MAISA and the REMC Association of Michigan
Best Practices in Technology Integration
Plan

Title: Developing Cause & Effect Understanding in Severely Multiply Impaired Students

Subject(s): Basic Special Equipment Utilization

Intended Grade Level(s): Teen/Adult Severely Multiply Impaired Students

Description:

The student will be asked to activate a single access switch to create various sounds and images on the computer screen. Teaching techniques will include cueing, hand over hand manipulation, fading, direct, delayed, and intermittent reinforcement as provided within the software.

Objectives:

The main goal of this plan is to develop, encourage, and maintain active interaction with, and control over, the environment by activating single access switches to produce the desired effect.
The specific target skill to be acquired is demonstration of cause and effect while activating a single switch . Other skills that may be acquired but are not targeted are: tolerance of objects on student's tray/desk, tracking of sound, tracking of image on a screen, signaling awareness of change in environment, attending to computer screen, demonstrating alerting response to sound, responding to screen change, increasing functional use of limbs/body to activate the switch (switch may be activated by various body parts including but not limited to the hand, elbow, head, dependent on individual student physical disability). This lesson may also serve as a precursor to, or in combination with, switch activation lessons in which students are taught to use single access switches to control various environmental elements, and augmentative communication devices.

Materials/Hardware/Software:

To complete this lesson students should have consistent, frequent access to the following:

- A computer with single switch access hardware and sound card. Ability to record messages is a plus but not a necessity. Also, a 17-inch or larger monitor screen size is preferred but smaller sizes may work. For this population the larger the screen size the better as the

purpose of the lesson is for the student to focus on the computer screen. Additionally, updated sound cards with realistic speech sounds (as opposed to the robotic speech of the older cards and computers) are preferable but not necessarily a requirement.

- A single switch that the student has the ability to activate. This may be a puff switch, movement activated switch, motion detection switch, or a direct touch activated switch.
- Trays or mounted holders that allow the student to activate a single switch.
- For this lesson plan, 101 Animations, Windows 95 version, published by RJ Cooper & Associates will be used. However, nearly any software that is activated by single switch may be used. It is important that the student finds the images and sound produced by the hardware stimulating. The teacher may want to experiment (as budget and time allows) with different programs to find the one that works best for their student.

Technology Rationale:

Students with severe multiple impairment have little or no control over their environment. Activities of daily life are done either to them or for them. Technology provides for at least the possibility that these students may achieve a modicum of control over their lives.

Activities/Procedures:

Teacher pre-activities:

1. The teacher will need frequent access to a computer which has single switch hardware, sound card, and software that is activated by a single switch. In this case, 101 Animations, Windows 95 version, published by RJ Cooper.
2. The teacher will need to experiment with the kind of switch (puff, motion sensor, motion detection, etc.) and the placement of that switch to determine the combination that is easiest for their specific student to activate. Placement of the monitor and lighting conditions are also important considerations. A darkened room in which the only light source is the monitor itself may be the best environment for your particular student. Consultation with physical and occupational therapists when making this determination can prove to be beneficial.
3. The learning environment should be as isolated as possible from other activities and students to help eliminate, as much as is feasible, any potential distractions.
4. The teacher, optimally, should work with the student using a one-on-one ratio for at least 15 minutes per day. Other students may watch

the activity but care should be taken that these observers are not serving as a distraction to the student being focused on.

Activities:

1. Load the program on the computer and guide the student to the desired activation sequence. The teacher may physically guide the student to the activation through physical cueing or hand over hand manipulation. **Note:** Verbal cueing is not used in this plan. The focus student is severely impaired. Language cues require that the student first process the verbal input and then act upon it. Consequently, verbal cues may act as a distraction for the student rather than provide necessary/helpful information.
2. Once the switch has been activated monitor student for response to the sound/screen. The teacher may react to the screen with single words or short phrases but it is recommended that the teacher keep language to a minimum. As much as possible, allow the sound and screen to be the reinforcer, thereby allowing the student to focus on the screen rather than on the teacher's language or on the teacher.
3. Fade cueing a student becomes more proficient. Give as little cueing as possible throughout the exercise. Adjust switch placement as necessary.

Assessment/Evaluation:

Criteria:

As with any student in this functional range, assessment must be individualized. The teacher must determine what criteria will best reflect attainment of specific goals. Criteria used for this plan may include the following:

- Eye contact with switch
- Physical attempts to activate switch
- Physical response to sound/screen changes (e.g. startle response, turning toward screen/sound, smiling frowning, etc.)
- Eye contact with screen
- Number of independent activations within a predetermined time period.

Data Collection:

Progress within this population is almost universally slow. Therefore, data collected on a daily, or even weekly basis is often both time consuming and wasteful. It eats up teacher time that could be spent with the student and provides little if anything by way of meaningful information.

Baseline data is collected on areas of criteria identified for the first one or two sessions. Data can then be collected at rates of eight to nine week intervals. This will provide sufficient feedback to the teacher to evaluate criteria and monitor the setup of necessary environmental conditions.

An alternative to this method may be noting specific data of importance when it occurs. It is recommended that teachers using this technique list only achieved aspects of criteria rather than the multitude of negatives that the student is likely to receive.

Note: Due to the characteristics of this functional level, it is advised that work should continue at a consistent pace for several months. Teachers should monitor for very small signs that progress is being made. Document progress observed, even if it does not meet the pre-set criteria the teacher started with.

Follow-up Activities:

- Hook up a single access switch to an environmental control unit to turn on and off various electric appliances (lights, fans, mixers, blenders, radios, tape players, etc.)
- Hook up a single access switch to activate various battery activated items (e.g. toys that make noise or light up, tape/CD players, radios, etc.)

Name: Dan Betts

School District: Berrien County Intermediate School District

School: Blossomland Learning Center

Address: 711 St. Joseph Ave.
Berrien Springs, MI 49103