

Looking to the Future

Chapter 9

# Infusing Assistive Technology for Learning into the IPP Process

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This resource is primarily intended for:

Teachers	✓
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Health-related Professionals	✓
Counsellors	✓
Students	
Parents	
General Public	



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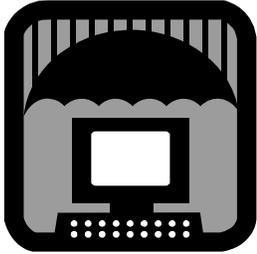
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## Chapter 9



# Infusing Assistive Technology for Learning into the IPP Process

*“The success of technology has more to do with people than machines. All the right parts and pieces together won’t work miracles by themselves. It is people who make technology powerful by creatively using it to fulfill their dreams.”*

– Alliance for Technology Access 1996, p. 8

Assistive technology for learning (ATL) is defined as the devices, media and services used by students with physical, sensory, cognitive, speech, learning or behavioural disabilities to actively engage in learning and to achieve their individual learning goals. ATL is a subset of a broad range of technologies that enhance students’ learning. ATL assists students in performing functions that would otherwise be difficult or impossible to accomplish independently. ATL is directly related to the delivery of learning outcomes in the Alberta programs of study.

Like other technologies, ATL ranges from simple tools to complex systems. It could be as simple as providing a pencil grip for writing or as complex as a computer with screen reading software for reading and learning.

Arguably, all technology can be described as assistive technology—it assists us in doing something better, easier or faster.

Assistive technology for learning is different from educational or instructional technology. Assistive technology for learning can be distinguished from other types of technology used with students in the classroom. Educational technology is generally used by all students. ATL is more specialized and often more complex technology that allows access to learning for students who have barriers due to their disabilities. However, there is some overlap. ATL can have benefits as an instructional tool for all students. For example, text-to-speech software can benefit all students who are learning to write and keyboard. Likewise, students with special education needs may benefit from educational technology such as reading instruction software programs, but they may also need assistive technology for learning, such as a specialized mouse or keyboard, to access these programs. Without this assistive technology, they would be unable to participate independently in this educational activity.

*“For people without disabilities, technology makes things easier. For people with disabilities, technology makes things possible ...”*

– National Council on Disability

Areas where assistive technology for learning may positively impact a student's success in learning include but are not exclusive to:

- printing and handwriting
- reading
- writing
- studying
- math.
- computer access
- vision
- hearing
- communication

## Continuum of Assistive Technology for Learning

The term assistive technology for learning represents a continuum of tools ranging from low- to high-tech. Low-tech and many mid-tech tools are often available in office supply stores or electronics stores, and are common in most classrooms. Other mid-tech tools are available only from specialized vendors. High-tech tools are frequently computer-based solutions that focus on the specialized needs of an individual student, although there are cases in which a high-tech tool provided for one student can benefit other students in the classroom. For example, a sound-field FM amplification system, which uses a classroom speaker system to boost the voices of the teacher and individual students, allows the voices to be clearly heard by all students in the classroom, not only the individual student with hearing difficulties.

Some examples of ATL are shown on the sample continuum below.

### Sample Continuum of Assistive Technology for Learning

#### Low-tech

- Raised line paper
- Alternative writing surfaces (e.g., white boards)
- Alternative writing implements (e.g., magnetic letters, alphabet stamps, magnetic words)
- Materials to support memory, focus and organization (e.g., sticky notes, highlighters, webs)



#### Mid-tech

- Tape recorders
- Calculators
- Talking calculators
- Talking spell checkers
- Audio books
- Dedicated word processors
- Simple voice playback devices (e.g., talking picture frames)



### High-tech

- Specialized software such as:
  - talking word processors
  - word prediction software
  - screen reading software
  - scan-and-read software
- Dedicated communication devices
- Specialized computer access such as:
  - touch screens
  - alternative keyboards
  - switch adapted mice
  - refreshable Braille display

Many students with special education needs require both low-tech and high-tech solutions to be successful learners. The general rule is to begin with the lower-tech solutions and progress to more complex technologies only if the low-tech options do not adequately reduce barriers to learning. For example, the best solution for a student whose handwriting is difficult to recognize might be a portable word processor with memory, rather than a more costly laptop.

## Benefits of ATL

To understand how assistive technology for learning can create positive outcomes for students with sensory, physical, cognitive or other learning challenges, consider the following stories of students who are using ATL in the classroom. In each case, having appropriate ATL tools and supports is creating opportunities for the student to participate, learn and succeed.

#### Adam's story

Adam is a Kindergarten student with cerebral palsy who communicates by using a voice output communication device. He is learning to write by attaching his speech device to the classroom computer. Adam also uses many low-tech tools, such as alphabet boards to participate in writing activities, page fluffers to help him turn the pages of books and a light pointer attached to a baseball cap so that he can point to things in the classroom.

#### Daniel's story

Daniel is a Grade 6 student who struggles with reading, although when materials are read to him, he can understand grade-level concepts very well. Daniel uses scan-and-read software to access print materials in the classroom. This allows him to be independent with reading tasks as he can scan materials on his own. He can read e-books and other electronic materials independently and can do research on the Internet.

Daniel also has difficulties printing and spelling. He uses a dedicated word processor to ensure his writing is readable. For more complex writing, the talking word processor helps him to hear what he is writing so he can correct his own errors. He also uses the word prediction software if he is struggling to spell a word. This technology is helping Daniel demonstrate what he knows, and be a more independent, confident and successful learner.

### Stepha's story

Stepha is a Grade 10 student with partial paralysis caused by a vehicular accident. Stepha cannot hold a pencil but she can type with two fingers as long as she has a keyguard to help guide her hands. Stepha has learned to be very fast with this two-finger typing method. She writes using a dedicated word processor. She takes notes and types her assignments on her portable dedicated word processor. She then transfers this data to a computer to edit and print. Stepha also uses math processing software to write math equations and do computations. She has customized keyguards for all of her devices so that it is easier for her to target the keys. Stepha is a strong writer and hopes to go on to be an English major at university.

## Choosing Appropriate ATL Solutions

Investigating whether or not individual students might benefit from ATL, and which ATL would be most appropriate in meeting their needs, is an ongoing process that involves working as a team to explore alternatives, gather information and set up opportunities for students to try potential ATL solutions across learning environments.

### Team decision making

Evidence shows that ATL plans are more likely to be well-implemented when the student's entire learning team is involved in the initial decision making. Teachers, parents and the students themselves should all be involved in identifying and selecting ATL solutions. As with any kind of accommodations, the ultimate goal of assistive technology for learning is to help students become more independent, so it is essential that they participate as fully as possible in the selection, implementation and monitoring of ATL solutions. Students may be reluctant to use certain tools because they fear it will make them stand out in the classroom; involving students in decision making increases the likelihood that they will use the technology effectively and consistently. Parents should also be as involved as possible in decision making around ATL by thinking about, advocating for and actively supporting their child's use of assistive technology for learning. Because of the specialized knowledge as well as the potential expense involved, it may be most effective to involve students and parents once some viable possibilities have been identified.

### Appendices

*See Appendix 9-A for sample questions for parents about assistive technology for learning.*

Specialists such as occupational therapists, vision teachers or speech-language pathologists may be brought in to support the school team in ATL decision making, especially for children with more complex needs. For example, occupational therapists may provide assistance in exploring ATL tools for writing, including computer modifications and low-tech supports like pencil grips, slant boards and specialized writing materials. Speech-language pathologists may help the team identify low- and high-tech systems for a student with communication difficulties. Audiologists and vision consultants can provide expertise for students who need to overcome sensory barriers to learning. Physical therapists can assist in mobility issues and may have expertise in computer access solutions for students with physical challenges.

In addition, school or jurisdiction technology personnel should be included in the consideration process. These individuals can provide advice and support to the learning team. Some jurisdictions also have ATL specialists who are available to provide information to the team. There are a number of ways schools and jurisdictions can build capacity in the area of ATL, including providing access to conferences, workshops, online resources and information, and facilitating sharing of expertise with other schools and jurisdictions.

See pages 24–28 for a listing of sample Web sites and resources for ATL that may be helpful to school teams needing more information.

### Identifying ATL solutions

As the learning team begins exploring potential ATL solutions, a standard set of investigative questions, such as the SETT Framework developed by Joy Zabala, can serve as a tool for gathering and organizing data. The SETT Framework considers the student, the environment, the tasks and then the tools needed by the student to address the tasks. Using the questions in the framework, the learning team can generate a list of basic ATL tools and strategies to help the student be better able to complete identified tasks in the school environment.

#### SETT Framework<sup>1</sup>

##### The STUDENT

- What does the student need to do (that he or she is unable to do now and that assistive technology for learning may be able to support)?
- What are the student’s special education needs?
- What are the student’s current abilities?

##### The ENVIRONMENT

- What materials and equipment are currently available in the learning environment?
- What is the physical arrangement?

