

Module: **Developmentally Appropriate Orientation and Mobility**

Session 1: Foundations of Developmentally Appropriate Orientation and Mobility

Study Questions and Answers for Recommended Reading A: Clarke, Sainato, & Ward

Clarke, K.L., Sainato, D.M., & Ward, M.E. (1994). Travel performance of preschoolers: The effects of mobility training with a long cane versus a precane. *Journal of Visual Impairment & Blindness*, 88(1), 19-30.

1. What reason do the authors give for initiating this study?
Many OMSs believe that preschool children with severe visual impairments should have training with mobility devices, but there is disagreement about which type of device is most suitable and most beneficial to preschoolers. Additionally, there is a lack of empirical evidence available to assist caregivers and professionals in making an informed decision regarding the selection of an initial mobility device for young children.
2. Give a brief summary of the debate over long canes versus precanes and the proposed advantages or disadvantages of each.
Proponents of long canes believe that it is logical to teach children to use the same device that they will use throughout their lives and that the use of the long cane gives children confidence to travel, protection from travel obstacles, and better mobility. Those who oppose the long cane believe that preschool children are not developmentally ready to use it. They feel that the precane is more appropriate and offers better lower body protection for young children.
3. Which of the research questions do you find most interesting or believe to be most important for the field of visual impairment? Why?
Participants' answers will vary.
4. Write a brief description of the design and methodology of this study.
The study had four participants, all children around 60 months of age with severe visual impairments and no additional disabilities. All children were ambulatory and attended preschool regularly. Two children had previous O&M training. An O&M instructor trained each of the children on the Connecticut precane device and on the traditional long cane. Each student then walked an L-shaped route in a school hallway multiple times. The route included a wall with several clear plastic boxes as travel obstacles and a plastic runner marking a boundary opposite the wall. The obstacles were randomly placed

for each travel session, and all sessions were videotaped and coded to determine effectiveness of the devices for each student.

During Baseline 1, children walked down the hallway without a device. They had to maintain orientation and continue walking forward, while the OMS was directly behind them giving prompts and cues. During Baseline 2, each child was told to begin walking the route and was given a mobility device to use without instruction on how to use it. During the travel sessions, the order of devices was varied each time to control for treatment order, and the OMS intervened only if the child used the device in an unsafe manner.

5. Describe the long cane and the Connecticut precane device. Which of the two devices do you predict would be the most effective and appropriate for preschool children?

The long cane was a fiberglass cane that was measured chest-high for preschool children. It was lightweight, with a grip for the children to hold on the top portion of the cane and a marshmallow tip on the end. The Connecticut precane device was made of PVC pipe and also measured to mid-chest level for the children. It had two sidebars with red visibility tape at the bottoms, black grip tape at the tops, and a circular pipe connecting the two sidebars at ground level.

Participants' predictions will vary.

6. What types of activities did the OMS use with the children to train them on the mobility devices?

The training script for using the mobility devices included songs, rhymes, and games to engage and motivate the children to use the mobility devices appropriately.

7. What measures did the authors use to determine the effectiveness of each of the mobility devices?

The researchers measured the number of times children had bodily contact with the travel obstacles, the average speed of travel for each child with each mobility device, the number of appropriate device subskills that each child demonstrated, and the number of verbal and physical prompts and praise that the O&M instructor gave to the children in each travel session.

8. How did the researchers train the children and determine the most suitable device for each child?

Children received eight-minute lessons with one of the devices each day and were videotaped walking with the device after each training session. After the children had been through multiple training sessions, a panel decided on the

most appropriate device for each child based on the various measures of independent mobility.

9. How did the children's preferences differ from the researchers' findings?
According to the carefully researched measures and parameters, the precane was more appropriate for all of the children in the study, but when asked, the children had different opinions. Two children preferred the precane, but one chose the long cane every time. The fourth child was unable to give a preference.
10. How did the parents and teachers react to the video clips of the children using the mobility devices? Did any of their reactions surprise you?
The majority of the parents and teachers rated the precane as more effective and appropriate for the children. However, one teacher believed that her child did better with the long cane, and one mother admitted that she rated her child's precane use negatively because she did not care for the appearance of the device. Participants' responses will vary.
11. What answers did the authors find for each of their research questions?
- **Preschool children are capable of learning to use long canes and precanes independently in a training setting.**
 - **Children can continue to use their mobility devices well after the training period.**
 - **Children are able to generalize their skills to other settings.**
 - **The precane is more effective than the long cane at preventing contact with travel obstacles.**
 - **The children's average speed of travel was slightly faster with the long cane than with the precane.**
 - **The preferred device varied for each individual child. With such a small sample size, one cannot conclude that most children would prefer one device over another.**
 - **The parents and teachers generally approved of the devices and noticed the difference in independent travel skills when the children use the devices.**
 - **The only dissenter was a mother who objected to the appearance of the precane.**