Children with visual impairments are more likely to have lower levels of physical activity and motor skills than their sighted peers (Haibach, Wagner, & Lieberman, 2014; Houwen, Houwen, & Visscher, 2009; Lieberman, Byrne, Mattern, Watt, & Fernandez-Vivo, 2010). It is important for children with visual impairments to be introduced to a variety of physical activity options in addition to typical team sports. By introducing children with visual impairments to outdoor adventure and recreation options at a young age, teachers can create a love for activity that could continue for their lifetime. Physical activity is important for children with visual impairments, as it supports endurance for vocational experiences, and stamina to complete activities of daily living. This is important as research has shown that people who are blind and visually impaired use more energy than their sighted peers for activities of daily living (Kobberling, Jankowski, & Leger, 1989). In addition, walking is often the major mode of transportation for people with visual impairments, since they often do not drive.

In the field of visual impairment there is an emphasis on the Expanded Core Curriculum (ECC) for children with visual impairments. The ECC is a set of components of a curriculum that need to be emphasized for children with visual impairments during their school age years in order to be independent adults (Allman, & Lewis, 2014; Sapp & Hatlen, 2010). These very important educational components are orientation & mobility, recreation, socialization skills, career awareness, technology, compensatory skills, sensory efficiency skills, independent living skills, and self-determination. Recreation activities themselves also contribute to many of the components of the ECC so necessary for adolescents with visual impairments or deafblindness (Haegel, Lieberman, Culumma, & Runyan 2014). Some of the components of the ECC covered in recreation activities are self-determination, socialization, independence, orientation & mobility, and compensatory skills. These are some important concepts to consider when teaching adventure or recreation activities to children with visual impairments. Facilitators should keep in mind the importance of self-determination, self-help, socialization, choice making, and transition planning. “The provision of a well-rounded physical education with a variety of sports, games, fitness, and lifetime recreation can increase the variety of opportunities and choices for children with visual impairments or deafblindness and lead to an increase in their sense of self-determination (Lieberman et al., 2013, p.62). If physical activity and recreation activities are taught appropriately they increase the chance for children to gain independence, self-confidence and advocate for themselves when it comes to being active and in life in general. The more children with visual impairments have the opportunities to gain these skills from recreational experiences, their foundational skills improve and they may be more active as an adult. For more information on how the ECC ties into physical activity and recreation please see Haegel, Lieberman, Culumma, and Runyan (2014).

Experiences in recreation activities provide youth with typical experiences that they can share with siblings, friends, and neighbors. Participation in these opportunities can help to counteract the feelings of loneliness and isolation, while helping to increase engagement in community events and activities (Lieberman et al., 2013, p. 62). By promoting physical activity and recreation, children with visual impairments can be active with their families, neighbors and friends. By
giving children the skills and experiences, it is easier to be active and to participate in activities in their local communities rather than sitting on the side. Many of the activities mentioned later in the article are great for pairs or groups. Through learning the skills to participate in these activities, children with visual impairments can initiate and maintain appropriate socialization skills. The variety of recreation experiences provides them with choices.

“Offering students choices in a classroom may enhance their feelings of self-determination and intrinsic motivation to participate in class activities” (Brooks & Young, 2011, p.51). Choice making is essential for academic achievement, social adjustment and quality of life (Van Tubbergen et al., 2008). Choice making is a part of everyday life. During recreation and physical activities, providing children with the opportunities to make choices might increase their self-confidence and self-determination, which could be carried over into all aspects of their lives. Giving choices and providing a variety of activities can help a child with a visual impairment to find an activity for their lifetime, while also giving them an opinion and say in what happens in their life. For example, Braiden tried fishing, biking, hiking, and stand-up paddle board the summer he was 13. He falls in love with stand-up paddle boarding and biking and chooses to pursue these activities with his friends and family in his free time. These skills can be added to his transition plan on his individual education plan (IEP) in school.

