

Creating an ADA Compliant Workstation

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One of the most important parts of a human's life is to right to an education. For persons with certain disabilities, that can often come with a major challenge, but it does not have to. In many instances, the needs of the disabled are often neglected or forgotten. Whether it is handicapped parking, inclines or elevators in multilevel buildings, or brail on public signs the disabled deserve comfort in living. As equal citizens, persons with disabilities have the right to the same education as everyone and deserve to have efforts made to assure that they are accommodated to obtain that right.

In any classroom setting, whether students have disabilities or not, the environment plays a major role in the learning process. If the lighting in the room is too low, student may lose motivation and become tired and unwilling to cooperate. If the temperature is too high or too low, students' lack of comfort will also interfere with learning.

Now imagine the struggles that persons with disabilities face if their needs are not accommodated. Inability to use textbooks because they cannot see, inability to hear what is going on in the classroom due to hearing impairments, inability to utilize technical equipment because of physical ailments, and so on. These frustrations make it almost impossible to learn. Most schools have programs in place for learning disabilities and other mental ailments, therefore, the focus on this proposal will be meeting the needs of persons with hearing, visual, and motor skills because they are often neglected in schools. The key to making an effort to meet each of these needs is to become aware of the major areas of disabilities and understand how to accommodate those disabilities properly.

The following proposal lays out the necessary infrastructure requirements needed for Topsail High School's Special Education class to meet ADA requirements via a computer workstation. The proposal will discuss the major disabilities of focus and tools that are available to make the learning environment equal for everyone. Once the issues are laid out, a schedule of implementation will be presented in the form of a table, describing what will be done, who will be involved and when it should be completed.

Together with Technology

With the ever-changing, improvements in technology, there is no excuse for anyone to have difficulties meeting basic needs of life. Technological advancements are a key component for improving the way of life for persons with disabilities. Technology is an important component of a person's education and is a key ingredient for career success in the future. In this section we will layout many technological advances that are essential in meeting the needs of persons with disabilities.

Hardware and Software

Persons with physical disabilities often have difficulties using the tools that other students use in the classroom such as calculators and computers. A common cause of lack of learning is frustration by students because they cannot properly use the equipment needed

for understanding a lesson. Fortunately as technology continues to advance, there are ways to meet the needs of such disabilities.

Many schools are turning toward the use of voice recognition software in the classrooms and computer labs. This software is important for persons with physical disabilities because it allows them to write papers, or communicate commands if they are unable to use their hands. This software has many capabilities and offers the same functions as the keyboard and mouse. Since the need is being recognized by so many, the cost of obtaining voice recognition software is continuing to decrease. If there is one item that is essential in a workstation, the voice recognition software is it.

For persons with visual impairments, there are many options. First a common item used for persons who are not completely blind, but have minimal eyesight, and that is a computer monitor magnifier. With this device, the images on the screen are magnified to a level that makes it easy for anyone with at least minimal eyesight to see. Most magnifiers offer an adjustment mechanism that allows the magnification to be changed according to the needs of the user.

Braille keyboards are a common tool as well. Each key on the keyboard has both the written figure as well as the brail reading to allow blind individuals to learn the keys and develop proper typing abilities. This option gives persons with visual impairments an equal opportunity to use a keyboard. In our case for this proposal, we have found that there are labels available that can be placed on a current keyboard which contain Braille. This method is cost efficient in that it does not require the expensive Braille keyboard, and the labels can also be removed if not needed.

As with persons with visual impairments, persons with hearing impairments can have their needs met by utilizing their other senses. In most cases with the hearing impaired, they have a sense of sight and a solid sense of touch. There are devices available that thrive on the available senses to make sure that their learning abilities are not hindered.

A good way of offering a student the chance to learn, using technology for instance is captioning. When watching a video or movie, the captioning option allows the persons with hearing impairments to see what everyone else is hearing so that they don't miss out on the learning process. Captioning is available for televisions, computers, and even hand-held devices. Whenever there is a need for students to hear something from a video source, the captioning option will make them feel like they have an equal playing field for learning.

Signaling devices are essential to for they give the hearing impaired cues as to completing an assignment or beginning an assignment, as well as other necessary adjustments to hearing. Personal FM Systems (PFM's) are designed to provide hearing impaired listeners the best possible signal-to-noise ratio in difficult listening environments, such as classrooms, churches and theaters. These systems utilize a frequency band combination to provide clear, undistorted signals with minimal

interference. The system can be used with headphones, earphones, or can be adapted into certain types of hearing aids, either direct wired or wireless.

