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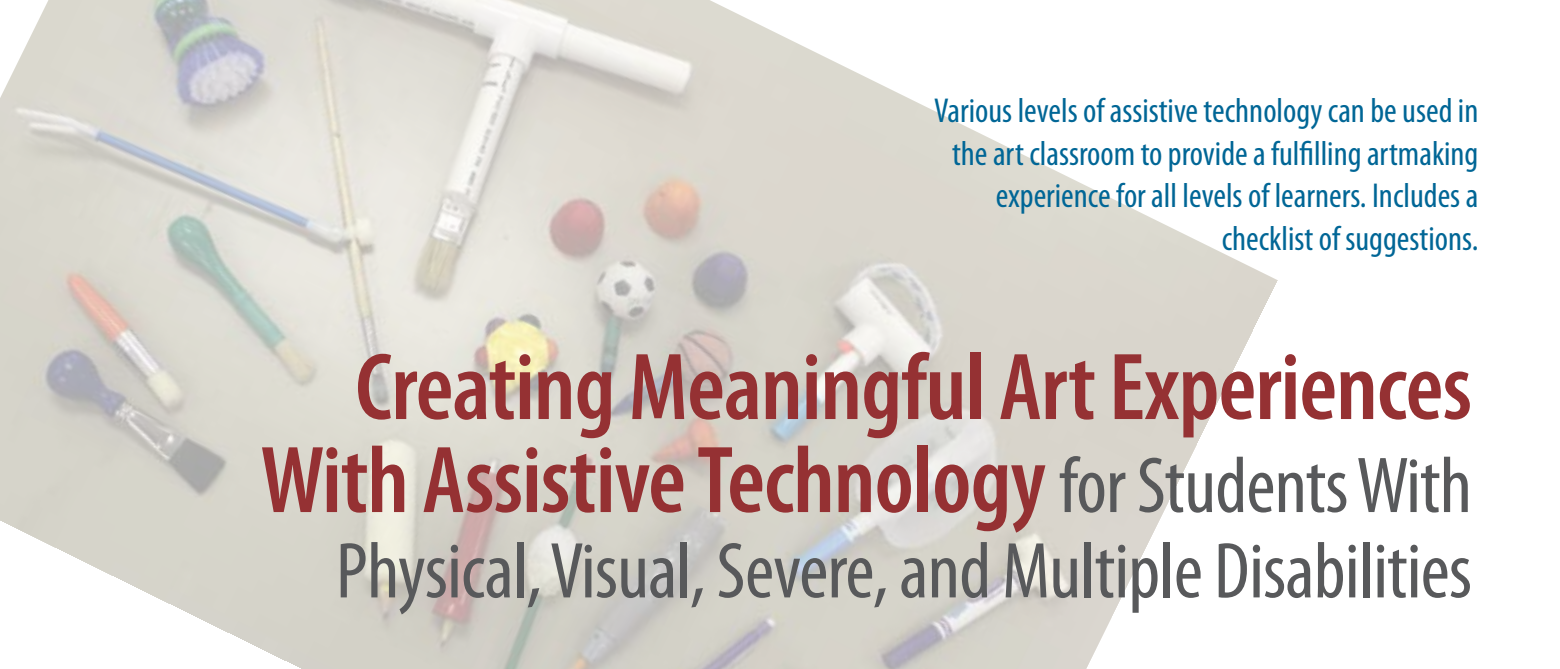
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Various levels of assistive technology can be used in the art classroom to provide a fulfilling artmaking experience for all levels of learners. Includes a checklist of suggestions.

Creating Meaningful Art Experiences With Assistive Technology for Students With Physical, Visual, Severe, and Multiple Disabilities

MARI BETH COLEMAN and ELIZABETH STEPHANIE CRAMER

The theme was *transportation* and students were engaged in making trains, automobiles, and planes from the found materials on their desks that they had selected earlier. The 5th-grade students "shopped" for their materials—each picking out treasured implements that inspired them to create (Székely, 2010). The teacher watched Henry create a roller skate as he folded and moved the materials on the lightweight board that was fastened to his wheelchair. The rolled-up towel the teacher placed under his elbow (Vize, 2005) allowed him more physical working ability. As Henry worked, the paraprofessional watched, grinning, and then she looked up at the teacher to smile. Henry's roller skate was a different way of expressing transportation—something the other children in the classroom did not seem to consider. The teacher noticed Henry's creative solutions before and felt pleased that she adapted her instruction with choices to accommodate each of her students. If she had not read literature and studied about disabilities, perhaps Henry would not have been as successful at making art pieces that communicated his stimulating ideas, she thought.

