Using the SETT Framework to Level the Learning Field for Students with Disabilities

Joy Smiley Zabala, Ed. D., ATP

The SETT Framework is a tool that helps teams gather and organize information that can be used to guide collaborative decisions about services that foster the educational success of students with disabilities. Originally developed to support assistive technology selection and use in educational settings, the principles of the SETT Framework have been used to guide decisions about a much broader range of educational services, and also, with minor adjustments, have been successfully used in non-educational environments and service plans.

SETT is an acronym for Student, Environments, Tasks and Tools. The SETT Framework is based on the premise that in order to develop an appropriate system of Tools (supports –devices, services, strategies, accommodations, modifications, etc.) teams must first develop a shared understanding of the student, the customary environments in which the student spends time, and the tasks that are required for the student to be able to do or learn to do to be an active participant in the teaching/learning processes that lead to educational success. When the needs, abilities, and interests of the Student, the details of the Environments, and the specific Tasks required of students in those environments are fully explored, teams are able to consider what needs to be included in a system of tools that is Student-centered, Environmentally useful, and Tasks-focused.

What questions does the team ask in each section of the SETT Framework?

As playwright Eugene Ionesco said, "It's not the answer that enlightens, but the question." This is true of the questions in the SETT Framework because they are expected to guide and deepen discussion rather than be complete and comprehensive in and of themselves. As each of these questions is explored, it is likely that many other questions will arise. The team continues the exploration until there is consensus that there is enough shared knowledge to make informed, reasonable decisions that can be supported by data.

The Student

- What is(are) the functional area(s) of concern? *What does the student need to be able to do that is difficult or impossible to do independently at this time?*
- Special needs (related to area of concern)
- Current abilities (related to area of concern)
- Expectations and concerns
- Interests and preferences

The Environments

- Arrangement (instructional, physical)
- Support (available to both the student and the staff)
- Materials and Equipment (commonly used by others in the environments)
- Access Issues (technological, physical, instructional)
- Attitudes and Expectations (staff, family, other)

The Tasks

- What SPECIFIC tasks occur in the student's natural environments that enable progress toward mastery of IEP goals and objectives?
- What SPECIFIC tasks are required for active involvement in identified environments? (related to communication, instruction, participation, productivity, environmental control)

How is the S-E-T Information used to think about Tools?

In the SETT Framework, Tools include devices, services, strategies, training, accommodations, modifications–everything that is needed to help the student succeed. Some parts of the Tool system address the specific needs of the student, while parts of the Tool system may more specifically address issues in the Environments, such as access to the classroom, accessibility of instructional materials, support for staff that helps them develop and sustain learning environments that are inviting, challenging, and productive for ALL students, including those with the full range of abilities and special needs.

When determining what the needs to be in the system of Tools to support and increase the achievement of a student, team members analyze the information gathered on the Student, the Environments, and the Tasks to address the following questions and activities.

- Is it expected that the student will *not* be able to make reasonable progress toward educational goals without assistive technology devices and services?
- If yes, *describe* what a useful system of supports, devices, and services for the student would be like if there were such a system of Tools.
- Brainstorm specific Tools that could be included in a system that addresses student needs.
- Select the most promising Tools for trials in the natural environments.
- Plan the specifics of the trial (expected changes, when/how tools will be used, cues, etc.)
- Collect data on effectiveness.

Does use of the SETT Framework require using a specific process?

No. It must have the basic elements of an effective process, like those mentioned above, but

SETT is a FRAMEWORK, not a protocol requiring a specific set of implementation practices for validity. It is important, however, to keep in mind that consistent processes are required for effective implementation: therefore, people are encouraged to imbed the use of the SETT Framework into existing processes (such as referral, IEP development, implementation planning, evaluation, etc.) or include it in the development of new, more effective processes when required. More will be said about processes

Because many people have requested examples of how the SETT Framework fits into various processes, brief guides and forms are being developed to provide a place to begin. Those guides and forms are known as SETT Scaffolds. In the building trade, a scaffold is used to support the integrity of a structure and also while it is being developed and also provide access to harder to reach parts of the structure. The SETT Scaffolds have a similar purpose. They provide teams with a place to begin and support the building of strong processes that are imbedded in or aligned to other processes that suit specific environments. During the development of personalized processes, the SETT Scaffolds help teams remember and attend to issues that might be missed without guidance. SETT Scaffolds, however, may also be used more permanently if appropriate references are maintained.

