

Assistive Technology
Kennesaw State University
April Shinpaugh

Introduction

Assistive technology is any device or service that helps a student with a disability to meet his or her Individual Education Plan (IEP). The goal of assistive technology is to participate in the general education setting to the greatest possible extent (The Iris Center, 2013). Assistive technology is used as a communication tool, tool for performing academic tasks, accessing materials, and participating in social and extracurricular activities.

Consideration

As I reviewed the student’s IEP and discussed with the special education teacher student needs, I created a list of six tasks to help the student in daily classroom and home activities.

Task	A. If currently completes task with special strategies and / or accommodations, describe.	B. If currently completes task with assistive technology tools, describe.	C. Describe new or additional assistive technology to be tried.
Computer Access	Student requires a buddy to help with computer access. Student cannot read beyond sight words. Students hand eye coordination is not fully developed so assistance is required.		In order to assist the student in reading, audio books will be used. Also, a text reader will be used so the student can practice reading. Student will be set up with a laptop to enable the student to sit comfortably.
Composing Written Material	Student completes this task with extra time given. Also, student is allowed to shorten assignment.	Student uses enlarged line paper and a special pencil which makes it easier to grip. The pencil also helps with poor penmanship.	Slant boards will be tried with the student to prevent slipping of paper when student is writing. Also, an enlarged, simplified graphic organizer will be used for ideas.
Reading	Student can only read sight words. Student holds paper close to face. Student is given extra time to finish assignments which are often shortened. Student also has a parapero to help with reading.	Student has a parapero to assist when reading.	In order to assist the student in reading, audio books will be used. Also, a text reader will be used so the student can practice reading. Student will be set up with a laptop to enable the student to sit comfortably. Student will also be given a magnifying glass to enlarge words.
Math	Student has parapero that assists in math class. Student is also pulled in a small group when learning new concepts. Student has all material read to them. Student gets extra time on tests.		Student will use a calculator during math. Student will also use a test which has been scanned and can be read from a student reader software.
Activities of Daily Living	Student is developmentally deficient when completing daily activities. Student often forgets to wear clothing items such as socks. Student is unable to determine if clothing is too big or appropriate to wear to school. Student does not maintain hygiene. Student also has trouble determining if a jacket is needed etc.		Create checklist for seasons so student can determine what is needed. Provide pictures on the checklist so student can associate clothing with weather.
Vision	Student has vision problem. Student does not wear glasses/contacts. Student is placed at the front of the room to assist in seeing.	Student completes task with someone reading the assignment several times.	Student can be given an enlarged printed assignment on a slant board. Student can use magnifying class to further enlarge if needed.

(Assessing Students' Needs for Assistive Technology, 2009)

The student will be given technical assistance on the use of computers and Ipad. The reading ability of the student enables them to navigate on computers and Ipad. In addition, this assistance will also be given to the student's father and older sister so they may help the student at home. The student will also practice using audio books and reading software. An additional goal of learning seasons for appropriate dress will also be incorporated.

Equipment

There will be several pieces of assistive technology used throughout the observations with the student. Some of the equipment used is new to the student. Therefore, additional tutoring and time will be given to the student to ensure she understands how to work the technology. As each piece of equipment is introduced observations and evaluation will be completed to determine effectiveness and comfort of the student. Below is a list of the equipment to be used. The technology will not be will not necessarily be implemented in this order.

- Audio books
- Student reader software- more specifically Premier Tools
- Laptop/Ipad
- Slant boards
- Calculator
- Scanner
- Magnifying glass
- Personal hygiene poster and checklist

Implementation Plan

In order to efficiently begin using the assistive technology with the student, it is important to ensure a plan is in place. It is also imperative for the teacher to be efficient in the use of the technology. All of the assistive technology equipment is owned by the school. Therefore, no excess steps will be added to locate or purchase equipment. The implementation plan will be implemented in several steps. The table below identifies each step of the process along with additional details.

Task	Person Responsible	Date Due (for implementation)
Gather laptop and Ipad for student use from school	April Shinpaugh	6-21-13
Ensure Premier Tools is installed on laptop and Ipad	April Shinpaugh	6-21-13
Practice using Premier Tools by teacher	April Shinpaugh	6-22-13
Gather scanner and install on laptop/Ipad	April Shinpaugh	6-22-13
Slant board will be picked up from school and placed at student's house for	April Shinpaugh	6-24-13

<p>use Magnifying glass will also be picked up and placed at student's house for use Visual aid will be created to assist in student learning about seasons and appropriate hygiene Audio book software will be downloaded to laptop/Ipad. Teacher will practice using audio book software to ensure comfort during implementation with student.</p>	April Shinpaugh	6-24-13
	April Shinpaugh	6-25-13
	April Shinpaugh	6-26-13
	April Shinpaugh	6-26-13

(Assistive technology implementation, 2013)

Implementation Team

It is important to have an implementation team in place when using assistive technology. The classroom teacher, special education teacher, and other administration are appropriate team members. Each of these members can give valuable feedback as to progress of the technology with the student.

