

# SETT and ReSETT: Concepts for AT implementation

**By Joy Zabala, Gayl Bowser,  
and Jane Korsten**

Since its introduction at Closing The Gap in 1994, the SETT Framework (Zabala, 1995) has helped individuals with disabilities, family members, and professionals make appropriate assistive technology decisions. SETT is an acronym for Student, Environment, Tasks and Tools. Using the SETT Framework as a guide, teams gather and organize the thoughts, observations, and experiences of each member in order to build a common understanding of the strengths, skills, and challenges that the student possesses, the environments in which the student is expected to learn and grow, and the tasks that the student needs to do or learn to do so that appropriate tools can be considered, selected, and integrated into the student's educational program. The focus of the SETT Framework is to support student participation and achievement.

Tools, as they are understood in the SETT Framework, include everything that might be needed to enable the student to succeed. While tools might include devices, they also might include support and training needed by the student and others, accommodations or modifications of various aspects of the environments in which the student is expected to use those devices, or adjustments to the tasks for which the use of

the device is intended (Zabala, 1996).

The information in the SETT Framework is intended to guide teams through the entire range of activities needed to provide assistive technology services – selection, acquisition, and use of AT devices. However, many teams have limited its application to determination of need for AT and selection of AT devices. Although AT use is the main purpose of ALL AT services, implementation and integration of AT into a student's educational program and life has been found to be one of the most challenging and least understood parts of ongoing assistive technology service delivery.

Once the team has determined that assistive technology devices and services are necessary, revisiting the SETT Framework helps teams plan for effective use of AT by the student in customary environments for the accomplishment of everyday tasks. In order to expand the understanding of how the SETT Framework supports AT use, this article on implementation offers strategies to help teams see the importance of keeping the information in the SETT Framework up-to-date, accurate, and inclusive. When this is done, the SETT Framework information can be used to guide ongoing decisions about assistive technology services to students

and measure its impact on student performance and achievement.

When AT implementation works well, students have the opportunity to change in new ways by using technology to build on existing strengths. When AT implementation works well, environments and the people in those environments change in order to support the educational participation and achievement of all students, including those who use assistive technology. When implementation works well, tasks change because the AT helps students increase the quantity, quality and independence of their participation and productivity. For all this to happen, implementation must be well-planned. Effectiveness must also be evaluated as the implementation progresses so that the plan can be adjusted if data shows that the student is not progressing as expected.

Teams review the information in the SETT Framework to revisit their shared knowledge of the student, the environments, and tasks. As they do this, they ask themselves what needs to happen so that they can work together to foster the learning and growth of the student. Some questions may include:

- What new learning do we expect to see for this student?
- What environmental changes do we have to make in order to support student change?

**Address**  
526 Main St.  
P.O. Box 68  
Henderson, MN 56044

**Phone**  
507-248-3294

**Fax**  
507-248-3810

**Web site**  
[www.closingthegap.com](http://www.closingthegap.com)

**E-mail**  
[info@closingthegap.com](mailto:info@closingthegap.com)

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- How is the student's performance on specific tasks expected to change as a result of AT use?
- How can we monitor the effects the use of an AT tool has on a student's performance?

**ReSETting with a student focus: What new learning do we expect to see for the student?**

After AT for a student has been identified, teams begin to look at the specific ways the student will use the technology for learning and participation in daily activities. One very useful framework that can assist with planning for AT Implementation can be found in the work of Janice Light. In her article, "Toward a Definition of Communicative Competence for Individuals Using Augmentative and Alternative Communication Systems," (1989) Light proposed four kinds of skills that all users of augmentative communication devices and strategies need to develop: operational, linguistic, strategic, and social. Looking closely at each of Light's four areas of competence can help teams identify specific goals and objectives for every student. We have slightly modified Light's areas to address the development of skills needed when using a wide variety of assistive technology devices and strategies.

**Operational Competence:** Operational skills are the skills that a user of AT needs in order to operate the AT device. Skills may be very simple – like understanding how to press a single switch – or they may be complicated – like typing on a computer keyboard. Operational competence may include not only the skills needed to operate the device, but also skills that are needed to use alternative access methods such as voice recognition and screen readers. Operational skills are the ones we most often think of when we talk about teaching a child to use assistive technology.

**Functional Competence:** In Light's original work, she describes an area she called linguistic competence. For AAC users, linguistic competence involves the language skills needed to communicate. Linguistic competence for AAC users describes the reason that AAC was chosen and the functional application of device use. In applying this model to other categories of assistive technology, we have changed the

term *Linguistic Competence* to *Functional Competence*.

If teams have done a good job of assistive technology assessment, they have focused on the use of assistive technology for functional skills. We should know ahead of time the ways that the student will use the technology that is provided to do identified tasks that are currently difficult or impossible. However, all too often, teams assume that new tools enable the student to do things just because they are provided. For example, John's team determined that he needed a portable word processor for composition in order to compensate for poor eye-hand coordination. When the device arrived, John's operational competence grew quickly. He could easily type letters and make words, but when his teacher asked him to complete a writing assignment, it was discovered that John was lacking many composition skills. Because the physical act of writing had been so difficult for him, he had not learned composition skills, such as word order, use of modifiers, punctuation and capitalization. The team had to regroup and identify the specific writing (functional) skills that John needed to learn. Once the barrier of poor eye-hand coordination had been overcome, AT made it possible for him to learn the composition skills he had missed, but he needed considerable instruction and support while learning them. The instruction and support in written composition were also included in John's plan.