What are the critical elements of using the SETT Framework?

While the individual processes that a team uses to implement the SETT Framework will vary based on the particular phase of service delivery is being discussed and the particular challenges and facilitators of the environments in which it is being used, there are some critical elements that must ALWAYS be included. They are:

- *Shared Knowledge:* One of the major premises of the SETT Framework is that decisions about Tools–the devices and actions that are needed for the student and others to succeed–are most valid when they are made based not on the knowledge that one person has (or believes that they have) but based on an agreed-upon, mutually valid shared knowledge of the student, the environments, and the task.
- *Collaboration:* The SETT Framework is tool that both requires and supports the collaboration of the people who will be involved in the decision-making and those who will be impacted by the decisions. Collaboration is not only critical for the SETT Framework, it is also critical to gaining the buy-in necessary for effective implementation of any decisions.
- *Communication:* The SETT Framework requires that people communicate actively and respectfully. Shared knowledge can only be developed if the opinions, ideas, observations, and suggestions are respected and respectful.
- *Multiple Perspectives:* Everyone involved beings different knowledge, skills, experience, and ideas to the table. Although multiple perspectives can be challenging at times they are critical to the development of the accurate, complete development of shared knowledge. Not only are the multiple professional perspectives important to include, but also those of the student and the parents. This can make the difference between success and lack there-of.

- *Pertinent information:* Although there is much information that is pertinent to decision-making, there is other information that is not relevant. Knowing where to draw the line in important, but that line may well be a moving target.
- *Flexibility and Patience:* When working through the SETT Framework or using any other means of concerns-identification and solution seeking, there is a tremendous human tendency to suggest possible solutions before the concerns have been adequately identified. When a solution springs to mind, collaborators are urged NOT to voice it until it is time to talk about the Tools because when a solution is mentioned, the conversation shifts immediately from concern-identification to determining the worth or lack of worth of the suggested solution. Even when a team member thinks of the "perfect" solution, silent patience is urged. It might not look quite so perfect when all important factors are discussed.
- On-going Processes: Decision-making in educational settings involves ongoing processes. Whatever conclusions are reached at any point are only as valid as the evidence shows they have been successful in lowering barriers to student achievement. It is expected that the SETT Framework will be useful during all phases of assistive technology service delivery. With that in mind, it is important to revisit the SETT Framework information periodically to determine if the information that is guiding decision-making and implementation is accurate, up to date, and clearly reflects the shared knowledge of all involved.

Conclusion:

The SETT Framework supports a thorough yet simple approach to assistive technology assessment and intervention. When data is gathered and organized with simplicity, a team's ability to effectively generate a range of Tools that can be used to support student achievement is greatly enhanced. It is much more likely that the selected system of tools will enhance the student's abilities to address the tasks in which he/she is expected to build competency, thus making the tools more valuable. Equally, it is more likely that the people supporting the student will see the relevancy of using the Tools as the student grows in competence, confidence, and independence, and thus, be more active in encouraging and supporting the student's achievement through its use.

Using the SETT Framework as a guide, it is possible, from the start, to address and overcome many of the obstacles which lead to abandonment or "under-implementation" of Tools. When the Environment and the Tasks are fully explored and considered, the lament "Well, I tried that but it didn't work" is much less likely to be heard. Instead, students, parents, and professionals should all rejoice at the increased opportunities for success which come when Tools–devices, services, strategies, accommodations, modifications, training, etc.–are well matched to the student's needs and abilities to perform the natural tasks which are part of living and learning in this world.

Closing The Gap

Computer Technology in Special Education and Rehabilitation

Ready, SETT, go! Getting started with the SETT framework

By Joy Smiley Zabala, Ed.D, ATP

Whenever I open the Closing The Gap Resource Directory, I am transported back to the first time I entered a Closing The Gap exhibit hall. The year was 1987, and just inside the door I was stopped in my tracks, for there in front of me was a man using exactly the tool I was imagining for a student...and I didn't even know it existed! It was the coolest tool I had ever seen!

