

# Chapter 10

## Switch Technologies

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### **ABSTRACT**

*The purpose of this chapter is to provide information about the use of switches in the field of assistive technology. Information included in this chapter will benefit assistive technology professionals, case managers, educators, physical therapists, occupational therapists, speech and language pathologists, rehabilitation counselors as well as students of these professions and consumers. The information will apply to all age groups including birth to six, all levels of primary and secondary education, adulthood and senior services. This chapter will go from assessment to implementation. First this chapter will look at the background information including the what, why, when, and where of switches. Next, this chapter will provide instruction on a variety of assessments available to aid in matching an appropriate switch to a client's skill set and task requirement. The chapter also discusses types of switches that can access toys, computers, communication devices, environmental controls, recreation, and mobility options. Finally, the chapter presents strategies for successful implementation including the prompt hierarchy, an action plan, data collection, and writing assistive technology into the Individualized Education Program.*

### **INTRODUCTION**

A switch is a device or piece of equipment commonly used to turn things on and off as in a light switch. The light itself is a separate fixture with light bulbs and wiring and a plate for securing it to the ceiling with nuts and bolts. The light switch is

not the light fixture; the switch simply turns it on and off. A switch used as an assistive technology (AT) device turns things on and off as does a light switch. It is important to point this out when talking about switches and AT because using a switch with a student or client is not an activity, it is simply the access to the activity, turning it on and off, making the connection. A switch provides access to an activity for the physically and cognitively challenged.

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A switch may be a simple on and off connection or a complex electronic switch programmed to perform a multitude of functions. A switch is used in conjunction with other technologies, allowing access to a communication device or computer, making it possible for someone who is physically or cognitively challenged to interact with the same instructional technology the rest of their classmates have access to.

Technology is so vast with definitions for an expansive list of technologies. The differentiating phrase for AT is in the IDEA (Individual with Disabilities Education Act) definition describing the user as “a person with a disability.” The identification of “a person with a disability” may range from mild to severe and may involve cognitive impairment or physical impairment or both. Individuals with disabilities have the potential to benefit from technology in many areas including communication, education, employment, and independent living.

The intent of this chapter is not to delve into the definitions and historical background of AT, but to focus on the specifics of switch technologies. For an in-depth study of the historical background of AT and the historical legal mandates, Blackhurst (2004) writes a chapter on Historical Perspectives in the *Handbook of Special Education Technology Research and Practice*.

The implementation path for information/educational technology (IT/ET) may require acquisition of the technology, it may require instruction, a trial period with follow-up support and this is enough for the individual to benefit from the technologies available to help them become more informed, efficient and independent at school and in the work place. Individual's with significant physical impairment may also benefit from the same technologies and implementation path including acquisition, instruction, trial and follow-up support, though may have the inability to access the technology due to physical or cognitive limitations. This is when switch technologies or access must be considered. The implementation of

AT for access to communication, education, employment, and independent living for individuals is the focus of this chapter. The many applications of IT and ET available once access is achieved through switch technologies are extensive and will not be covered in this chapter.

The objectives of this chapter are to:

- Provide information of best practices in the area of switch technologies.
- Provide information of various switch technologies in order to assess clients and make appropriate recommendations.
- Provide information of appropriate assessments to be used in selecting and locating switches for maximum benefit to the client.
- Provide information in teaching strategies for successful switch use.

## **SWITCH BASICS**

### **What**

A switch is a device used to connect and disconnect an electrical circuit, for example a light switch. To further explain a switch as it is used as an AT device, the Merium-Webster dictionary defines assistive as designed or intended to assist disabled persons and defines technology as a manner of accomplishing a task especially using technical processes, methods, or knowledge.

Having said this, a switch used as an AT device would be a device used to connect and disconnect an electrical circuit, intended to assist disabled persons to accomplish a task especially using technical processes, methods, and knowledge. The key word and important point to understand in defining a switch as an AT device is that a switch is a “device”, not an activity. The device assists a person to accomplish something; it is the access to an activity. Access is the means by which a person controls an AT device. Computers, toys, EADL's may all be accessed by

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