



# Complex Child E-Magazine

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## Using Technology to Alleviate Boredom---Educationally! by Susan Agrawal

It is an unfortunate truth that many children with complex medical issues or disabilities are bored. Many are confined to a bed or chair for much of the day, especially during periods of worsening health. Still others have very limited physical abilities that restrict playing and exploring on their own. Regardless of the cause, it is undeniable that many kids spend portions of the day completely bored, no matter how hard we try to keep them entertained.

Over the past few months, my husband and I have been working very hard to use technology to eliminate chronic boredom for my daughter. She has multiple medical diagnoses, including severe cerebral palsy and an undiagnosed disorder that makes her extremely medically fragile. Due to fatigue and pain issues, she is usually too worn out to sit in her wheelchair or go in her stander after school. As a result, she spends the majority of her afternoons and evenings relaxing on a recliner in the living room. She has almost no ability to move volitionally on her own, other than using a single switch. And because she is visually impaired, she cannot even see the television across the room or watch a movie. Despite her physical impairments, she is reasonably bright and clearly detests boredom.

While we do our best to keep her occupied, she requires constant one-on-one interaction. Since Karuna has a little brother and we have all the usual responsibilities like cooking, cleaning, and managing the life of a child with special needs, it is simply impossible for us to entertain her every moment of the day.

We've come up with a system that allows her to watch television, view movies, listen to books, play switch games, and listen to music, almost entirely on her own. It did require a bit of an investment, but a few hundred dollars is well worth the hours of now alleviated boredom.

Later on, I will go through all the ins and outs of what equipment you might need, but first I would like to concentrate on some of the activities you can do, even if your child must remain in bed, in a wheelchair, or in some other constant position.

## **Audio Books**

One of my daughter's favorite things is to read books, and she really enjoys listening to audio books using a laptop computer. While books can be purchased through sources like iTunes, most library systems have tons of titles available that can be downloaded for free for a set borrowing period of two to four weeks. Our city library has hundreds of children's classics available in this format, and many regional or educational libraries also provide this service. All titles work on a Windows PC with free downloadable software that should be available through the library site or can be downloaded directly from <http://www.overdrive.com/>. If you have a Mac, you can only use books in an MP3 format due to restrictions by Microsoft on their WMA format. It appears that libraries are beginning to move toward the universal MP3 format, but as of now, most remain in a PC-only format.

These audio books can also be transferred to portable devices. MP3 titles work on any device, while the more restrictive WMA titles can only be played on certain devices that are Microsoft-based.

Another option for books is Bookshare [<http://www.bookshare.org>], a program that focuses on books that can be read using Braille, print on the computer screen, or text-to-speech using a computer voice. They currently have 42,000 titles available in multiple formats. The service is free to children in participating educational institutions, and free to children with documented visual, learning, or mobility disabilities.

For more advanced children, textbooks are beginning to be available in these formats. Bookshare has more than 1300 textbooks available. Some textbooks may also be available from your local library.

A new source called Tar Heel Reader, available at <http://tarheelreader.org/>, includes primarily user created books developed for young children or children and teenagers with developmental disabilities. The collection contains nearly 2000 books on a wide variety of topics, for multiple age levels. Books contain pictures and text, which can be silent or read using text-to-speech in a variety of voices. Backgrounds may be changed for children who are visually impaired, and the site is set up so that switches or alternative keyboards may easily be used.

You can also create your own books for your child using software like My Own Bookshelf, available from SoftTouch at <http://www.softtouch.com/myownbookshelf.aspx>

## **Movies, Television, and Music**

While not as educational, movies and music are great for alleviating boredom. My daughter loves to watch movies on her laptop, which allows the screen to be placed right in front of her where she can actually see it. We use a variety of methods to watch movies, including DVDs from services such as Netflix or Blockbuster, online video from

iTunes or free websites, and, using some creative wiring, from the television. The specific details of the equipment needed will be described later on, but it is possible to connect the laptop to the television so that anything you are watching on the television, including TiVo programming, DVDs, or videotapes, can appear on the laptop screen. The opposite is also possible, allowing whatever appears on the laptop to be transferred to the television screen. It is also possible to get a TV tuner card that will allow you to tune into television directly on a laptop without needing a television set. My daughter loves to be able to watch Sesame Street up close on her laptop!

Movies and music can be downloaded from sites like iTunes to either a computer or a portable MP3 device for as little as 69 cents a song. Some, especially the more educational ones, may also be available for free.

Finally, don't overlook Podcasts. These are typically free and include a huge variety of topics, ranging from children's books a chapter a week to a Sesame Street Podcast. These can be fun to listen to, and often include a combination of music, speech, and other activities, and some even contain videos.