As the need for more information on how to accommodate and address all learners in the art classroom increases, strides have been made to provide literature to assist art teachers in improving outcomes for learners with disabilities. Loesl (2012) advocates for an adaptive art specialist in schools. The adaptive art specialist has additional certification to the K-12 art license and works with all teachers in a school on supporting the art needs of students with diverse learning needs. Loesl argues that art in schools provides an excellent opportunity for students to increase fine motor skills, practice multiple ways of mastery, and strengthen the ability to problem solve (p. 48). With few school systems employing art therapists, art teachers often must assume responsibilities for engaging students with a variety of learning and emotional challenges in the art classroom (Loesl, 2010). In addition to work by Loesl, several other resources may serve to guide art educators in this area. Gerber and Guay's (2006) *Reaching and Teaching Students with Special Needs through Art* clarifies the role of the art educator in relation to laws and provides a thorough view of working with and reaching students who are served in special education. *Understanding Students with Autism through Art* (Gerber & Kellman, 2010) assists art educators with ways

and concepts for better understanding of adapting curriculum and instructional approaches when working with students with autism. Both of these books contain practical suggestions for adapting or modifying tools or utilizing assistive technology. In *What to Do When Students Can't Hold a Pencil* (Zederayko & Ward, 1999), suggestions such as how to create a wristband that holds drawing implements and how to build a drawing tool are included. In the article, Zederayko argues that "inclusive art programs must be adapted so that active participation is possible for all students" (p. 18). Active participation in the art classroom provides students with disabilities a voice in expressing their ideas. Nyman and Jenkins (1999) advise in the introduction of their anthology that developing "creative and expressive capabilities of all of our students is of paramount importance" (p. 5). The call for learning how to provide optimal opportunity for all learners is gaining in strength and art educators are asking about best practice solutions.

The art classroom is a place where students of all learning levels come together to create artwork. A greater understanding of working with diverse populations comes through inclusion of teaching diverse groups of children of various abilities. The openness of art instruction (many solutions, not single answers) naturally allows the expressions

or voices of multiple learners. But how can all students participate successfully? Providing meaningful art experiences becomes even more of a challenge when students have severe cognitive disabilities or disabilities that impair motor or visual functions. With creative adaptations, students with physical, visual, severe, and multiple disabilities can participate in art more fully. One adaptation that can increase opportunities for heightened participation in art experiences for students with significant disabilities is assistive technology (Loesl, 2012).

While several practical resources exist regarding implementing the use of assistive technology with individuals who have physical, visual, severe, or multiple disabilities (Gerber & Guay, 2006; Gerber & Kellman, 2010; Zederayko & Ward, 1999), there is a paucity of research demonstrating the effectiveness of assistive technology in increasing access to the art curriculum through the use of assistive technology for this population of students.

Although dated, Peterson and Foley (1992) reported case studies on the use of multiple assistive technology devices (e.g., expanded keyboards, communication devices, pointing devices attached to the student's head, computerized drawing software) by students with physical disabilities and communication disorders. They found that technologies were able to open doors to art education that otherwise were unable to be opened. Peterson and Foley state, "Assistive technology enables such people to express and experience their talents for the first time with new forms of language—the visual and performing arts" (p. 30). Shih and Chao (2010) used no and low tech tactile strategies to improve ink and wash painting for students with visual impairments. In conjunction with specific verbalizations, students were taught a technique using tactile markers (paperweights) to outline the drawing area and different tactile strategies (e.g., feeling with palm) to create paintings.

