Technology for Early Childhood Braille Literacy (TEC-BL)

US Department of Education, Office of Special Education and Rehabilitative Services
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Purpose: To answer the question of how to make Braille literacy more accessible, this project will investigate the efficacy of the new electronic note takers and Braille displays in early literacy instruction, and their potential for facilitating early literacy for children who are blind.

Method: The study will compare outcomes of instruction using the traditional Braille writer and paper, with outcomes of instruction using an electronic note taker with a Braille display among emergent and early literacy students who are blind and visually impaired. At least 10 children who are legally or functionally blind between the ages of five and seven, with measured cognitive ability within normal range or above, will participate. The selected participants will receive at least one hour of individual or small group reading instruction per day, with Braille as their primary reading modality. Licensed teachers of visually impaired learners will use their preferred curriculum for instruction but must be consistent in the use of that curriculum for the period of the study (at least six months). This study will use a single-subject alternating treatment design with at least 10 participants. Each child will participate for at least 24 weeks. For each week of the study, the child will be randomly assigned to literacy instruction with the Perkins Braille Writer or with an electronic note taker with a Braille display. During the course of this study, weekly curriculum-based measurement (SCBM) will be made using the media instruction for that week. CBM probes will determine student fluency in producing Braille symbols and words; fluency in reading Braille symbols and words; and fluency in reading passages in text at their instructional level. For each child, data paths for each measure and for each device will be analyzed using visual analysis. Differences will also be analyzed using randomization tests