1. Adapted from Joy Zabala, “Introduction to the SETT Framework,” *Resources for Assistive Technology in Education*, 1995, <http://sweb.uky.edu/~jszaba0/SETTintro.html> (Accessed August 2004). © Joy Smiley Zabala. Used with permission. For more information, contact by e-mail to [joy@joyzabala.com](mailto:joy@joyzabala.com).

- What is the instructional arrangement? Are there likely to be changes?
- What supports are available to the student?
- What resources are available to the people supporting the student?

#### The TASKS

- What activities take place in the environment?
- What activities support the student's learning?
- What are the critical elements of the activities?
- How might the activities be modified to accommodate the student's special education needs?
- How might technology support the student's active participation in those activities?

#### The TOOLS

- What low-tech, mid-tech and high-tech options should be considered when developing a system for a student with these needs and abilities doing these tasks in these environments?
- What strategies might increase student performance?
- How might these tools be tried out with the student in the environments in which they will be used?

#### Example

Consider the example of a Grade 6 student named Marti, who is struggling with writing tasks due to a fine motor disability. Here is how the SETT Framework might be used to explore ATL solutions that would best meet her needs.

Beginning with “S” for “Student,” the learning team would look first at Marti's learning needs and strengths, as illustrated in the following list.

<b>Student</b>
<ul style="list-style-type: none"> <li>• significant fine motor problems</li> <li>• academically strong student</li> <li>• very motivated to achieve</li> <li>• main area of need is completing writing assignments</li> <li>• has many great ideas but struggles to get them down on paper in a way that others can read and that is fast enough</li> <li>• important to her to be independent</li> </ul>

From this list, Marti's team identifies completing writing assignments as the main barrier to her success at school.

Next, the team would consider Marti's current learning environments and the types of tasks she has to complete in each. The following chart demonstrates how this information could be organized.

Environments	Tasks
<ul style="list-style-type: none"> <li>• she moves from class to class</li> <li>• computer available in Marti's core classes (teacher's computer)</li> <li>• needs to be able to complete written assignments at home</li> <li>• TA is available to scribe upon request</li> <li>• jurisdiction has access to occupational therapist consultation</li> <li>• regional health centre has AT lending library</li> </ul>	<ul style="list-style-type: none"> <li>• written work in language arts and social studies</li> <li>• note taking in all core classes</li> <li>• homework for all subject areas</li> </ul>

For the next part of the SETT Framework, the team focuses on Marti's identified need—writing assignments—and identifies a list of potential tools. The team then identifies the type of function that the student needs from these tools and analyzes how each tool matches the need. See chart below.

**Student:** Marti                      **Area of established need:** Written assignments

Potential tools	Function				Availability
	allows student to move easily from environment to environment	increases student's independence	increases student's speed	allows student to demonstrate her ability	
Pencil grips	✓	✓	x	x	A
Slant board	?	✓	x	x	S
Raised line paper	✓	✓	x	x	S
Scribe	✓	x	✓	✓	S
Teacher's computer with <i>Sticky Keys</i>	x	✓?	✓	✓	A
Laptop computer	✓	✓	✓	✓	N
Word prediction software	?	✓	✓	✓	N
Dedicated word processor	✓	✓	✓	✓	

**Key:** A – available to ALL students  
 S – available through special programming  
 N – tools which need to be acquired if assessment data establishes student need

The team then makes a short list of tools that would best meet the student's needs. For example, from the data above the team determined that a laptop, word prediction software and/or a dedicated word processor offered the best potential ATL solution for this student. The next step is to look at required services to support each type of potential ATL. See the following chart.

Tools	Services required for effective use		
	Student	Staff	Family
Laptop	<ul style="list-style-type: none"> <li>• connection to school network</li> <li>• monitor battery life</li> </ul>		
Word prediction software	<ul style="list-style-type: none"> <li>• training</li> </ul>	<ul style="list-style-type: none"> <li>• training on how the software works</li> </ul>	<ul style="list-style-type: none"> <li>• access at home</li> </ul>
Dedicated word processor	<ul style="list-style-type: none"> <li>• training</li> <li>• connection to computer/printer</li> </ul>	<ul style="list-style-type: none"> <li>• awareness</li> <li>• technical support</li> </ul>	<ul style="list-style-type: none"> <li>• awareness</li> <li>• technical support</li> </ul>

For more information

For more information on the SETT Framework, go to [www.joyzabala.com](http://www.joyzabala.com).

Appendices

See Appendices 9-B to 9-F for sample forms to use for identifying what kinds of ATL solutions an individual student might benefit from.

When discussing tool options, the team may need to get more information on what ATL tools are available. Begin by exploring what you already have. In many instances, there are tools available in the classroom that can be used in a different way and therefore become assistive technology for learning for a student. For example, all computers have accessibility options available in the control panels. Changes can be made in keyboard and mouse control panels.

For more information

For more information on built-in accessibility features, see:

- <http://www.microsoft.com/enable/> – for Windows systems
- <http://www.apple.com/accessibility/> – for Macintosh systems.

Continue to look for other ideas. Consider tools across the continuum and seek out information on new tools as they emerge. A list of potential ATL tools, such as the ones below<sup>2</sup>, can help teams to come up with new ideas. Tools are listed from simpler to more complex.

### Reading

- Changes in text size/space/colour/background colour
- Book adapted for page turning (e.g., with page fluffers, three-ring binder and folders)
- Use of pictures with text
- Talking electronic devices for single words
- Scanner and talking word processor
- Electronic books

2. Adapted with permission from Wisconsin Assistive Technology Initiative, *The W.A.T.I. Assessment Package* (Oshkosh, WI: Wisconsin Assistive Technology Initiative, 2004), pp. 54–55.

### Organizing and studying

- Print or picture schedules
- Low-tech aids to find materials (e.g., colour tabs, coloured paper or folders)
- Highlight text (e.g., markers, highlight tape, ruler)
- Voice output reminders for tasks, assignments, steps to tasks
- Software for manipulation of objects/concept development – may use alternate access method such as touchscreen
- Software for organizing ideas and studying
- Hand-held devices with scheduling software

### Mathematics

- Abacus, math line
- Calculator/calculator with printout
- Talking calculator
- Onscreen calculator
- Software with cueing for math computations
- Tactile/voice output measuring devices
- Software that provides onscreen manipulation
- Math processing software

### Printing and handwriting

- Variety of pencils and pens
- Pencils with adaptive grips
- Adapted paper (e.g., raised lines or highlighted lines)
- Slant board
- Prewritten words or phrases
- Templates
- Portable word processor
- Computer with word processor

### Alternative computer access

- Keyboard with accessibility options
- Keyguard
- Alternative keyboard
- Dowel, mouth stick, headpointer with keyboard
- Word prediction, abbreviation/expansion to reduce keystrokes
- Alternative mouse (e.g., touchscreen, trackball, trackpad, joystick)
- Onscreen keyboard
- Switch with Morse code
- Switch with scanning
- Voice recognition

### Spelling and writing

- Word cards, word book, word wall
- Pocket dictionary, thesaurus
- Electronic dictionary/spell checker

- Word processor with spell check and grammar check
- Talking word processor
- Software with talking spell checker
- Word prediction software to facilitate spelling and sentence construction
- Multimedia software for production of ideas
- Voice recognition software

### Vision

- Eyeglasses
- Magnifier
- Large print books
- Closed circuit television
- Screen magnification software
- Screen colour contrast
- Screen reader, text reader
- Braille materials
- Braille translation software
- Enlarged or Braille/tactile labels for keyboard
- Alternate keyboard with enlarged keys
- Braille keyboard and note taker
- Refreshable Braille computer display

### Hearing

- Pen and paper
- Computer/portable word processor
- Signalling device
- Closed captioning
- Real-time captioning
- Computer-aided note taking
- Flash alert signal on computer
- Personal amplification system/hearing aid
- Personal FM system
- Sound-field FM

### Communication

- Communication board with pictures/words/objects
- Eye gaze frame
- Simple voice output device
- Voice output device with sequencing
- Voice output display with multimessage capability
- Voice output device with speech synthesis

In some cases, the learning team may need to seek out the advice and assistance of consultants with specific expertise in ATL.

When identifying possible ATL tools, remember that one student may use several different technologies to accomplish different tasks. For example, students with visual impairments may use a variety of tools such as a Braille keyboard and screen reading software, as well as a talking calculator and talking word processor. Start with what students need to be able to do and then consider tools from simple to complex that will allow them to do that task.

## Evaluating ATL solutions

Once a number of possibilities have been identified, the learning team must evaluate the options and determine the technologies that are most likely to be effective for the particular student. When evaluating assistive technology for learning, it is important to consider what services and supports are needed in addition to the devices. Appropriate use of ATL requires an understanding not only of what the things are, but also of how to use them effectively to make a difference for students.

Additional questions that the learning team may ask when gathering information include the following.