Fisher, Frey, and Kroener (2013) discuss three dimensions that lead to successful access to the general education curriculum for students with disabilities. Their "triangle of supports" includes personal supports, instructional and assistive technology, and accommodations and modifications. While not directly examined in the context of art, research demonstrates the effectiveness of these types of supports for providing access to the reading (Strangman & Dalton, 2005), writing (Coleman & Heller, 2013), and math general education curriculum for students with disabilities. We have drawn from the literature in special education as a guide for supporting students with physical, visual, severe, or multiple disabilities in the art classroom.

The purpose of this article is to add to the body of knowledge by providing ideas generated from collaboration between the fields of special education and art education that we feel will benefit art educators. As a former special educator and former art educator— each with at least 10 years of K-12 teaching experience—we have combined knowledge and ideas from our experiences, literature from our respective fields, and details from our areas of research to present information that we feel will enhance instruction in art classrooms for students with physical, visual, severe, and multiple disabilities. Additionally, several resources on assistive technology were used to identify technologies that can be used to provide access to the art

curriculum for this population of students (Bryant & Bryant, 2003; Coleman, 2011; Coleman & Heller, 2009; Cook & Polgar, 2008). *Assistive technology* (AT) is defined in the Individuals with Disabilities Education Improvement Act as: "any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability" [20 U.S.C. § 1401 (1); 1401(2)]. Basically, AT is anything that helps a student with a disability perform a task that he or she otherwise would not be able to perform or would perform less efficiently. As indicated in the federal definition, AT can be "any item." For example, if a student who has hemiplegia—or one-sided paralysis—uses a piece of scotch tape to affix her paper to a desk so she is able to write without the paper moving around, the scotch tape becomes AT (Coleman & Heller, 2009).

There are four levels of AT: no technology solutions (i.e., accommodations or modifications)**, low technology, middle technology, and high technology** (Bryant & Bryant, 2003; Cook & Polgar, 2008). A student may require only one type of technology to be successful in the classroom or may require a combination of technologies from multiple levels to reach his/her full potential (Coleman, 2011). For students with mild disabilities, no technology solutions include accommodations (i.e., adaptations to teaching and learning activities that do not alter performance on state-required standards). This would include changes such as increased time to complete assignments, shortened assignments, the use of a word processor to complete written assignments, the use of specialized equipment (e.g., large-handled paintbrushes), or changes to an assessment format that do not decrease the level or breadth of standards covered by students without disabilities (Heller & Coleman, 2009). Students with more significant disabilities, particularly those with intellectual disabilities, often need modifications to tasks in order for them to participate fully. Modifications consist of changes that alter the performance of standards-based skills such that the student is meeting fewer or lower-level standards than peers who do not have disabilities (Alberto & Waugh, 2009; Coleman & Heller, 2009). Given a standard such as, "Describe how different expressive features and organizational principles cause different responses" [National Visual Arts Standards, 2.b.], a modification might include having the student identify art elements or describe expressive features by pointing to one or two elements or features without demonstrating comprehension of perceived responses. The most crucial thing to consider with accommodations or modifications is making the student as independent as possible, so that he or she has control over art experiences.

Low technology AT devices include items that are nonelectronic, not very expensive, easy to acquire, or easy to make (Bryant & Bryant, 2003). This would include large-handle paintbrushes, grips added to writing utensils, round-handled crayons, and materials placed on slanted or nonslip surfaces. Middle technology AT devices are those that are battery-operated or noncomputerized electronic technology (e.g., business calculators) and generally are not very expensive. An example of a middle technology device for art is Spin Art, which has been adapted to allow students to operate it with a single switch (Coleman, 2012). High technology AT devices are those

Art teachers need to have more knowledge about a wider array of solutions for students who have physical, visual, severe, and multiple disabilities.

that are computerized or mechanical and generally more expensive (Coleman & Heller, 2009). Computer software for drawing and painting would fall in this category. Some students need to use all levels of technology to be successful. For example, a student with a visual disability may need additional time to complete assignments (no tech accommodation), larger print materials (low tech), a lighted magnifier (middle tech), and screen enlargement software (high tech).