For persons with minimal hearing, amplification options are available. Unless the majority of the class has hearing impairments, these amplification devices are generally used with headphones so that the person having trouble hearing can increase the sound waves and have an equal opportunity to hear what is being said or done. Amplification devices are reasonably priced and easy to obtain. This is an essential component for any class because many people have different hearing capacities, and it may be needed in the case of outside noise.

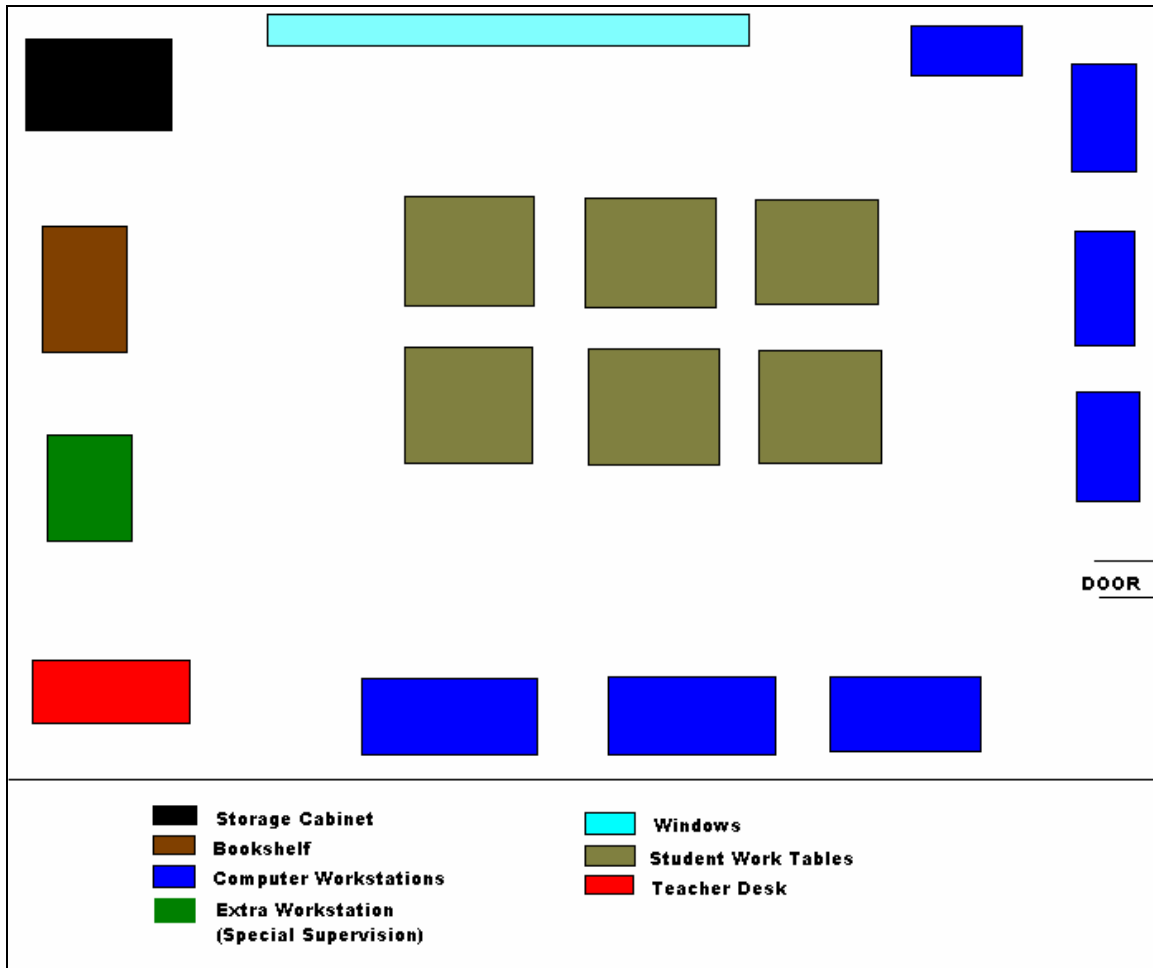
Other Necessities

All of the above technological advances are very necessary, but if the students are unable to properly access and utilize them comfortably, then they are still at a major disadvantage. In this section we will discuss certain environmental accommodations that must be met to ensure the needs of persons with disabilities are met.