In order for transition to be effective, the PE teacher must be included in the planning. In addition, every child should be learning the same units as their peers. For example, endurance and balance skills must be learned to ensure skills for stand-up paddle boarding. Every child’s transition plans should include recreation (Samalot, & Lieberman, 2016) to ensure the appropriate underlying skills to access their chosen activities. Barriers must be discussed and strategies for overcoming them addressed in order to promote activity and independence. For example, Braiden will need to access a stand up paddle board and transportation to the lake in order to paddle board. He will have to learn the advocacy skills to access this activity. In order for children to be self-determined, they also need to learn the fundamental skills in physical education that they will need in the community. The benefit of learning these recreation skills relates to the fact that fundamental skills can be generalized from one recreational activity to another. For example, if a child learns how to put on shoes for bowling independently, that can be generalized to putting shoes at a rock climbing facility or ice skates for ice skating.

As can be seen, recreational skills are essential for so many areas in life that help children become independent adults. The purpose of this article is to share the various ways to modify recreation activities for children who are visually impaired, blind or deafblind.

**General Instructional Approaches**

The following are some general principles to follow when teaching recreation activities to children with visual impairments or deafblindness. Then below are some specific steps for each activity that is introduced.

### General Principles

#### Allow the child to feel the whole activity
- Equipment (e.g., upside down bike, kayak on the grass, rock wall and harness)
- Tactile map (e.g., pool)
  - Use tactile modeling with verbal assistance and cues (the child feels an instructor or peer move through the skill)
  - Use physical guidance with verbal assistance and cues (the child is moved through a skill by an instructor or peer)
  - Use tactile maps, tactile modeling and physical guidance in combination to help create a better picture
  - Ask the child which option they prefer

#### Explain all terminology
- Go through the activity slowly at first
- Teach Whole-Part-Whole
  - Teach the skill as whole first
  - Next break down skill into smaller parts or sections
  - Finally, bring all parts taught together to complete the whole skill
- Task analyze
- Peer can guide when possible

#### Discuss fears or anxieties if they have them
- What are your fears? How can you overcome fears?
- Through practice of skills the child finds challenging, allowing the child to see/feel an activity being done before trying it.
- Set goals (ex. hike a mile today, bike 2 miles, swim for an hour)

#### Children who are deafblind

Ensure they know the sign and terms for each part of the activity if they use sign

Ensure you discuss communication at the beginning of the activity so you can set up clear receptive and expressive communication
- Make sure that any activity that is continuous (has no clear beginning and end) is broken up during skill acquisition so feedback can be given
- Make sure the interpreter or intervener feels comfortable during the activity to ensure safety (for example communicating in a canoe or on a paddle board or while rollerblading)

(Arndt, Lieberman, & Pucci, 2004)

**Achievement can be a goal not just participation!**
Modifications for Recreational Activities:

One place that many recreational skills are learned and perfected for children is Camp Abilities. For more information on Camp Abilities please refer to the article by Lieberman, Lepore, and Haegle, 2014.

The following section describes a variety of recreation activities and how to modify them specifically for children with visual impairments. These include water activities, rock climbing, archery, rollerblading, biking, horseback riding, and fishing.

**Water Activities**

- Feel the whole canoe, kayak, or SUP and paddles on land before child gets in.
- Get in the canoe, kayak, or SUP on land and practice paddling with physical guidance and/or tactile modeling and feedback.
- Use tactile markers on the paddles to ensure appropriate hand placement.
- Bright colored duct tape or a strip of braille
- Allow child to listen to appropriate cadence in order to keep dry.
- Discuss what to do in case of emergency.
- Give positive feedback during movement.
- If correction must happen try verbally, or pull over to give physical guidance or tactile modeling.
- Verbally (or tactiley) support the child through each stroke at the beginning.
- Soon fade to appropriate prompts and promote socialization.