- What are the educational goals for this student?
- What does this student need to be able to do in order to meet these goals?
- What needs to be in place so that teachers and others can help this student do the tasks necessary to accomplish these goals?
- What has been tried to address these needs?
- What technology is currently available and could it be customized to meet the student's needs?
- If there is more than one tool that does the same type of thing, which tool will be best for this student?
- How will this tool help the student to increase his or her level of independence?
- What skills will the student need in order to use the tool effectively?
- Will the student require specific training in order to acquire the skill? If so, who will provide the training?
- Is the technology needed throughout the school environments? At home? In the community?
- What specific training will school staff and parents need to support the use of this technology? How will this training be provided?
- What people in the school or jurisdiction have the expertise to support the ATL process? Who will support the student's use of the ATL?
- How will this technology grow with the student?
- Is the solution cost-effective?
- What strategies will need to be used to implement the tools consistently and effectively?
- How will we measure how well the ATL is working? What will success look like?

The general rule of ATL purchases, like most other major purchases, is *don't buy it until you try it*. Real trials of the ATL need to be done before purchasing the equipment for the student. Trials not only demonstrate how well the solution may work for the student, but also help the team to understand what needs to happen to support ongoing implementation of the ATL. There are a number of possibilities for trying out ATL tools, including the following:

- locating a demo version of software—many companies have demo CDs that will run for a limited period of time
- borrowing the equipment on a short-term loan—many ATL vendors will provide short-term loans of equipment to try with students; some school jurisdictions and health facilities also have lending libraries of equipment
- accessing the tool through the school's ATL toolkit.

### Assistive technology for learning toolkit

Ideally, the selection and implementation of assistive technology for learning should begin at the school or jurisdiction level. One idea that is gaining support in various school jurisdictions is creating an ATL toolkit. An ATL toolkit consists of a set of easy-to-use, cost-effective media and devices that assist teams when considering ATL options for students. By putting together an ATL toolkit, schools may be able to address the needs of a number of individual students without having to refer them for an ATL evaluation by a specialized team. The toolkit would be readily available for school staff to try with a student in classroom environments. School teams can use the sample list of ATL tools from the preceding pages as a starting point for creating their own ATL toolkits.

In order for the toolkits to be effectively used, there will need to be training for school staff.

Assistive technology for learning allows students to do things that, due to their disability, would otherwise be difficult or impossible for them to accomplish. Evaluating the effectiveness of the technology means focusing on how well students can perform those tasks with the technology in place.

#### Sample strategies

Consider the following sample strategies for effectively conducting trial runs to evaluate ATL tools.

- Clearly define how the team expects the technology to affect student performance. Consider changes across many dimensions—will the student be faster? More accurate? More spontaneous? Produce more legible work or speech output? Or be able to do things independently? Know what type of change is realistic. Not all variables will change equally. For example, scan-and-read software may not help students read faster or more than they would if they had someone reading to them, but it may allow them to read independently.

- Consider the typical environments where the student will be using the technology. Doing a trial of software in a quiet room with no other distractions will not give an appropriate picture of how it will really work for the student in a busy classroom with other students.
- Use a template to record information during learning trials, particularly if several options are being evaluated.

### Appendices

See Appendices 9-G and 9-H for sample forms to record data gathered during ATL trials.

### Sample strategies

In addition to trials themselves, there are a number of strategies for gathering information to evaluate ATL tools, including the following (Reed, Bowser and Korsten 2002).

- **Interviewing students.** After students have participated in trials of the ATL tools identified, ask students which technology they preferred. While not all students are capable of providing this kind of feedback, when it is possible, this information can help ensure that individual students are willing to use the tools selected, and help the team to understand what is or is not acceptable or helpful to them.
- **Reviewing finished products created by students.** This is the most commonly used method of gathering information. Students' work can be evaluated to see the difference in the product when using ATL. This method can work well for looking at quality and quantity of output. However, looking only at finished products may not tell the whole story, such as how long a task took or how many errors needed to be corrected.
- **Observing students' performance completing the task.** Observing students allows teachers to see changes in the process of the task completion. It involves taking the time to watch a student "in action," and making systematic notes about the events observed.
- **Videotaping students completing the task.** This type of data recording can show many things about qualitative change in the student's ability to accomplish the task. It can also create an opportunity to watch and discuss a tape in a group, making it more possible for discussion and a shared understanding that could lead to better decision making.

It is critical that relevant data be collected to make the best selection possible for an individual student. A magazine ad or article, a Web site reference or a vendor recommendation simply does not provide enough information for making an ATL decision for an individual student. Consider the following example to understand the importance of testing out and reflecting on ATL solutions before making decisions.

## Joyce's story

Joyce is a Grade 9 student who has a physical impairment that makes writing difficult. Her team wanted her to try to use speech recognition software on a laptop computer. Joyce learned to use the software at home on her desktop computer and was getting quite good at composing essays and papers for English and social studies.

Because of the apparent success with this ATL system, the school purchased Joyce a laptop with the software for Joyce's use. Joyce tried to use this system in her English class. The results were not good. First, the computer would run out of battery power at critical times. Joyce's classes were 80 minutes long. Her battery typically only lasted one hour. So, she moved her desk closer to the wall so that she could plug in at the beginning of each class.

Then, Joyce had difficulty talking into her computer while her teacher was talking. The computer "heard" other voices and this caused problems for the recognition feature. Joyce could correct these errors in class, but she found it difficult to talk and attend at the same time. Also, her talking, although quiet, was disruptive to other students seated near her.

Most importantly, Joyce was uncomfortable using this technology in class. She didn't want people to "hear" what she was writing, especially first drafts. Joyce was happy to use speech recognition at home to do longer assignments, but this was not the most appropriate tool for her to use in the classroom.

## Creating an ATL Implementation Plan

If ATL tools are to be used effectively, planning for implementation is critical. An implementation plan usually involves the following four components:

- training the student to use the ATL
- training staff to understand and support the student's use of the ATL
- developing a technical support plan for managing equipment that the student will be using
- monitoring the effectiveness of the ATL tool.

It is also important that the team be proactive. Ensuring that appropriate ATL and training and support for new classroom staff is in place prior to a student's transition will save time, reduce frustration and be more cost-effective over the long term.

Putting the ATL implementation plan into action requires the learning team to think through questions about how the student will use the ATL, such as the following.

- What specific things need to happen to ensure that the ATL tools will be used effectively?
- Who will be responsible for seeing that these things happen?

- What tasks is the student going to use this technology for?
- Where is the student going to use the technology?
- What set-up and supports are necessary?

## Training

The student is obviously a key person who will need training on the ATL tools, but it is just as important to make plans for training other people who will be working with the student on a regular basis. This includes teachers and teacher assistants, and parents if the student will be using his or her ATL at home. When the people who support the student on a daily basis do not understand the student's technology tools, assistive technology for learning use can seem too difficult or cumbersome and is more likely to be abandoned (Scherer 1993).

## Technical support

The team also needs to identify where to go for technical support. They also need a plan for troubleshooting and device maintenance. If the student and the team know where to turn for help, it is more likely that the equipment will be used. Assistive technology for learning devices with minor problems (such as dead batteries that no one knows how to change) may be put on the shelf for days or weeks until a consultant can look at it. When the team sets up a system that can deal with anticipated (and sometimes unanticipated) technical problems, the student's use of the ATL is much more likely to be successful.

## Monitoring

Change will happen for a number of reasons, including the following.

- The students themselves will change. They will mature, develop new skills and have different needs.
- The environments in which students function will change. Every year students attend new classrooms, the demands in those classrooms are different and the supports in those classrooms are different.
- Tasks will change. Each year will bring different curricular demands as well as different expectations for participation and changing definitions of what success looks like.

As students' needs change, their assistive technology for learning needs will also change. For this reason, ongoing monitoring of a student's ATL solutions is critical.

### Appendices

*See Appendices 9-I and 9-J for sample tools for gathering and organizing information for the monitoring process.*

The SETT Framework can be used for ongoing review and adaptation. During times of transition, the team can use the framework to gather and review information.

## Example

## Making ATL Part of the IPP Process

If students are to benefit from assistive technology for learning, the thinking about and planning for ATL needs to happen throughout the IPP process. The example below illustrates how Daniel's learning team used assistive technology for learning as an integral component of his IPP process.

### 1. Identifying strengths and areas of need

Daniel is a Grade 6 student who is struggling with reading and writing. Daniel's learning team explores the following questions.

- Will assistive technology for learning enable Daniel to be a more independent reader and writer?
- Will assistive technology for learning allow Daniel to work at a grade level more consistent with his cognitive ability?

### 2. Setting the direction

Using the SETT Framework to guide their decision making, the team decided that Daniel could benefit from ATL to support writing and reading.

### 3. Creating a plan

There are several different tools available that have the potential to help Daniel be a more independent reader and allow him to check his own legible writings. The following ATL tools were identified as having the potential to benefit Daniel:

- word prediction software
- talking word processing software
- scan-and-read software.

After trying out different demo versions of each type of software, it became obvious that one program with the ability to read scanned text, convert text to speech and perform word processing, worked best. It was the easiest for Daniel to use and also was the most cost-effective.

The plan for using the software was documented in Daniel's IPP as both a writing goal and a reading goal.