The individuals involved in the implementation team for this student are the special education teacher and I. The special education teacher has worked with this student since she started kindergarten. I have worked with this student for two years. I feel knowledge of the student's skills and background is imperative. By using team members who know the student, the implementation process will be more effective (Assistive technology implementation, 2013).

Training

Since Premier Tools is being used as an assistive technology, it is important for both team members to understand how to use it. Premier tools is used as a student reading program. It will read to the student. Also, items can be scanned to read aloud to the student. Premier tools is used in my school system so no additional training will be required. Audio books will be the only assistive technology in which team members will need review.

Classroom Implementation

Since equipment has been obtained and training completed, it is time to begin the classroom implementation. When implementing assistive technology in the classroom, it is important to ensure the technology is accessible to the student at all times. It is also important to give the student extra time to become familiar with the technology being used.

After speaking with the special education teacher, we developed a set of goals for the student to work on at the beginning of the upcoming school year. However, in order to prepare the student for the upcoming year, implementation will begin over a five hour span. This time will be used to help the student become familiar with the technology being used. This time will also be used as an evaluation period for the team to determine if the assistive technology chosen will be efficient for the student.

IEP Goal	Curriculum/ Domain	Person(s) Responsible	AT needed to accomplish goal
Student will read all Dolch Words up to second grade. Student is currently on pre-primer	Reading	Implementation Team	Premier Tools- student reader software Scanner- scan in Dolch words list so Premier Tools can read words to student. Then student can recite words. Magnifying glass- to make words bigger for student to read
Student will meet a 5 point goal in Accelerated Reader per each 9 weeks.	Reading	Implementation Team	Student will use audio books to listen to stories. Student will then take a test on the computer to gain Accelerated Reading points. Student will listen to the book at least twice. Student will have someone read questions and answer choices twice.
Student will learn basic addition facts through 18 in math.	Math	Implementation Team	Student will use lined paper to solve math problems. Students will be given a calculator to solve some of the problems with.

(Assistive technology implementation, 2013)

Home Implementation

Since the student is having a hard time determining appropriate clothing and hygiene, a daily living goal has also been added to the assistive technology module. The student will be given a kid friendly checklist to use each day. The checklist will also help with student organization needs. A poster will also be made using pictures to help the student determine what the weather is for the day. The student will use the laptop/Ipad each afternoon in class to help determine the weather for the following day. The student’s father and older sister will also be involved in this project to provide support at home. A collection of videos from Teacher Tube will be shown to the student to show how important personal hygiene is. Reflective questioning will be done daily to reinforce personal hygiene.

Monitoring & Evaluation

There will be several methods of evaluation and monitoring depending on the assistive technology being used. Checklists, Excel spreadsheets, and rubrics will be used as evaluation methods. The table below highlights how each goal will be monitored and evaluated.

Goal	Instructional Strategy	Record System/ Frequency	Responsible person
Laptop/Ipad use	Go over steps with student on appropriate way to use laptop/computer. Will also label steps using post it notes and numbers.	Excel to determine appropriate use by student. This will be done on a daily basis throughout the evaluation period.	April Shinpaugh
Daily Living Skills	Watch and review videos with student. Explain importance of hygiene and being healthy. Introduce checklist to student.	Checklist to determine if student followed hygiene plan on a daily basis.	April Shinpaugh/ student father & sister
Reading-Dolch Words	Scan Dolch Words into computer. Have student practice with Premier Tools. Premier Tools will read words and student will recite back.	Excel for record keeping. Will be checked daily for mastery.	April Shinpaugh

Calculator Use	Teacher will go over mathematical signs and practice using a calculator with student.	Rubric used for checking student understanding.	April Shinpaugh
Accelerated Reader Points	Teacher will review several books giving student a choice of what they would like to hear. Teacher will then teach how to select and start listening to story.	Excel- track books read and points	April Shinpaugh
Magnifying glass	Talk with student about what a magnifying glass is and get thoughts once student practices	Excel- track results on how many times student successfully used it.	April Shinpaugh

(Assistive technology implementation, 2013)

In order to successfully implement the technology, it will be a collaborative process between the parent, the student, and the teacher.