Arm supports, head supports, chair inserts, and adaptive desks that can meet all disabilities are very important. In many instances, persons with physical ailments are unable to effectively learn when their posture is affected even slightly. Having the head and arm supports, and the chair inserts would be effective for promoting good posture in all students while also meeting the needs of the students with disabilities. Meeting this dual purpose would assure that the money spent is put to very good use. We have found a chair that meets all the needs of posture. The Classroom Positioner Chair listed in the resources chart on page 6 allows for total comfort while sitting and operating a computer.

When designing a workstation, it is important to make sure that students maneuver their walking aids, wheelchairs, and also have access to support devices. One common mistake in a classroom setting is having the desks too close together. Their needs to be enough aisle and door space for a wheel chair to maneuver in and out, and through the classroom. As far as the placement of the workstation for such individuals, it needs to be near the door with enough space for the wheel chair and all the equipment. An example diagram of how the classroom needs to be designed is on the next page:

Diagram of Classroom



Let's look at a couple important areas of the classroom. First, the location of the teacher's desk. First off, although the diagram does not demonstrate this, the teacher's desk will be caddy-cornered so that they can see most angles of the room. The green color, extra workstation is for students who need to have close supervision at all times. If there is more than one student meeting that requirement, then the other three workstations close to the teacher's desk can serve that purpose as well. In this type of classroom setting, as suggested previously, spacing is an issue. There could be wheelchairs, walkers, crutches, or other supportive devices that need to be maneuvered. The adequate space between the desks will help meet that purpose because students can move from desk to computer or to and from the bookshelf and storage closet. It is also suggested that students who may take longer to move do to physical disabilities sit close to the door.

As you can see, it is essential that the needs of persons with disabilities be met properly and effectively. The next two pages will describe a complete compilation of needs necessary to meet ADA compliancy. Please pay close to the implementation plan and the details involved in meeting its requirements. Agreeing to the suggestions proposed here could help the school save hundreds of thousands of dollars in the future that could arise from not satisfying Federal regulations. Remember this proposal is not in place for my benefit, but rather to help your school assure that each student

Fortunately for Topsail High School, there is adequate technology available as far as basic computer equipment is concerned. The machines themselves will not need to be replaced, but rather upgraded to meet the extensive needs of some of the assistive technology. Presently the Special Education room already contains 9 Dell Pentium IV processors with fourteen inch monitors and CD-RW and floppy access. Eight of the machines are for student use, with one for the teacher. To meet the needs of the proposal below, each upgrade and addition will need to take place on all 9 machines including the teacher's.

In certain cases, there is not a need to have certain hardware for every machine because cases are rare which need certain hardware such as joysticks for physical disabilities and switch adapted mice. Web resources which describe the software and hardware components are available with each description to offer you a chance to review the equipment more before agreeing to the decision. I can assure you that the devices suggested have been thoroughly researched and highly recommended. The goal is to be a barrier-free environment, and I am certain that through the use of the resources mentioned, the environment will meet that expectation.s

Resource Needs for an ADA Compliant Workstation	
Resources	Description
<i>Standard Equipment upgrades and editions</i>	
Dell Pentium IV CPU (already in place)	<ul style="list-style-type: none"> • 9Units • Upgrade to 512 MB to hold all software effectively • Minimum of 60 GB Storage
17" Flat Screen Monitor (from previous 14" monitor)	<ul style="list-style-type: none"> • 9 units • Flat screens take up less space and also give clearer image • Each screen will have a magnifier that can be adjusted as needed
Wireless Keyboard	<ul style="list-style-type: none"> • 9 Units • Wireless allows for less clutter and ease of motion • Also more range of use
Wireless Mouse	<ul style="list-style-type: none"> • 9 Units • Wireless allows for less clutter and ease of motion • Also more range of use
<i>Physical Disabilities</i>	
Input Accessories	<ul style="list-style-type: none"> • BIG Track (4 units) • Switch Adapted Mouse (4 units) • Roller Plus Joystick (2 units) <p>http://www.infogrip.com/</p>
Head, arm, and posture support	<ul style="list-style-type: none"> • Classroom Positioner Chair with Headrest (8 units/1 per computer workstation) <ul style="list-style-type: none"> ○ Can be moved anywhere in the classroom necessary, but key for computer area <p>www.equipmentshop.com/ProductDetail.asp?ProductID=38</p>
Voice Recognition Software	<ul style="list-style-type: none"> • Dragon Naturally Speaking 8 <p>http://www.voicerecognition.com/</p>
<i>Visual Impairments</i>	
Monitor Magnifiers	<ul style="list-style-type: none"> • Max View Magnifier <ul style="list-style-type: none"> ○ 8 units (1 per computer)

