness than their sighted peers (Buell, 1950a, 1950b; Jankowski & Evans, 1981; Winnick & Short, 1982). The researcher believes that physical fitness is relevant in this study because individuals who are blind need to become exposed to appropriate physical activities. Research indicates that children with visual impairments have lower levels of fitness compared to their same age sighted peers (Lieberman and McHugh, in press). Buell (1966, 1982) and Winnick and Short (1982), found that both males and females with visual impairments have shown an improvement in their physical fitness during certain age spans. Some students with visual impairments tend to avoid skill and movement participation, due to their fear of potential failures (Sonka & Bina, 1978).

A goal of this research is to teach the participants healthy physical activities, how to perform them and different ways to learn them. This research is also intended to teach educators how to teach these activities and to be advocates for students who are visually impaired to participate equally with their sighted peers of the same age. In order to lead a healthy lifestyle, one must be physically active. By involving individuals with visual impairments in sport activities, the researcher would also like to promote lifelong fitness activities and participation in blind sport such as goal ball. Historically, children who are blind have demonstrated lower levels of fitness; therefore, educators, parents, and coaches, need to advocate for healthy lifestyles. In order to do this, we need to determine how children who are blind learn best, and what activities are most appropriate and beneficial. Issues related to physical fitness and children
with visual impairments will be discussed further in the literature review of chapter 2. As previously stated, one’s efficacious beliefs are essential for successful performance. If one’s efficacious beliefs are strong, physical performance will be better. In contrast, weak self-efficacy results in poorer physical performance. A lack of physical performance results in lower levels of cardiovascular and psychomotor performance (Bandura, 1997b). The researcher hopes to reverse efficacious levels in individuals with visual impairments and blindness.

**Statement of the Problem**

The problem is that children with visual impairments are behind their sighted peers in physical fitness and motor skills (Skellenger, Rosenblum, & Jager, 1997). Buell (1973), found that individuals who are blind expend more energy than their sighted peers in activities of daily living. Children who are blind and visually impaired are born with the same potential as their sighted peers, but often lack the opportunity to reach their potential. Opportunities, skill level and efficacy may increase with proper instruction. However the type of instruction that is most effective to improve physical fitness and motor skills is not known at this time. And due to the limited research on the effect of various modeling techniques used to determine the self-efficacy of children with visual impairments and blindness, further exploration of this topic is needed. Greater insight is needed regarding how to successfully engage students with visual impairments in fitness and sport activities and the impact on self-efficacy of that endeavor.

**Research Hypothesis:** The following hypotheses were examined:

1. Whether modeling techniques for participants who are blind (brailling or physical guidance coupled with explanation) alter self-efficacy in a pre/posttest intervention.
2. Determine which modeling technique had the greatest effect on self-efficacy for the participants in the study.

**Purpose of the study**

Children in general benefit from demonstration and positive skill specific feedback. When instruction and demonstration are coupled with positive specific and corrective feedback, the skill acquisition and self-efficacy of the skill increases. It is not known which modeling techniques are best for skill acquisition and for producing self-efficacy in children who are blind. Therefore the purpose of the study was to determine the effects of modeling on self-efficacy during goal ball of participants who are blind. If modeling techniques increase self-efficacy for kids who are blind, a further look into which technique has the greatest potential to increase the efficacious levels on children with visual impairments will be undertaken. The current study will examine a) which modeling technique increases self-efficacy for participants with blindness and b) which modeling technique increases self-efficacy the most for participants with blindness.

**Definition of Terms**

**Brailling**: Term is used to describe a learning technique whereby the individual feels or touches the coach or another individual that is performing a particular movement. In this way the athlete can
obtain information regarding limb and body position and proper technique (Australian Sports Commission, 1995).

Children with Disabilities- The term means those children having mental retardation, hearing impairments, visual impairments including blindness, speech or language deficits, serious emotional disturbances, orthopedic impairments, autism, traumatic brain injury, other health impairments, specific learning disabilities, and who, because of those impairments, need special education and related services (Federal Register, 1977).

Demonstrations- A skill that is shown and the pupil follows attempting to imitate the exact movement demonstrated (Lieberman and Cowart, 1996). This may be visual, kinesthetic, or haptic.

Explanation- Uses language to communicate. Many pupils use their sense of hearing to gain information about skill development and the skills being taught (Lieberman and Cowart, 1996).

Instructional Prompts- Range of instruction stimuli that are provided to direct the student toward a desired response (Falvey, 1995).

Kinesthetic Sense- Knowledge of the movement and position of the body (i.e. the sensory experience derived from human movement.) (Australian Sports Commission, 1995).

Mastery Experience (Past performance)- Serves as an indicator of capability (Bandura, 1997a,b).

Modeling- Process of learning by observing the performances of others. This process can influence the development of physical and social skills (Australian Sports Commission, 1995).

Participant Modeling- Partner follows the leader type activities (Winnick, 1990).

Perceived Self-Efficacy- Refers to the beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments (Bandura, 1997a).

Physical Guidance- The teaching technique of performing a movement with the student, who then eventually gets the feel of the motion. It consists of placing the student's body and/or limb(s)- with or without an implement- into the appropriate position and putting him/her into the desired movement at the preferred speed (Sulzer-Azaroff and Mayer, 1991).

Physiological state- People partly judge their capableness, strength, and vulnerability to dysfunction (Bandura, 1997b).

Self-efficacy- As defined by Bandura (1977), is the belief that one can successfully execute the given behavior required to produce a certain outcome; a situation specific self-confidence.

Self-efficacy Theory- A theory of behavioral change which states that physiological procedures, whatever the form, alter the level of strength of self-efficacy, which in turn, affects approach/avoidance behavior (Bandura, 1977).

Tactile- Related to or experienced through the sense of touch (Australian Sports Commission, 1995).

Verbal Persuasion- Allied types of social influences that one possesses certain capabilities (Bandura, 1997a,b).
Vicarious Experience - Alter efficacious beliefs through transmission of competencies and comparisons with attainments of others (Bandura, 1997a;b).

Visual Impairment - An impairment of vision that with correction adversely affects a child's educational performance. The term includes both partial sight and blindness (Federal Register, 1977).

Assumptions
1. It was assumed that the children of Camp Abilities represent the population of children with blindness.
2. It was assumed that the counselors at Camp Abilities represent teachers in the field of adapted physical education or visual impairment.

Delimitations
1. The study was limited to 13 participants representing the population blindness attending Camp Abilities.
2. The participants of this study were between the ages of 9 and 21.
3. The sport skill components that were measured within the sports of track and field which are USABA sanctioned sports.
4. This study was conducted at Camp Abilities, Brockport, New York during the summer term, 2000.
5. The participants were randomly selected into groups of physical guidance or brailling each coupled with explanation.
6. The study was limited to modeling techniques for participants who are blind. The modeling techniques included brailing, physical guidance, and coupled with explanation.

Limitations
1. The participants may have answered the questions according to what they think the researcher wants to hear.
2. The findings of this study may have only reflect the population sampled.
3. The intervention was not controlled for counselor personality, rate of feedback, or type of interactions with the participants.
CHAPTER II
Literature Review

The purpose of this chapter is to present a review of the significant literature pertaining to uniqueness of a visual impairment, delayed development, physical fitness, self-efficacy, and modeling techniques.

Uniqueness of Children Who Are Visually Impaired

Infants born without vision are unable to see where they are going, so instead they must rely on their auditory senses for mobility. A person’s ability to use auditory senses does not begin until 8-12 months of age (Aldeson and Frailberg, 1974). The lack of vision may then lead to motor developmental delays. Eventually, later in life, these children reach the milestones at a significantly slower pace than their sighted peers. To discourage slow pace development caregivers can manipulate their environment to help increase their motor development (Adelson & Frailberg, 1974). Another possible reason for the delay in motor development is the type of parent involvement. Overprotective parents resulting in preventing a child with visual impairments from participating (for whatever reasons) and engaging in movement activities may partially explain the delays in development (Buell, 1950 b; Pereira, 1990).

There are challenges for teachers, coaches and parents to provide opportunities and develop an active lifestyle for children with visual impairments (Skaggs & Hopper, 1996). Much research is needed on the psychomotor capabilities of children with visual impairments. Children with visual impairments and blindness have the same need for physical activity as any other child.

Successful Experiences for Individuals Who are Blind

People with visual impairments have the same right and need to use movement freely and imaginatively as their sighted peers do (Chin, 1988). Walking, posture, body control, and body management are all a part of orientation and mobility, therefore a part of movement (Kratz et al, 1987). It is imperative for the teacher to match the specific teaching styles and learning strategies to each child. In physical education, the success of the student with a visual impairment could depend on how the teacher directs the lesson presentation. In general, it is important for students involved in learning to feel good and believe that they can achieve. It is important for teachers to find instructional strategies to match each child's learning style. For some children, such as those who are blind, teachers need to know which learning style is the best for each and every child. Students with visual impairments can take part in activities with very few adaptations made. Children should be given the opportunity to effectively interact with their environment and enjoy successful experiences. Positive feelings of being able to do something are those feelings of efficacy (Bandura, 1981). Adaptations and modifications in activities should target student success. These experiences and interactions that the children will take part in are a basis for their self-efficacy.
It is important for children to become familiar with spatial concepts in order to move freely and ensure confidence in their movements. For children who are blind to move skillfully and efficiently, it is important for them to understand their own bodies and the relationships of their body parts (Chin, 1988).

Margot and Palazes (1986) studied the need for motor development programs for preschoolers who are visually impaired. They stated that the sensory awareness components, tactual and kinesthetic/propiroceptive, are basic concepts that lead to efficient mobility for children in these programs. Tactual modes include awareness, identification, atmospheric conditions, discrimination, and textures underfoot. According to Sherrill (1998), tactual inspection on some objects or people can enhance learning for children with visual impairments. Learning about one's body and the way bodies move in space is a vital concept for children who are blind to understand. When a child learns how to perform a skill, three-dimensional figures must be present to maximize learning for the child (Sherrill, 1998). Kinesthetic refers to the quality of movement and the body's position in space (Margot & Palazes, 1986). Tactual and kinesthetic tie into the haptic perception, which is a combination of tactile and kinesthetic movements used together. Winnick (1985) stated that the visual limitations require the teacher to focus on auditory, haptic, and residual visual abilities that children with visual impairments possess during instruction. For this reason kinesthetic movements are a more effective method of learning than auditory feedback with students who are blind (Dye, 1983).

According to Liberti (1980), a pre-requisite for acquiring orientation and mobility skills is an understanding of how the body moves in space. Different sensory systems that children use are visual, tactual, kinesthetic, proprioceptive, and vestibular modalities. The auditory system for children with visual impairments is imperative. The tactual system allows students with visual impairments to be aware of how certain objects feel. An example of this is how the floor feels with addition of roller blades on the individual's feet. Kinesthetic refers to the way in which we use our muscles, tendons, and joints to propel the body through space. A combination of these senses unites with the vestibular system to help identify posture and balance (Liberti, 1980). Many researchers argue that balance is the key for the problem found in orientation of children who are blind and visually impaired (Long, Reiser, & Hill, 1990). The authors also suggest that motor development in children with visual impairments, low vision, or blindness is dependent on a variety of factors such as balance, base of support, movement patterns, environment, distribution of weight during movement, and the difficulty of providing different kinds of motor experiences leading to the conception and understanding of environmental space. As a result, orientation, mobility, motor behavior, and learning depend on appropriate auditory, tactile-kinesthetic, proprioceptive, and visual stimulation (Long et al., 1990).

Vision has a large effect on a person and their ability to travel. An individual without sight is therefore limited in physical and motor development. It is crucial that youngsters with a degree of vision loss have opportunities for physical activity. Individuals who are visually impaired can reach the same motor milestones and motor development as sighted individuals with differences in timing. Research has
supported that those with a visual impairment are behind in motor milestones characterized by mobility and locomotion as opposed to muscular maturation and postural achievement (Aldeson & Fraiberg, 1974; Norris, Spaulding, & Brodie, 1957). Norris et al. (1957) found that 66 participants in her study had significant delay in learning to stand, walk, and jump. Delayed motor development in individuals who are blind is due to the lack of mobility, which is caused by the lack of sight. The lack of sight interferes with visual stimulation and makes moving increasingly difficult (Winnick, 1979). This lack of vision contributes to poor posture in the following ways: head stability, inhibiting the movement and physical activity that helps in muscular development, posture, and vision to maintain body alignment (Cratty, 1971).

Physical Fitness and Motor Performance for Children with Visual Impairments

It is likely that performance in physical and motor activities of persons with visual impairments will be slightly below that of sighted peer, especially at an early age. Since they need greater than normal stamina to reach the same level of performance as those people with sight, physical education and motor performance for children with visual impairments is critical.

What is the effect of exercise and physical activity on people with visual impairments? There are nearly 1.5 to 2 million children in the world who are visually impaired (Best & Corn, 1993). The earlier that physical activity is implemented into a child's life, the easier it is to maintain throughout life. Children with visual impairments often have sedentary lifestyles and have even more to gain from physical activity, skills for lifetime sports, and recreational programs than people with sight. Seele (1983) states that a person's condition of physical fitness affects the quality of life. People who are blind exercise for the exact same reasons as sighted people. This population of people wants to enhance their status as human beings. Fitness impacts body image, self-concept, emotional well-being, and coping with activities of daily living (Weitzman, 1986). For some individuals who are blind, personal perfection by means of physical fitness is motivating to promote self worth. Progressive mastery in sport leads to an overall improvement in self-confidence and self-esteem in people with visual impairments (Glesser & Brown, 1986).

Research supports that people with visual impairments maintain a lower level of physical fitness compared to their same aged peers (Buell, 1950a, 1950b; Jankowski & Evans, 1981; Winnick & Short, 1982). Winnick (1979) reported that due to the lack of sight, delayed motor development is a result of the lack of mobility by the individual. The loss of sight decreases stimulation to move therefore makes it increasingly difficult to maneuver. This is an implication for a spotlight to be shown on the perceptual abilities of children with visual impairments. A recent study by Skaggs and Hopper, (1996) found that almost all components of physical fitness; including cardiovascular endurance, muscular endurance, flexibility, and balance, were lower in children with visual impairments when compared to their same aged sighted peers. The only significant differences found were the male skin fold. Differences were also found in psychomotor skills such as cardiovascular endurance, muscular strength and endurance, flexibility, and balance, of those with visual impairments.
Some researchers suggest possible environmental situations as to why children with visual impairments may have lower fitness levels (Kobberling, Jankowski, and Leger, 1991; Shepart, Ward, Natale, and Lee, 1985). One reason accounted for is lower levels of physical activity. One other possibility is by Buell, (1950a,b) stating that maybe the lower levels are a result from the restrictiveness of the child's parent or guardian. Short and Winnick (1986) studied how placement settings in school cause the decreased fitness levels. They found that there were differences in fitness levels, favoring children that attended segregated, versus children in the integrated schools. Increasing physical fitness levels for people with visual impairments can truly benefit their psychomotor performance and help improve their quality of life (Skaggs & Hopper, 1996).

Hanna (1986), in an extensive review of literature, suggested that levels of physical fitness or motor developments had not improved as expected in her study. Along with others, Hanna agrees that individuals with visual impairments can achieve the same fitness levels as those with sight. To do this physical education teachers, facilities, and communication need to be set forth to include the children with visual impairments into the least restrictive environment (Buell, 1950b; Hanna, 1986; Short & Winnick, 1986; Winnick, 1985).

Motor performance in individuals with visual impairments is lower compared to those with their sighted peers (Buell, 1950 a,b; Daugherty and Moran, 1982; Schneekloth and Day, 1980; Skaggs and Hopper, 1996). Included in the realm of motor-performance is balance stating that persons with visual impairments perform more poorly than people with sight during static and dynamic tasks (Buell, 1950b; Gipson, 1981; Pereira, 1990; Ribadi, Rider and Toole, 1987). Children who are visually impaired or blind, develop their proprioceptive senses, rather than their vision like a child with sight. These senses are valuable for mobility training and moving for individuals with visual impairments (Gipson, 1981).

