Fine motor is a term used to describe bodily movements that require a high degree of control and precision. Examples of these types of movements include drawing shapes, writing, cutting with a scissors, and using eating utensils (Logsdon, n.d.). Some children experience difficulty with their fine motor skills, which may be a result of neurological problems or delayed development (Logsdon, n.d.). In many cases, children are prescribed occupational therapy to help these students catch up to where they need to be developmentally. Students may also need modifications or assistive technology in order to be successful academically.

According to the IRIS Center for Training Enhancements (n.d.), many types of assistive technologies and services are available to help students with fine motor difficulties become more successful in their academic careers. In order for a student to have access to assistive technology and other forms of special education, they must meet the requirements included in the Individuals with Disabilities Act (IDEA) (ICTE, n.d.). The IDEA Act states that any student with a disability must have access to a free and appropriate education (FAPE) that will help prepare them for further education, employment, and independent living (ICTE, n.d.). When a student meets the requirements for special education and accommodations, an individualized education plan (IEP) team assembles to decide what types of accommodations and assistance the student might benefit from in the educational environment (ICTE, n.d.). Many factors must be considered when choosing which technology to use for an individual student. For example, it is important that the IEP team ensures that the particular technology meets the specific needs of the individual child (ICTE, n.d.). The IEP team should also make sure the technology is age appropriate for the student and that the student receives proper training on how to use the particular piece of equipment or device (ICTE, n.d.). It is also important that teacher is familiar
with the technology or device and that he/she educates other students about the assistive technology and how it is beneficial to the particular student (ICTE, n.d.).

Once a student begins using assistive technology in the classroom, the student’s teachers must closely observe the student and collect data to make certain that the student continues to benefit from the technology (ICTE, n.d.). This should be done on a regular basis so that appropriate modifications and changes can be made if necessary.

Many students will show observable warning signs that point to fine motor difficulties. Signs may include difficulty with writing or frequent discomfort when writing (Wells, n.d.). There may be a difficulty controlling the speed of hand and arm movements leading to uncontrollable motor movements resulting in untidy work. Students should develop and display appropriate hand skill development between 3 and 5 years old (Bly, 2003). Fine motor skills are displayed by hand separation, cutting, wrist extension and translation skills. Trouble in one or more of these areas may signify a difficulty with fine motor development (Liddle and Yorke, 2003).

There are several different elements of fine motor development that can be addressed using various types of assistive technology. For example, fine motor development requires proximal stability, distal mobility, intrinsic muscles and hand arches (Smith, 2003). To assist with proximal stability difficulties, students can practice weight bearing activities for arms and hands or work in a vertical plane. For example, students may use assistive technology, such as a slant board, to improve muscle strength and writing ability (Smith, 2003). For students with distal mobility difficulties, they can focus on hand manipulation tasks such as finger spelling (Kurtz, 2003). Children who have weak intrinsic muscles used for refined precision and control can strengthen these muscles by picking up fragile objects with tweezers (Smith, 2003). Students
with difficulties stabilizing their hands for writing can improve their hand arches with weight bearing activities and fine motor manipulation tasks (Smith, 2003). For example, students may use a HandiWriter stretch band to form the recommended “tripod grip.”

The HandiWriter (HandiThings, 2011) is a stretch knit band used to wrap around the wrist and pencil to facilitate the correct positioning and holding of writing tools. It is recommended for use with children with incorrect grasp patterns (HandiThings, 2011). The HandiWriter is easy to wear and students are attracted to the bright colors and charms available (HandiThings, 2011). First, the large loop is placed around the wrist. The charm is held in the palm of the hand with the little and ring fingers. The thumb, first and middle fingers grasp a pencil and the top loop of the HandiWriter is placed around the top of the pencil (HandiThings, 2011). This pulls the pencil back into the web of the hand, and forms the therapist recommended “tripod grip” (HandiThings, 2011). HandiWriter bands are sold individually or in sets of 12, 50 or 100. Different colors and charms are available. Due to the inexpensive, straightforward support the HandiWriter provides, this type of assistive technology is great for those with fine motor difficulty or for the entire class as they maintain correct pencil grip.

The Brother PT-18R Label Maker is an assistive technology solution for students with fine motor difficulties. The features of a portable label maker make it easy for students to formulate letters and produce written work (Brother International Corporation, 2011). Typing words or phrases will save them time and allow students to complete in-class tasks with the speed and efficiency of the entire class (BIC, 2011). Once the student has typed in the text, they can print the label and affix it to the worksheet or document. This particular label maker has a docking station that allows it to be recharged on the desktop (BIC, 2011). The labeler makes it easy for students to type quickly and accurately, using the “label preview” as well as templates
and symbols for more complicated work (BIC, 2011). The label maker assistive technology is best suited for students in grades two and above. Teachers may plan for lessons and worksheets to accommodate students in their class with this difficulty. Leaving extra space on the page for the labels to fit will encourage students with fine motor weakness to easily participate in class activities.

The Apple iPad is a touch screen tablet computer that serves as a cross between a Smartphone and a laptop computer. The devices portability and user-friendly interface make it a popular choice for all ages and abilities (Apple, 2011). The iPad's large touch screen (9.5 in. x 7.3 in.) has peaked the interest of therapists, doctors, and educators who work people with disabilities, specifically the loss of fine motor coordination (Apple, 2011). Some of the downloadable programs, apps, have targeted early childhood students with disabilities and are aimed at the practice of fine motor skills in a fun and educational way (Logsdon, n.d.). Bubbles ($1.99) is a simple app that students can use to practice fine motor with cause and effect reactions as they pop bubbles on the screen (Prupas, 2010). Wheels on the Bus HD ($1.99) is an engaging musical app that students can use to creation their own animation; they can record their own voice as part of the song and dance (Prupas, 2010). Another example of an app to assist those with weak fine motor development is the Uncolor ($.99) app (Prupas, 2010). Students that are not ready to draw on the iPad can rub the screen to “uncolor” a picture. The Interactive Alphabet ($2.99) app provides a great outlet for practicing with and developing fine motor skills as well as the concept of cause and effect (Prupas, 2010). In addition, I Write Words ($2.99) is an excellent app that allows students to practice writing letters, numbers and words (Prupas, 2010). Using their finger, the child can trace the letter on the iPad. The program is well designed with kid-friendly images and sounds, yielding excellent results; some schools have reported
implementing the iPad in Kindergarten classes for all students. When teaching pre-writing skills, the hands-on interactive activities are excellent for students who have difficulty with fine motor such as writing with a pencil (Apple, 2011). Kinesthetic and tactile writing activities are especially effective for students with special needs like these (Logsdon, n.d.).

The HandiWriter, the Brother PT-18R Label Maker, and the iPad are three examples of assistive technology that can be used to help children with fine motor disabilities or delays to be more successful in their academic careers. These tools also demonstrate the varying degrees of complexity and technological use of assistive technology. Some tools can be as simple as rubber pencil grips and require no technology. Other assistive technology tools are very complex and involve large amounts of technology and often require appropriate training in order to use the tools effectively. The most important thing to remember when using assistive technology is that it is crucial that the technology or tool meets the specific needs of the individual child. The tools should help the student achieve the desired goals and outcomes more successfully than if the student attempted to reach the same goals without any assistance.
References


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