For more information on Stand Up Paddleboarding and people with visual impairments please see Fernandesz-Vivo & Cordero-Morales, 2015.
Rock Climbing

- Feel the wall and understand the placement of the rocks
- Use an auditory system at the top such as a bell or beeper to help the child comprehend how high the wall is if they can hear
- Feel the harness and helmet
- Discuss the clock system (12 o’clock directly above child’s head, 3 o’clock directly to their right, 9 o’clock directly to their left) or use left, right, up, down directions
- Teach how to find a helmet that fits
  - Make H in sign should fit horizontally between tops of eyebrows and bottom of the helmet, point fingers toward throat, should fit between buckled straps and bottom of chin
- ONLY allow one person to coach the child at a time from the ground to ensure one instructor is giving directions
- Hand over hand guide when possible
- Discuss and practice walking down (rappel) the wall before they go up
**Archery**

- Feel entire target first before anyone picks up a bow or begins shooting.
- Learn the point system for the colors.
- Understand the bow and arrows and each component with names and purposes.
- Take an arrow and bang it into the target so the participants understand how hard the arrow has to fly in order to stick.
- Show participants how far back they need to pull in order for the arrow to stick.
- Share the various ways to aim.
- Use auditory cues behind the target (radio, sound source, shaker), so archer knows they are facing the correct direction.
- Another person can sight for the child and give feedback.

**Rollerblading**

- Feel the rollerblades.
- Teach how to find a helmet that fits.
- Make H in sign should fit horizontally between tops of eyebrows and bottom of the helmet, point fingers towards throat should fit between buckled straps and bottom chin.
- Learn how to use straps on rollerblades and to be sure they are secured tightly.
- Provide support to help with balance as needed.
- Or child could use ski poles with tennis balls on the bottom to help keep balance and aid in propulsion.
- Give verbal or signed feedback about performance and any obstacles in the way.
- Cues: Step and glide.
  - Allow the child to feel the instructor step and glide if necessary.
- Set goals and measure progress when possible.
Biking

- Tandem, conference, kickbike, single, or side-by-side bike
  - Find what type of bike is best for the child
    - Depending on factors such as previous experience, size of the child, balance, etc.
- How to find a helmet that fits
  - Make H in sign (two fingers), should fit horizontally between tops of eyebrows and bottom of the helmet, point fingers toward throat, should fit between buckled straps and bottom of chin.
- Feel all of the parts of the bike (seat, chain, brakes, etc.) explain how each part works together to propel the bike (please note that this experience is often greasy and is part of the experience. Towels and soap and water should be available after this as it can get messy)
- Teach hand signals and road safety (turn right, turn left, and stop)
- Remind child to keep their head up while biking as this helps to keep their balance
- Be sure to share what is seen in the environment when the child is interested in knowing
  - For children who are deafblind be sure to set clear signals for right turn, left turn, slow down, stopping and starting

Horseback riding

- How to find a helmet that fits
  - Make H in sign (two fingers), should fit horizontally between tops of eyebrows and bottom of the helmet, point fingers towards throat, should fit between buckled straps and bottom of chin.
- Feel saddle, bridle, reins, and learn all terms
- The child should feel the whole horse to understand the size of the horse. Explain the body parts with correct terms.
  - Also teach horse etiquette, such as not walking behind a horse.
- Demonstrate how to mount the horse
- Use physical guidance, and/or tactile modeling to relay the skills of going faster (kicking the horse lightly), and how to go slower or stop with the reigns
- Set up clear communication during riding for children who are deafblind
Fishing

- Feel the environment, rod, and all components with terminology for each.
- Show the child the bait and teach him/her how to put it on INDEPENDENTLY
- Discuss the importance of a good cast and how to do a cast for distance.
- Show the biomechanics of a good cast (where to release cast)
  - Use verbal guidance or tactile modeling
- Help them know when they have a bite
- Attach bell to the bobber or use brightly color bobber if the child has some sight
- Have the child touch the line to feel when it becomes tight from a bite
- Show them how to take the fish off the hook safely
- Have the child feel a fish once it is caught, and help the fish off the hook and throw the fish back into the water.

Conclusion

The activities above are just some of the ways to modify recreation for children with visual impairments. This article presented general teaching tips for all activities and specific modifications for the recreation provided. When taught correctly these activities can meet most of the components of the ECC including: self-determination, independence, orientation & mobility, socialization, compensatory skills, sensory efficiency and recreation.

Promote the Potential of Every Child!

References


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