Orientation and Mobility

Mobility refers to a child's ability to move from one point to another. Orientation is associated with how the body relates itself to space. Both mobility and orientation are essential to provide the students with efficient movement. Mobility training increases a child's confidence when moving and also provides safety during movement participation. Physical education teachers must be prepared to teach a variety of other forms of sensory experiences for the child with visual impairments.

Sonka and Bina (1978), looked at a case study on cross-country running program for children with visual impairments. They stated that the distance running reinforces some of the skills and concepts in orientation and mobility training. The implications of the article are that orientation and mobility can enhance sport participation simply by reinforcing skill and concepts in orientation and mobility. Some of the concepts discussed are safety, proficient travel, directional travel, time, and distance. Awareness, recognition, and sensory cues are important things for independent traveling. Overall improvements in posture and gait were found. And through these experiences, social interaction skill are learned and improved (Sonka and Bina, 1978).
Confidence, Self concept, and Self-esteem in Children with Visual Impairments and Blindness

Self-esteem is the affective component of self-concept. Self-esteem not only determines the interpretations given to events in a social and physical environment but is affected by the interpretations (Tuttle, 1987). A person tends to incorporate signals received from his significant others into his own self-concept. When a person is accepted and valued by others, they are more inclined to accept themselves. It is obvious that persons receive several reflections such as these above from many different people throughout their lifetime. Individuals with disabilities experience a wider range of predominantly negative reflections, which results in lowered self-esteem (Kirtley, 1975; Lowenfield, 1975; Monbeck 1973). Another major source of self-esteem is the ongoing internal process of making judgments about one's own competence (Tuttle, 1984). Out of the visually impaired students' self-concepts or perceptions of their own personal attributes emerge their aspirations and goals in life. Their aspirations determine the tasks and activities they choose to accomplish (Tuttle, 1984).

Dibner (1973) examined a camper with a physical disability at a two-week camp and his self-concept at the end. The campers came in with lower self-concepts than the campers without disabilities, but after the camp they showed greater gains in self-concept. The learning and mastery of a new skill can indeed enhance the self-concept of individuals with disabilities. Self-efficacy is the determining factor upon understanding changes in self-concept (Craft & Hogan, 1985).

Sonka and Bina (1978) performed a case study on a cross-country running program at the Wisconsin School for the Visually Impaired. The multi-purposed aimed to improve physical condition in athletes in order to make them feel better and provide success, practice orientation and mobility skills, and opportunities for social interactions from their sighted guides (Sonka & Bina, 1978). The following case study on "Jack" is beneficial to providing opportunities and success for students with visual impairments. Jack joined the cross-country team because others recognized his running capabilities. Jack achieved success and accomplished much in cross-country. After joining the team, the young boy felt more outgoing and more confident. The acceptance, increased confidence and motivation helped him become a marathon runner (Sonka & Bina, 1978). This level of success is uncommon but each child is entitled to the same opportunities as everyone else. It is important to engage children with visual impairments into activities that they enjoy and help foster success in their endeavors. As shown in this study, increased confidence and acceptance because of a sport that the child felt good about doing the activity about is important. Social acceptance increases a child's motivation to continue to participate. When his cross country season ended, Jack stated that he felt better and were more alert during training (Sonka & Bina, 1978). The article also spoke of sighted guides who are used for those people who cannot follow red, yellow, and blue flags that mark important features throughout the course. The faculty of the school volunteered to be sighted guides for Jack. The runner was encouraged to take initiative to set the pace, maintain motivation, and other tactics in the course. Guides were there to inform the runners about significant changes that were ahead, position in the race, and determining tactics to remain motivated.
Sonka and Bina (1978) found that the best sighted guide running technique was to allow the runner to hold the guide's arm just above the elbow. The runner is about one-half a pace behind the guide holding onto the arm therefore able to feel the terrain ahead due to the movements of the guide's arm. Overall, it is important for kids to participate in events that they enjoy and feel success. In some students may feel fearful or scared because they have never had the opportunity to take part in an activity. It is important to understand how kids with visual impairments best learn and help them avoid fear in potential endeavors. Providing environments, methods, and activities for children to participate is important for the development of that child.

Self-concept is the picture that one has of oneself. Beatty (1969), defines it as "a core of self-regarding attitudes or beliefs." A person's behavior will be consistent with the kind of people they feel and see themselves becoming.

A widely held belief is that students with visual impairments have a lower self-concept than their normally sighted peers (Kessler & Milligan, 1979; Martinek & Karper, 1982; Obiakor & Stile, 1989; Rosenberg & Gaier, 1977; Sheare, 1978). This is thought to reflect their lack of social acceptance. Social acceptance is associated with academic underachievement, physical incapability and social maladjustment (Obiakor & Stile, 1989). Obiakor and Stile (1989) looked at the Student's Self Assessment Inventory for kids with visual impairments. This test measures a child's self-knowledge, self-esteem, and self-ideal and how each of these relates to areas of physical maturity, peer relations, academic success, and school adaptiveness. The students who were visually impaired were defined as not performing satisfactorily without proper modifications in the classroom. There were significant findings as to the difference in self-concepts of the students with visual impairments and normally sighted students. The differences were significant favoring those students with visual impairments (Obiakor & Stile, 1989). This meant that the students that attended the residential schools had better self-concepts than students who were not in that school setting.

A study by Ross et al. (1998) looked at a school in Texas using golf to teach students with visual impairments lifetime skills pertaining to sport, recreation, and social interaction. A total of ten students participated in the study, all possessing different levels of vision. Trained peer coaches and physical education teachers in the classroom provided additional training and coached the students. There were five phases in the entire study including academic instruction, weighted clubs for swing patterns, regular sized heads to swing, community based instruction, and a golfing tournament. Throughout the phases of instruction, the students were assisted hand over hand and then expected to perform independently. The academic instruction was an overview of the golf game and hands on instruction in putting. The student coaches helped the student who was visually impaired produce the proper stroke with the putter. Once the student developed the correct stroke, the coach tapped a golf ball against the putter head to assist in proper alignment. The coach then tapped a metal rod against the target and the student putted toward the localized sound. Immediate feedback was given to the student to allow for a harder or softer stroke the next time.
Students with a visual impairment benefited from the experience of participating in recreational activity that can now be continued into adulthood. This experienced increased self-esteem as a result of their success.

Pupils who are blind need increased self-confidence to meet their struggle in the "sighted world." The golf study explored the subjects' body experiences as they described themselves. There were no statistical correlations or predictions in the study. The results of the study can be used for education of young children. Participants who had spent time exercising felt that it was a positive experience; The physical training had left the participants with a sense of security, self-confidence, and well being which, in turn, promoted positive self identity. This study focused on the idea that self-confidence and body awareness is important for a person with a visual impairment to succeed in the world of vision. It is important to note that even though the participants in this study were blind, the majority of chapter 2 reviews literature about individuals with visual impairments. Very few studies exist that focus on sport and self-efficacy of individuals who are blind.

**Open and Closed Skill**

Children's motor skill, whether with a disability or not, can be investigated in a variety of ways. Different instructional strategies are needed depending on the cognitive capability and skill of the learner. The actual type of motor skill performance is important to consider during instruction and learning. Many authors have investigated whether the methods of practice influence skill acquisition and performance of the learner. An open skill, according to Poulton (1957), is one that has an unpredictable set of environmental requirements; for example, hitting a thrown baseball. A closed skill, on the other hand, is one that can be performed without a direct response to environmental aspects; for example, a shot put (Poulton, 1957). Lieberman and Cowart (1996) mentioned that brailling (if performed correctly) had an effect upon the way an individual learned a skill where the body was stationary and the limbs moved (closed skill). In addition to this idea, the learner's level of functioning in performing the skill affects the understanding of motor skill learning and performance. Timing performance (Nettlebeck and Brewer, 1981) and coincidence anticipation performance (Dummer 1979; Edwards, Elliott, and Lee, 1986), on individuals who are mentally retarded performing motor tasks have been investigated. Through this investigation it was determined that the individuals with mental retardation had more difficulty in reaching the open skill criterion level of performance during the acquisition phase than the closed skill. Forty six percent of the mentally handicapped subjects did not reach the criterion. This supports the suggestion of a simple to complex principle progression for students who are mentally retarded. The task for experiment number one was a linear slide apparatus which included two stainless steel rods with microswitches which were place parallel to each other. The subject needed to slide from the first to the second rod and the time was recorded. Although the identical skills found in experiment one were performed very well by those who were in a closed skills, the open skill task was much too complex; it was determined that experiment one was much too difficult. (Eidson and Stadulis, 1991).
Self-Efficacy

"People who regard themselves as highly efficacious act, think, and feel differently from those who perceive themselves as ineffectual. They produce their own future, rather than simply foretell it” (Bandura, 1986, p. 395).

Self-efficacy is a measure of self-confidence for individuals in sport and motor performance (Feltz, 1988). Self-efficacy is the sport specific self-confidence rather than confidence in its entirety. Self-confidence is necessary for successful sport and skill endeavors (McAuley & Gill, 1983). Self-efficacy refers to “the conviction that one can successfully execute the behavior required to produce the outcome.” (Bandura, 1986, p. 193). Bandura defines self-efficacy as “people’s judgments of their capabilities to organize and execute courses of actions required to attain designated types of performances” (1986, p. 391). Bandura (1977) wanted to explain the relationships between cognitive beliefs that a person had and the behavioral changes that could occur; he (1977) stated that behavioral changes are a result of cognitive beliefs and the individual will then lead these beliefs to produce certain outcomes. Self-efficacy is not associated with the skills the individual has, but rather the judgments of what he or she can do with the particular skill. For example, an individual may have higher efficacy playing soccer but display low self-efficacy during a tennis game. According to Schunk (1981), self-efficacy is relevant to children’s achievement behavior. Individuals with greater self-efficacy expectations tend to approach more complex and challenging tasks, put forth more effort, and may perform longer at the task (Bandura, 1977). Adversely individuals with lower self-efficacy expectations may perform more challenging tasks while experiencing anxiety (Bandura, 1982), engage in activities halfheartedly (Schunk, 1981), or tend to give up more easily (Bandura, 1982). Experiences designed to raise self-efficacy should enhance persistence and skillful performance (Schunk, 1981).

The self-efficacy theory (Bandura, 1977; Bandura, 1986) is based upon outcome expectancy and efficacy expectancy. Outcome expectancy is whether or not the person performing a task thinks (ahead of time) that a particular behavior will lead to a certain outcome. This does not address whether or not a person believes they can do something; Personal capabilities are not contingent on personal beliefs. Efficacy expectation is the actual belief that an individual is or is not capable of performing the behavior at all (Bandura, 1977). Efficacy expectations also determine behavior of the individual (Bandura, 1977); When an individual believes they have the ability to do the activity then they are more likely to become involved (Bandura, 1997a). Also, when people have worthwhile efficacy and expected performance outcomes they expect behaviors to have the desired outcomes and beliefs (Bandura, 1997a). Stronger beliefs in ability may result in more effort and devotion to complete the task (Bandura 1977; Bandura, 1986). The more the individual believes that he or she can do the activity the greater they will be able to succeed. Bandura (1990) stated that an individual’s capability to complete the task is only as good as the performance.
Possibly for an individual with a visual impairment, efficacy may be the belief that one can successfully walk independently with a cane, perform tasks independently, or participate on an athletic team. Self-efficacy expectations not only influence behavior but are also influenced by the executions of the behavior.

Research is needed in the area of self-efficacy for individuals with disabilities and more specifically individuals with visual impairment and blindness. Due to attitudes, discrimination, stereotyping, and limited access to avenues for efficacy enhancement, individuals with disabilities are thought to have lower levels of perceived self-efficacy compared to individuals without disabilities. These feelings may have a negative effect on the way that individuals with disabilities perceive their physical and cognitive abilities as well as their self worth.

There is research on perceived efficacy enhancement through mastery experiences, modeling, and verbal persuasion. (Craft & Hogan, 1985). Teachers and coaches know that if their students and athletes maintain self-confidence, they have an increased likelihood to be more successful in the physical activity that they choose. Teachers and coaches therefore try to instill the idea of self-confidence in their students to help improve outcomes of actions. They know that an individual's self-beliefs are directly related to better performance, higher motivation; and greater enjoyment of the activity. These assumptions are consistent with Bandura's theory of self-efficacy (1986). As stated previously, self-efficacy is one's judgment of capability required to successfully perform a task or activity. Self-efficacy has motivational effects and is considered by Bandura (1971, 1978, 1981, 1997) to be a very important component of motor movement and skill learning. In 1979, Feltz and her colleagues studied the effects of different types of modeling on self-efficacy cognition's and back-diving performance. Participant modeling was found to be significantly more successful in raising efficacy expectations and improving performance than live or videotaped means of modeling behaviors. Ness and Patton (1979) found similar results in a study of weightlifting. They found that verbal persuasion enhances the athlete's self-efficacy. A comparison was made between the lifter that thought the weight was less than it really was, those that thought the weight was more, and those that did not know the weight at all. The outcome was who thought the weight was less, actually lifted more weight.

Enhancing Self-Efficacy

Bandura (1977) states that there are four sources that relate to the outcomes of self-efficacy: past performance, vicarious experience, verbal persuasion, and physiological states. It is these four items that serve to develop, strengthen, and enhance personal efficacy (Bandura, 1977).

Past performance (performance accomplishments) provides the influential source of efficacy because they are based on successful endeavors and mastery experiences (Bandura and Adams, 1977). Research links past performance as the most influential in reflecting efficacious beliefs in movement (Felts, 1994; Feltz, 1988; McAuley, 1985). Performance accomplishments refer to the idea that an individual has mastered a skill. When individuals achieve expected levels of performance, the result is an increase of
self-esteem (Feltz & Weiss, 1982). The performers can continue to gain the confidence to repeat the expected performance. When in turn provides efficacious beliefs to increase; individuals are more confident to complete the task based on their previous experiences. Self-efficacy is enhanced through performance accomplishments depending on a few factors: effort expended, difficulty of the task, external aid received to perform the task, temporal pattern of success and failure, and circumstances involved (Bandura, 1981).

Vicarious experience involves seeing other people model a movement/skill and by watching them, the individual will feel confident about performing the skills (Bandura, 1977). Weinberg et al., (1981) followed up his 1979 study concluding that weaker relationships between self-efficacy and performance occurred when vicarious experiences were taken away. Success in a model can increase the observer’s self-efficacy beliefs. Likewise, the opposite is true; seeing an unsuccessful attempt can lower self-efficacy beliefs, especially if the model is similar to the observer (George, Feltz, & Chase, 1992; Gould & Wiess, 1981; Lirgg & Feltz, 1991). Vicarious experiences can be beneficial in an educational setting; Observing others successfully completing challenging or threatening tasks allows the observer to believe that he or she can accomplish the same task. The more similar the model is to the observer, the greater the self-efficacy will be for the observer (Stanley & Maddux, 1986). Participant modeling, in which the subject observes a model that successfully completes a task, has been a successful method to increase self-efficacy (Bandura & Adams, 1977; Feltz, Landers, & Raeder, 1979).

Verbal persuasion is established by comments, suggestions, and persuasion from coaches, parents, or teachers during the task. There is some research supporting verbal persuasion positively influencing self-efficacy (Feltz & Reissinger, 1990; Weinburg, Grove, & Jackson, 1992; Wilkes & Summers, 1984). It is important to state positive messages to the self-doubting individual to help strengthen their beliefs.

The physiological state of Bandura’s 1977 self-efficacy theory accounts for arousal, levels of pain, anxiety and fatigue. Individuals judge their capabilities according to the physiological changes they are experiencing (i.e., increased heart rate). Proponents say that usually these negative attributes will decrease self-efficacy. Bandura (1977) explained that physiological states above are associated with poor behaviors; chances are failure is likely. This theory was tested by Bandura (1977) using adults and snake phobias. If, however, these physiological states are positive and the negative connotations do not exist, self-efficacy beliefs will increase. Emotional arousal has not been a good predictor for the enhancement of self-efficacy on sport performance (Feltz, 1982; Feltz & Mungo, 1983).