As you go through this Directory, you will find a huge array of tools that, when combined with other strategies, can improve, increase or maintain the functional capabilities of individuals with disabilities, and increasingly, their non-disabled peers. You will see tools for communication, productivity, participation – the latest and greatest, the tried and true, the smallest, the most powerful, the most focused and specific, the lowest tech, the highest tech, hardware, software, strategic guides, and a host of supporting materials – tools you are aware of, and to your delight – tools that, like me in 1987, you never knew existed. You name it and you will find it here. In fact, you do not even have to name it... if you can describe it, you can probably find it here!

Everything you see will be "cool." However, the reality is that, though each one is a cool tool, no one of them is "cool" for everyone. Making the "right" decision can be a daunting task. Making the "wrong" decision can be very costly in a variety of ways – unrealized expectations of individuals and families, unproductive use of professional time, ineffective use of limited resources, high rates of device abandonment or underutilization, and most important, the irreclaimable time lost for living, education, employment, or recreation by the individual whose functional capabilities were not increased, improved, or maintained by the technology.

So the questions arise... How can you sort through the plethora of "cool tools" to find the ones that make up the system of tools that is "right" for a specific individual? How can you select tools that should be included in a make up to the array of tools needed to increase the universal accessibility of a home, school, workplace, community, or any other environment?

It has been observed that even when the needs and abilities of students/individuals and the features of systems of assistive technology tools are well-matched, high rates of abandonment occur when tools are selected without up-front attention to the environments in which tools will be used, and the naturally occurring tasks within those environments. **SETT** – an acronym for **S**tudent, **E**nvironments, **T**asks, and **T**ools was developed to help collaborative school-based teams create Student-centered, Environmentally useful, and Tasks-focused Tool systems. However, with minor adjustments, it has proven useful at all level of service provision, from early intervention through adult services.

The SETT Framework provides an organizational structure that enables all involved to participate actively and with confidence in assistive technology decision making throughout all phases of service delivery. Use of the SETT Framework helps create an atmosphere in which the information, skills, observations, and thoughts of individuals, families, and professionals are valued and respected. Collaborative team members seek to build a shared vision of what technology might be needed and how it will be used, by first building a common understanding of the student, the environments, and the tasks. The questions and comments below are intended to guide discussion but are not complete and comprehensive. As these questions are explored, other questions arise. Conversation continues until there is consensus that there is enough shared knowledge to make an informed, reasonable decision that can be supported by data.

The Student – Information specifically related to the student.

When thinking about the Student, four small questions may yield reams of data: What is the functional area(s) of concern? (What does the student need to be able to do that is difficult or impossible to do independently at this time?) What are the student's special needs that contribute to these concerns? What are the student's current abilities related to these concerns? What are the student's interests? The questions are intentionally broad, so that they do not preclude anyone or any possible solutions at the outset.

When considering what the student needs to be able to do, it is

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

Phone
507-248-3294

Fax
507-248-3810

Web site
www.closingthegap.com

E-mail
info@closingthegap.com

This article originally appeared in the February / March 2005 issue of *Closing The Gap*, Vol. 23, No. 6.

fine to be global. "Talk" or "write" or "move about" may be appropriate at this point, though some elaboration is desirable. Later, in the Tasks section, these issues will be explored more deeply, as it would be useless to pursue "talking" if "about what?" could not be defined. The primary goal of this question is to invite active, nonjudgmental sharing to begin to establish consensus among group members about what it is really important for this student to be able to do. The question about the student's special needs is designed to generate conversation about the barriers which keep this student from doing whatever needs to be able to be done.

When exploring current abilities, it is important to keep in mind that, no matter how great the needs, everyone has abilities which can be built upon and enhanced – and not necessarily replaced.

The Environments - Information related to anything or anyone around the student in places where the technology is expected to be used.