Writing goals:

- Daniel will demonstrate that he can use the features of Software X to support his writing.
- Using word prediction software, Daniel will independently complete class writing assignments with at least five complete sentences.

Reading goal:

- Using scan-and-read software, Daniel will read textbooks and other grade-level materials independently in social studies.

#### 4. Implementing the plan

Daniel, three of his teachers and one teacher assistant were trained on the software that was chosen. Daniel, two of his teachers and his mother were also interviewed by his IPP coordinator to share what outcomes they observed from Daniel's use of this technology.

Daniel needed further support to operate his ATL system more independently and the school arranged for a volunteer student teacher to help Daniel learn how to use the software. The school tech support teacher was also trained on the software and the system requirements (e.g., scanner, printer) so that she could support Daniel and his teachers.

With teacher support, Daniel will begin to maintain his own log of ATL strategies that work and device information.

#### Appendices

*See Appendix 9-K for a sample tool for maintaining a log of ATL information.*

#### 5. Reviewing and revising

The learning team continued to monitor Daniel's progress by asking the question: Does ATL continue to be effective at helping meet Daniel's learning needs?

All team members agreed that the software was helping Daniel be a more independent reader. He would eventually need more training so he could use the scanning system independently. Daniel's IPP was revised to make the scan-and-read software an accommodation.

His writing, although better, was still not reflective of his cognitive ability. The text to speech, talking spell checker and word prediction software had potential to be helpful but Daniel didn't consistently use the tools in the most productive way. A demo version of voice recognition software was introduced but Daniel does not currently have the skills to use this software independently. IPP goals continued in the area of using ATL to support and build on writing skills.

#### 6. Planning for transitions

Daniel will be moving to junior high within the next year and the demands for independent reading will increase.

The SETT process was used again with specific focus on what new tasks Daniel will have in the upcoming junior high environment. The resulting decision was that Daniel will need a laptop computer and a scanning station in order to make materials available in each classroom. The new school worked with Daniel's current teacher to create an ATL system that would best meet Daniel's needs in his new school.

The team arranged for his receiving language arts teacher to come and observe Daniel using the ATL in his current classroom. This will also be an opportunity for his current Grade 6 teacher to talk to the receiving teacher about skills that Daniel will need to make a successful transition to junior high.

#### Appendices

See Appendix 9-L for a sample tool for planning transitions.

## ATL Solutions as Essential IPP Information

Information about assistive technology for learning can be part of the essential information required in the IPP for a student with special education needs, including goal statements, required classroom accommodations, identification of coordinated support services and transition plans.

### IPP goals and objectives

A goal related to assistive technology for learning could include learning how to best use the tool.

#### Example

For example:

- *Daniel will demonstrate that he can independently use scan-and-read software to access reading material assigned in class.*
- *Using scan-and-read software, Daniel will independently read Grade 6 level materials for his social studies class, including the textbook and various other reading materials.*

ATL could also be a condition or provide a context for a related goal.

### Required classroom accommodations

Once the appropriate ATL tools are identified, it is important to document their use as effective accommodations for an individual student.

For example, once Daniel's use of scan-and-read software had been well established and proved to be effective across environments, the essential information about ATL could move from the goal statement to the accommodations list.

#### Example

For example:

- *Daniel needs the following classroom accommodations:*
  - *scan-and-read program X to independently read classroom materials*
  - *teacher assistant support to scan materials approximately 30 minutes per day.*

## Required coordinated services

Human resources, knowledge and other support that make the ATL system work should be listed under the required coordinated services.

### Example

For example:

- *Daniel requires the services of:*
  - *jurisdiction tech coordinator (annual maintenance of scanner, headphones and laptop computer)*
  - *jurisdiction ATL specialist (annual consultation).*

## Transition plans

It is important that all ATL tools and services are included in the IPP and are reviewed on a regular basis by the learning team. Documenting the ATL tools and strategies used successfully by students will help maintain success as these students transition through their school years.

### Example

For example:

- *Daniel will continue keyboarding instruction with the goal of typing 25 wpm.*
- *Team will investigate potential use of laptop for junior high.*

## Sample IPP

This chapter ends with a compiled sample of an IPP that illustrates how assistive technology for learning might be a focus on an individualized program plan. This sample is for a Grade 6 student of average ability who has a mild physical disability and is having difficulty managing longer writing assignments independently. The classroom teacher is coordinating the IPP process, and the school technology coordinator and the district occupational therapist are working with the student and her parents. The major focus of the IPP is increased independence as this student prepares for transition to junior high.

<b>Individualized Program Plan</b>	
<b>Student Information</b>	
<b>Student:</b> Martine S.	<b>Age as of Sept. 1/0X:</b> 11 yrs., 4 mos.
<b>Date of Birth:</b> April 21, 199X	<b>Date I.P.P. Created:</b> Sept. 200X
<b>Parents:</b> Joe and Joan S.	<b>Eligibility Code:</b> 58
<b>Grade:</b> 6	(mild physical disability)
<b>Background information: Classroom context</b>	
<b>School:</b> Any Elementary School	
<b>I.P.P. Coordinator and Classroom Teacher:</b> Ms. Teach	
<b>Additional IPP Team Members:</b> Ms. Tech (School Technology Coordinator) Ms. Move (District Occupational Therapist)	
<b>Background Information: Parental input and involvement</b>	
<p><i>September 200X</i> Parents met with Ms. Teach to discuss Martine's desire to work more independently this year. They report she is very comfortable on computer at home and inquire about possibly using a computer at least in language arts.</p> <p><i>October 200X</i> Parents, Martine and Ms. Teach met with school technology coordinator and district occupational therapist to discuss potential assistive technology for learning options. Martine agreed to do 3-week trials of a) computer with Microsoft Word, b) computer, Microsoft Word and word prediction software, and c) dedicated word processor (Alphasmart Neo).</p> <p><i>February 200X</i> Martine reports she is feeling confident with her Alphasmart and parents note she appears to be happy with her new level of independence.</p> <p><i>June 200X</i> Telephone conference to confirm junior high placement for September. Parents plan to meet with Martine and her new teachers in early September.</p>	

Sample IPP - Martine (continued) page 2/4

<b>Strengths</b>		
<ul style="list-style-type: none"> <li>highly motivated and driven to be independent</li> <li>strong verbal skills</li> <li>working at grade level</li> </ul>		
<b>Areas of Need</b>		
<ul style="list-style-type: none"> <li>technology tools to support independently completing longer writing assignments (currently receives teacher assistant support in language arts and social studies)</li> </ul>		
<b>Medical Conditions that Impact Schooling</b>		
Mild spastic cerebral palsy that affects fine motor control and fatigue level		
<b>Assessment Data (Specialized Assessment Results)</b>		
<b>Date and Assessor</b>	<b>Test</b>	<b>Results</b>
June 200X Dr. Motor	Bruiniks-Ozeretsky Test of Motor Proficiency	moderate fine motor delay
June 200X Dr. Toni	Test of Non-verbal Intelligence-3 (TONI-3)	58 <sup>th</sup> percentile
<b>Current Level of Performance and Achievement</b>		<b>Year-end Performance</b>
<i>Results from Grade 5 report card:</i> Language Arts: 78% (with teacher assistant support)		<i>Results from Grade 6 report card:</i> Language Arts: 80% (with ATL support)
<b>Coordinated Support Services</b>		
Consultation with district occupational therapist, Ms. Move, on as-needed basis		

## Sample IPP - Martine (continued) page 3/4

<b>Goal # 1</b>		
<b>Long-term Goal:</b> By June 200X, Martine will use appropriate technology to complete writing assignments independently and within reasonable timelines to grade level expectations.		
<b>Short-term Objectives</b>	<b>Assessment Procedures</b>	<b>Progress Review</b>
By November 15 Martine will try out three different tools to complete writing assignments and will participate in evaluation of which tool works best for her.	<ul style="list-style-type: none"> <li>collect and use classroom rubric to compare three writing samples completed using each of the three trial tools</li> <li>student interview to determine preferred tool</li> </ul>	November 15 Martine is able to produce longer, more accurate assignments using the dedicated word processor. Although word prediction does not increase speed or accuracy of writing, we'll continue to make it available as Martine reported it allowed her to compose with less fatigue and this also would allow her to continue to learn to use the software.
By February 15 Martine will independently use her chosen tool to complete at least 50% of her written assignments.	<ul style="list-style-type: none"> <li>use classroom rubric to compare current writing sample with writing sample from September (completed with no ATL)</li> <li>log of completed written assignments, noting lengths and time to complete</li> </ul>	February 15 Martine is able to use the dedicated word processor with minimal assistance. She required occasional support to connect the device to the printer. She rarely uses word prediction as she feels it slows her down.
By June 15 Martine will independently use her chosen tool to complete at least 80% of her written assignments.	<ul style="list-style-type: none"> <li>log of completed work, noting length, time to complete and awarded mark</li> </ul>	June 15 Martine is able to complete all written work independently, maintaining a 75% overall average.
<b>Accommodations and strategies to support objectives</b>		
<ul style="list-style-type: none"> <li>three-week trials of three different ATL tools</li> <li>access to chosen tool and related peripherals (e.g., printer, cables) plus instructional support from technical coordinator</li> </ul>		

Sample IPP - Martine (continued) page 4/4

**Planning for Transition**

September 200X

Martine wants to be more independent and be able to work without teacher assistant support in junior high. She is now using the family computer for writing and editing at home, and the team will look at a dedicated word processor for Grade 6. If needed, the team will explore other technologies such as speech recognition software if Martine is not able to keep up with increased demands in junior high.