The determinants of self-efficacy that were just discussed are said to be effective in developing one’s efficacy expectations during performance.

Efforts to increase self-efficacy should respond to the following:

1. To succeed at any easy task is redundant with what one already knows, where as mastery of a difficult task conveys new efficacy information for raising one's efficacy appraisal.
2. Successes achieved with external aid carry less efficacy value because they are likely to be credited to external factors.

3. Success with minimal effort is less likely to have an impact on perceived self-efficacy. Individuals who experience periodic failures but continue to improve over time are more likely to raise their perceived efficacy (Bandura, 1981).

Self-Efficacy Related to Physical Activity

A study by Chase (1998) looked at the sources of self-efficacy in physical education and sport. Chase explored the knowledge of children's self-beliefs of specific situations within physical education and sport. This knowledge then transformed to teachers and coaches to provide instruction to their students. All of Bandura's effects of self-efficacy influences played a positive role in this study. The children mentioned the vicarious experience affected their learning by watching others and comparing their performances. Lirgg & Feltz (1991) stated that children will learn and increase self-confidence by seeing their peers do certain activities and then attempting them. Higher self efficacy beliefs will lead to better performance in a skill where lower beliefs will result in failure of a particular skill (Feltz, 1994). Teachers can easily incorporate this into their classes with peer tutors (Chase, 1998).

McAuley (1985) studied the role of modeling as a teaching modality for motor performance and how anxiety and self-efficacy play a role in motor skill using gymnastics. Subjects in both modeling groups that were used reported that they have higher self-efficacy beliefs than the control groups that were used. The aided participant groups had higher scores than the unaided participant modeling groups but each were higher scorers than the control group. The difference between the aided and unaided participant modeling group suggests that the modeling treatments made the subjects feel more competent and satisfied with their performance compared to the control group. This study supports modeling as being a positive attribute toward motor skill acquisition and increased self-efficacy.

Gould and Weiss (1981) studied subjects who viewed a model that either made a positive, negative, irrelevant, or no efficacy statement to the subject. A similar model that made positive efficacy statements would enhance the subject's efficacy and cause enhanced motor performance. Dissimilar models that made negative efficacy statements were expected to decrease subject efficacy and cause poorer performance. The outcome of this study suggests significantly better results for subjects who viewed a similar model than subjects who viewed a dissimilar model or no model at all. These performance results also produced a significant interaction, but Gould and Weiss (1981) concluded that the model similarity was more potent than self talk in modifying performance.

McCallugh (1986) looked at whether or not the model type would affect the attention phase of the learner. As predicted by Bandura (1977), the model status should affect the attention phase of the learner. Therefore, the subjects with a high status in performance would be expected to differentially focus more attention on this model as compared to a low status (performance) model, and performance would be enhanced. In the postcued condition, the subjects were unaware of the model status until after the
demonstration and performance differences would not be expected if the model status was primarily an attention-controlling variable, since the attentional phase would already have been completed. Performance results indicated that subjects performed better after viewing a high, as opposed to a low, status model. The cueing manipulations by the model did not produce any significant performance effects, which suggests that model characteristics did not exert a prime influence on the attentional phase (in this investigation).

McCullagh (1987) tried to replicate the findings of previous model characteristics from studies by Gould and Weiss (1981), Landers and Landers (1973), and McCullagh (1986). McCullagh (1987) also wanted to determine if the model characteristics affect attentional subprocesses. The task involved 75 undergraduate college women using the Backaman ladder, all consistent with previous studies mentioned. Phase one of the study the subjects were seated in a room and given verbal directions as to what to do on the test. Then the subjects watched the monitor for the demonstrations of what to do. The control groups had the same verbal instructions but did not receive any information or reference to the demonstration. After receiving the instructions, all subjects completed a questionnaire pertaining to their perceived similarity to the model. Self-efficacy was measured by a questionnaire designed to measure the level and strength of efficacy. Questions pertained to the skill, climbing a ladder, and whether they thought that they could attain rungs 1-15. The yes scores were then summed. Following phase 1, the subjects were given a 1-minute rest and then asked to complete a final 10 trials without outcome knowledge of the results. This could help determine if the subjects could maintain their performance without the informational and motivational benefits of the knowledge of results. Also the additional set of trials for the control subjects was to help determine if performance strategies would be changed after viewing a model. The results were consistent with previous research. If found that when the subjects viewed what they perceived as a similar model, they performed better than if they perceived the model to be dissimilar. The findings illustrate the importance of providing learners of a novel motor skill with a demonstration if initial enhancement of motor performance as the goal. The phase two findings suggests that the subjects who view a demonstration used the model's performance as a goal upon which to emulate their own performance immediately; but if given adequate practice, no demonstration subjects can acquire this particular skill and achieve the same outcome without the benefit of a model. In many motor skills, the form or strategy of the skill may be important to the outcome. One interesting finding with the control group was the change in performance when they were given a demonstration. Before seeing a demonstration, they did not display the desired form or strategy of climbing quickly up the ladder. Once they viewed the demonstrator, they significantly enhanced their outcome scores and changed their strategy as they started climbing significantly quicker! This study did not find significant relationships between the level or strength of efficacy. This is contrary to other studies (Gould & Weiss, 1981). They did find significant results between the efficacy level and performance in both similar and dissimilar groups. In the present study, demonstration is not advantageous to reach performance levels. The study by McCullagh (1987) suggests
that through modeling one acquires the cognitive component of the task, but skill execution requires practice and feedback.

In conclusion, self-efficacy is the belief that an individual has to successfully complete a behavior for a desired outcome. This belief is a result of one or a combination of past performance, vicarious experience, verbal persuasion, and physiological states. Self-efficacy does not always guarantee that the desired outcome is attainable at all times, the performer must also have skill and motivation (Bandura, 1977). Self-efficacy continues to be a major determinant of wanted outcomes in performance, motivation, and enjoyment for individuals (Feltz, 1994; Schunk, 1995).

**Modeling**

Modeling is a general process where an observer tries to reproduce an action performed by another person (Australian Sports Commission, 1995). Modeling or providing learners with a demonstration is one technique that is fairly well accepted as a means of imparting relevant information to learners in several settings (McCullagh, 1987). Physical educators and coaches use modeling everyday to show students how to perform a given task (Lirgg & Feltz, 1991). Bandura proposed four components that may influence modeling. These components are attention, retention, motoric capability, and motivation; all of which should be accounted for when integrating modeling.

**Demonstration**

Demonstrations (showing) are another teaching strategy that can be used to teach children with visual impairments. Correct form by the model, along with verbal instruction, is essential when demonstrating a new skill for the observer (Lieberman & Cowart, 1996).

The first step includes paying attention and retaining what the model demonstrated. Actually possessing the motoric capability to reproduce the act and being motivated to complete the outcome are necessary prerequisites for modeling. If these are constant, additional means of external motivation may be given to impact the performance by the observer (Bandura, 1986). As previously stated, seeing a skill being modeled can positively influence the self-efficacy beliefs of an observer (Gould & Weiss, 1981; McAuley, 1985; Weinberg, Gould, & Jackson, 1979). According to Bandura (1977), a number of variables in modeling can influence people's beliefs that they can perform a skill successfully. For instance, research has shown that self-efficacy will be raised if the model is similar to the observer (age; sex, etc) (Gould & Weiss, 1981; Schunk & Hanson, 1985). Schunk and Hanson (1985) found that peer models are more effective than a teacher model in raising a child's self-efficacy when performing math tasks. Competence and model status may also result in how effective the beliefs are. Another study, conducted by Brown and Inoye (1978), found that efficacious beliefs were lowered when the model failed at the task. However, viewing a high status model on a motor task and succeeding at it enhanced the performance of the observer (McCullagh, 1986).

The child with a congenital visual impairment has no concept of boundary because they have never seen it before. General and self-space are as large or small as their imagination perceives it; there is
no field vision to restrict them. Without demonstrating or modeling a skill, the child has no conceptual picture of what to do. A possible solution that Sherrill (1993) suggests is the use of dolls or figurines that the teacher can use to help demonstrate the skill. This is particularly useful when modeling movement concepts such as gymnastic stunts. Many movement explorations such as skills, animal walks, or other movements are difficult for a child with visual impairments to "see" without any sort of tactile or kinesthetic inspection. The child needs to be able to feel, smell, and hear what is expected in the movement (Sherrill, 1998). A well-developed body awareness is necessary for people who are blind to be able to relate to the environment and to other people (Bullington & Karlson, 1997).

Observations of a peer model leads to higher self-efficacy for learning (Schunk & Hanson, 1985). In their study, children scored higher than non-model subjects did on the following measures. The experiment investigated how participants observing peer models who were demonstrating cognitive skills influenced the children's own efficacy and achievement. As previously stated, Bandura's (1981) self-efficacy theory refers to one's judgment of one's performance capabilities in a given domain of activity. Self-efficacy can influence choices of activities, effort, persistence, and the actual task that is being accomplished. Efficacy is perceived through actual performances, vicarious experiences, forms of persuasion, and physiological indexes (Bandura 1977, 1981, 1982). During Lirgg and Feltz's (1991) study, self-efficacy was recorded after verbal cues, viewing the model, and actual performance. One hundred sixth grade girls were randomly assigned in a 2x2 (Model type X model skill) design or to a non-model group. The participants then observed one of the four models: skilled teacher, unskilled teacher, skilled peer, or unskilled peer. Subjects that watched an unskilled model had lower efficacious beliefs; At first, the subjects thought they could perform the task but when they saw the unskilled model do it, their initial thought was changed. Physical education teachers-and coaches should have appropriate learning models (or be the model) so the students can be confident to perform a task. In order to learn the desired skill, the student must know how to practice it.

According to Rosenthal and Bandura (1978), people can learn new skills from observing others. Modeling is hypothesized to be an important source of information about one's perceived efficacy (Bandura, 1978). The acquired skills can in fact increase one's self-efficacy. Modeling implies that the observer can perform the skill according to the perceived capabilities that one has by watching (Schunk, 1984). This in return has the child believe that he or she can perform the skill (Bandura, 1981). Zimmerman and Ringle (1981) studied the effect of children's efficacy on putting together a puzzle after observing an adult model, which was not successful, at their attempt in putting together the puzzle. The model verbalized statements of either confidence or pessimism as they put together the puzzle. The children were required to first judge their self-efficacy before the demonstration and, then again, after seeing one of the modeling sessions. After seeing the model fail at the attempt, children then had the opportunity to put together the puzzle. The children whom experienced the model's pessimism scored significantly lower than the children seeing the confident modeling. It is mentioned throughout the study
that it is possible modeling would have a greater effect on the child's self-efficacy if the model was a same age peer to the subjects. There is a likelihood of increased observational learning for the subjects (Bandura, 1971; Brown & Inouye, 1978; Schunk, 1984). It is declared that children who may have difficulty in the subject matter might view the teacher (model) as superior in competence. Thus, as a result, models of the same age and sex as children, and whom children view as similar in competence, may not only teach children the skills but will promote their self-efficacy for acquiring those skills.

Schunk and Hanson (1985) investigated how peer models affected children's self-efficacy and achievement in the learning context. The study supported the idea that modeling is an important influence in a child's self-efficacy during cognitive skill acquisition. Modeling is often used to teach children certain skills, and the belief that one has learned a skill can increase self-efficacy (Rosenthal & Bandura, 1978; Schunk, 1984). The subjects had difficulty in subtraction operations that were modeled. The children viewed videotapes showing modeling in a classroom by the same age and sex peers as them. It was hypothesized that observing a peer model learning to subtract would in fact enhance self-efficacy for learning, more than observing a teacher model or no observations at all. In return, a higher perceived self-efficacy was related to a greater skill development. This study also analyzed the affects of whether or not the peer models varied depending on the type of modeled behavior displayed; This study dealt with a mastery model or a coping model. It supported evidence of increased self-efficacy for a coping model rather than a mastery model. A coping model makes an attempt at resolving a problem and is not mastery based. The model was hesitant, made errors throughout the problem, verbalized statements reflecting negative achievements, and gradually improved throughout the problems. This model did not demonstrate mastery because coping is directed toward dealing with fears. On the other hand, the mastery model easily grasped the problem and stressed positive attitudes as well as confidence throughout the study. The primary difference between the two models was the rate of learning, number of errors, and type of achievement beliefs that each portrayed. In the study, the peer model displayed either mastery or coping while solving the problem. Those subjects that observed a coping model displayed higher self-efficacy than those who observed the mastery model because they had an indication of how to do it.

Maxson, Tedder; Marion, and Lamb (1993) looked at learning tasks and teaching methods of education of deaf-blind students. A survey was sent to 124 teachers in 25 different states addressing instructional techniques, flexibility of teaching methods; assessment of students, and methods (Maxson et al., 1993). For the purpose of the current study, it is important to highlight the areas of specific teaching methods that were used by the teachers of the children who are deaf-blind. Teaching approaches that were used were structure means including repetition (cues); experimental (modeling), and task analysis (checklist breakdown). Sensory approaches included concrete objects, varied stimuli, visual demonstration, auditory, tactual, and language (Braille). These approaches were used to rate how the teacher taught each of the learning tasks. The learning tasks that the students were responsible for included remembering concrete information, remembering abstract information, learning a concept, learning a
perceptual task, and learning to solve a problem. Structural methods of teaching had a higher priority than
the sensory input methods for this study. Demonstration has shown increased self-efficacy for individuals
(Schunk & Hanson, 1985; Schunk, 1984; Bandura, 1981; Zimmerman & Ringle, 1981; Schunk & Hanson,

Physical Guidance

Physical guidance is another instructional strategy used for people with visual impairments.
When physical guidance is used, the model helps direct the student's body in the proper position that he/she
needs to accurately perform a skill (Lieberman & Cowart, 1996). This also enables the child that is
observing the movements to feel the movement. For example a model may use hand over hand technique
to move the student's arm when learning how to strike an object from a tee.

Lane (1996) took six students who were blind and severely mentally retarded. She looked at
whether or not these six children would differ between multimodal prompting (manual guidance and verbal
prompts) or uni-modal prompting (manual guidance only) upon learning a new task. The sessions took
place two times a day for 15 minutes each. The students received manual guidance on task A and manual
guidance and verbal instruction on task B. Task A involved placing a toothbrush, tube of toothpaste and a
plastic cup in a caddie (shape perception). Task B was the correct placement of a washcloth, bar of soap
and a small sponge in a 6x9-inch basket (perception of texture). Lane (1996) used this to promote and
reinforce the reception of information through two or more sensory systems for the student. The trainers
were given 10 hours of instruction on strategies, reinforcement schedule and procedures. During the
beginning of each of the tasks, the trainers gave the subjects a demonstration trial to become more familiar
with the task being asked. The demonstration was followed by five trials using their dominant hand.
Physical guidance was used if the student did not respond within five seconds of the given task and social
reinforcement was given to the students upon the duration of successful interactions. This study did not
provide results favoring either treatment overall. Of the six students, 5 of them increased their
performance with the intervention. Lane (1996) noted that the student performed better when the training
did not demand simultaneous attention to verbal and kinesthetic information. The trainees used manual
guidance and verbal instruction and therefore may have experienced difficulty in reception of the skill.
When analyzing the results of this study it is important to know how kids who are blind learn the best.
Educators are responsible for effective instructional needs and teaching methods that have positive effects
and that promote effective learning from the students.

Brueske and Cuvo (1985) studied a woman who is blind performing four household tasks:
cleaning a bathroom mirror, patio door, bathtub (experiment one) and sweeping a kitchen floor
(experiment two). An AB experimental design was used to evaluate self-efficacy or training. The outcome
of the study suggests a model for training blind individuals and has implications for task analysis. The data
gathered on instruction included no help, minimal verbal instruction, detailed verbal instruction, and
physical guidance with detailed verbal persuasion. For increasingly difficult tasks such as cleaning the
mirror and the bathtub, physical guidance and detailed verbal persuasion were used to achieve success. Improvements were made after the training and modeling was implemented. It is important to note that the subject had no other means of training, therefore, chances of previous experience did not influence the outcomes of the study.