### **Educational Websites and Software**

There are hundreds of educational websites available on the internet that may interest your children. My kids love <http://www.starfall.com>, a site that teaches phonics and reading, and can at times even be used with a switch. Other sites they enjoy include those associated with their favorite television programs, such as the websites for Sesame Street, Curious George, Thomas the Train, and so forth. Most contain games, videos, and other activities.

There are also many free switch or adapted games available online. A few are listed below:

- ☐ SENSwitcher: <http://www.northerngrid.org/ngflwebsite/sen/intro.htm>
- ☐ Priory Woods Games:  
<http://www.priorywoods.middlesbrough.sch.uk/resources/programres.htm>
- ☐ Priory Woods Switch Videos:  
<http://www.priorywoods.middlesbrough.sch.uk/resources/videos.htm>
- ☐ UK Inclusive Technology Games:  
<http://www.inclusive.co.uk/reports/2006/cbeebies.shtml>

Some games for young children are also easily adapted for switch or touchscreen use. A few are listed below:

- ☐ Talking Child: <http://www.talkingchild.com/games.aspx>
- ☐ KiddiesGames: <http://www.kiddiesgames.com>
- ☐ StoryPlace: <http://www.storyplace.org/preschool/other.asp>

Finally, you can always use switch or touchscreen software, though this is of course rather expensive. We have a few programs for my daughter that she uses on her laptop, including some of the Simtech games [<http://www.marblesoft.com/>], Choose and Tell Nursery Rhymes [[http://www.inclusive.co.uk/catalogue/acatalog/choose\\_and\\_tell\\_nursery\\_rhymes.html](http://www.inclusive.co.uk/catalogue/acatalog/choose_and_tell_nursery_rhymes.html)], and Teaching AccessAbility [<http://www.softtouch.com/teachingaccessability.aspx>]. She enjoys playing these games, while also developing her switch skills and learning new concepts. Software is available for all ages and abilities.

## **The Equipment**

The first thing we purchased for Karuna was an inexpensive used laptop. It is possible to find used laptops for \$150-300 on sites like Craigslist or Ebay. We ended up trading in some other old computer equipment at a local family-owned business, allowing us to get a great laptop with a wide screen for very little money. You don't need anything fancy or new. All you need is a laptop with a DVD drive, a USB port, the ability to connect to the internet, preferably an S-video output, and a reasonably recent operating system.

To make the laptop work well for Karuna, we needed to purchase or reuse several items. One of these is a switch interface that allows you to attach a switch to the computer, which many of you familiar with assistive technology may already have. There are many different styles of these, ranging from very basic to quite advanced. RJ Cooper [<http://www.rjcooper.com/site-map/index.html>] has a wide variety, for as low as \$70. The one we use is the Don Johnston Switch Interface Pro [[http://www.donjohnston.com/products/access\\_solutions/hardware/switch\\_interface\\_pro\\_5/index.html](http://www.donjohnston.com/products/access_solutions/hardware/switch_interface_pro_5/index.html)], which is \$99 and allows multiple switches to be used in varying ways.

Since Karuna can only see things close-up, a big part of what we wanted to do was bring television and movies to her using the laptop. In order to do this, we needed to purchase special cables. One is an S-video cable that goes between the S-video output on the laptop and the television, and is usually very inexpensive, about \$15 or less. This allows whatever Karuna is watching or doing on the computer to also appear on the television, which comes in very handy when the whole family wants to watch a movie but does not want to sit crowded around the laptop. There are other ways to do this, depending on what type of equipment you have. You may need a VGA cable or an adaptor. Connecting the laptop to the television can also be done wireless, though this requires more equipment and software.

The other cable is a little more complicated, but will allow you to transfer whatever is on the television to the laptop. For this we needed a video capturing device, and we chose the Diamond VC500 One Touch Video Capture Device, about \$40, which will "capture" the video from any source, including your television, and show it on your laptop. This little device allows Karuna to watch anything that is on television, including live programs or recorded programs played on a DVD or TiVo, on her own laptop screen.

There are a few more pieces of equipment that may be helpful depending on your child's needs. If your child needs to be in bed or on a recliner like Karuna, you may want to purchase a small laptop stand. We got the MyPlace Workstation [<http://www.myplaceworkstation.com/>] on a holiday closeout sale for under \$20. Another option that we often use is an angle and height adjustable TableMate table, widely available for \$20-30, depending on size.

If your child is going to be using switches, you may also need to get a switch-mount of some sort. Since all children need different systems, it is hard to make any general suggestions on this topic. It is also something we have not yet perfected for my daughter, who primarily uses a head switch. We have been using a Magic Arm mounting system, but we have yet to find something sturdy enough to mount it to near her recliner.

Our total expenditures to set up this system, not including items we already had, was about \$300. It may seem like a lot, but ultimately, you cannot put a price on alleviating boredom.