For students with disabilities, the accommodations, modifications, and AT devices required to participate in art class should be included on the Individualized Education Program (IEP). The special education teacher should support the art teacher by helping to create adaptations that will be implemented in the art classroom. Conversely, Guay (2006) states, "Art teachers who need information or assistance should seek out peers and special education teachers willing to share their expertise and visit each other's classrooms, gather for discussion and support, and learn from each other" (p. 11). Unfortunately, this may not be occurring in a manner that lends itself to meaningful art experiences for many students with physical, visual, severe, and multiple disabilities.

In an unpublished study during which approximately 80 art educators were surveyed about their knowledge and experiences teaching students with physical, visual, severe, and multiple disabilities—including the use of AT, Coleman et al. (in review) found that approximately 40% of art educators never received support or training in the area of AT. More surprisingly, only approximately half of the art educators who responded said they regularly collaborate with special educators about the needs of these students. Most of the responding art teachers felt it was important for students with physical, visual, severe, and multiple disabilities to participate in art projects and the social aspects of art classes. However, more respondents reported receiving minimal to medium levels of training in teaching and assessment strategies for these students. With regard to specific types of AT, the majority reported using large-handled paintbrushes, but many AT solutions were used by small numbers of respondents (e.g., computerized or battery-operated painting options). These findings suggest that special education teachers need to do a better job of consulting and supporting art educators who work with their students, and art teachers need to have more knowledge about a wider array of solutions for students who have physical, visual, severe, and multiple disabilities—including the use of AT (Cramer et al., in review).

Although one resource cannot substitute for adequate training, we have created a checklist of assistive technology solutions that we hope will be useful for art educators to use in their classrooms to enhance art experiences for students with physical, visual, severe, and multiple disabilities. The Checklist of Assistive Technology Solutions for Enhancing Art Instruction for Students with Physical, Visual, Severe, and Multiple Disabilities (see Appendix) is organized by type of student limitation that would require assistive technology

(e.g., physical limitations, visual impairments). Ideas for technologies included on the checklist were acquired through the authors' experiences along with ideas from sources on assistive technology (Bryant & Bryant, 2003; Coleman, 2011; Coleman & Heller, 2009; Cook & Polgar, 2008). The checklist, similar in format to the Assistive Technology Checklist: Curriculum Access for Students with Physical Disabilities (Coleman, 2011), is not designed as an exhaustive resource, but as a starting point for considering AT solutions to meet individual student needs for full participation in art class. Before using the checklist, the art educator should refer to the types of limitations described in the student's Individualized Education Program (IEP). The art teacher can then refer to the corresponding checklist section(s) for possible solutions that might enhance instruction in the art class for that student. Ideally, art educators and special educators would use this checklist when collaborating to help design art adaptations for their students with physical, visual, severe, or multiple disabilities. In the next section, we briefly describe the checklist and some of the specific solutions it contains.

Understanding the Checklist and Types of Assistive Technology for Art

■ No Technology Solutions (Accommodations and/or Modifications)

The first area on the checklist includes some of the commonly used accommodations and modifications with no technology solutions. For the most part, these are self-explanatory. Even more than for the adaptations that require technology, it is important for teachers to realize that the no tech adaptations serve as a means of access to the art curriculum for students with disabilities. Richard Lavoie, an expert in special education whose training video about teaching students with learning disabilities is part of the curriculum in many teacher training programs, comments: "'fairness' is not equal, identical treatment; rather, 'fairness' means that every student receives what he needs. Because each individual's needs are different, 'fairness' dictates that their programs and expectations will be different" (Rosen, Lavoie, Eagle Hill School Outreach, Peter Rosen Productions, & PBS Video, 2004). Even students whose cognitive level dictates that they should be meeting all grade-level art standards may need accommodations such as increased time or decreased number of assignments in order for their access to art instruction to be "fair." It is important for art educators and special educators to work together to ensure that all required standards are being met (i.e., all standards for students receiving accommodations; a few key standards or a few key elements from the standards for students receiving modifications). This may mean a written assignment with bullet points covering all required assignment components rather than a lengthy essay for a student with extremely slow typing skills.