Erwin (1996) ran a year long longitudinal study to analyze the effect of adaptive strategies used to promote inclusion for a 3-year old boy, Ryan, who has a visual impairment and was in a community based preschool. Natural supports such as contextual cues, promoting learning through natural events, explanations, anticipatory cues, and physical prompts were used. All of these helped Ryan with independence and also to engage himself in class events. Ryan received specific verbal direction explaining how he could accomplish the task which was provided by adults in the classroom. The more verbal interaction from the adults, the less apprehensive Ryan was. Physical prompts to show him how to perform a dance movement were used and eventually Ryan was able to perform the task independently. Providing Ryan with important feedback and tools to promote independence, confidence and competence was important for his development in the classroom. The article suggests that a starting point to meet the child's need is to teach or model the specific strategies to peers (suggesting peer models) (Erwin, 1996).

Physical guidance has been shown to increase success and likeness in learning for people with visual impairment (Erwin, 1996; Brueske & Cuvo, 1985; Lane, 1996).

**Brailing**

Brailing physical guidance and demonstration are modeling techniques used for children who are visually impaired or blind (Lieberman & Cowart, 1996). Brailing is the tactile (touch) inspection of an observer or object that can help a student learn and understand a skill (Lieberman & Cowart, 1996). When a student is totally blind, brailing gives that child the potential to feel and explore the model's body in the direction of a given movement. Speed, rhythm (Lieberman & Cowart, 1996), movement, direction, and precision are all recognized by brailing. At the present time there is no literature connecting sport, recreation, physical movement, self-efficacy, and children who are blind. When successful performance in activities is important to the individual, then focus should be placed on improving performance in activities. Performance is best when close contact with people or objects is available. The limitations due to vision loss of certain individuals required that teachers modify and adapt teaching methods to meet individual needs. As discussed earlier, kinesthetic perception is the ability to "feel" the correctness of movement. An example of this is, letting the student feel movements of a particular skill as they perform activities. Several teaching implications are useful to teachers to incorporate modeling for kids with visual impairments or blindness.

Textbook pictures, diagrams, and illustrations make a major contribution to some children's learning process. However, most of these aids are of little value to a child with a visual impairment (Franks & Murr, 1978). Tactile aids of different sorts must meet the specific criteria for tactile perceptions, not just replace the visual symbols with tactile symbols (Franks, 1971). Tactile maps are an important
source of information for children with visual impairments because it not only provides knowledge about
the immediate and distant places in an environment, but it contributes to success in finding their way from
point A to point B (Passini, Dupre, & Langlois, 1986). Ungar, Blades and Spencer (1996) studied 26
children of different ages with visual impairments while holding a tactile map and then finding their way to
a specific destination. The children pointed out their position periodically throughout their travel so they
knew exactly where they were. Different routes were included and the children were asked to use aligned
and nonaligned tactile maps to find out which might affect their travel. Overall the children's ability to
locate themselves on the map was excellent and the results implied that children with visual impairments
are capable of finding themselves as well as understanding the tactile maps as a model in navigation
(Ungar, Blades, Spencer, 1996). It is clear that instruction has shown to increase self-efficacy for
individuals (Ungar, Blades, & Spencer, 1996).

Summary
Currently, it is not known which teaching technique is best in determining self-efficacy for
children with a visual impairment or blindness. Due to the paucity of findings on self-efficacy, children
with visual impairments, and physical activity, the insights gleaned from the present study could be a
tremendous asset for educators. The researcher anticipated that modeling techniques such as brailling,
physical guidance, explanations, and demonstrations should affect the level of self-efficacy for a child with
a visual impairment upon motor performance. The findings should illuminate which technique or
techniques are most helpful in increasing self-efficacy; which is an important discovery for teachers,
parents and those who teach students with visual impairments and blindness.
CHAPTER III
Methods and Procedures

This chapter presents the methods and procedures used to collect and analyze the data. Chapter three includes sections on participants and setting, permission, analytic instrument, intervention, counselor journals, validity, reliability, and data analysis. It is not known which modeling techniques are best for skill acquisition and for producing self-efficacy in children who are blind, therefore, the purpose of the study was to determine the effects of modeling on self-efficacy during goal ball of participants who are blind. If modeling techniques increase self-efficacy for kids who are blind, an investigation as to what technique has the greatest potential to increase the efficacious levels on children with visual impairments will be undertaken.

Participants and Setting

Camp Abilities is a developmental sport camp designed especially for participants between the ages of 9-21. Thirteen participants who are blind participated in the study. This selected site for the intervention was due to the abundance of children with blindness that attended the camp. The data was collected on a total of 13 (n = 13) participants who are blind. The participants came to the State University of New York College at Brockport from all over the state of New York. The participants were randomly assigned into two groups: brailling (B = 6) and physical guidance (PG = 7). The brailling group consisted of six girls and the physical guidance groups consisted of four boys and three girls. The mean age of the six participants in the brailling group was 12.5 years (X = 12.5 & SD = 3.51). The mean age of the participants in the physical guidance groups was 14.4 years of age (X = 14.4 & SD = 4.41). The ability levels of the participants were mixed due to age, past performance and level of visual impairment. Prior to Camp Abilities each participant was paired with a counselor, 1:1, and randomly assigned into two groups of, either, physical guidance or brailling (each coupled with explanation).

Permission

In order to conduct the study, approval from the Institutional Review Board at the State University of New York at Brockport was needed. The human subjects approval form is included (Appendix A) along with the Parental consent (Appendix C) and child consent (Appendix B) from each participant. Consent forms included details of the study and described activities of the first day of Camp Abilities. Each consent form supplied the necessary informed consent information. Participation was completely voluntary and all research records were kept confidential. Any written materials used in the data collection included the child's first name and first initial of the last name. All information collected about the participant was destroyed after the study was completed.

Analytic Instrument

A pre and posttest questionnaire was administered to help determine self-efficacy (Appendix E). The pretest was administered prior to the modeling techniques and the posttest was administered after the intervention. The questionnaire includes both open and closed questions using a five point Likert scale,
containing 16 questions. Self-efficacy is the variable that will be analyzed in the questionnaire. The eight closed ended questions were Likert scale items on a scale from 1-5. The remaining eight questions were used to determine the sources of efficacy. The participants were asked to indicate how successful they felt regarding the answer to the questions. The Likert scale contained five responses including one (1) being not at all sure, three (3) being somewhat sure and five (5) being totally sure. The impact of the intervention was measured by the differences between the pre and posttest scores that capture the changes in the participant feelings about their capability to perform the task. Posttest scores were compared to the pre test scores to identify the changes in participant's self-efficacious beliefs. For the purpose of this study changes following the intervention were analyzed.

The construction of the self-efficacy questionnaire was characterized by general questions leading to more specific questions that resulted from the general questions. For example, the first goal ball question pertained to whether or not the participant knew what goal ball is; if they chose "Yes" more specific and challenging questions followed; if the participant answered "No" to this question no more specific questions about the sport were asked.

According to Bandura (1977), there are four sources that determine one's efficacy. These have been discussed in chapter two under the self-efficacy section. These sources were verbal persuasion, vicarious experiences, physiological arousal, and past performance. The four sources of efficacy are important to understand how the participants feel about goal ball skills. Following each of the closed ended questions on the questionnaire, there were open-ended questions that focused on the four sources of efficacy. The participant had the chance to explain why he/she answered the previous question the way he/she did. This gave the researcher added insight as to what sources of efficacy were manipulated to produce the participant's response to the question.

It is important to understand the sources of self-efficacy and why the participant is or is not confident to perform the new skill. This understanding can help the researcher recognize which techniques, if any, are useful for teaching children who are blind.

Training

The counselors were required to attend the all day training session to learn the different teaching methods and individual goal ball skills that were to be used in instructing children who are blind. The training session included instruction in visual impairments and blindness, a packet of information on the various modeling techniques to guide them (Appendix D), and an orientation on what skill should be taught along with how to teach it (Appendix D). The counselors were asked to practice the modeling and teaching techniques with a partner and were encouraged to ask additional questions. The following day the counselors had one hour to practice each modeling technique and ask questions pertaining to the study before the participants arrived.
Intervention

When the participants and parents arrived at Camp Abilities, consent forms were signed for clearance of participation in the study. The pretest questionnaire was administered in a large cafeteria with all of the participants and counselors involved in the study. The researcher read each question aloud to the campers allowing ample time to complete the question with their counselor. Once everyone was finished completing the questionnaire, the group proceeded onto the next questions. Throughout the week, the counselors were responsible for modeling goal ball skills according to their protocol. The researcher attended each training session to ensure appropriate implementation and to answer any questions. The last full day of the Camp Abilities, the researcher administered the self-efficacy post questionnaire for the participants to complete to determine the posttest scores. The posttest questionnaire was administered in a large room with each camper and counselor present. The researcher read each question aloud allowing for enough time to complete each question. Once the participants were finished answering the question, the group went forward with the next question.

Three forms of modeling for children with visual impairments and blindness were used throughout the week of Camp Abilities: brailling and physical guidance each coupled with explanation. These are specific modeling techniques used for people who are blind (Lieberman and Cowart, 1996). The sports skills that were modeled were components of goal ball, and as stated earlier, a pretest and posttest self-efficacy questionnaire was administered to the participants to determine how they perceive themselves performing specific tasks within this sport domain. This helped determine the most effective mode of instruction for altering the efficacious levels of the participants prior to, during, and after modeling. The counselors were all responsible for tracking their modes of instruction, modeling and results. They followed in a strict manner using only the modeling technique that they were assigned throughout the week of Camp Abilities. Adherence to each modeling technique was enhanced by the researcher monitoring each goal ball session and being made available in the training area to answer any questions. This study helped determine which technique was most significant in improving self-efficacy. It is important to note that each technique was analyzed for significant differences between pretest and posttest; this helped determine if one teaching technique (brailling or physical guidance) was better than the other and, if so, how significantly.

Counselor Journals

As mentioned earlier in this chapter, each counselor was responsible for tracking modes of instruction, how they felt about teaching their participant, their comfort levels when using the modeling technique, comments made by their participant pertaining to the intervention, and any other feelings about the specific modeling technique they used. This was a way to help the researcher track the sources of efficacy and interpret efficacious beliefs and feelings that were pertaining to the modeling techniques and intervention.
Validity

The self-efficacy questionnaire was designed and sent out for validation to nine experts in the field of sport psychology, adapted physical education pedagogy, and visual impairment from leading universities around the country. The researcher served each expert with a copy of the questionnaire and research proposal. The experts were asked to review the questionnaire independently and provide the researcher with feedback and suggestions. Seven of the nine professionals responded with feedback and constructive criticism. The cumulative results of the feedback were utilized to establish content validity for the questionnaire. As mentioned before, the questionnaire was administered to each child by their counselor and solicited information pertaining to how they felt about selected sports skill criteria in goal ball.

Reliability Test Retest

The reliability check of the questionnaire was found to be reliable. The reliability was found to be 75% reliable. Six individuals were selected to complete the questionnaire two times to determine whether or not the questionnaire was a reliable instrument. The individuals completed the questionnaire on a Monday and Wednesday for two 40-minute sessions each. Refer to chapter V for additional information.

Data Analysis

The variables that the researcher manipulated were the two modeling techniques, physical guidance and brailing, each coupled with explanation. The dependent variable is self-efficacy of the participant; which is believed to significantly change as a result of the treatment. The question is whether or not each modeling technique affects the self-efficacy of children who are blind. Both paired and unpaired t-tests were used to determine whether significant differences exist within and between groups.

Comparing Physical Guidance and Brailing Pre/post

The researcher’s goal was to determine whether an overall significant difference (p < .05) in self-efficacy occurred due to the intervention. To determine whether or not self-efficacy levels increased, the researcher used a paired t-test to determine whether significant differences were found between pre and posttest scores for the physical guidance group and for the brailing group. The researcher anticipated finding significant differences in both of these analyses. If there were significant differences found between the pre and posttest the researcher would examine which modeling technique most increased efficacious levels.

Unpaired t-tests would be undertaken to determine whether there were significant differences between the physical guidance and brailing group. If the researcher found that there were significant differences in the pretest group score between physical guidance and brailing, significant differences between posttest scores might not be found; or if significant differences in posttest scores were found, it may be attributed to differences in pre-test scores and not differences in modeling techniques.
CHAPTER IV
Results

Children in general benefit from demonstration and positive skill specific feedback. When instruction and demonstration are coupled with positive specific and corrective feedback, the skill acquisition and self-efficacy of the skill increases. Currently at this time, it is not known which modeling techniques are best for skill acquisition and for producing self-efficacy in children who are blind. Therefore, the purpose of the study was to determine the effects of modeling on self-efficacy during goal ball of participants who are blind. The current study examined 1) which modeling technique increases self-efficacy for participants with blindness, 2) which modeling technique increases self-efficacy the most for participants with blindness and 3) which sources of self-efficacy help determine the change in self-efficacy.

Summary of Intervention

A pretest-posttest design involving two randomly selected groups investigated the effects of brailling and physical guidance on the self-efficacy of 13 participants who are blind. A validated self-efficacy questionnaire was administered to measure the participant's level of self-efficacy before and after the intervention. From the results, the researcher was able to determine how each child felt about their goal ball skills, both prior to and after the intervention. The intervention took place at a one week specialized sport camp and the modeling technique assignments were taught during goal ball. The participants were split into groups of six in the brailling (B = 6) and seven in the physical guidance (PG = 7) group. During the intervention each counselor and participant was required to use only the modeling technique in which they were assigned. The researcher was available at all times during the week to monitor the intervention, answer any questions, or provide feedback.

In this chapter the results of the study were statistically analyzed and presented in the following order: (1) analysis of paired t-test results of physical guidance and brailling (2) analysis of unpaired t-test results of physical guidance and brailling, (3) overall sources of efficacy as it applies to the present study, and (4) conclusions. The statistical significance of the following results was determined at the .05 level of significance.

Brailling and Physical Guidance Pretest Posttest Results

The results involved both brailling and physical guidance before and after the intervention. Both pre and posttest scores from the physical guidance group, and from the brailling group were compared to see whether or not the intervention had an impact on how the participants felt about the way they performed goal ball skills. The same scores were analyzed for brailling.

The results were collected from a five point Likert scale. Participants indicated how they felt about their present feelings of goal ball. Four composite scores were calculated (a pretest and a posttest score for physical guidance and brailling) and used in the analysis. The composite scores were determined by summing each participant's pre and post scores and then dividing by the total number of closed ended questions asked. Table 1a and b list results of the raw scores.
### Table 1a
Physical guidance composite self-efficacy scores.

<table>
<thead>
<tr>
<th>Participant</th>
<th>Pretest Score</th>
<th>Posttest Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG 1</td>
<td>1.50</td>
<td>2.25</td>
</tr>
<tr>
<td>PG2</td>
<td>0</td>
<td>3.63</td>
</tr>
<tr>
<td>PG3</td>
<td>2.88</td>
<td>4.13</td>
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<tr>
<td>PG4</td>
<td>3.75</td>
<td>4.13</td>
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<tr>
<td>PG5</td>
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<tr>
<td>PG6</td>
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<td>4.13</td>
</tr>
<tr>
<td>PG7</td>
<td>.63</td>
<td>4.38</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td><strong>10.01</strong></td>
<td><strong>25.28</strong></td>
</tr>
</tbody>
</table>

\[ \bar{X} = 1.43 \quad \text{SD} = 1.4290 \]

### Table 1b
Brailling composite self-efficacy scores

<table>
<thead>
<tr>
<th>Participant</th>
<th>Pretest Score</th>
<th>Posttest Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>0</td>
<td>1.13</td>
</tr>
<tr>
<td>B2</td>
<td>3.75</td>
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</tr>
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<td>B3</td>
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</tr>
<tr>
<td>B4</td>
<td>4.13</td>
<td>4.75</td>
</tr>
<tr>
<td>B5</td>
<td>2.75</td>
<td>4.25</td>
</tr>
<tr>
<td>B6</td>
<td>4.38</td>
<td>4.75</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td><strong>19.26</strong></td>
<td><strong>24.51</strong></td>
</tr>
</tbody>
</table>

\[ \bar{X} = 3.21 \quad \text{SD} = 1.6795 \]

\[ \bar{X} = 4.08 \quad \text{SD} = 1.4641 \]
Paired T-test results

The statistical results for the paired t-test were found to be significantly different between pre and post-test score for both physical guidance and brailling ($p = .011$ and $p = .005$, respectively). It was determined that an overall increase in self-efficacious levels was present whether using physical guidance or brailling. Table 2a shows the result of the paired t-test.