Field Experience

Throughout this process, I spent five hours with the student in the home environment. I provided all of the tools specified in the process to the student. The following provides a detailed description of the time spent with the student.

Day 1

Day one was spent as a process of introduction of the technology to the student. I had two goals for this day. First, introducing the basics of the laptop and Ipad; secondly, talking with the student about interests and locating online books. The student and I went through the steps on using the laptop. We first talked about where the button was to turn on the computer. Also, it was discussed about what to click to get on the internet. Before beginning, I put links to all of the software we would be in the favorites on Internet Explorer so they would be more accessible to the student. I also created short cuts for products on the desktop. I increased the font size so they items could be more easily located since the student has a vision problem. We went through the same process with the Ipad. This accomplished the first goal

The second goal was to determine the student’s interest in order to locate books. I engaged the student based on toys and objects I saw in the household. We conversed for about five minutes about things the student liked and was interested in. I then introduced the idea of having the computer read the books to the student. She was very excited about this. I assisted the student in finding the link to Storyline Online. There, we browsed through books until the student found a book she wanted to hear. The book she chose was The Tooth. I gave the student step by step directions for getting the story started. She then listened to the story. She was extremely engaged about the book. She appeared to listen attentively.

After the story was finished, we talked about the idea she could use this technology at school to help with Accelerated Reader. We discussed how she could listen to books two to three times and then test over them to reach her point goal which is specified in her IEP. She was very entertained by this idea.

For a review, I had her go into the internet and open Storyline Online. She did this with success. I then asked her to select a book she would like to read. When she found the book, I asked her to read the title to me to practice her reading skills. After she read the title, she automatically began listening to book independently.

Day 2

I used the beginning of day two as a time to review what we learned about the laptop and Ipad. The student preferred to use the laptop over the Ipad. The student then proceeded to turn on the computer and open the internet. I explained to the student that we would be working on something very important today with her older sister who was present. She was extremely anxious to see what this session was going to hold.

At the beginning of this session, I felt it was important to introduce the personal hygiene and daily living skill aspect. I pulled up a couple of videos from Teacher Tube for the student to view. The videos were relatively short in content so the student could maintain focus in which she did. When we were finished viewing the video, I asked the student a series of questions in order to gage her understanding.

- What was the video about?
- What did you like about the video?
- What was important in the video?
- Are there things that could help you in the video?

The student talked about how important it was to brush teeth daily, shower daily, and wash hands on a regular basis. I commended the student for choosing these important parts of the video. I asked the student if this was something she could do every day. While she agreed she could, she expressed she often forget these things because she was tired every morning. I then gave the student a checklist with these important items. I suggested the checklist could help her remember to do these things. I also asked her the process for wearing a jacket each day. I asked if she realized there were different seasons. She was able to acknowledge the seasons; however, she had no strategy or idea when it was appropriate to wear a jacket. I then pulled out the picture poster which identified the four seasons: summer, fall, winter, and spring. I asked the student to point to the time she thought she should wear a jacket. She pointed to winter. I felt this was adequate since she realized it was cold in winter. I then told the student she could keep the board to help her identify the days she needed to wear a jacket to school. I also provided the student a checklist of daily items she needs to bring to school.

Day 3

To begin day 3, we reviewed what we learned on day one. The student opened up the laptop and turned it on. She also provided me with the checklist regarding hygiene. As a reward for doing these things, I gave her a smelly sticker. We then talked about what we were going to do in the day's session. I addressed using the scanner. The scanner has already been loaded onto the computer. I discussed with the student how to scan documents into the computer. I told her we were going to use a program that would help her learn the words on the paper that she did not know. I scanned the first page in. I went step by step to show her exactly how to do the scanning. After I scanned the first page, she wanted to scan the remaining pages. So, one at a time, she scanned them in. She was a bit slow at this activity, but did a great job with scanning.

I instructed her to open up Premier Tools. From there, we opened the word lists up. She clicked the "play button" as she referred to it and began listening. Prior to doing this, I set the speed for the program to read the words. It read slowly. I instructed her to repeat the word to me after the computer said it to her. She did this very well. We went through each set of Dolch Words twice. At the end of the school year, the student knew her pre-primers, so we worked on the remaining lists. After we were finished listening and repeating Dolch Words, I introduced a magnifying glass. She related using this tool in science for an experiment. I demonstrated how the magnifying glass made everything look bigger. She investigated by going around her house looking at different items. After going through the words twice, I had the student use an enlarged list as well as a magnifying glass and say the words to me without help. The student recalled around twenty-five percent of the words which was progress for her.