While it is appropriate and central to focus on the student and match tools to the student's needs and disabilities, it is just not enough – otherwise we would not have the continuing high levels of underutilization and abandonment that we see all over the country. Although many teams are becoming increasingly aware that it is important to think about the environments and the tasks that are required in those environments, many teams only take a cursory glance at those areas. The questions about the environments need to be as detailed as possible, never just "the 4th grade classroom" (for example). There is SO MUCH more to each of the environments than that! How many students? What is the physical layout? How much support is available from and to staff? What materials and equipment are being used by other students? Are there physical access issues? What services are being provided? What are the attitudes and expectations of others in the environments? AND, certainly, the student does not LIVE in the 4th grade classroom...

What about other school environments like the cafeteria and the playground? What about home environments in which the student may need to use technology? What about community environments in which the student may need to practice skills that will assist in mastery of goals?

The Tasks – Information about what actually happens in the environments.

The tasks are the actual activities that take place that will enable the student to achieve educational goals and be an active participant in the daily life surrounding them – for adults, the tasks may be vocational or have some other focus. Tasks are different than the "functional areas of concern" discussed in the Student area (for example, reading, moving about, communicating, seeing, etc.).

Tasks are what is actually HAPPENING – the specifics of the functional demands for each particular environment. An example of a functional area of concern might be "reading" and the goal might be to "read of grade level". But, when it comes to tasks, nobody ever says, "Alright students, its time to read on grade level." The tasks are EXACTLY what students will need to do IN THE SPECIFIC ENVIRONMENTS to learn to read on grade level. The reason this is important is that, although goals may be similar from environment to environment, there may be quite a wide range of tasks that will take place to help students reach the goals.

The following example provides insight into the importance of exploring specific environments and tasks before attempting to select tools:

There are two students with the same disability who have written productivity issues caused by the same fine motor issue that impedes their ability to hold a pencil securely over a period of time. If discussion focused only on the students and the tools, it could be concluded that the same tools would be required for each student. However, what if one of the students was in the first grade and the other was a junior in high school? Clearly the written productivity TASKS are immensely different for the two students.

The first grader has to fill in blanks, draw lines, write words and letters and, over the year, an increasing number of sentences and short paragraphs. This student's needs may be met with an appropriate pencil grip and some pacing of tasks. Even though the productivity expected at this grade level does not require that the student use a more complex tool at this time, it may also be of benefit for the student to become familiar with keyboarding and word processing by frequently using the classroom computer that he shares with other class members.

The high school student, on the other hand, is likely to have a significant number of lengthy writing tasks throughout his day. Each of those tasks may require more endurance than the student has. Although the pencil grip would also be an important part of this student's tool system, he would very likely need frequent access to a keyboarded device (or devices) that he could use in multiple environments to complete his written assignments. Thus, it is clear to see why selecting tools based only on the student's special needs or disability category is not likely to lead to expected achievement.

The Tools

Finally, the SETT Framework addresses the area where most people would like to begin. The SETT Framework, leads teams to the main question, "What needs to be included when developing a system of assistive technology tools for a student with these needs and abilities, doing these tasks in these environments?" All other questions merely gather and organize the information that is needed to arrive at answers to this question. It is hoped that a team using the SETT Framework to arrive at this point, does so with a clearer understanding of what tools should be sought. What a difference to begin seeking tools with a clear idea of who is going to use them, where, and for what!

In the SETT Framework, tools include devices, services and strategies – everything that is needed to help the student succeed. They are "no tech" strategies as well as low tech and high tech devices and supports. They are systems of tools working in combination to assist a student in moving forward. More often than we would like to think – even when ongoing training has been provided – a laptop computer may fail to meet expectations because there is no extension cord available when the battery runs low. In a well-thought-out system, the extension cord would have been included.

It is expected that the SETT Framework will be useful during all phases of assistive technology service delivery, from device selection through use and evaluation of effectiveness. With that in mind, it is important to revisit the SETT Framework information periodically to determine if the information that is guiding decision-making and implementation is accurate, up to date, and clearly reflects the shared knowledge of all involved.