Table 2a
SPSS statistical analysis of paired t-test

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error of the Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>PG POST &amp; PG PRETEST</td>
<td>7</td>
<td>3.6114</td>
<td>.8381</td>
</tr>
<tr>
<td></td>
<td>PG POST &amp; PG PRETEST</td>
<td>7</td>
<td>1.4300</td>
<td>1.4290</td>
</tr>
<tr>
<td>Pair 2</td>
<td>BR POST &amp; BR PRETEST</td>
<td>6</td>
<td>4.0850</td>
<td>1.4641</td>
</tr>
<tr>
<td></td>
<td>BR POST &amp; BR PRETEST</td>
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<td>3.2100</td>
<td>1.6795</td>
</tr>
</tbody>
</table>

Paired Samples Correlations

<table>
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<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error of the Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>PG POST &amp; PG PRETEST</td>
<td>7</td>
<td>3.6114</td>
<td>.8381</td>
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<td>PG POST &amp; PG PRETEST</td>
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<td>Pair 2</td>
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</tr>
<tr>
<td></td>
<td>BR POST &amp; BR PRETEST</td>
<td>6</td>
<td>3.2100</td>
<td>1.6795</td>
</tr>
</tbody>
</table>

Paired Samples Test

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<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error of Mean</th>
<th>Lower</th>
<th>Upper</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>PG POST &amp; PG PRETEST</td>
<td>2.1814</td>
<td>1.5895</td>
<td>.6008</td>
<td>.7114</td>
<td>3.6515</td>
<td>3.631</td>
<td>6</td>
</tr>
<tr>
<td>Pair 2</td>
<td>BR POST &amp; BR PRETEST</td>
<td>.8750</td>
<td>.4430</td>
<td>.1809</td>
<td>.4101</td>
<td>1.3399</td>
<td>4.838</td>
<td>5</td>
</tr>
</tbody>
</table>
Brailling vs. Physical Guidance Pretest and Posttest Results

From Table 1a and 1b the pretest mean for physical guidance was 1.43 and the pretest mean for brailling was 3.21; whereas the posttest mean for physical guidance and brailling was 3.61 and 4.08, respectively. These scores suggest that the two groups felt differently about their skills in goal ball, before the modeling intervention. Since the groups (brailling and physical guidance) pretest scores were unequal at the start of the investigation, significant differences might not be found between the posttest scores of physical guidance and brailling; or if significant differences are found, one modeling technique may not necessarily be better than the other one for increasing self-efficacy.

An unpaired t-test was used to determine whether there were significant differences between pretest scores and posttest scores for physical guidance and brailling. From Table 2b t-tests indicated there was no significance differences (p > .05) between physical guidance and brailling in the pretest (p = .063) and posttest (p = .480) scores. From the results, one modeling technique did not have a significantly greater effect upon self-efficacy than other modeling technique, although both physical guidance and brailling increased efficacious beliefs overall.

Table 2b
SPSS statistical analysis of un-paired t-test

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error of the Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRETEST 2.00</td>
<td>7</td>
<td>1.4300</td>
<td>1.4290</td>
<td>.5401</td>
</tr>
<tr>
<td>PRETEST 2.00</td>
<td>6</td>
<td>3.2100</td>
<td>1.6795</td>
<td>.6857</td>
</tr>
<tr>
<td>POSTTEST 2.00</td>
<td>7</td>
<td>3.6114</td>
<td>.8381</td>
<td>.3168</td>
</tr>
<tr>
<td>POSTTEST 2.00</td>
<td>6</td>
<td>4.0850</td>
<td>1.4641</td>
<td>.5977</td>
</tr>
</tbody>
</table>
Levene's Test for Equality of Variances

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>Sig.</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSTTEST2 = Var. Assumed = Var. Not Assumed</td>
<td>.593</td>
<td>.458</td>
<td>-.731</td>
<td>11</td>
<td>.480</td>
<td>-.4736</td>
<td>.6482</td>
<td>-1.9003</td>
<td>.9531</td>
</tr>
</tbody>
</table>

Overall Sources of Self-efficacy

Four sources of efficacy according to Bandura (1977, 1997a,b) are essential to increase one's efficacious beliefs. Part of Bandura's (1981 and 1997a,b) theory behind self-efficacy is that self-efficacy can be increased from verbal persuasion, past performance, vicarious experience, and physiological states. Each of these has played a role in the outcomes of this study except for physiological state. Consistent with previous research, physiological states were not hypothesized to be a determining factor in the outcomes of this study, because physiological states are not good predictors of the enhancement of self-efficacy levels on sport performance (Feltz, 1982; Feltz and Mungo, 1983). The open ended questions and the counselors journals has helped determine which sources of efficacy influenced the participants.

Figure 1 Overall changes of self-efficacy from the pretest to posttest

![Bar chart](image)

Sources of Efficacy

The author can see that due to the participant's responses to the intervention, there is a strong case about learning a skill and feeling good by physical guidance. All of the sources of self-efficacy played a role in the way that the physical guidance participant's felt about a skill except for physiological states. It
is evident that all the sources of efficacy (Bandura, 1977) increase after the intervention, except for past performance, which remained the same and physiological state that had no effect. (see Figure 2a and Table 3a). The brailling participants felt verbal persuasion, and vicarious experience (Bandura, 1977) increased, past performance remained the same, and physiological state had no effect after the intervention was completed. (See figure 2b and Table 3b). According to Bandura (1981, 1997), verbal persuasion, past performance, vicarious experience, and physiological states can alter self-efficacy beliefs. It is unambiguous from Figure 1 that efficacious beliefs increase both due to the intervention using brailling and physical guidance. A further discussion of the results is addressed in chapter V.

Table 3a
Pretest and posttest efficacious percentages for physical guidance.

<table>
<thead>
<tr>
<th>Source</th>
<th>Pretest</th>
<th></th>
<th></th>
<th>Posttest</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cases</td>
<td>%</td>
<td>Cases</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Past Performance</td>
<td>4/7</td>
<td>57%</td>
<td>4/7</td>
<td>57%</td>
<td></td>
</tr>
<tr>
<td>Verbal Persuasion</td>
<td>1/7</td>
<td>14%</td>
<td>3/7</td>
<td>43%</td>
<td></td>
</tr>
<tr>
<td>Vicarious Experience</td>
<td>0/7</td>
<td>0%</td>
<td>5/7</td>
<td>71%</td>
<td></td>
</tr>
<tr>
<td>Physiological State</td>
<td>1/7</td>
<td>14%</td>
<td>0/7</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

V.E. = Vicarious Experience
P.S. = Physiological State

Figure 2a Comparison of the pretest and posttest sources of efficacy influences for physical guidance.

It is obvious looking at the sources of efficacy (Bandura, 1997) that all except past performance, which remained the same and physiological state that had no effect, increase after the intervention was completed.
It is undeniable that Bandura's (1997) sources of efficacy played an important role in determining one's efficacious beliefs. The author can see that due to the participant's responses to the intervention the participants feel good about learning a skill by physical guidance. All of the sources of self-efficacy played a role in the way that the participants felt about a skill, except for physiological states. The numbers from Table 3a were determined from the open ended questions on the questionnaire and the counselor's journals. It is interesting to note that the physiological states for physical guidance were non-existent following the intervention.

Through the present study, it was determined that verbal persuasion and vicarious experience were the top two sources of efficacy while participants said that modeling and verbal persuasion were instrumental in helping them learn. Past performance also played a role, but was not a main factor in improvement of efficacious beliefs. And as stated before, physiological states were not significant in determining how the participant felt about the intervention. The numbers from Table 3b were determined from the open ended questions on the questionnaire and the counselor's journals. Further discussions of the results are discussed in chapter 5.

Table 3b
Pretest and posttest efficacious percentages for brailling

<table>
<thead>
<tr>
<th>Source</th>
<th>Pretest</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cases</td>
<td>%</td>
<td>Cases</td>
</tr>
<tr>
<td>Past Performance</td>
<td>5/6</td>
<td>83%</td>
<td>5/6</td>
</tr>
<tr>
<td>Verbal Persuasion</td>
<td>1/6</td>
<td>17%</td>
<td>6/6</td>
</tr>
<tr>
<td>Vicarious Experience</td>
<td>0/6</td>
<td>0%</td>
<td>6/6</td>
</tr>
<tr>
<td>Physiological State</td>
<td>2/6</td>
<td>33%</td>
<td>0/6</td>
</tr>
</tbody>
</table>

P.P. = Past Performance
V.P. = Verbal Persuasion
V.E. = Vicarious Experience
P.S. = Physiological state
Figure 2b  Comparison of the pretest and posttest sources of efficacy influences for brailling.

It is obvious that for all of the sources of efficacy (Bandura, 1997) increase after the intervention was completed except for past performance, which remained the same and physiological state, which had no effect upon the results.

![Bar Chart](image)

Figure 3  Sources of Efficacy Overall Percentages

- V.E. = Vicarious Experience
- P.P. = Past performance
- V.P. = Verbal Persuasion
- P.S. = Physiological State

Reliability

The self-efficacy questionnaire was verbally conducted with six individuals who were blind. These individuals were given the self-efficacy questionnaire within two days of each questionnaire. The researcher conducted the questionnaire sessions in an educational setting, conducive to learning, and then analyzed the results. To determine reliability, the researcher used agreement over total responses. The test-retest reliability of the questionnaire was found to be at 75%. According to the literature, this is adequate to consider the instrument reliable (Thomas, J. R., and Nelson, J. K.).

Conclusion

The results provide evidence that both brailling and physical guidance have an effect on the self-efficacy of participants who are blind. Both physical guidance and brailling significantly increased the participant’s efficacious level within groups. Self-efficacy score differences (between pre and post-test) between physical guidance and brailling was not examined and it was not determined whether these pre/post test scores differences were significant. When looking at the statistical outcomes of brailling vs.
physical guidance in pretest and posttest scores, the results reveal that there were no significant differences between physical guidance and brailling in pretest scores or posttest scores.
CHAPTER V
Discussion

What the present study revealed was that both physical guidance and brailling were effective in determining the participant's efficacious levels. It has shown that physical guidance had greater gains in increasing efficacious levels for the participants than brailling (although there were no significant differences between the two). However, this present study is a steppingstone for future studies on blindness, modeling techniques and self-efficacy.

The researcher believes that from the results reported in chapter 4, there were significant gains in the area of learning about modeling techniques and self-efficacy for children who are blind. This chapter includes (1) discussion of the differences and similarities of brailling and physical guidance (2) discussion of the unpaired t-test, (3) discussion of paired t-test results, (4) possible causes of findings, (5) overall conclusions and (6) recommendations for further research.

Similarities of brailling and physical guidance

There have been significant gains made from this study about the effects that brailling and physical guidance (the two modeling techniques used) have on participants who are blind. The results of the study showed that both brailling and physical guidance increased self-efficacy for participants who are blind both within groups and compared to each other. This is shown to be consistent with the results in the literature review (Craft & Hogan, 1985; Erwin 1996; Gould & Weiss, 1981; McAuley & Gill, 1983; Ness and Patton, 1979; Weinberg, Gould, & Jackson, 1979). In the present study, the participants who are blind had higher self-efficacy when they were taught closed skill sports with appropriate modeling techniques (similar to previous research). In this study, the intervention was strictly taught to each counselor. Each counselor had the proper training for their modeling technique and then taught the appropriate goal ball skills to the campers. Bandura (1981) stated that positive feelings when one believes they can do something are those feelings of efficacy. During the intervention the feelings were clear of the enthusiasm from both the counselors and the campers during the week of Camp Abilities. There were outside factors that accounted for some of the efficacious feelings such as the positive atmosphere of camp, other participants and a mix of counselor personality. The researcher believes that this was influential to the outcomes of scores and because the participants were included in the learning atmosphere, they believed that they could do the skills. They had their own counselor and ask many questions about the goal ball skills. After all, Camp Abilities is developmental and specifically for individuals who are blind. It is important to remember that for some of the participants, this is the first time that they are involved in physical activity all year long. The researcher found some of the participants did not know how to do the skill but were able to ask their counselor who knew exactly what to teach. The modeling techniques such as brailling and physical guidance are important for helping children learn and feel their capability of performing a skill. This is
consistent to what has been reported in the literature (Gould and Weiss, 1981; Lieberman and Cowart, 1996; McCullagh, 1987; Rosenthal and Bandura, 1978; Weinberg, Gould, and Jackson, 1979).

Sherrill (1998) found that tactual inspection of objects or people enhance learning for individuals with visual impairments. The researcher would like to point out the tactual inspection on the actual person was the intervention used in the present study. The brailling group used the tactual approach; The counselor completed the skill and the camper had to physically inspect and get a mental picture of the correct position. Once this was performed the participant could inspect the speed, tempo and rhythm of the movement. It is obvious know that the participants involved in the intervention increased their capability of tactually feeling that they can do a particular skill in goal ball. This in turn made the participant feel better about themselves and that particular capability.

Consistent with Dye (1983), individuals who are blind learned better kinesthetically and tactually rather than by receiving only verbal responses from the teacher. This is certainly believable considering individuals who are blind learn through modeling techniques that assist them with spatial awareness and performance of a skill (Lieberman and Cowart, 1996). For the present study the researcher knows that the participants involved in the study learned goal ball skills through brailling and physical guidance coupled with explanation.

Physical Guidance Within Group Discussion

The results of physical guidance significantly increasing self-efficacy scores are consistent with the findings of Ros et al., (1998); Hand over hand instruction for that study improved the golfers putting stroke. Eventually this confidence that the golfer had helped lead to more independence for his game and thus leads to a lifetime leisure activity for this person. Because the participants in the present study knew they had the capabilities to perform a given skill, they in return execute the skill. It is important to remember in this study that it is not the outcome of the skill that is important but the feeling that one can successfully accomplish it. The research determined that physical guidance resulted in a significant increase in efficacious levels.

Some of the participants noted that they felt better about performing a skill once they found success. Certainly success plays a role in motivation, effort, and likeliness to continue participation. Bandura (1977) noted that the greater the self-efficacy, the more effort an individual may put forth to accomplish certain task(s). For the present study, this is certainly true. The participants that had the intervention felt better about the way they performed a goal ball skill and had the motivation from the counselors and from themselves to go on and perform the specific skill. For some of the participants, it did not matter how difficult the task was; the participants that knew the task was difficult and at first did not feel that they could perform the skill had lower efficacious levels and did not believe that they could do the particular task at first. Due to the intervention from the counselor, they now believe (because they did) that they can perform the specific skill. The reinforcing factors from the counselors helped the participants feel that they could perform goal ball skills and helped them achieve greater levels than if the participants
would have tried the skill on their own without the intervention. Schunk (1981) stated the way that individuals feel about accomplishing certain tasks is related to their achievement. Those individuals performing tasks with lower efficacious beliefs tend to give up more easily than those with higher efficacious beliefs. The Camp Abilities experience is consistent with Schunk's (1981) research. It is important to note that the following symbols (participants) of PG # (physical guidance) and B# (brailling) are set in appendix G. For PG6 and PG2 were participants who did not know what goal ball was at the beginning of the week. By the close of the week the two ended up playing goal ball and finding out that they could perform some of the skills at a level attainable for them. PG6's self-efficacy increased by 4.125 from the beginning of the intervention to the end. It is obvious that her efficacious beliefs increased a significant amount due to the modeling techniques from her counselor. PG6 was not as proficient at each of the goal ball components but she did however end up feeling that she could perform the goal ball skills. The same holds true for PG2; PG2 had an increase of self-efficacy from the pretest to the posttest of 3.6.