**Year-end Summary**

June 200X

Martine learned to use her Alphasmart Neo independently and by year-end she was completing all written assignments with no assistance. She maintained her overall language arts performance at a comparable level to that of last year. Martine says that she is comfortable with the idea of taking the Alphasmart to junior high and she feels confident it will help her maintain her independence in this new setting.

**Signatures**

I understand and agree with the information contained in this Individualized Program Plan.

\_\_\_\_\_

Parents

\_\_\_\_\_

Date

\_\_\_\_\_

IPP Coordinator/Teacher

\_\_\_\_\_

Date

\_\_\_\_\_

Principal

\_\_\_\_\_

Date

## Looking to the Future: Universal Design for Learning

There is a growing understanding among educators that special education needs can be accommodated by adopting the principles of *universal design*, which originated in the field of architecture. This means that instructional materials and activities should be designed so that students with broad differences in their abilities to see, hear, speak, move, read, write, understand language, attend to information, organize, engage and remember, can achieve their learning goals.

Universal design for learning means flexible curricular materials and learning activities that provide alternative ways to participate for students with differences in abilities and backgrounds. These alternatives are not added afterwards; they are built into the design of the materials, equipment, instruction and activities.

As learning environments and resources become more universally designed and accessible to all, the need for assistive technology for learning will change. What is a critical specialized tool for an individual student today may be part of how all instruction is provided in the future. Technology is always changing. The promise of universal design for learning is that changing technology will better address the needs of *all* learners.

For more information

### For More Information

**Alberta Consortium for Rehabilitative and Assistive Technology**  
[www.acrat.ca](http://www.acrat.ca)

This Alberta initiative focuses on assistive technologies and the role they play in enabling participation in society by persons with disabilities.

**Materials Resource Unit, Learning Resources Centre**

[www.lrc.education.gov.ab.ca/pro/visual\\_imp/visual\\_imp\\_index-p.htm](http://www.lrc.education.gov.ab.ca/pro/visual_imp/visual_imp_index-p.htm)  
 The Materials Resource Unit (MRU) for the Visually Impaired loans alternate format resources (Braille, audio, electronic resources and large print), kits, specialized equipment and professional resources to assist Alberta schools in the delivery of an educational program for ECS–Grade 12 students with visual impairments.

**Regional Educational Consulting Services (RECS) Teams**

RECS provide educational support services for children/students:

- aged 2.5 to 20 years
- in a school or ECS program
- meeting the criteria for Alberta Education exceptional student codes (41, 43, 44, 45, 46, 55, 56) and requiring the support of a multidisciplinary team. RECS are not available for ECS children/students with a severe delay involving language (code 47) unless there is evidence that the child/student has severe needs that are not reflected by the current code

- with mild/moderate disabilities (at Réseau provincial d'adaptation scolaire only).

RECS provide the following services:

- assessment to determine a student's strengths and areas of need for programming purposes
- consultation to schools as part of the learning team
- inservice to provide information on a wide range of topics that will support schools in providing positive learning opportunities and experiences for children/students.

For more information, contact your RECS team:

- CASE (Coordinated Assessment Services for the Exceptional), Grande Prairie, 780-513-7310
- ERECS (Edmonton Regional Educational Consulting Services), Edmonton, 780-472-4455
- REACH (Regional Educational Assessment and Consultation Services), Calgary, 403-777-6983
- RÉSEAU (Réseau provincial d'adaptation scolaire, Francophone), Edmonton, 780-487-3200

### **Student Health Initiative**

[www.education.gov.ab.ca/shi/](http://www.education.gov.ab.ca/shi/)

The goal of the Student Health Initiative is to improve access to and enhance the provision of integrated health and related support services for children with special health needs so that they can participate fully in their educational programs to attain their potential and be successful at learning.

### **Other providers of ATL**

#### **Augmentative Communication and Educational Technology Service (ACETS)**

The Augmentative Communication and Educational Technology Service (ACETS) of the Alberta Children's Hospital, located in Calgary, is a multidisciplinary team that works in collaboration with families, therapy teams and caregivers. ACETS provides assessment, consultation, education, advocacy support and short-term intervention in augmentative and alternative communication strategies, and may include a combination of no technology, low technology and high technology. For more information, call 403-943-7023 or fax 403-244-0935.

#### **I CAN Assistive Technology Centre**

[www.capitalhealth.ca/icancentre](http://www.capitalhealth.ca/icancentre)

The I CAN Centre at the Glenrose Hospital in Edmonton provides assessment, consultation, training, follow-up, education and research in assistive technology, specifically augmentative communication, adapted computer access, environmental controls and specialized power mobility. Other services include an equipment pool for short-term loans, a resource library, and workshops for teachers and other professionals.

## Assistive Technology for Learning Web Sites

### **Alliance for Technology Access (ATA)**

[www.ataccess.org/](http://www.ataccess.org/)

The Alliance for Technology Access (ATA) is a network of community-based resource centres, developers, vendors and associates dedicated to providing information and support services to children and adults with disabilities, and increasing their use of standard, assistive and information technologies.

### **Assistive Technology Strategies, Tools, Accommodations and Resources (ATSTAR) Program**

[www.atstar.org](http://www.atstar.org)

The Assistive Technology Strategies, Tools, Accommodations and Resources (ATSTAR) Program is designed to increase ATL expertise through technology-enhanced learning environments.

### **Assistive Technology Training Online**

<http://atto.buffalo.edu>

The Assistive Technology Training Online Project provides Internet-based training in both general and specific areas of adapted computer use.

### **California State University at Northridge, Center on Disabilities**

[www.csun.edu/cod/](http://www.csun.edu/cod/)

Located at California State University at Northridge, the Center on Disabilities develops and publishes materials of interest to the field of disability, and sponsors conferences, seminars and workshops.

### **Center for Applied Special Technology**

[www.cast.org](http://www.cast.org)

This site is a resource for expanding educational opportunities for individuals with disabilities through Universal Design for Learning.

### **Closing the Gap**

[www.closingthegap.com](http://www.closingthegap.com)

This Web site spotlights resources in computer technology, special education and rehabilitation. The Web-searchable resource directory is a database of over 2000 hardware and software products.

### **Georgia Project for Assistive Technology**

[www.gpat.org](http://www.gpat.org)

This federally funded project of the Georgia Department of Education, Division for Exceptional Students, provides a range of technical support services in the area of assistive technology for learning to state school system personnel and their students. A variety of helpful resources and forms are available.

### **LD Online**

[www.ldonline.com/](http://www.ldonline.com/)

This interactive Web site provides resources on learning disabilities to parents, teachers, children and other professionals. The site includes books, articles, videos and a newsletter.

### **National Assistive Technology Research Institute**

<http://natri.uky.edu/>

The National Assistive Technology Research Institute conducts assistive technology research, translates theory and research into practice, and provides resources for improving the delivery of assistive technology services. The Institute is operated by the Department of Special Education and Rehabilitation Counseling at the University of Kentucky.

### **Oregon Technology Access Program**

[www.otap-oregon.org/](http://www.otap-oregon.org/)

This program provides training, information, technical assistance and resources regarding the uses of technology for children with disabilities.

### **Quality Indicators for Assistive Technology Services**

[www.qiat.org](http://www.qiat.org)

This consortium is an American grassroots group dedicated to identifying, disseminating and implementing a set of widely applicable quality indicators for assistive technology for learning services in school settings. The listserv provides a national forum for discussion of assistive technology for learning issues. Sign-up information is available on the Web site.

### **Resources for Assistive Technology in Education**

[www.joyzabala.com/](http://www.joyzabala.com/)

This Web page introduces the SETT Framework and provides resources for learning more about assistive technology for learning devices and services in educational settings. It provides links to informational sites as well as sites which provide opportunities for participation in collegial discussions and research on assistive technology for learning.

### **SET-BC**

[www.setbc.org/](http://www.setbc.org/)

SET-BC is a provincial resource program designed to assist school jurisdictions in British Columbia in meeting the technology needs of students with physical disabilities and sensory impairments.

### **Special Education Technology Practice**

[www.setp.net/](http://www.setp.net/)

This is the site of special education technology professor and researcher Dave Edyburn. This site has links to the journal titled *Special Education Technology Practice* and other information regarding the use of technology in special education.

**Special Needs Opportunity Windows (SNOW)**

<http://snow.utoronto.ca/>

The Special Needs Opportunity Windows (SNOW) Project is a provider of online resources and professional development opportunities for educators and parents of students with special education needs.