In the Solutions That Do Not Use Technology portion of the check-list, partial participation (bullet 8) is very important. For students with physical, visual, severe, and multiple disabilities, it is important that the student retains as much control over the art activity as possible. Sometimes, well-meaning adults provide too much support, thus diminishing the meaningfulness of the art experience for students with more significant disabilities. Partial participation is a teaching strategy that allows the student to do as much of the task independently as possible and then receive support for the rest (Doyle & Giangreco, 2013). For example, a student with multiple disabilities including severe intellectual and physical disabilities may be able to paint, but not assemble parts of a mobile. The student should be allowed to paint and then provide input on the rest of the project by directing an adult or pointing and gesturing how she wants the project assembled. She may also hold part of the string while a knot is tied. The idea is that she is as involved and as independent as possible.

■ AT for Students With Physical Limitations

It is vital that teachers not assume that physical disabilities are always accompanied by intellectual disabilities (Heller, 2009). The decision to use accommodations or modifications will depend on each student's cognitive ability. If the student has the mental capacity to learn the concepts, he should receive accommodations and should participate in alternative ways if necessary. We broke AT Solutions for Physical Limitations into two sections: AT for positioning to enhance access to art activities (gross motor solutions) and AT to enhance access to art activities for students with fine motor limitations. Positioning of students and their materials is crucial. Individuals with physical disabilities must fight gravity and their own bodies at times to perform even the simplest controlled motor movements (Heller, 2009). A simple position change—such as using a rolled-up towel to elevate a student's arm—can make fine motor motions much easier to perform. One example of position change is the use of a slantboard (see Figure 1). Changing the slant of a surface by a few inches can move a student's hand into a better position to facilitate drawing or painting. Placing materials closer to the student's dominant side (e.g., position wheelchair sideways next to easel so the dominant hand is closer to the canvas), can make painting much more accessible for a

student with limited physical range (Heller & Coleman, 2009). Another item on the checklist is the use of nonslip material for stabilization. In the process of trying to stabilize themselves, students with physical disabilities often inadvertently put pressure on materials, causing the materials to slide around, on, or off of the work surface. Using inexpensive rubber shelf liner or Dycem, an expensive but extremely nonslip material, can keep materials in place without requiring assistance from an adult or peer (Heller & Coleman, 2009).

For students with fine motor limitations, a wide array of AT can make a difference in how the student accesses art instruction. The checklist begins with physical adaptations that do not require technology (e.g., student holds implement in mouth or toes, student receives hand-under-hand assistance from a peer or adult). Some of the solutions on the checklist involve partial participation (e.g., precut items, student creates separate pieces of a clay project but someone else assembles the final product according to the student's verbal directions). Several of the checklist solutions involve alternate materials. Larger and softer surfaces allow for better gripping and better control of the art implement. There are commercially available adapted paintbrushes, scissors, markers, crayons, and crayon holders. However, teachers can use ingenuity to come up with solutions that are inexpensive and meet a student's needs. For example, larger or softer handles for pencils, paintbrushes, markers, crayons, and clay-working tools may be created with trim paintbrush roller covers, PVC pipe, Styrofoam, and more (see Figure 2). Loesl (2012) offers the following advice regarding adaptive art implements:

Adaptive art tools should be standard equipment in the art room for all students to use, not just for the students with disabilities. As long as the tool is available when the specific students need it, it should not be kept in isolation from peers. It is important to remember that an adaptive art tool only becomes assistive technology when the student *requires* that particular tool to access his art making. Successful integration of adaptive tools into the art classroom for use by students with special needs is increased when the adaptive tools are available to all. Many art tools were not especially designed to be adaptive, but due to their features, are quite adaptive. (p. 50)

Figure 1. Examples of surface adaptations.
Left to right: commercially available adjustable slantboard, rubber shelf liner to secure slantboards or other materials on a table, slantboard made from a clipboard propped on stacks of erasers (middle front), slantboard made with a spool holder and baking sheet so magnetic items will stick to it (middle back), slantboard made from stacked binders with a clipboard clip attached.