Due to the intervention, PG2 learned how to perform the skills and actually be proficient at them. The researcher believes that success played a part in the self-efficacy levels of B2. B2 was proficient at the skills he never performed before and felt very confident after he scored or stopped the goal ball several times throughout the week. However, the important component is that before the week started, B2 did not know what goal ball was and had never played before. All of his goal ball accomplishments were from the intervention. It is fair to assume that the counselor that showed B2 how to perform the skills impacted the way in which he felt capable and successful.

It is important to note that some of the participants in this study, continued trying things because they felt good about the way they had performed another skill. Some participants stated that they "felt unbeatable" and that "nothing could stop them." Their counselor instilled confidence and feedback that allowed for the feeling of success. And in fact, some of the participants clearly explained the feelings of success to their counselors or to the researcher.

**Brailling Within Group Discussion**

The researcher found brailling pretest scores and brailling posttest scores to be beneficial in supporting the fact that the participants felt good about performing a skill. The participants in the brailling group felt that it helped the group feel capable to do a goal ball task. The results indicate that brailling significantly (p<.05) increased self-efficacy for the participants in this group.

**Brailling and Physical Guidance Pretest Discussion**

The brailling pretest scores started off very high (on this five point Likert scale), which left minimal room to significantly improve the posttest scores. It is possible to assume the brailling groups hit a ceiling effect, which in turn limits the increase that it can have in the posttest scores. One possibility for the ceiling effect is that the participants were randomly assigned (which may not have been the best way to assign groups for the present study) and that the majority of the participants in the brailling groups had participated in Camp Abilities before. Many of the participants in the brailling group had attended camp
abilities or played goal ball in the past. Which was due to chance alone. Therefore, their pretest scores were already high. Another possibility for the outcomes may be that physical guidance is the better modeling technique for participants who are blind when learning a skill. There are many studies like the ones previously mentioned (Brueske & Cuva, 1985; Erwin, 1996; Lane, 1996) that show physical guidance to be beneficial to participants learning skills. There are several researchers in the past that have research to support different modeling techniques for participants in general and individuals who are visually impaired or blind. However, regardless of the actual differences in pre-test scores between physical guidance and brailing, no statistically significant differences (p > .05) were found between the two pre-test scores.

According to the reports in chapter IV, the participants in the physical guidance group seem to improve (increase) efficacious levels more than the participants in the brailing group. As discussed earlier, this could be due to a variety of circumstances. The participants feelings about the goal ball skills could be due to previous experience in goal ball, the random selection for the groups, the actual testing environment, the positive atmosphere of Camp Abilities, the participant may have wanted to answer high on the questionnaire to impress their counselor, sample size, or the counselor's mood may have had an effect on the way the participant answered the question. It is important to point out that random selection might have had an effect on the results depending on which group the participant's were assigned. This could result in different feelings of efficacy for each participant. A participant or counselor may have been in a group where they felt insecure or overpowered by other participants and may not perform and feel like they could perform the skill.

Brailing and Physical Guidance Posttest Discussion

For this study the pretest score for physical guidance was 1.43 and the posttest was 3.61 making a difference of 2.17. On a five point Likert scale, this is a large increase in the self-efficacy scores taken from the questionnaire. The brailing group had a pretest score of 3.21 and a posttest score of 4.08, which makes a difference of .87. Even though each modeling technique increased efficacious levels overall, no significant differences (p > .05) were found in the posttest scores between physical guidance and brailing. Additionally, post-hoc tests revealed that there were no significant differences (p > .05) in pre-post efficacy scores between physical guidance and brailing. Therefore, no conclusions can be made about which modeling technique is better, although the participants having physical guidance for their intervention, overall felt better about the way they could perform the requested goal ball skills according to the data collected. This is not to say that the participants in the brailing group did not feel better, it was just not as large an overall effect as the physical guidance.

What the researcher found was that brailing may have hit the ceiling effect from the pretest scores to posttest scores. This means that because the pretest composite scores were so high there was no room for significant improvement or effect for the self-efficacy posttest scores. In the present study, the researcher does not know which modeling technique (physical guidance or brailing) is better in helping the participants learn skills. It can, however, be determine from the current study that both physical
guidance and brailling increased self-efficacy scores overall. Physical guidance had a greater increase in efficacious levels than brailling did. This may also be due to the fact that the brailling group felt more confident so there was no room for larger increases in efficacious beliefs. This fact makes an implication that random selection may not necessarily be the best way to place participants into groups. The researcher suggests alternative ways for groupings at the conclusion of this chapter.

Sources of Efficacy for Physical Guidance

By looking at the results, the researcher determined that physical guidance played a role in helping determine the participant’s efficacious levels. Fifty seven percent of the participants in the physical guidance group felt that past performance had an influence on their self-efficacy and two of the seven participants have attended Camp Abilities before. This means that they have had previous experience in playing goal ball. Also, some of the other individuals have had other goal ball opportunities in school, recreation opportunities, or leagues they are involved in. These are important factors when discussing previous experience. Forty three percent of the individuals felt that verbal persuasion from their counselor had an effect on their efficacious beliefs; the most important source of self-efficacy that the present study focuses on is vicarious experience. Seventy-one percent of the participants felt that the physical guidance helped them learn the skills of goal ball; this is extremely important to the results of this study, and was found to significantly impact self-efficacy in goal ball. Physiological states accounted for 0% of the sources which most influenced self-efficacy for the seven individuals.

Sources of Efficacy for Brailling

The researcher also looked at the sources of efficacy for both pre and post test in the brailling group. The researcher found that the pretest percentage for past performance was 83% and that was consistent with the posttest findings. Nearly 83% of the participants felt that they had the capability to demonstrate the goal ball skills. Performing the skills prior to camp, helped their efficacious levels feel that they thought they could do skills. Seventeen percent of the participants felt that they could execute goal ball skills on the posttest due to verbal persuasion. The posttest scores increased all of the brailling participant’s feelings during the intervention because their counselor provided feedback, encouragement and verbal prompts according to the skills they were doing. From this information the researcher knows that the participants who received the brailling benefited from the counselor’s verbalization. The participants obviously felt that the verbalization coupled with modeling aided in learning the skill, rather than just modeling alone. Another source of efficacy, by Bandura (1997), is vicarious experience. The brailling group on the pretest did not feel that modeling or replication of the skill helped them feel capable in achieving a skill. By actually feeling where the body parts were in space painted a mental picture in the participant’s head. From this, the children could then try to match the shape with their own body. The last source of efficacy was the physiological state. Thirty three percent of the brailling participants felt that this played a part on the pretest. This could be due to the overwhelming feeling of Camp Abilities the first day; anxiety, meeting up with old friends and nervousness. The posttest indicator was that of 0%. As noted
previously in chapter 2, physiological states are not good indicators of increasing self-efficacy for individuals. It is good that the posttest was 0% because this implies that anxiety or nervousness did not influence their outcomes and overall feelings about performing a skill.

Counselor Journal Discussion

The majority of the study's participants increased efficacious beliefs are due to verbal persuasion, past performance, and, most definitely, vicarious experience from their counselors' explanation of each group (brailling and physical guidance). The outcomes of the research state, that, overall 77% of the kids (10 out of 13) who took part in the study felt that because their counselor helped them actually move through the skills at some point in the intervention, helped them feel better about the way that they could play goal ball. Forty-six percent of the kids in the intervention stated that the feedback and the encouragement from their counselor helped them feel that they could go on and feel like they could complete the certain goal ball skills. Past performance or having the experience of goal ball before was accountable for 53% of the kids in the intervention. The physiological states were not accounted for because there were no significant measures marked by the counselors or the campers during the week, except for the brailling pretest. The researcher found that past performance, verbal persuasion and vicarious experience were determining factors when increasing self-efficacy throughout the intervention.

![Figure 3 Sources of efficacy overall percentages](image)

V. E. = Vicarious Experience
P. P. = Past performance
V. P. = Verbal Persuasion
P. S. = Physiological State
Reliability

Due to the test-retest reliability findings, the researcher determined that the questionnaire was reliable because of the way that the participants answered the questions. Thirty-six out of the 48 questions asked were the same answer in the pre and posttest questionnaires. Three quarters of the total questions asked were the same answers. The researcher found the reliability to be at 75% after the intervention. The equation used to determine reliability for this study was agreement over the total number of questions of verbal responses:

\[
\text{Reliability} = \frac{\text{Agreement}}{\text{Total}}
\]


Self Concept and self-esteem

The case study of Jack (Sonka and Bina, 1978) the cross-country runner in Wisconsin school for the visually impaired relates to this research. The campers (like Jack) were accepted, motivated by their counselor and consequently their self confidence increased. This is known due to the responses on the pre and posttest questionnaires and the feedback from the kids to the researcher and counselors during the intervention. Consistent with the study, it is important for individuals to participate in activities that they enjoy and feel good about and accepted within. The results of the present study support that the participants with blindness feel that they were capable of performing goal ball activities. As stated before, the feeling is due to learning the skills from the modeling techniques provided by counselors during the intervention. They now have been given the opportunity to learn, and for some, be quite successful in the skill development of goal ball.

Obiaker & Stile, (1989) support the thought that individuals with visual impairments have a lower self-concept than their normally sighted peers, which has been thought to be a direct result of their lack of social acceptance. The researcher believes that the present study has much to do with this because of the social aspect and acceptance that the kids were given during the week of Camp Abilities. The researcher believes that not only was the intervention helpful for increased acceptance, but that the time spent out of goal ball with other campers, participants and other people shaped the way the participants felt about themselves. Obiaker & Stile (1989) also stated that social acceptance is associated with physical capability. The present study supports the fact that the participant's ability in goal ball assisted them in feeling better about themselves through their capabilities and accomplishments from that week. The participants were engaged in activity and not only taught the skills individually but in a team situation as well. It was clear that the participants were accepted and included into the goal ball activities.
Implication for Physical Educators, Coaches, and Parents

One important issue that was proposed in chapter 2 was physical fitness for individuals who are visually impaired or blind. Buell (1950b) stated that lower levels of fitness could be due to external factors, such as parents. The results of this study have helped the 13 participants increase self-efficacy for goal ball skills. Once the participants know how they learn best, they are able to teach others how to teach them. It can be an ongoing process for learning, growing and maintaining physical fitness for individuals with visual impairments and blindness. Now that the thirteen participants’ efficacious levels have increased in goal ball skills, they feel that they can perform the skills and understand how they learn best. Physical educators, coaches, and parents can all learn how to teach and include individuals who are blind by using valuable modeling techniques such as brailing or physical guidance. More and more teachers who teach individuals with visual impairments and blindness are using brailing and physical guidance in physical education and recreation programs to help children learn skills. This study supports previous research that physical guidance increases sport and recreation performance (Lane, 1996; Brueske and Cuvo, 1985; and Erwin, 1996). The results of brailing support previous research stating that kids who are blind learn and benefit from tactual inspection (Sherrill, 1998). The present study focuses on brailing coupled with explanation and how they affect learning skills in movement activities. This study has clear implications for individuals who take part in the lives of youths who are blind. The results of this study can provide for increased recreation and sport opportunity, involvement, and inclusion.

Discussion

The researcher concludes that some of the differences between the two participant groupings could be due to the increased attention received by some of the campers. There were 13 counselors that were trained equally. Human nature is that all individuals are different and it is impossible in this study to track and monitor attention given to the camper, rate of feedback, modes of instruction for each counselor at the same time and give the exact same feedback. Due to the fact that there is no ground for how reliable each counselor was, it is fair to consider the Hawthorne effect in this study. The Hawthorne effect (Brown, 1954) refers to the idea that due to the attention the performer receives from the counselor, the performers performance/learning is changed.

Conclusions

Based on the results of the present study, the following conclusions were made:

1. Modeling techniques for participant’s who are blind in goal ball, enhanced self-efficacy for the participants in both physical guidance and brailing groups.

2. Both physical guidance and brailing enhanced every participant’s self-efficacy. Although a stronger case was found with physical guidance, no significant differences were found between the two modeling techniques.
3. The sources of efficacy that influenced the participant's self-efficacy the most were vicarious experience 76%, past performance 54%, verbal persuasion 45%, and physiological state accounted for less than 10%.

Recommendations for further research

After the results and discussion of this research, the following recommendations for further researcher are suggested. This study is an avenue for the education of visual impairment/blindness, self-efficacy and movement activities. The suggested areas to examine are:

1. The effects of different modeling techniques for individuals who are visually impaired or blind using USABA sanctioned sports, such as track and field.

2. Investigate guiding techniques for running on children who are blind or visually impaired. Once this is determined, look at the top guiding techniques and determine which one increases self-efficacy for the individuals the most (if any at all).

3. Replicate the study using models that are similar to participants. The researcher believes that trained peer models could impact the results of modeling on the self-efficacy. This idea is consistent with Schunk and Hanson (1985). When randomly selecting the participants into groups, consider previous experience in goal ball. Another suggestion is to compare the partially sighted and blind individuals. The researcher encourages a pilot study prior to the intervention pre/posttest questionnaires. One final suggestion that the author has is to use a control group to determine the differences in efficacious beliefs.

4. Steps that were not taken in the present study that were suggested were measuring the reliability of the counselors and whether or not their teaching was consistent. The researcher suggests a longer intervention period to track consistency. The question comes as to whether or not the rate of feedback was consistent from counselor to counselor and the impact that it could have on the present study.

5. The researcher also suggests alternative ways for grouping. It is not known whether or not random selection and random assignment were the best means of grouping the participants for this study. The researcher suggests ways such as levels of mastery, specific ability levels, different way of randomly assigning the groups.

Summary

In this study the self-efficacy of children who are blind was analyzed using two different teaching methods for the sport of goal ball. Counselors in a one-week summer camp were paired with campers who are blind 1:1 and randomly assigned a teaching technique. Brailling and physical guidance both coupled with explanation were studied to determine whether or not they helped in increasing self-efficacy in goal ball skills and which one elicited a greater improvement. This study also analyzed the sources of efficacy. A pre and post test self-efficacy questionnaire (5 point Likert Scale) was used for the self-efficacy, open ended questions were used to determine sources, and counselor journals were also used in collecting information for the sources. Results determined that both brailling and physical guidance significantly (p< .05) increased self-efficacy scores.
When analyzing the sources of self-efficacy, verbal persuasion and vicarious experience (Bandura, 1997) increased, past performance remained the same, and physiological state had no effect after the one-week intervention was completed.
REFERENCES


IDEA, 1999, U.S. Code Service Title 20, Sec. 11401 (3).


Sherrill, C. (1993). Adapted Physical Activity, Recreation and Sport; Brown Benchmark, Dubuque, IA.


APPENDIX A
INSTITUTIONAL REVIEW BOARD MATERIALS
Date: June 20, 2000
To: Lauren Lieberman
Megan O’Connell
From: Colleen Donaldson for Institutional Review Board
Re: Project IRB #2000-100

Your proposal “Effect of Modeling Techniques on the Self-Efficiency of Children with Visual Impairments” has been approved. If you wish to continue this project beyond one year, federal guidelines require that the information below (items 1-6) will need to be provided to the IRB before the project can be approved for a second year. Please note also that if the project initially required a full meeting of the IRB (Category III proposal) for the first review, then continuation of the project after one year will again require full IRB review.

Information required by the IRB for continuation of the project past the first year includes the following:

1. number of subjects involved in year one
2. a description of any adverse events or unanticipated problems involving risks to subjects or other, withdrawal of subjects from the research or complaints about the research during the previous year
3. a summary of any recent literature, findings, or new information about any risks associated with the research
4. a copy of the current informed consent document
5. a general summary of research findings from year one
6. reason why project needs to be continued into a second year or more.

Please contact Colleen Donaldson, Office of Academic Affairs, immediately if:
- the project changes substantially,
- a subject is injured,
- the level of risk increases.

A final report of less than one page that focuses on human subjects participation in the process is due on or before June 19, 2001.