On this day, the student expressed how much fun she was having using the different pieces of equipment. She wanted to continue using them beyond the hour we allotted to do this.

Day 4:

When I arrived, the student had the computer ready to go. Before we began, I asked to see her checklist. She has been making progress using this. We then tested the Dolch Words using an enlarged list and magnifying glass. The student had still maintained approximately twenty-five percent of the words. She also informed me she had listened to another book online and wanted to share. She gave quite a detailed description of the book.

Day four is scheduled to be our last session. Instead of doing a one hour session, we will be doing a two hour session. The session is already ahead of schedule since the student had the computer ready to do.

Next, I brought out the calculator. The student was able to tell me what the object was and even showed me how to use it to add. She informed me she played with a similar calculator at home. I then gave her a worksheet that was enlarged. It had ten addition problems on it. She used her magnifying glass and special pencil for writing to answer the problems. She was able to do three of the problems without the calculator and quickly finished the remaining problems using the calculator. I then provided her a sheet of subtraction problems with the same

perimeters. She was only able to answer one problem without the calculator. She did very well at answering the remaining problems.

After wrapping up the math session, we returned back to the computer to listen to another story. The student was able to open the link and choose a book she wanted to hear. She did a wonderful job with this.

Data Collection

Below is the data collected through the five hours of time spent with the student.

Session	Technology Used	Student reaction	Positives/Negatives with technology
Day 1	Laptop/Ipad introduction Storyline Online	Student enjoyed using laptop. She appeared comfortable with using laptop because it could be place where she could sit comfortably. She was hesitant about using the internet, but appeared comfortable when listening to a book.	Positives: Laptop allowed for comfortable seating Student engaged in Storyline Online Student used Storyline Online after our session was over Negatives: Student did not like Ipad. Stated it was too small. Had trouble with the touch screen.
Day 2	Laptop Personal Hygiene videos from Teacher Tube	Study appeared comfortable using laptop Seemed engaged by the videos yet confused about connection with daily life Liked the poster and pictures	Positives-laptop comfort Using visuals Negatives- connecting technology with real life was hard at first
Day 3	Laptop Hygiene poster Premier Tools Scanner Magnifying glass Dolch Word list	Student provided checklist regarding hygiene- seemed to make the connect better on this day Premier Tools- student seemed comfortable using P.T. for listening Scanner- students was very excited about using the scanner Magnifying glass- used to investigate and gain meaning and then used in reciting Dolch Words	Laptop- student is comfortable-knows routines Hygiene poster/checklist- student is beginning to make the real life connection Premier Tools- student was uncomfortable at first, but began to feel comfortable after it read words Scanner- student was excited about scanning Magnifying glass- comfort with using magnifying glass was noted Negatives- learning Dolch Words
Day 4	Laptop Hygiene Poster Magnifying glass Dolch Words Math problems (addition/subtraction) Calculator Storyline Online Special pencil	Student had laptop ready. Student also had checklist and other equipment ready. Student did not improve on Dolch words but was eager to recite using tools. Math was a struggle without the calculator. Storyline Online is a comfortable website for student use.	Positives- works well with laptop, associating hygiene in daily life, magnifying glass is familiar. Student seems to have no trouble using it. Student enjoys hearing books online and seems to recall most details exactly to what was read. Calculators are familiar and easy to use for student. Negatives- Dolch Words and math fluency need more intervention.

Conclusion

Implementing various types of technology is both exciting and scary. It is important for the teacher to know the important components of the technology before implementing it to the student. This student seemed to catch on to using the technology quickly. It was a great motivator for her as opposed to working on pencil and paper work. The student was eager to learn and expressed positive results using the various assistive technologies. Upon further use, I think it would be adequate to include using a computer and online book software on a daily basis for the student. The student was also very comfortable using the special pencil, calculator, and magnifying glass. After the student explored the calculator and magnifying glass, she began to focus back on the task at hand. Therefore, I feel these tools should all be addressed in the IEP to help student achieve academic goals.

Resources

The Iris Center. (2013). *Assistive technology: An overview*. Retrieved from <http://iris.peabody.vanderbilt.edu/resources.html>

Assistive technology implementation plan. (2013). Unpublished raw data, University of Kentucky .

Assessing Students' Needs for Assistive Technology. (2009). *Wati assistive technology consideration guide*. Unpublished raw data .

Storyline online. (2013). Retrieved from <http://www.storylineonline.net/>