Figure 2. Examples of adapted painting, coloring, and writing implements.
Paintbrush options from top to bottom: interchangeable PVC pipe paintbrush, dish scrubber used for painting, paintbrush secured with a mouthstick, three larger-handled paintbrushes. Crayon solutions at the top middle: homemade egg carton crayons, crayons attached to small rubber balls, commercially available multicolor crayon holder (yellow, center), commercially available finger crayon (orange). Marker solutions on the top right: PVC and Velcro strap marker holder, marker holder made from a gallon jug and Velcro, PVC marker holder. Pencil or thin paintbrush solutions at the bottom, from left to right: trim paintbrush roller cover (white, center), BIP Grip (red, commercially available enlarged surface for pencils), Styrofoam egg, commercially available weighted pencil holder, commercially available pencil grip, pencil grip made from a curler sponge, commercially available pencil grip.

When appropriate, students who cannot draw by hand might use alternate sources to acquire or create pictures that can be incorporated into a piece of art (e.g., stamped images or magazine pictures incorporated into a nicho). Battery-operated spinning art or scribbling devices can provide a way for students to "color" when they have such limited physical abilities that they can only press a switch (Peterson & Foley, 1992). A device called a *battery interrupter* can be placed between the battery and contacts to make the device switch-adapted. For example, Doodle Doug (see Figure 3) is a scribbling device that is usually placed on a surface and moved by the child to change the composition of the doodles. When adapted with a switch, as shown in Figure 3, a student with a severe physical or cognitive disability gains control over activation of the scribbling (Coleman, 2012). When other students are allowed to draw or paint, providing Doodle Doug would allow independent creation of a product for a student with severe disabilities. The doodles could be incorporated into a larger product, if appropriate, giving the child more ownership over at least part of the

product's creation. Computerized drawing or painting software might be used by students who have limited physical abilities but can control a mouse, joystick, trackball, or other adaptive computer input device. One example of this is a free software program called Tux Paint (www.tuxpaint.org) that provides a lot of stamps, shapes, colors, and special effects that allow for creativity for students who could not produce anything visually recognizable by hand. For students with fine motor limitations and higher cognition, being able to produce a recognizable picture that can be incorporated into another product may be more meaningful than having someone else draw or paint for them. These solutions may not be appropriate for all activities, but may provide greater independence for students with physical disabilities in activities where appropriate.

■ **AT for Students With Visual Impairments**

Vision-related solutions include alternative modes of accessing text such as large-print materials, print read with the use of magnification devices, and alternative modes of text access (i.e., book on CD or computer with text-reading software). Magnification devices such as hand-held magnifiers or Closed Circuit Television (CCTV) can be used to magnify text, pictures, or other materials (Li, Parker, Smith, & Griffin-Shirley, 2011). A CCTV looks like a television screen sitting on a pedestal. On the bottom of the screen, there is a camera that projects a magnified image of any item placed under it onto the screen. Increased backlighting allows many students with low vision to see their work more clearly. This can be accomplished with a light box, a

# …limited communication does not mean limited cognition.

Figure 3 (left. Doodle Doug, battery-operated scribbler, adapted to make accessible with a switch. A battery interrupter has been added to interrupt the flow of electricity. The large green switch is plugged into the battery interrupter; a student with very limited movement can color with markers independently by pressing the switch to make Doodle Doug operate.

Figure 4 (below). Example of a low-tech communication board for a painting activity.

device similar to a Light Bright, which contains a light bulb underneath a frosted—but see-through—plastic surface. Backlighting can also be accomplished by having a student with low vision view images on the computer. Rarely will you work with a student who has no vision, so color or lighting solutions may be sufficient. It is important for art teachers to remember that students with very limited vision have difficulty with concept development; more abstract concepts, such as expression of feelings in a piece of art, may need instruction through other means (e.g., tactilely different materials, listening to a drama with expressions of emotions) (Shih & Chao, 2010). Using tactile materials may supplement or supplant visual perception and create meaningful connections for students with severe vision losses (Heller, 2000; Heller, Brackett, & Scroggs, 2002). Along these lines, students with more severe vision loss might use tactile materials instead of painting or drawing tools. For example, a student creating a beach scene might use sandpaper, cotton balls, and puff paint to create his or her beach image. In this case, however, the student would have to have received prior instruction on the symbolism of each of these textures (e.g., exploring the feeling of sand).