**Technology and Media Division of the Council for Exceptional Children**

[www.tamcec.org/](http://www.tamcec.org/)

This division of the Council for Exceptional Children works to promote the effective use of technology and media for individuals with exceptional educational needs. The site includes information on conferences and professional publications including the *Journal of Special Education Technology*.

**Texas Assistive Technology Network**

[www.texasat.net/](http://www.texasat.net/)

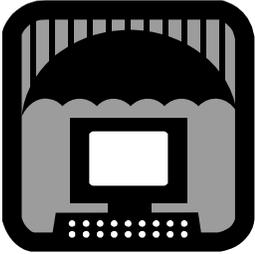
This is a collaborative network between educational service centres in Texas. The site provides links, resources and training materials.

**Wisconsin Assistive Technology Initiative**

[www.wati.org/](http://www.wati.org/)

This statewide project, funded by the Wisconsin Department of Public Instruction, helps school jurisdictions develop or improve their assistive technology for learning services. It includes information on best practices, training materials, resources and sample forms, and provides links to other sites related to assistive technology for learning.

## Appendices



These tools are available in PDF format at [www.education.gov.ab.ca/k\\_12/special\\_needs/resource.asp](http://www.education.gov.ab.ca/k_12/special_needs/resource.asp) and on the CD-ROM packaged with the print version of this resource.

# Infusing Assistive Technology for Learning into the IPP Process

The purpose of these sample tools is to enrich the IPP process. These tools should be used selectively and can be adapted to best meet the needs of individual students. Many of these tools will be used informally as part of the IPP development process and not as products for the student's permanent school record.

- 9-A Sample Questions for Parents about Assistive Technology for Learning
- 9-B Assistive Technology for Learning Planning Process: Student, Environment and Tasks
- 9-C Assistive Technology for Learning Checklist
- 9-D Printing and Handwriting Inventory
- 9-E Writing Inventory
- 9-F Assistive Technology for Learning Investigation: Student Report
- 9-G Assistive Technology for Learning Trial Record
- 9-H Assistive Technology for Learning Trial Record: Student Report
- 9-I Monitoring My Assistive Technology for Learning Use: Student Report
- 9-J Parent Feedback on Assistive Technology for Learning
- 9-K Record of Assistive Technology for Learning Maintenance Information
- 9-L Assistive Technology for Learning Planning for Transition Checklist



## Sample Questions for Parents about Assistive Technology for Learning

### Sample questions to ask myself

#### Investigating assistive technology for learning

- What are the specific problems that my child is encountering in school (such as reading assigned text, writing clearly and legibly, seeing written words, speaking clearly, communicating needs and interests)? What evidence do I have of these difficulties?

### Sample questions to discuss with my child's learning team

- Could my child perform better if the way difficult tasks were done was changed?
- Are you aware of new solutions (that could include no-tech to high-tech) that might help my child be more successful?
- If there is no one on my child's learning team who is familiar with current ATL solutions, who in the jurisdiction is knowledgeable about assistive technology for learning? How can we access that person?
- What assistive technology for learning, if any, has my child tried? What data did the trial generate? How long did the trial last? Did it make a difference?

#### During the assessment and trial period

- What does my child say about how he or she feels about the assistive technology for learning being tried?
- What changes in my child's performance and attitude, if any, am I seeing at home while my child is using this assistive technology for learning?
- Who is coordinating the assessment and trials to identify the best assistive technology for learning solutions for my child?
- In what environments will my child need assistive technology for learning?
- How long will the trials take? By what date will we know which assistive technology for learning device, if any, will work best for my child?



Appendix 9-A

## Sample Questions for Parents about Assistive Technology for Learning (continued) page 2/3

### Sample questions to ask myself

### Sample questions to discuss with my child's learning team

#### After the initial assessment and trials

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Did the results of the assessment and trials point us clearly toward the specific assistive technology for learning that could help my child?</li> <li>• Does my child need to use this assistive technology for learning at home as well as at school? For what specific tasks? If yes, how will the use of assistive technology for learning at home impact our family?</li> <li>• Do I need to know how to use the assistive technology for learning my child is using? How much do I need to know?</li> </ul> | <ul style="list-style-type: none"> <li>• For what specific tasks will my child use the assistive technology for learning at school?</li> <li>• When and how often will my child use the assistive technology for learning during the school day?</li> <li>• How long will it take to put the assistive technology for learning into place?</li> <li>• What related service, if any, will my child need in order to use the technology effectively?</li> <li>• What will other students in the classroom be told about my child's use of this technology?</li> <li>• When my child uses this assistive technology for learning in school, what can I do to support his or her success?</li> <li>• If my child uses assistive technology for learning only at school, how will I know how things are going?</li> </ul> |
|--|--|

#### During ongoing monitoring

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• What changes, if any, does my child report about how things are going at school since he or she began using assistive technology for learning?</li> <li>• What changes, if any, have I seen at home since my child began using assistive technology for learning?</li> </ul> | <ul style="list-style-type: none"> <li>• What differences are you seeing in my child's performance with the use of assistive technology for learning?</li> <li>• What problems are there, if any?</li> <li>• How are you keeping track of what is working and not working in relation to my child's assistive technology for learning use?</li> <li>• What specific things do I need to know about the assistive technology for learning that my child is using? Who will teach me what I need to know?</li> </ul> |
|---|--|



## Sample Questions for Parents about Assistive Technology for Learning (continued) page 3/3

### Sample questions to ask myself

### Sample questions to discuss with my child's learning team

#### Planning for transitions

- Is the assistive technology for learning working for my child in the ways I expected?
  - What have been the benefits of using the assistive technology for learning?
  - What have been the drawbacks, if any, of using the assistive technology for learning?
  - If there were drawbacks, how can we overcome them in the future?
  - Now that my child is using assistive technology for learning at school, what are the other situations or environments where he or she could use the same technology?
- Will my child use the same assistive technology for learning next year?
  - What assistive technology for learning supports will my child need in the future?
  - If my child is making a transition to a new setting, will the same assistive technology for learning be available at the new setting? Are the staff knowledgeable about that specific technology? Is it compatible with other technology in that setting? What needs to be done to ensure the transition is successful?



Appendix 9-B

## Assistive Technology for Learning Planning Process: Student, Environment and Tasks

### A. Student

1. What does the student need to do, but is currently unable to do?  


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2. What are the student's strengths, abilities, accomplishments and/or motivators? What "success stories" can you share?  


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3. What are the student's unique learning needs?  


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4. What strategies or accommodations have been used successfully for this student?  


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5. What are the student's long-term goals?  


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6. What behaviours (both positive and negative) significantly impact the student's performance?  


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7. What strengths, learning preferences, coping strategies or interests need to be considered by the team?  


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---
8. What other issues should be discussed at the team meeting?  


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This appendix reproduced from Minnesota Department of Education, *Minnesota Assistive Technology Manual, 2003 Edition* (Minneapolis, MN: Division of Special Education, Minnesota Department of Education, 2003), "Student, Environment, and Tasks Worksheet, Assistive Technology Planning Process." Permission to use is granted if credit is maintained.



Assistive Technology for Learning Planning Process:  
Student, Environment and Tasks  
(continued) page 2/3

**B. Environment**

What learning environments are typical for this student? Select up to three learning environments where strategies, assistive technology products or adaptations are necessary.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Complete questions in the table below for each environment. Use additional sheets if necessary.

	<b>Environment 1</b>	<b>Environment 2</b>	<b>Environment 3</b>
1. What materials are currently available to the student?			
2. What is the physical arrangement?			
3. How does the instruction generally take place (e.g., lecture, lab work, small groups, etc.)?			
4. What supports are currently available in this environment?			
5. What additional resources are available to support the student?			



Appendix 9-B

Assistive Technology for Learning Planning Process:  
 Student, Environment and Tasks  
 (continued) page 3/3

**C. Tasks**

Use the table below to identify critical learning tasks. Use additional sheets if necessary.

	<b>Task 1</b>	<b>Task 2</b>	<b>Task 3</b>
1. What learning activities (tasks) take place in the environment that are critical to the student?			
2. What are other ways of completing these tasks?			

**Notes:**

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## Assistive Technology for Learning Checklist

1. Student's performance is improved by (check [✓] all that apply):

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> smaller amount of text on page | <input type="checkbox"/> spoken text to accompany print | <input type="checkbox"/> graphics to communicate ideas |
| <input type="checkbox"/> lowered reading level          | <input type="checkbox"/> enlarged print                 | <input type="checkbox"/> other                         |
| <input type="checkbox"/> bold type for main ideas       | <input type="checkbox"/> reduced length of assignment   | _____  |
|   |   | _____  |

2. Assistive technology for learning that has been tried (check [✓] all that apply):

- highlighter, marker, template or other self-help aid
- tape recorder, taped text or talking books to read along
- talking dictionary (e.g., Franklin Speaking Language Master) to pronounce single words
- computer with talking word processing software to:
  - pronounce words
  - speak sentences
  - speak paragraphs

3. Computer availability and use (check [✓] all that apply)

The student has access to the following computer(s):

- |   |   |
|---|---|
| <input type="checkbox"/> Windows system | <input type="checkbox"/> Macintosh system |
| _____                                   | _____                                     |

The student uses a computer:

- rarely
- frequently
- daily for one or more subjects or periods
- every day, all day

Adapted with permission from Wisconsin Assistive Technology Initiative, *The W.A.T.I. Assessment Package* (Oshkosh, WI: Wisconsin Assistive Technology Initiative, 2004), pp. 30–31.