CD:dh
1. Children in general benefit from demonstration and skill specific feedback. When instruction and demonstration are coupled with positive specific feedback and corrective feedback the self efficacy of the skill increases. It is not known which teaching technique is best for self-efficacy on children who are blind or visually impaired. The overall goals for this study at Camp Abilities 2000 are to see how modeling techniques for kids with visual impairments and blindness will alter their self-efficacy in order to lead to improved motor performance. The researchers anticipate that due to the implementation of modeling techniques, the child’s self efficacy will increase. This increased feeling that they can perform the skill will help them feel better about participating and engaging in sport and future athletic endeavors. We hope to gain knowledge about which modeling technique works best for kids with visual impairments and kids who are blind. It is important to understand which method works the best to help kids learn and grow in movement. Teachers, parents, and coaches will have assessment tools, teaching techniques, and information about what works best for the child to learn motor skill. The findings of the present study will be a tremendous asset for professional growth.

A validated and reliable self efficacy questionnaire will be administered to each child pertaining to how they feel about selected sports skill criteria that are looked at. There will be a pre and post questionnaire administered to help determine the efficacy differences and how the intervention changed the feelings of how the child performs. Each 1:1 counselor will administer the questionnaire to the child during the time of Camp Abilities.

2. It is important to note that all of the participants will be a camper of Camp Abilities 2000. Camp Abilities is a developmental sports camp designed specifically for children who are blind. There will be 50 participants used in the study. Each participant will be blind or visually impaired and may also possess multiple disabilities.

3. The participants and their families have been sent a research consent form and all participants have agreed to be a part of this study. Those participants under the age of 18 have parental permission to participate in the study. Participation is completely voluntary.

4. There will be several research assistant used in this study. The research assistants
are volunteer counselor’s attending the week of Camp Abilities 2000. The counselors are either undergraduate students or graduate students from several different universities from around the country. Each counselor working 1:1 with a camper will be conducting the questionnaire and modeling techniques. Each research assistant will be responsible for administering the pre and post questionnaires to the campers. The assistants will also be responsible for implementing the modeling techniques to their camper throughout the week.

5. We have been awarded two sources of funding for this project. Two grants were submitted for funding of the study. The researcher has proposed a grant to The Student Research Grant and the Therapeutic Recreation Program. This study is ineffective without the proper training for the counselors. They must know how to properly model and guide the campers throughout the week. In order to complete the training session we must have the counselors stay overnight on Friday the 23rd of June in order to attend an all day training workshop on the 24th in order to implement the study. Camp Abilities will then begin on the 25th. Fifty counselors and four trainers must stay an extra night in order to complete the training. The counselors must also be fed breakfast, lunch, and dinner on the day of training. We have received money to cover the cost of room and board for the 54 counselors who will be implementing the intervention.

6. The Research is expected to begin on Saturday June 24 and continue during the week through July 1. All of the data will be collected by July 1, 2000.

7. Please see attached appendix A

8. Research records will be kept as confidential as legally possible. Any written materials pertaining to this study will list first name and first initial of the last names of the participants. The participants will be referred to by a participant name (Ex. Megan O). Any information collected on the participants will be destroyed after the study is completed. Parents/guardians wishing to keep any of this information may do so.

9. Children in general benefit from demonstration and skill specific feedback. When instruction and demonstration are coupled with positive specific feedback and
corrective feedback, the skill acquisition and self efficacy of the skill increases. It is not known which teaching technique is best for skill acquisition and self efficacy for children who are visually impaired or blind. It is evident that this study does require research to attempt to answer which teaching techniques are the best for skill acquisition and self efficacy of motor skills for children who are blind or visually impaired. The problem is that children with visual impairments are behind their sighted peers in physical fitness and motor skills (Lieberman & McHugh, in press; Skellenger, Rosenblum & Jager, 1997). This is alarming, yet even more alarming since individuals who are blind expend more energy than their sighted peers in activities of daily living (Buell, 1973). Children who are blind and visually impaired are in fact born with the same potential as their sighted peers, but lack the opportunity to continue at that level.

Fifty children who are blind or visually impaired will come to SUNY Brockport for a summer sports camp. Each child will be paired with a 1:1 counselor who will instruct them on new skills and sports the entire week. The children will be divided into groups is blind or visually impaired depending upon their visual acuity. Each group will then be divided further into two groups. The blind children will be in either the instruction and physical guidance/assistance or the instruction and brailing group. The children with visual impairment will be divided into the instruction with demonstration or the instruction with demonstration and physical guidance group. Through skill analysis checklist and self-efficacy questionnaires we will determine which teaching techniques is best for each groups.

The children will be divided into two groups, blind and visually impaired. Of these two groups, the children will be randomly divided into the teaching techniques. For the children who are blind it will be instruction and physical guidance or instruction and brailing. For the group of children who are visually impaired the two techniques are instruction and demonstration and instruction and physical guidance. Again, the children will be randomly assigned to groups. The counselors will be trained and taught the specific teaching technique for their group. They will strictly use the teaching technique they are assigned to throughout the week of camp.

Due to the very few findings found on self-efficacy, children with visual impairments, and physical activity, the findings of the present study will be a tremendous asset for professional growth. It is clear that the results will benefit the subjects ability to learn and participate in several recreational activities.
Research recorded will be kept as confidential as legally possible. Any written materials pertaining to this study will not list last names of the participants. Any information collected on the participants will be destroyed after the study is completed. The consent will allow the participant to participate in the research. If at any time during the procedures the participant feels the necessity to discontinue participation, they may do so. Any questions or concerns pertaining to pertinent questions about the present study or subjects rights should be addressed to Megan O'Connell.

10. Not applicable

11. Not applicable
APPENDIX B.
CHILD CONSENT FORM
Child Consent Form

I, ______________________, understand that my parents have given permission for me to participate in a study concerning different modeling techniques upon self-efficacy for kids with visual impairments under the direction of Megan E. O'Connell. If you have any additional questions or concerns, please contact Megan O'Connell at [contact information].

I know that my involvement in this project is voluntary, and I have been told that I may withdraw from participation in this study at any time without penalty and loss of benefit to myself.

________________________
Signature
APPENDIX C
PARENT/GUARDIAN CONSENT FORM
**Parent/Guardian Consent Form**

Children in general benefit from demonstration and skill specific feedback. When instruction and demonstration are coupled with positive specific feedback and corrective feedback the self-efficacy of the skill increases. It is not known which teaching technique is best for the self-efficacy of children who are blind or visually impaired. The overall goals for this study at Camp Abilities 2000 are to see how modeling techniques for kids with visual impairments and blindness will alter their self-efficacy in order to lead to improved motor performance. The researcher anticipate the due to the implementation if modeling techniques, the child's efficacy will increase. This increased feeling that they can perform the skill will help them feel better about participating and engaging in sport and future athletic endeavors. We hope to gain knowledge about which modeling technique works best for kids with visual impairments and kids who are blind. It is important to understand which method works best to help kids learn and grow in movement. Teachers, parents, and coaches will have assessment tools, teaching techniques, and information about what works best for the child to learn motor skill. The findings of the present study will be a tremendous asset for professional growth.

In attempting to answer the question of which teaching techniques are the best for self-efficacy of motor skills for children who are blind or visually impaired we hope that you will allow your child to partake in this study. If you have any questions or concerns please contact Megan O'Connell at [contact information].

I __________________ give permission for my child __________________ to participate in this research. I realize that at any age time throughout the study my child may withdraw from the study.
APPENDIX D
CAMP ABILITIES
INTERVENTION PACKET
Camp Abilities 2000
Orientation Packet:
Modeling Techniques for Campers who are Blind and Visually Impaired

Megan O’Connell
SUNY Brockport
Dept. PE & Sport
Brockport, NY 14420
The following are modeling techniques that will be used for the campers of Camp Abilities 2000. All counselors with campers who are blind will be responsible for correctly teaching brailling and explanation or physical guidance and explanation.

**Brailling**- The term used to describe a learning technique where by the athlete feels or touches the coach or another athlete while they perform a particular movement. In this way the athlete can obtain information regarding limb and body position and correct technique (Australian Sports Commission, 1995).

**Physical Guidance**- The teaching technique of performing a movement with the student, who then eventually gets the feel of the motion. It consists of placing the student’s body and/or limb(s) with or without an implement into the appropriate position and putting him/her into the desired movement at the preferred speed (Sulzer-Azaroff and Mayer, 1991).

**Explanation**- Using senses of hearing to gain information about skill development and games. This can be done by using oral, sign, or body language to communicate (Lieberman and Cowart, 1996).

**Demonstration**- When a skill is performed by either a mastery model or coping model with the idea that the pupil will follow with an attempt to imitate the movement (Lieberman & Cowart, 1996).
Children in general learn best from modeling techniques coupled with positive specific feedback. The three teaching techniques will be used for Camp Abilities for those students with blindness. These teaching techniques will be used to help the campers learn new skills through tactual inspection.

It is important to reinforce the following techniques when:

**Brailling**

* Brailling should be done accordingly and accurate to the correct movement, speed, and rhythm so the camper knows exactly how to do it!
* You are there for the camper as a model. The camper will examine with their hands your body movements when performing goal ball skills. It is important that you know exactly how to perform the tasks.
* For some of the campers, this is the first time that they will be participating goal ball skills. Demonstrate the skill as many times as you need to.
* Brailling may be easier to follow with stationary movements. When you are brailling movements that are moving, be sure to reinforce, provide feedback and instruction, and demonstrate as many times as possible.
* After demonstrating and the camper is given the opportunity to perform the skill, it is OK to guide the student through the movements.

**Physical Guidance**

* Physically guiding a student through a particular movement can consist of many levels such as: total assistance, a touch, or a prompt.
* Be sure to explain or sign instruction to go along with physical guidance
* Reinforce with appropriate feedback upon completion of the goal ball skill component. We hope that through physical guidance, the child will also become more independent upon performing the skill.
* Positioning is important also. When physically guiding a camper, rhythm, speed, and movement should be natural for the camper. Try not to interfere with this. Direct the student in a way that they will perform correctly. Remember that we are striving for success and independence for our campers.

**Explanation**

* Use all the time coupled with reinforcing positive feedback.
* Use oral or sign to communicate (this depends on the students need).
* Repeat instruction as many times as possible.
* If the student is having difficulty understanding, you may want to find another means of communicating (sign, gestures, etc.).
* Explain the same time that you are demonstrating the skill so the camper can know what part of the skill you are performing.

**Demonstration**

* Be sure that the learning environment and setting is conducive to the child's learning need (ex. direction of sun/lights etc).
* Combine demonstration with explanation (oral or sign depending on the child's need).
* Be sure you know how to perform the skill. If you do not know how to perform the skill all you have to do is ask or refer to the skills check list.
* Allow time, repetition, and practice for the camper to learn.
* Repeat the skill as many times as needed.
* Use task analysis (The Camp Abilities Activity Achievement Checklist).
* Remember that students in general learn best from skill specific feedback and demonstration.
Please be sure that all of the questions are answered. This is the only time that you can give them the questionnaire. The camper will not be allowed to go back and change any answer after it is handed in. Please double check all of the questions to make sure they are filled in- THIS IS EXTREMELY IMPORTANT!

As mentioned before, those of you assigned to a child who is blind, you will then perform the modeling techniques that you are assigned to. Please be sure to only use the technique that you have been assigned to for goal ball. On Friday June 30, you will administer the same questionnaire as you did on Sunday to your camper. The same procedure as the pretest questionnaire will be taken. The time and place will be announced as the week goes on. Hopefully by this point of the week, the camper should be able to answer all of the questions on the questionnaire. Again, be sure to answer all of the questions! Please double check after you complete it. It is also important to let the camper answer each question for themselves. Do not persuade the camper to answer in any way. Your job is to simply ask the question for them to answer.

If at any time you have any questions, please see Megan!
Have Fun,
Good Luck, &
THANK YOU!
What is expected of those counselors working with campers that are blind:

1. Administer both pre and post test questionnaires
2. Perform the recommended modeling techniques to provide maximum learning and independence for your camper. *This is very important that the technique that you are given to model, you stick with it for goal ball all week long. Consistency will be key for this study and this depends on you!* 
3. Keep track of your mode of instruction during goal ball. Mark down which modeling techniques you used (either physical guidance or brailling), what worked best for you and your camper, how your camper responded to this technique, how you felt using this, and how receptive your camper was to learning through the techniques. Basically this is a journal of what you are doing with your child. Indicate the campers first name and first initial of the last name. You may want to suggest what worked best for you during the other sports too. This would be helpful for the researcher.

**Sunday June 25th**

Campers arrive and those counselors with campers who are blind, will meet with me to do the pretest questionnaire in the afternoon. (TBA) You will read each question to the camper. *If the camper answers “No” to the first question DO NOT CONTINUE WITH THE QUESTIONNAIRE! For those of you that have a camper that answers “Yes”, continue asking the questions until you reach the end. You may repeat the questions as many times as necessary to the camper. On the closed questions (those with the number scale below), answers 1, 3,&5 have guiding words under them. Numbers 2&4 do not. You may wish to use a verbal description so the camper knows what they men. For #2 the description is “kind of sure” and for #4 “very sure.”*

After administering this, you will then return it to Megan.
APPENDIX E
SELF-EFFICACY QUESTIONNAIRE
SELF-EFFICACY QUESTIONNAIRE
CAMP ABILITIES 2000

CAMPÊR INFORMATION:

<table>
<thead>
<tr>
<th>FIRST NAME</th>
<th>FIRST INITIAL OF LAST NAME</th>
</tr>
</thead>
</table>

COUNSELOR INFORMATION:

<table>
<thead>
<tr>
<th>FIRST NAME</th>
<th>FIRST INITIAL OF LAST NAME</th>
</tr>
</thead>
</table>
HOW I FEEL ABOUT MY SKILLS IN GOAL BALL

I will read you some skills questions that you will participate in during Camp Abilities 2000. Please indicate how sure you are, today, that you can do these things. Please answer the best that you can, according to how you feel today, not what you think you should answer! Be as complete as possible when filling out part two of each question. Your responses are confidential.

1. Do you know what goal ball is?
   __________ Yes  __________ No

2. If you know what goal ball is then, have you ever played goal ball before?
   __________ Yes  __________ No

3. Are you a good goal ball player?
   __________ Yes  __________ No

4. On a scale of 1-5 how would you rate yourself as a skilled goal ball player?
   1  2  3  4  5
   not at all sure  somewhat sure  totally sure

5. Where have you played goal ball?
   __________ Camp Abilities  __________ At home  __________ School
   __________ Camp Abilities and School  __________ Other (if other please explain)
6. How often do you play goal ball?
   ____ once a week   ____ once a month   ____ 2 times a year:
   ____ once a year   ____ never

7. Do you know what ready position is in goal ball?
   ____ Yes   ____ No

8. How sure do you feel that you can get into the ready position in a game of goal ball?
   1  2  3  4  5
   not at all sure  somewhat sure  totally sure

8a. Please provide a reason(s) for the way you answered question 8.

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

9. Do you know how to roll the ball (pass the ball) to the other team in a goal ball game?
   ____ Yes   ____ No

10. How sure are you that you can underhand roll the goal ball to the other team during a game?
    1  2  3  4  5
    not at all sure  somewhat sure  totally sure
10a. Please provide a reason(s) for the way you answered question 10.


11. Do you know what the lying position is in a game of goal ball?

   _____ Yes  _____ No

12. How sure do you feel that you can fall into the lying position in goal ball?

   1  2  3  4  5
   not at all sure  somewhat sure  totally sure

12a. Please provide a reason(s) for the way you answered question 12.


13. How sure are you that you can pass the goal ball toward a teammate?

   1  2  3  4  5
   not at all sure  somewhat sure  totally sure

13a. Please provide a reason(s) for the way you answered question 13.