■ AT for Students With Communication Limitations

Students with physical, severe intellectual, or multiple disabilities often have decreased communicative abilities (Heller, 2009). It is important to reiterate that limited communication does not mean limited cognition. Regardless of cognitive level, communication is a vital part of participating in classroom instruction. For students with severely limited communication skills, using communication devices can increase meaningful participation (Calculator, 2009). Art teachers should keep low technology (i.e., paper) communication boards in their classrooms to be used for students to participate in instruction by making choices, indicating preferences, or using interactive phrases (e.g., "Do you like that?"). For students with severe intellectual disabilities, providing one or two pictures would allow the student to increase his control over the art process by engaging in simple choice-making (Van Tubbergen, Omichinski, & Warschausky, 2007). For students with higher cognitive abilities, the communication board may contain more words along with interactive phrases. Figure 4 shows a low technology board created with Boardmaker Software, a program commonly used in special education classrooms. If the software were not available, a similar board could be created using tables in a word processor with drawings, clip art, or photographs. This example
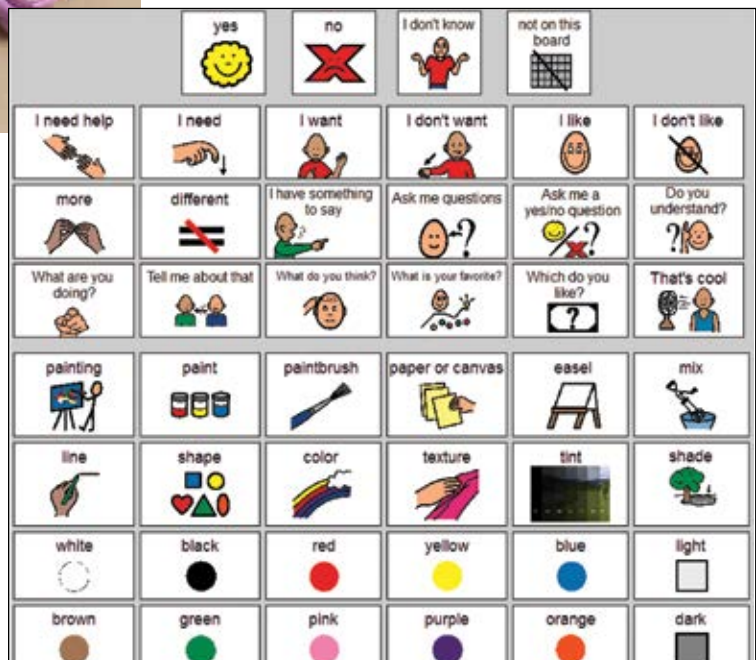
contains many possible combinations of messages that would allow for a lot of participation and control within the art classroom. Boards with larger or smaller numbers of items should be created based on the cognitive and linguistic needs of the students who will use them (Light & Drager, 2007). If the student has a middle or high technology communication device, the art teacher should collaborate with the special educator or speech language pathologist to develop a plan to incorporate the device into the art classroom. Middle technology (i.e., battery operated) communication devices may contain one spoken phrase or several phrases. These might be used for something simple such as, "More paint, please," or could contain several color choices to encourage the student to engage in more active participation. High technology communication devices usually allow the user to communicate a wide variety of messages by changing to different screens programmed within the software. This would allow the student to have screens containing activity-specific vocabulary so there could be a different screen for painting than for printmaking, and different screens for concepts addressed in the curriculum, such as elements and principles of art or topics in art history (Coleman, 2012).

To reiterate, this checklist is not exhaustive. However, we hope it will serve as a starting point for art teachers to use when planning

instruction for students with physical, visual, severe, and multiple disabilities. As Loesl (2012) states,

> Students with disabilities need access to art making experiences as much as or more than their peers. Students with physical disabilities need more and longer opportunities to move their hands and bodies and to increase their strength and independence... Through art, students with cognitive challenges learn to concretely work through their understanding of abstract concepts. (p. 48)

Additionally, Shih and Chao (2010) feel that creating art "can provide positive feelings of accomplishment and achievement" (p. 162) for students with severe visual impairments. We hope these ideas will help provide access to meaningful art experiences in your classroom.