## Printing and Handwriting Inventory

1. Student's current printing and handwriting ability (check [✓] all that apply):

- |   |  |
|---|--|
| <input type="checkbox"/> holds regular pencil                     | <input type="checkbox"/> copies simple shapes                  |
| <input type="checkbox"/> holds pencil when adapted with:<br>_____ | <input type="checkbox"/> copies simple words                   |
| <input type="checkbox"/> holds pencil, but does not write         | <input type="checkbox"/> copies from board                     |
| <input type="checkbox"/> prints name                              | <input type="checkbox"/> writes on 1" lines                    |
| <input type="checkbox"/> writes cursive                           | <input type="checkbox"/> writes on narrow lines                |
| <input type="checkbox"/> prints a few words                       | <input type="checkbox"/> uses spacing correctly                |
| <input type="checkbox"/> writing is limited due to fatigue        | <input type="checkbox"/> adjusts size of writing to fit spaces |
| <input type="checkbox"/> writing is slow and arduous              | <input type="checkbox"/> writes independently and legibly      |

2. Student currently uses the following strategies for writing (check [✓] all that apply):

- |  |  |
|--|--|
| <input type="checkbox"/> shortened assignments | <input type="checkbox"/> verbal response instead of written response |
| <input type="checkbox"/> scribed by others     | <input type="checkbox"/> writing frames                              |

3. Assistive technology for learning used by student (check [✓] all that apply):

- |   |  |
|---|--|
| <input type="checkbox"/> special pencil or marker | <input type="checkbox"/> adapted desk, tray, table |
| <input type="checkbox"/> splint or pencil holder  | <input type="checkbox"/> slant board or easel      |
| <input type="checkbox"/> pencil grip              | <input type="checkbox"/> tape recorder             |
| <input type="checkbox"/> paper with heavier lines | <input type="checkbox"/> computer                  |
| <input type="checkbox"/> paper with raised lines  |  |

4. Current keyboarding ability (check [✓] all that apply):

- |   |  |
|---|--|
| <input type="checkbox"/> does not currently type                      | <input type="checkbox"/> uses Touch Window                                     |
| <input type="checkbox"/> types slowly, with one finger                | <input type="checkbox"/> uses access software                                  |
| <input type="checkbox"/> types slowly, with more than one finger      | <input type="checkbox"/> uses adapted or alternate keyboard,<br>such as: _____ |
| <input type="checkbox"/> performs 10-finger typing wpm: _____         | <input type="checkbox"/> uses switch to access computer                        |
| <input type="checkbox"/> requires arm or wrist support to type        | <input type="checkbox"/> other: _____  |
| <input type="checkbox"/> accesses keyboard with head or<br>mouthstick |  |

This appendix adapted with permission from Wisconsin Assistive Technology Initiative, *The W.A.T.I. Assessment Package* (Oshkosh, WI: Wisconsin Assistive Technology Initiative, 2004), pp. 24–25.



## Printing and Handwriting Inventory (continued) page 2/2

5. Current computer use (check [✓] all that apply):

- never used a computer
- potential to use computer but has not used a computer because:

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- uses computer for games
- uses computer for word processing
- uses spell checker on computer
- uses computer at school for these tasks:

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- uses computer at home for these tasks:

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6. Computer availability:

The student has access to the following computer(s):

- Windows system
- Macintosh system

---

7. Summary of student's abilities and concerns related to printing and handwriting:



Appendix 9-E

## Writing Inventory

1. Student's current writing is typically:

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> single words    | <input type="checkbox"/> sentences               | <input type="checkbox"/> multiparagraph reports |
| <input type="checkbox"/> short phrases   | <input type="checkbox"/> 2–5 sentence paragraphs | <input type="checkbox"/> other: _____           |
| <input type="checkbox"/> complex phrases | <input type="checkbox"/> longer paragraphs       | _____   |

2. Student currently has difficulty:

- |   |   |
|---|---|
| <input type="checkbox"/> answering questions                              | <input type="checkbox"/> generating ideas                                 |
| <input type="checkbox"/> getting started on a sentence or story           | <input type="checkbox"/> working with peers to generate ideas/information |
| <input type="checkbox"/> adding information to a topic                    | <input type="checkbox"/> planning content                                 |
| <input type="checkbox"/> sequencing information                           | <input type="checkbox"/> using a variety of vocabulary                    |
| <input type="checkbox"/> integrating information from two or more sources | <input type="checkbox"/> summarizing information                          |
| <input type="checkbox"/> relating information to specific topics          | <input type="checkbox"/> other: _____                                     |
|   | _____   |

3. Student currently uses the following strategies for writing:

- |  |   |
|--|---|
| <input type="checkbox"/> verbal responses instead of written responses | <input type="checkbox"/> templates or writing frames to provide the format or structure (both paper and electronic) |
| <input type="checkbox"/> graphics to communicate ideas                 | <input type="checkbox"/> outlines   |
| <input type="checkbox"/> shortened assignments                         | <input type="checkbox"/> scribing by others   |
| <input type="checkbox"/> story starters                                | <input type="checkbox"/> other: _____   |
| <input type="checkbox"/> webbing/concept mapping                       | _____   |

4. Student currently uses the following assistive technology for learning for writing materials:

- |  |   |
|--|---|
| <input type="checkbox"/> word cards  | <input type="checkbox"/> word processing with spell checker/grammar checker |
| <input type="checkbox"/> word book   | <input type="checkbox"/> talking word processing                            |
| <input type="checkbox"/> word wall/word lists  | <input type="checkbox"/> word processing                                    |
| <input type="checkbox"/> personal dictionary   | <input type="checkbox"/> voice recognition software                         |
| <input type="checkbox"/> electronic dictionary/spell checker   | <input type="checkbox"/> other: _____                                       |
| <input type="checkbox"/> talking electronic dictionary/spell checker                                     | _____   |
| <input type="checkbox"/> symbol-based software for writing (e.g., Writing with Symbols 2000, Pix Writer) |   |

Adapted with permission from Wisconsin Assistive Technology Initiative, *The W.A.T.I. Package* (Oshkosh, WI: Wisconsin Assistive Technology Initiative, 2004), p. 26.



## Assistive Technology for Learning Investigation: Student Report

1. What I want assistive technology for learning to do for me: \_\_\_\_\_  
\_\_\_\_\_
2. What I do now to help with this problem: \_\_\_\_\_  
\_\_\_\_\_
3. Assistive technology for learning I already use: \_\_\_\_\_  
\_\_\_\_\_
4. What have I already tried that did not work? Why didn't it work? What would have made it better?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. Things that other students use or that I have seen that might help me: \_\_\_\_\_  
\_\_\_\_\_
6. Things I want to tell teachers and others about things I have tried or want to try:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. Questions I want to ask: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Adapted with permission from Gayl Bowser and Penny Reed, *Hey! Can I Try That? A Student Handbook for Choosing and Using Assistive Technology* (Roseburg, OR: Oregon Technology Access Program and Wisconsin Assistive Technology Initiative, 2001), p. 11. [www.edtechpoints.org](http://www.edtechpoints.org)



Appendix 9-G

# Assistive Technology for Learning Trial Record

## Goal for Device Use

Goal for assistive technology for learning device:

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How will we know if the trial is successful?

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What level of achievement is reasonable to expect during the trial period?

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How will we know if the trial is not working (what criteria will we use to stop)?

