Using Computer-Assisted Instruction to Teach Food Preparation and Cooking Skills

What is the evidence base?

A moderate level of evidence based on three acceptable quality single subject studies

With who was it implemented?

- Students with
  - Mild to moderate intellectual disability (1 study, n=3)
  - Moderate intellectual disability (2 studies, n=7)
- Ages ranged from 15-22
- Males (n=5), females (n=5)
- Ethnicity
  - None reported (n=10)

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 food preparation and cooking skills, CAI included using a:

- portable DVD player displaying video and audio prompts (Mechling, Gast, & Fields, 2008; Mechling & Stephens, 2009)
- computer software package that incorporated video modeling (Ayers & Cihak, 2010)

How has the practice been implemented?

- CAI in combination with a system of least-to-most prompting was used to teach
preparation of grilled cheese, ham salad, Hamburger Helper, hot chocolate, ravioli, broccoli, chocolate pudding, tuna, and french fries (Mechling et al., 2008; Mechling & Stephens, 2009)

- CAI in combination with video modeling and a system of least-to-most prompting has been used to teach
  - cooking soup, making a sandwich, and setting the table (Ayers & Cihak, 2010)

Where has it been implemented?

- Resource classroom (1 Study)
- School affiliated apartment (2 studies)

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

The best place to find out how to implement CAI is through the following research to practice lesson plan starters:

- Using CAI to teach food preparation and cooking skills
  
  [link]

How does this practice relate to Indicator 13?

- Indicator 13 Checklist Item #3: Teaching cooking skills may reflect results of transition assessment information
- Indicator 13 Checklist Item #4: Cooking instruction may be a transition service designated in an IEP that will enable a student to meet his or her postsecondary independent living goal(s)
- Indicator 13 Checklist Item #6: Teaching meal preparation may be part of an annual IEP goal that supports a student's postsecondary independent living goal(s)

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)
  - 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
- Reason quantitatively and use units to solve problems (Number and Quantity, High School)
  - Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; and interpret the scale and the origin in graphs and data displays
• 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 State’s Career Cluster Initiative:
Essential Knowledge and Skills?

• Review safety and sanitation procedures applicable to the work area to ensure a
  safe and healthy work environment. (Hospitality and Tourism Cluster)
  o Examine overall safety procedures to maintain safe work areas in hospitality and
    tourism workplaces.

References used to establish this evidence base:

preparation skills: Acquisition, generalization, and maintenance. *Intellectual and

and system of least prompts to self-prompt cooking task completion by young
adults with moderate intellectual disabilities. *Journal of Special Education, 42*,
179-190.

via picture-based cookbooks and video recipes. *Education and Training in
developmental Disabilities, 44*, 218-236.