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Appendix
**Checklist of Assistive Technology Solutions for Enhancing Art Instruction for Students
with Physical, Visual, Severe, and Multiple Disabilities**

Student: _____ Date: _____

Student's Diagnosis/Eligibility: _____

Student's Capabilities in Art with/without Assistive Technology: _____

Student's Functional Limitations that Require Assistive Technology: _____

Complete the following checklist for assistive technology solutions that may be beneficial for this student to participate fully in art class.

Solutions That Do Not Use Technology (Accommodations and/or Modifications)

- ❏ Peer or adult assistance in gathering materials
- ❏ Increased time to complete art assignments or assessments
- ❏ Decreased number of assignments or assessments
- ❏ Decreased number of written assignments
- ❏ Directions given in an alternate format (e.g., spoken instead of written)
- ❏ Directions broken down into small steps
- ❏ Additional explanation of requirements
- ❏ Partial participation (student creates as much of project possible while someone else creates the rest)
- ❏ Modified grading rubrics requiring reduced number of standards met (e.g., mastery of one concept instead of all concepts presented).
- ❏ Other: _____
_____

Assistive Technology for Students with Physical Limitations

▪ AT for Positioning to Enhance Access to Art Activities
- ❏ Adapted position of desk (e.g., desk raised or lowered)
- ❏ Adapted position of materials (e.g., placement of materials to student's dominant side).
- ❏ Classroom adaptations which allow extra room for mobility or positioning equipment (e.g., wider aisles for wheelchair or walker)
- ❏ Use of a slantboard or other slanted surface for students with decreased range of motion
- ❏ Use of nonslip material for stabilization (e.g., rubber shelf liner placed under materials)
- ❏ Use of rolls, wedges, or other equipment to stabilize student during activity (e.g., rolled up towel placed under arm)
- ❏ Other: _____
_____

▪ AT for Students with Fine Motor Limitations to Enhance Access to Art Activities
- ❏ Student uses an alternate body part (e.g., paints with brush held in mouth or with foot)
- ❏ Student receives hand-over-hand or hand-under-hand assistance (student retains control of paintbrush or writing utensil)
- ❏ Large handled paintbrushes or writing utensils
- ❏ Larger sized materials (e.g., larger shape cutouts)
- ❏ Adaptive scissors (double handle loops, spring open scissors, scissors mounted on a platform for one-handed use)
- ❏ Precut materials

- ❏ Student creates parts of clay project and directs a peer or adult to put pieces together
- ❏ Students uses adaptive tools instead of hands to shape clay
- ❏ Stamps used instead of writing or drawing
- ❏ Battery-operated painting device (e.g., Spinart, Doodle Doug) used so student can be independent instead of having someone else paint for him/her
- ❏ Magazine pictures or pictures/clipart acquired from internet sources used instead of drawing by hand
- ❏ Computerized drawing or painting program used instead of painting/drawing by hand
- ❏ Student is given an alternative activity which allows for more independence (e.g., switch-operated computer program teaching colors or shapes for students with severe intellectual disabilities)
- ❏ Other: _____
_____

AT for Students with Visual Impairments

- ❏ Larger text created with word processing software or copier
- ❏ Magnifiers (nonelectronic or lighted)
- ❏ Electronic or computerized magnification (e.g., materials viewed using a Closed Circuit Television or viewed on the computer using screen-magnifying software)
- ❏ Text provided auditorily using an MP3 player, specialized text-reading device, or computer with text-reading software
- ❏ Use of tactile rather than visual materials (e.g., instead of different colors, student uses different textures)
- ❏ Light box (similar to a Light Bright or created from a Light Bright) used to provide visual contrast while student is working
- ❏ Other: _____
_____

AT for Students with Communication Limitations

- ❏ No technology solutions such as signing or gestures.
- ❏ Nonelectronic communication devices with pictures of art materials or activity-specific vocabulary (e.g., cardstock with pictures on which student points to indicate choices).
- ❏ Battery-operated communication devices with activity-specific phrases (e.g., BIGmack Communicator programmed with the phrase, "I need more paint.")
- ❏ Computer-based communication devices programmed with a page for each art activity (e.g., separate pages for painting, sculpture, paper-making, etc.)
- ❏ Other: _____
_____