**Strategic Competence:** Strategic competence involves using an AT device in real world situations. In the previous example, John used the portable word processor for written composition. To do that effectively, he needed to learn such strategic skills as: deciding when to use the word processor instead of a computer or a pencil; when an accommodation, such as dictation to an educational assistant, was a more effective solution; and how and when to print written assignments. John also had to learn the associated strategic skill of how to turn in his written assignments. Because he had struggled for such a long time with writing, he had learned to expect that an educational assistant would scribe for him and also turn in all assignments. Strategies that would be used to help John develop

independent strategic competence were included in the plan.

**Social Competence:** Social competence, as it applies to augmentative communication, refers to the ability to initiate, maintain and terminate communication with real people in real life situations. It includes the skills needed to develop social relationships using the AC. As it relates to other kinds of assistive technology, social competence can help teams identify skills that relate to using the technology around other people. For example, when John first took his portable word processor to his sixth grade class, the sixth grade teacher explained to other students why John would be using the device in class. Over time, John was able to take on this task for himself. By the time he reached high school, it was part of his transition plan, that he would meet with each new teacher to explain the accommodations he needed in order to complete written work. In addition to learning when and how to use his device, with support from his team, he was learning to ask for the accommodations he needed when they were not provided automatically. Strategies increasing John's independent social competence related to the use of his assistive technology had to be included in the plan.

Light's description of the kinds of skills that AAC and AT users need to develop to become competent device users can help teams to identify a comprehensive array of student goals, objectives, supports, and services. The paradigm can be applied to a wide variety of students with a wide range of disabilities. As teams revisit information in the SETT Framework with a focus on AT implementation, the four areas of AT competence can help to ensure that everyone has the same vision for a student's AT use and understands how to foster it.

**ReSETting with an environmental focus: What environmental changes do we have to make in order to support student change?**

AT implementation involves changes, not only in the lives of students, but also in the lives of the student's family members and professional staff, the educational (or community) environments and any other place where assistive technology might be used to increase the functional capabilities of students with disabilities. One important

focus of an AT implementation plan is making sure that the student, the family, and involved professionals understand how the student's use of AT should "look" on a daily basis and their part in supporting that use. When ReSETting, the team looks at the environments in which the student is expected to use the AT and determine what must be in place to support the educational participation and achievement of the student using assistive technology. In order to focus on what is needed in the environment, the team addresses four types of questions:

**Questions about student training:**

1. What specific technology use skills will the student need to learn?
2. How much training does the student require?
3. What kind of direct supervision and support will the student need in order to use the device in a functional manner?
4. Who will provide the training and support to the student?

**Questions about equipment:**

1. Who will provide the device(s), peripheral tools, and consumable supplies needed?
2. How will the device be made available in each environment where it is needed?
3. Where will the device be located when the student uses it?
4. Who will be responsible for maintaining the device, making repairs, and re-ordering supplies when needed?

**Questions about training for staff, family, and others:**

1. What will various staff and family members need to know about the device and how it works?
2. Which adults in the child's environments will require training in the use of the device?
3. Who will provide the needed training for these people?
4. Who should be called if technical assistance is needed?
5. What do others need to know?

**Questions about the general environment:**

1. Are changes needed to ensure accessibility?
  2. Is additional support needed?
- Asking questions like these enables the team to look carefully at what they know

about the child's current environments and shape their activities so that the AT tools are truly useful in those environments. They also help the people who support the student identify and obtain the support they need to help the student succeed.

**ReSETting with a Task Focus: What specific tasks will be targeted for AT use that supports growth in student achievement?**

During an IEP meeting where assistive technology is considered, teams generally describe the big picture of how AT will be used to help the student. During implementation planning, it is important to more specifically describe the student's day to day use of the device. Often teams expect that implementers will know which tasks require the use of the AT and how to support that use, but that is generally not the case. In order to help teams plan well, Zabala and Korsten (2004) have developed an activity-based implementation and evaluation plan that includes 12 steps for planning the specifics of AT implementation. The first six steps focus on how the student will participate in specific activities and the supports that will be provided to support success. When ReSETting, the team reviews the tasks for which AT is required and identifies specific day to day activities that lead to student achievement.

Step 1 - Select activities and skills that will provide embedded opportunities for the student to develop and use priority skills

Step 2 - Identify barriers to performance or participation

Step 3 - Identify the AT tools needed to remove barriers

Step 4 - Identify strategies that encourage powerful participation

Step 5 - Determine when and how tools will be used

Step 6 - Determine cues to be used to support the student's learning and success

**ReSETting with a Focus on Change: How can we monitor the effects of AT use on student's achievement?**

Implementation and evaluation of effectiveness are continuous ongoing processes. Including evaluation as part

of the implementation plan helps teams focus on functional results for students and their roles in determining whether the AT is fostering achievement. It ensures that everyone has the same vision for the student's use of assistive technology and helps to avoid confusion about expected outcomes. Steps seven through 12 of the Activity-Based Implementation Plan help teams think about expected changes and what needs to be done to ensure that evaluation of effectiveness is built into the implementation.

Step 7 - Determine the major area(s) of expected change in student performance and identify the amount of expected change.

Step 8 - Describe the minimum criteria for success

Step 9 - Identify factors which might undermine student progress

Step 10 - Determine what evidence (data) will be collected

Step 11 - Determine how, when, and by whom data will be collected and analyzed

Step 12 - Review data and modify the plan if indicated

**ReSETting with a focus on Putting It All Together:**

Use of the SETT Framework is an on-going process that can support the selection, acquisition, and – most important – effective use of assistive technology to continually improve and expand a student's educational achievement. ReSETting is not starting over, but rather revisiting the information in the SETT Framework often in order to update and expand upon it as changes in the student, the environments, the tasks and the tools occur. If the information in the SETT Framework is accurate, up to date, and clearly inclusive of the shared knowledge of all involved, the chances for effective implementation are greatly enhanced. When effective implementation of AT occurs, improved student achievement is much more likely to result.

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