Using Computer-Assisted Instruction to Teach Grocery Shopping Skills

What is the evidence base?

- This is a research-based practice for **students with disabilities** based on four methodologically sound single-subject studies across 12 participants with disabilities.
- This is a research-based practice for **students with intellectual disability** based on four methodologically sound single-subject studies across 12 participants with intellectual disability.

Where is the best place to find out how to do this practice?

The best place to find out how to implement computer-assisted instruction (CAI) to teach grocery-shopping skills is through the following research to practice lesson plan starters:

- [Computer Assisted Instruction – Grocery Shopping Lesson](#)

With whom was it implemented?

- Students with
    - Mild to moderate intellectual disability (1 study, n=3)
    - Moderate intellectual disability (2 studies, n=6)
    - Moderate to severe intellectual disability (1 study, n=3)
- Ages ranged from 11-26
- Males (n=6), females (n=6)
- Ethnicity
    - None reported (n=12)

What is the practice?

Computer-assisted instruction (CAI) has been defined as "the use of a computer and other associated technology with the intention of improving students' skills, knowledge, or academic performance" (Okolo, Bahr, & Rieth, 1993, p. 1) and is synonymous with terms such as computer-based instruction, computer-mediated instruction, interactive hyper-media instruction, and multimedia instruction. CAI offers an interactive format that can provide examples and feedback to students, while including multiple components, such as graphics, photographs, audio, text, and video (Hutcherson, Langone, Ayres, & Clees, 2004).

In the studies used to establish the evidence base for using CAI to teach grocery shopping, CAI included using a:

- Multimedia, computer-based program using Hyperstudio 4.0 that included first- person view simulations, video caption navigation, still photographs, and a touch screen and/or computer mouse that advances the program to the next screen in addition to a 5s constant time delay procedure (Mechling, 2004)
- Multimedia, computer-based program using SMART Board touch-screen technology, Microsoft© PowerPoint, a Dell Optiplex Pentium PC computer (Mechling, Gast, & Krupa, 2007)
- Computer-based video program using Hyperstudio 3.1, video recordings, still photographs compressed and saved as video files, a TouchWindow for direct selection of images on the computer screen (Mechling, Gast, & Langone, 2002)
- Computer-based video program, video player, and a TouchWindow (Wissick, Lloyd, & Kinzie, 1992)

Where has it been implemented?

- Separate classroom (2 studies)
- Community (3 studies)
- Home (1 study)
- Local university campus classroom (1 study)

How does this practice relate to Common Core Standards?

- Understand ratio concepts and use ratio reasoning to solve problems (Ratios and Proportional Relationships, Grade 6)
  - o Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.
- Comprehension and Collaboration (Speaking and Listening, Grade 8)
  - o Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
- Knowledge of Language (Language, Grade 8)
  - o Use knowledge of language and its conventions when writing, speaking, reading, or listening.

How does this practice relate to the Common Career Technical Core?

- Demonstrate mathematics knowledge and skills required to pursue the full range of post-secondary education and career opportunities (Academic Foundations)
  - o Identify whole numbers, decimals, and fractions

- o   Demonstrate use of relational expressions such as: equal to, not equal, greater than, less than, etc.
- o   Demonstrate knowledge of basic arithmetic operations such as: addition, subtraction, multiplication, and division
- Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice (Communications)
  - o   Determine the most appropriate reading strategy for identifying the overarching purpose of a text (i.e. skimming, reading for detail, reading form meaning or critical analysis)
  - o   Employ technological tools to expedite workflow. (Information and Technology)

References used to establish this evidence base:

Mechling, L. C. (2004). Effects of multimedia, computer-based instruction on grocery shopping fluency. *Journal of Special Education Technology, 19*, 23-34.

Mechling, L. C., Gast, D. L., & Krupa, K. (2007). Impact of SMART board technology: An investigation of sight word reading and observational learning. *Journal of Autism Developmental Disorders, 37*, 1869-1882.

Mechling, L. C., Gast, D. L., & Langone, J. (2002). Computer-based video instruction to teach persons with moderate intellectual disabilities to read grocery aisle signs and locate items. *The Journal of Special Education, 35*, 224-240.

Wissick, C. A., Lloyd, J. W., & Kinzie, M. B. (1992). The effects of community training using a videodisc-based simulation. *Journal of Special Education Technology, 11*, 207-222.

Page Break