Braille keyboards	<ul style="list-style-type: none"> • Braille Keytop labels <ul style="list-style-type: none"> ○ These transparent adhesive labels have Braille symbols on them and may be stuck to the keytops for tactile recognition <p>http://www.abledata.com/text2/blind_and_low_vision.htm</p>
<i>Hearing Impairments</i>	
Captioning	<ul style="list-style-type: none"> • Allows video and audio needs to be met for persons with hearing impairments • Can be installed directly into computer, TV, and hand-held devices <p>http://www.remotecaptioning.com/ http://www.cpcweb.com/</p>
Signaling Devices	<ul style="list-style-type: none"> • Personal FM Systems <ul style="list-style-type: none"> ○ 8 Units (1 per computer) <p>http://archive.tri-cityherald.com/HEARNET/assistive.html</p>
Amplification Devices	<ul style="list-style-type: none"> • Room amplification system <p>http://archive.tri-cityherald.com/HEARNET/assistive.html</p>
The following site offers hundreds of resources for assistive technology that could be useful throughout the quest for meeting ADA compliancy	<p>http://www.uthscsa.edu/sah/assistive_tech/webliography.htm</p>

The resources listed above are essential needs. ADA compliance requires that needs be met for all physical disabilities. Offering more than one option in many cases allows for higher chance of meeting less severe to more severe cases of visual, auditory, or physical disabilities. As mentioned previously, the accommodations which allow each student to feel as though their ability to learn is not hindered make for a great learning environment. On the next page, the steps to obtaining the needs for this proposal are listed. We have discussed the actual technical needs, now it is important to consider the human resources and set a timeline to follow for implementation.

Implementation Plan		
Necessary Change	Persons Involved	Milestone Date
Meeting with Principal to present proposal	<ul style="list-style-type: none"> • Computer Resource Teacher • County Tech Person 	January 2005
Meeting to review ADA compliancy guidelines	<ul style="list-style-type: none"> • Principal • Computer Resource Teacher • County Tech Person • One EOC teacher • One EC teacher • Parent of EC student 	February 2005
Meeting to review county and state technology policies Also cover technology competencies to assure that these needs are met as well	<ul style="list-style-type: none"> • Principal • Computer Resource Teacher • County Tech Person • One EOC teacher • One EC teacher • Parent of EC student 	February 2005
Meeting to finalize software needs	<ul style="list-style-type: none"> • Principal • Computer Resource Teacher • County Tech Person • One EOC teacher • One EC teacher • Parent of EC student 	March 2005
All grants written for software needs	<ul style="list-style-type: none"> • Computer Resource Teacher • English Teacher • Principal Approval 	April 2005
Software and Hardware ordered	<ul style="list-style-type: none"> • Computer Resource Teacher • School Bookkeeper • Principal Approval 	May 2005
Staff Development for new software and hardware	<ul style="list-style-type: none"> • Computer Resource Teacher • County Tech person • At least one other teacher trained by CRT 	July 2005
Room wired properly to meet proposed classroom design	<ul style="list-style-type: none"> • Computer Resource Teacher • County Tech person • Classroom teacher 	July 2005

<p>All software installed and tested</p> <p>Double check to make sure that all installations, changes, editions, upgrades meet all county and state policies</p>	<ul style="list-style-type: none"> • Computer Resource Teacher • County Tech Person • Classroom teacher 	<p>July 2005</p>
<p>Room finalized (furniture, etc)</p>	<ul style="list-style-type: none"> • Computer Resource Teacher • County Tech person • Classroom teacher • Custodial/Maintenance Staff 	<p>August 2005</p>

Funding for any school system is an issue. It is always best to find alternative means of meeting the needs of a particular schools and school systems without having to request budget increases and or spending precariously from the current allotted funds. Most technology providers as well as the many government agencies offer grant opportunities which are often easily obtained with good intentions. Below is the list of all the resource options we plan to utilize to assure that Topsail High School is able to meet the ADA compliancy requirements.

Grant Resources

- <http://www.ed.gov/programs/edtech/index.html>
- <http://www.bmtfoundation.com/bfa/us/public/en/grants/>
- <http://grants.hp.com/us/programs/index.html>
- <http://www.ed.gov/fund/landing.jhtml>
- <http://www.ehr.nsf.gov/esie/>
- <http://www.intel.com/community/grant.htm>
- <http://www.vernier.com/grants/nsta.html>
- <http://www.eschoolnews.com/erc/funding/>
- <http://www.gatesfoundation.org/default.htm>
- <http://www.schoolgrants.org/>
- http://www.educationworld.com/a_admin/grants/index.html