14. How sure are you that you can stop a rolling ball coming towards you when playing defense in a game of goal ball?

1 2 3 4 5
not at all sure somewhat sure totally sure

14a. Please provide a reason(s) for the way you answered question 14.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

15. How sure are you that you can score a goal in a goal ball game?

1 2 3 4 5
not at all sure somewhat sure totally sure

15a. Please provide a reason(s) for the way you answered question 15.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

16. How sure are you that you know how to play goal ball?

1 2 3 4 5
not at all sure somewhat sure totally sure

16a. Please provide a reason(s) for the way you answered question 16.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

THANK YOU!
APPENDIX F
RESEARCH SCRIPT FOR
QUESTIONNAIRE
Script for Questionnaire

Today I am going to read you some questions about the game of goal ball. Goal ball is a game that you will learn how to play this week at Camp Abilities. Please answer the questions as best you can according to how you feel today, not what you think you should answer. When asked to talk about how you feel after some of the questions, please say as much as you can to your counselors. Please wait until the entire question is read before you choose an answer. No one will see your answers. Have fun.

1. Do you know what goal ball is?
   either check “No” or “Yes”

   If you just checked “No” you are all finished with this. Please do not answer anymore of the questions. Thank you for helping me out. If you checked “Yes” to the question of “Do you know what goal ball is”, then please listen for the following directions.

   For those of you that have checked yes we are going to answer some more questions about goal ball.

   Ready.......?

2. Since you know what goal ball is, have you ever played goal ball before?
   please check “yes” or “No”

3. Do you feel that you are a good goal ball player?
   please check “Yes” or “No”

4. On a scale of 1-5 would you rate yourself as a good or skilled goal ball player?
Please listen to all the following choices BEFORE you make your choice.
1 = not too sure  3 = somewhat sure  5 = totally sure

5. Where have you played goal ball?
please check one of the following.
Camp Abilities
At home
School
Both Camp Abilities and school
Other (if you choose other, please be sure to tell me where you have played goal ball before)

6. How often do you play goal ball?
remember to listen to all of the choices before you choose an answer
once a week
once a month
2 times a year
one time a year
I have never played goal ball

7. Do you know what ready position is in goal ball?
check either "Yes" or "No"

8. How sure do you feel today that you can show me how to get into ready position in goal ball?
Before you respond please listen to all of the choices.

8a. I would like you to tell your counselor why you feel that you can get into the lying position in goal ball. Please take your time, think about your answer, and explain as best as you can when answering this part.
9. Do you know how to pass the ball to the other team in a goal ball game? Please just answer “Yes” or “No” to this question.

10. How sure are you that you can underhand roll the goal ball to the other team during the game? Please be sure to listen to all the following choices *BEFORE* you make your choice.
   1= not too sure    3= somewhat sure  5=totally sure

10a. I would now like you to tell your counselor why you feel that you can underhand ball to the other team. Please take your time, think about your answer, and explain as best as you can when answering this part.

11. Do you know what the lying position is in a game of goal ball? Please answer “Yes” or “No” to this question.

12. How sure do you feel that you can fall into the lying position in goal ball? Please be sure to listen to all the following choices *BEFORE* you make your choice.
   1= not too sure    3= somewhat sure  5=totally sure

12a. I would now like you to tell your counselor why you feel the way that you do about getting into the lying position. Please take your time, think about your answer, and explain as best as you can when answering this part.

13. How sure are you that you can pass the goal ball toward a teammate? Please be sure to listen to all the following choices *BEFORE* you make your choice.
1= not too sure   3= somewhat sure   5=totally sure

13a. I would like you to tell your counselor why you feel that you can pass the ball toward a teammate. Please take your time, think about your answer, and explain as best as you can.

14. How sure are you that you can stop a rolling ball coming towards you when playing defense in goal ball? Please be sure to listen to all the following choices BEFORE you make your choice.

1= not too sure   3= somewhat sure   5=totally sure

14a. I would like you to tell your counselor why you feel that you can stop an oncoming ball in goal ball. Please take your time, think about your answer, and explain as best as you can when answering this part.

15. How sure are you that you can score a goal in a goal ball game? Please be sure to listen to all the following choices BEFORE you make your choice.

1= not too sure   3= somewhat sure   5=totally sure

15a. I would like you to tell your counselor why you feel that you are able to score a goal in goal ball. Please take your time, think about your answer, and explain as best as you can when answering this part.

OK this is the last set of questions for you to answer for today.
16. How sure are you that you know how to play goal ball? Please be sure to listen to all the following choices *BEFORE* you make your choice.

   1= not too sure  3= somewhat sure  5= totally sure

16a. I would like you to tell your counselor why you feel that you know how to play goal ball. Please take your time, think about your answer, and explain as best as you can when answering this part.

We are now finished with answering the questions. Thank you for taking your time, thinking, and helping me with my project. I hope that you learn a lot this week and have a great time!
APPENDIX G
COUNSELORS JOURNALS
USED DURING THE INTERVENTION
Physical Guidance Participants

PG1 Female Pretest composite score 1.50 Posttest score 2.25
PG1 is a 13-year-old girl who has attended Camp Abilities for the last two years. During the pretest questionnaire PG1 was reluctant to answer the goal ball questions. PG1 indicated that she did not like goal ball because she was not proficient at it, that it hurt her knees to fall into the lying position and that she did not know the meaning of the technical terms when asked on the pretest questionnaire. PG1 posttest outcomes reported that she still does not like goal ball because it still hurts, she learned a tremendous amount from her counselor about the game, and that she still believes she isn't very good at it, but now feels confident in performing certain goal ball skills.

PG2 Male Pretest scores 0 Posttest scores 3.63
PG2 is an 9-year-old boy who has never attended Camp Abilities before. PG2's pretest was unanswered because he answered "No" to whether or not he knew what goal ball was. During the week PG2's counselor left and two trained substitutes were provided along with the researcher's assistance during the goal ball intervention. PG2's posttest scores reported that he learned a tremendous amount about goal ball. He felt that he was very good at locating the goal ball and was excited to learn about the game. PG2 was compliant and understood what skills he was being taught during the physical guidance (vicarious experience and verbal persuasion). Physical guidance worked well for PG2 because he had great athleticism and he needed very few movements here and there. From these results the researcher can clearly see that the modeling techniques (vicarious performance) and explanation (verbal persuasion) worked to help increase PG2's self-efficacy.

PG3 Male Pretest score 2.88 Posttest score 4.13
PG3 is a 15-year-old boy who has attended Camp Abilities for the last four years. PG3 was familiar with most of the terminology, felt he was very good at it (past experience), but was unsure as to whether or not he knew exactly how to perform the skills like he attempted. PG3 said that he would give it his best shot to learn as much as he could throughout the week! PG3's counselor indicated that PG3 was very confident and happy to be playing goal ball. PG3 indicated on his posttest-questionnaire that he felt it was good that he was familiar with goal ball before he started or else he would not be able to learn as much (past performance). PG3 indicated that he felt he was good at the skills because he had done them so many times before and had the practice and repetition to learn (past performance). In PG3's counselor's journal reported, "PG3 failed to get into the lying position and roll the ball just with verbal cues: The researcher guided him physically in the skills and it was clear that PG3 benefited from this modeling technique" (vicarious experience). Another significant journal entry of the counselor was: "Today PG3 was not enthusiastic because he was not successful the first time he played today (blocking the ball). After intervening a couple of times and placing his arms above his head, PG3 could then replicate the skill by reaching up in front of him and stop many of the balls that came his way (vicarious persuasion). PG3 felt better and knew he could do it after feeling success."
PG4 female Pretest score 3.75 Posttest score 4.13

PG4 is a 21-year-old female that has attended Camp Abilities for the last 5 years. However, she feels that her past-experience has helped her learn how to play the game; her pretest scores indicated that her past performances with goal ball have helped her tremendously in learning and playing the game. PG4's posttest questionnaire reflected that she feels confident in playing goal ball because she's played all week long and before at Camp Abilities (previous experience). Both counselor and participant were very comfortable using physical guidance (vicarious experience) for the modeling technique. PG4 said, "I liked when my counselor told me directions (verbal persuasion) it made me feel better about where I was playing goal ball." This revealed that PG4 felt success with this type of feedback from her counselor which is consistent with Bandura's (1997) sources of efficacy.

PG5 Male Pretest score 1.25 Posttest score 2.63

PG5 is a 14-year-old boy who has attended Camp Abilities for the last four years. PG5's pretest questionnaire indicated that he has not played goal ball in over two years and was not confident in answering the questions that were asked. When asked to respond "Yes" or "No" to the question, "Are you a good goal ball player", PG5's response was "No." The remaining parts of the pretest questionnaire were consistent that he did not feel he was a good player at all. PG5's posttest questionnaire suggested that he still did not feel that he was a good goal ball player, however, he did remember the skills once he was immersed in the sport. He felt that he was more confident about getting into the lying position because he did it for the entire week with his counselor. This is consistent with the vicarious experience and verbal persuasion sources of efficacy according to Bandura (1997).

PG6 Female Pretest score 0 Posttest score 4.13

PG6 is a 9-year-old girl who never played goal ball until the week she participated in Camp Abilities 2000. PG6's pretest questionnaire stopped after the first question, "Do you know what goal ball is?" because she responded "No". The posttest questionnaire indicated that PG6 felt she learned some of the skills in goal ball. Overall, PG6 indicated on her posttest questionnaire that she did not like that game of goal ball at all and that she did not feel successful every time she tried to block the ball.

PG7 Male Pretest score .63 Posttest score 4.38

PG7 is a 18-year-old boy who attended Camp Abilities for the last four years. For PG7, physical guidance neither promoted nor obstructed his learning or development of goal ball skills. PG7 had a hard time remembering the skill and staying focused for the entire goal ball session. He was glad that he was kind of familiar with some of the skills and he thought he could perhaps recall some of the skills because he had performed them in prior years (past performance). PG7 found success in rolling the ball to the other team and stopping the ball because his counselor helped him (verbal persuasion and vicarious experience). The researcher saw that repetitive verbal persuasion worked very well with him upon improving his skill performance. PG7 did not feel that he improved in a variety of skills, however, what he did indicate was
that he improved on a few skills (rolling and stopping) that were taught. The researcher has questions as to whether or not PG7's information was consistent with the way he actually performed. Throughout the week of Camp Abilities, the researcher noticed some improvements to the way PG7 was performing. At the beginning of the week, his counselor was physically guiding and verbally directing PG7 through the skill. Both prompts lessened and PG7 became more independent when performing the skill. However, throughout the course of the week, PG7 never verbally expressed his enthusiasm for goal ball.

**Brailling Participants**

**B1 Female**

B1 Female pretest score 0 posttest score 1.13

B1 is a 12-year-old girl who attended Camp Abilities for the last four years. B1's self-efficacy scores did not resemble her progress throughout the week. Her pretest questionnaire stated that she was aware of goal ball from Camp in the past but could not remember everything about it. The researcher knows that B1 improved and learned how to complete the lying position during the week of goal ball because the researcher was active in brailling the skills for B1 over a period of two days to reinforce the skill component. It took B1 several times to understand each component, however she did learn the skill and was able to successfully perform with verbal cues, positive feedback and encouragement. The researcher insists that B1 benefited from the brailling intervention and believes that B1 knows she is able to perform some of the skills in goal ball, and just simply did not articulate this on her questionnaire.

**B2 Female**

B2 Female pretest 3.75 Posttest score 4.88

B2 is a 19-year-old girl who attended Camp Abilities for the past year. B2 has an abundance of experience playing goal ball and her skill level exceeds many other participants in the present study. Her pretest scores were exceptionally high due to past performance. While living in Germany, B2 noted that she was a member of a goal ball team for eight years and played quite often. She often talked about how much she learned while in Germany and how much that has helped her learn the game of goal ball at Camp Abilities and also for recreation purposes. Scoring, the ready position and passing were among the skills that she felt she could improve on. By the end of the week B2 expressed, to the researcher and counselor, that she felt better about doing these skills in particular because her counselor showed her exactly how the skill should be done and talked her through the tasks as she was performing them (vicarious experience). B2 also felt that, because she played every day at Camp, she grew with the sport and that she improved overall because her counselor helped reinforce and perfect the goal ball skills. Not a lot of time was spent on brailling, with the exception of the three skills mentioned above since B2 was so unfamiliar with the sport. B2 did state, however, that she did not mind the brailling she did receive. She felt the cues, positive specific feedback and encouragement helped her increase her confidence in performing skills. She admitted that even though she was really good, she felt that identifying her counselor doing the skill (modeling) actually helped her learn how to get into a better and stronger position (especially ready position).

**B3 Female**

Pretest score 4.25 Posttest score 4.88
B3 is a 15-year-old girl who attended Camp Abilities for the last 5 years. B3's self-efficacy scores are very high and reflect her performance in goal ball. For B3, scoring was an uncertain skill that she had. Overall, the participant improved immensely over the one-week camp. B3 mentioned that the brailing was uncomfortable for her and her counselor since she knew the skills and was stubborn to refine them. Once they used the brailing and practiced the techniques, B3 stated that she began to feel better about her ability to perform the goal ball skill. B3 also declared that her counselor's encouragement and verbal persuasion was a good feeling. These reinforcements fostered B3's incentive to learn the goal ball skills. It is also important to note that, when the researcher was speaking with B3, she said, "I forgot the exact name of what my counselor was doing, braille I think, but anyway, I have to admit, at first I did not like it at all. After a day of understanding what it was, I know that she was trying to help me and that is the reason why I learned and improved so much this year. I liked learning that way, it was cool."

B4 Female Pretest score 4.25 Posttest score 4.75

B4 is a 15-year-old girl who attended Camp Abilities the last five years. B4's responses to the pretest questionnaire were high and after speaking with her she said that she felt she could do most of the skills that were listed. She felt that her experience with goal ball in the past was the reason that she felt she could perform the skills. In the beginning, the two skills that she was least confident in stopping the ball in defense and scoring a goal during a game. B4's posttest scores did increase and she attributed the increase to past performance from Camp, the way that her counselor talked to her and made her feel she could do it, and the positive Camp atmosphere. B4's counselor noted that at the beginning of the week, B4 was very frustrated using brailing and felt that she did not need to use it. After the first day when her counselor showed her how to do it, she knew that she needed to use the brailing to feel success and to be able to understand exactly how to perform the skill correctly. B4 had never used brailing before and felt this way of showing her how to do a skill helped her learn, especially with scoring and defending.

B5 Female Pretest 2.75 Posttest score 4.25

B5 is a 12-year-old girl who attended Camp Abilities three times. B5's pretest questionnaire reported that she did not know a lot about goal ball. She has only played two times before the start of the week. B5 was unfamiliar with the goal ball terms and proper positioning but was excited to learn how to play. B5 expressed that she was not confident in the skills or her ability to do something. B5's posttest scores were a clear indicator that she learned a tremendous amount from her counselor. B5 stated on the questionnaire that her counselor helped her learn the goal ball skills better than any other sport at Camp because B5 could feel exactly how the body was suppose to be (vicarious experience). B5 also made reference to her counselor talking to her throughout the week and the confidence that she now has (verbal persuasion). B5 felt that she knows exactly how to do the skill at a pace that was comfortable for her. However, she was concerned with whether or not she could actually perform the skill at the rate it should be done.

B6 Female Pretest score 4.38 Posttest score 4.75
B6 is a 15-year-old girl who attended Camp Abilities for the last 5 years. B6 is very confident in her goal ball skills. B6's pretest questionnaire noted that she feels good about goal ball but does not understand the concept behind it. B6 noted that she felt she was good at performing the skills in her pretest questionnaire. The researcher believes that the excitement and joy of Camp Abilities carried B6's enthusiasm in her pretest results. B6 benefited from the support, and the fun that comes with goal ball. B6 noted that the reason that she loves to play and learn is because it is fun. B6's posttest questionnaire contributed to Bandura's theory of self-efficacy in verbal persuasion and past performance. At the beginning B6 was comfortable with goal ball because she had some familiarity with it, however she did not know whether or not she could actually do the skills or not. At the end of Camp she stated on her posttest questionnaire, "people have taught her how to do goal ball skills so she feels that she can do more skills than the beginning of the week." B6 also noted that it was a good thing that she knew what goal ball was before she started to play.