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Adapted with permission from Penny Reed and Gayl Bowser, *Assistive Technology Pointers for Parents* (Winchester, OR: Coalition for Assistive Technology in Oregon, 2000), p. 53. [www.edtechpoints.org](http://www.edtechpoints.org)



## Assistive Technology for Learning Trial Record (continued) page 2/4

### Learning Environments Where Devices Will Be Used

1. Environment: \_\_\_\_\_  
Tasks: \_\_\_\_\_  
\_\_\_\_\_  
Staff responsible for implementation: \_\_\_\_\_  
Days to be used: \_\_\_\_\_  
Times to be used: \_\_\_\_\_
  
2. Environment: \_\_\_\_\_  
Tasks: \_\_\_\_\_  
\_\_\_\_\_  
Staff responsible for implementation: \_\_\_\_\_  
Days to be used: \_\_\_\_\_  
Times to be used: \_\_\_\_\_
  
3. Environment: \_\_\_\_\_  
Tasks: \_\_\_\_\_  
\_\_\_\_\_  
Staff responsible for implementation: \_\_\_\_\_  
Days to be used: \_\_\_\_\_  
Times to be used: \_\_\_\_\_

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Appendix 9-G

### Assistive Technology for Learning Trial Record (continued) page 3/4

#### Devices for Trial

Device #1 \_\_\_\_\_

Date of trial initiation: \_\_\_\_\_ Minimum length of trial period: \_\_\_\_\_

Device trial review date: \_\_\_\_\_

Source of device for trial: \_\_\_\_\_

Contact person for technical assistance for trial: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Manufacturer technical assistance number: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

Device #2 \_\_\_\_\_

Date of trial initiation: \_\_\_\_\_ Minimum length of trial period: \_\_\_\_\_

Device trial review date: \_\_\_\_\_

Source of device for trial: \_\_\_\_\_

Contact person for technical assistance for trial: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Manufacturer technical assistance number: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

Device #3 \_\_\_\_\_

Date of trial initiation: \_\_\_\_\_ Minimum length of trial period: \_\_\_\_\_

Device trial review date: \_\_\_\_\_

Source of device for trial: \_\_\_\_\_

Contact person for technical assistance for trial: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Manufacturer technical assistance number: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

Adapted with permission from Penny Reed and Gayl Bowser, *Assistive Technology Pointers for Parents* (Winchester, OR: Coalition for Assistive Technology in Oregon, 2000), p. 54. [www.edtechpoints.org](http://www.edtechpoints.org)



## Assistive Technology for Learning Trial Record (continued) page 4/4

### Trial Summary

How did the student's performance change when using the devices?

How did the student like using each device? Did the student prefer one of the devices?

What are the advantages of using the devices?

What are the disadvantages of using the devices?

How long can the student be expected to use the devices?

Recommendations from trial:

---

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Appendix 9-H

## Assistive Technology for Learning Trial Record: Student Report

1. Assistive technology for learning I tried: \_\_\_\_\_  
\_\_\_\_\_
2. What I like about the assistive technology for learning I tried: \_\_\_\_\_  
\_\_\_\_\_
3. What I don't like about the assistive technology for learning I tried: \_\_\_\_\_  
\_\_\_\_\_
4. If there was more than one tool to try, the one I liked best was: \_\_\_\_\_  
\_\_\_\_\_
5. Why I liked it best: \_\_\_\_\_  
\_\_\_\_\_
6. If I was the only one using this tool, how did that feel? How did I explain this tool to other students?  
\_\_\_\_\_  
\_\_\_\_\_
7. What I want to tell the teachers and others about the assistive technology for learning that I tried:  
\_\_\_\_\_  
\_\_\_\_\_
8. Questions I want to ask the teachers and others: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Adapted with permission from Gayl Bowser and Penny Reed, *Hey! Can I Try That? A Student Handbook for Choosing and Using Assistive Technology* (Roseburg, OR: Oregon Technology Access Program and Wisconsin Assistive Technology Initiative, 2001), p. 13. [www.edtechpoints.org](http://www.edtechpoints.org)



Appendix 9-I

## Monitoring My Assistive Technology for Learning Use: Student Report

1. What kind of help will I need in order to use my assistive technology for learning effectively (e.g., tutorials, help from my teacher)?

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---

2. What will I need to learn in order to make my assistive technology for learning work?

---

---

3. What will I need to do every day to make this assistive technology for learning work for me?

---

---

4. Challenges I am having with my assistive technology for learning: \_\_\_\_\_

---

---

5. What I want to tell the teachers and others about my assistive technology for learning:

---

---

6. Questions I want to ask the teachers and others: \_\_\_\_\_

---

---

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Adapted with permission from Gayl Bowser and Penny Reed, *Hey! Can I Try That? A Student Handbook for Choosing and Using Assistive Technology* (Roseburg, OR: Oregon Technology Access Program and Wisconsin Assistive Technology Initiative, 2001), p. 17. [www.edtechpoints.org](http://www.edtechpoints.org)



Appendix 9-J

## Parent Feedback on Assistive Technology for Learning

1. Changes in my child's performance since using assistive technology for learning: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. Changes in how my child feels about using assistive technology for learning: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Benefits of the assistive technology for learning use: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Drawbacks of the assistive technology for learning use: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. Other places and situations in which this assistive technology for learning might be useful:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

This appendix adapted with permission from Penny Reed and Gayl Bowser, *Assistive Technology Pointers for Parents* (Winchester, OR: Coalition for Assistive Technology in Oregon, 2000), p. 39. [www.edtechpoints.org](http://www.edtechpoints.org)



Appendix 9-J

## Parent Feedback on Assistive Technology for Learning (continued) page 2/2

6. Things I want to share with the team:

My thoughts and feelings: \_\_\_\_\_

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Supporting evidence or data: \_\_\_\_\_

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7. My questions for the team: \_\_\_\_\_

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Appendix 9-K

# Record of Assistive Technology for Learning Maintenance Information

I have a \_\_\_\_\_ I use it to \_\_\_\_\_  
\_\_\_\_\_

## ID Information

Serial number \_\_\_\_\_  
Purchased on \_\_\_\_\_ Warranty good until \_\_\_\_\_  
Purchased from \_\_\_\_\_  
Address \_\_\_\_\_  
Telephone number \_\_\_\_\_ Customer support phone number \_\_\_\_\_  
Fax number \_\_\_\_\_

## Maintenance

Was a maintenance contract purchased?  No  Yes If yes, it is in effect until \_\_\_\_\_  
Maintenance and repair record \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

My service provider for this device is \_\_\_\_\_  
Telephone number \_\_\_\_\_  
I will get my device in for repair by \_\_\_\_\_

## Back-up Plan

If my device breaks down, my back-up plan is \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I can contact this person for support \_\_\_\_\_  
at \_\_\_\_\_  
\_\_\_\_\_

Adapted from Minnesota Department of Children, Families and Learning, *Minnesota Assistive Technology Manual* (Roseville, MN: Minnesota Department of Children, Families and Learning, 2002), "AT Log for Transition Planning." Permission to use is granted if credit is maintained.



## Assistive Technology for Learning Planning for Transition Checklist

### Setting the Stage for Transition

Early in the school year, students and their families can be introduced to the transition process and students can begin to participate in their own IPP planning process.

#### Self-advocacy

- Students have opportunities to learn how to describe their specific use of assistive technology for learning or related strategies to meet IPP goals.
- Students have opportunities to explain their use of assistive technology for learning or related strategies to appropriate individuals.

#### Independent Educational Strategies

- Discuss the strategies and ATL devices that students use regularly, including barriers to use.
- Student is able to identify appropriate times to use assistive technology for learning.

#### Vocational Planning

- Talk about student's responsibilities and activities at home and in the community, and potential ways to use assistive technology for learning or related strategies to support these activities.
- Select and implement appropriate technology strategies for home and in the community.
- Discuss barriers (both real and perceived) to student's educational or recreational activities.
- Explore additional strategies and devices based on needs.
- If needed, explore and contact appropriate funding sources for purchase, lease and/or maintenance of long-term assistive technology for learning equipment.

### Mid-stage Transition

Students and their families continue to build an understanding of the transition process and the new expectations that will be part of the next environment. Students practise skills, gather information and set goals for participating in their next learning and/or work environment.

#### Self-advocacy

- Discuss strategies students and their families can use to independently access information about useful assistive technology for learning and needs (e.g., support groups, Web sites, advocacy and peer groups, library, condition-specific health associations).
- Discuss available services.
- Begin a list of strategies to independently use and support assistive technology for learning devices.

---

This appendix adapted from Minnesota Department of Children, Families and Learning, *Minnesota Assistive Technology Manual* (Roseville, MN: Minnesota Department of Children, Families and Learning, 2002), "Assistive Technology Transition Planning Checklist." Permission to use is granted if credit is maintained.



Appendix 9-L

## Assistive Technology for Learning Planning for Transition Checklist (continued) page 2/2

### Educational and Vocational Planning

- Discuss and explore school experiences, favourite subjects, plans for post-secondary studies, ideas for careers.
- Investigate opportunities for career prep courses or volunteering.
- Continue discussion of use of assistive technology for learning devices and strategies for future environments.
- Expand selection and implementation of appropriate technology strategies for home.
- Discuss barriers (both real and perceived) to student's educational and recreational activities.
- Explore additional strategies based on needs.
- If needed, explore and contact appropriate funding sources for purchase, lease and/or maintenance of long-term assistive technology for learning equipment.

### Making the Transition

Students and their families prepare to move from one learning environment to the next with confidence; students use assistive technology for learning effectively and independently.

#### Self-advocacy

- Continue discussion of available support services.
- Formalize checklist of assistive technology for learning strategies and interventions for assistive technology for learning support.
- Students maintain assistive technology for learning record book to keep track of assistive technology for learning providers, repair and maintenance providers, vendors.
- Students meet with new teachers before transitions to support continuum of services.

#### Vocational Planning

- Learning team members are in agreement of strategies and interventions needed for transition.
- Appropriate service providers participate in and support transition plan.
- Appropriate funding is secured for needed devices and interventions.



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