Conclusion

The SETT Framework promotes team-building and builds consensus by using clearly understood language, requiring broad-based participation and valuing input from all perspectives. As data is organized and prioritized within the SETT Framework, it promotes logical thinking by all team members and can be an effective consensus-building tool. As environments and tasks are explored, the links between assessment and intervention become strong and clear, as does the need to develop a system of tools which will enhance the student's abilities to address the tasks in which he/she is expected to build competency. In addition to developing a system of tools valuable to the student, participating in a process using the SETT Framework increases the likelihood that the people supporting the student will see the relevancy of the technology and will be more active and persistent in encouraging and supporting the student's achievement through its use.

Using the SETT Framework as a guide, it is possible, from the start, to address and overcome many of the obstacles which lead to marginal student inclusion, general dissatisfaction and device abandonment. When the Student, the Environment and the Tasks are fully explored and considered, laments like "Well, the device is here, now what do I do with it?" or "He has it, but he won't use it!" should seldom be heard. Instead, students, parents, and professionals should all rejoice at the increased opportunities for success which come with assistive technology systems that are well matched to the student's needs and abilities to perform the natural tasks which are part of living and learning in this world.

Ready?...Gather the Team... SETT? Explore the Student, Environments, and Tasks... Go! Pick up the CTG Resource Directory and search for cool Tools that are student-centered, environmentally useful, task focused and the race to achievement is on!

For more information, contact Dr. Joy Zabala; E-mail: <joy@joyzabala.com> Web site: <www.joyzabala.com>.

This article was originally published in *Closing The Gap*. For more information visit www.closingthegap.com

Closing The Gap

Computer Technology in Special Education and Rehabilitation

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

E-mail
info@closingthegap.com

This article originally appeared in the November 2004/January 2005 issue of *Closing The Gap*, Vol. 23, No. 5.

• 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.

References:

Light, J. (1989). Toward a definition of communicative competence for individuals using augmentative and alternative communication systems. Augmentative

and Alternative Communication, p. 137-143

Zabala, J.S. (1995) The SETT framework: critical areas to consider when making informed assistive technology decisions. Houston, TX: Region IV Education Service Center. (ERIC Document Reproduction Service No. ED381962)

Zabala, J.S. (1996) SETTing the stage for success: Building success through effective use of assistive technology. Proceedings of the Southeast Augmentative Communication Conference (pp. 129-187). Birmingham, AL: United Cerebral Palsy of Greater Birmingham. Downloaded on October 25, 2004, from <http://www.joyzabala.com>.

Zabala, J.S., and Korsten, J.E. (1999). Making a measurable difference with assistive technology: Evaluating the Effectiveness of Assistive Technology. Preconference presentation at the 2001 Closing The Gap Conference. Minneapolis, MN.

Closing The Gap

Computer Technology in Special Education and Rehabilitation

SETTing up staff and supporters to promote student achievement

Joy Zabala and Gayl Bowser

The SETT Framework is widely used by collaborative teams in all phases of assistive technology service delivery. Using the SETT Framework as a guide, teams build shared knowledge about the strengths, challenges, and interests of a student, the facilitators and barriers of the student's customary environments, and tasks that the student must do or learn to do to be an active participant in educational activities. Following a careful examination and analysis of the Student, Environments and Tasks, teams are able to develop a system of Tools – devices, services, strategies, accommodations, modifications – and plan effectively so that assistive technology can be used by the student.

Although using the SETT Framework is most typically used for student services, it is also a powerful way to guide the effective needs assessment and planning for staff members and student supporters. By thinking carefully about the needs and abilities of staff and supporters of the student, their typical responsibilities within the environments in which the student is expected to use the assistive technology, and the tasks that staff and supporters will be called upon to do to support the student, it is possible to identify the tools – supports, training, technical assistance, additional devices, etc. – that they need to be successful.

In the following discussion, we'll follow the story of Jacob and his team. First we'll take a quick look at how they used the SETT Framework to determine what system of tools Jacob needs to be successful. Next, we will take a more in-depth look at how they used the SETT Framework to identify and plan for the system of tools – training, technical assistance, that they need to help Jacob learn to use his tools effectively.

Jacob is in the fifth grade. His right side is partially paralyzed and, although he walks independently, he uses his left hand for almost every task. When Jacob started school, he was able to use his left hand for all his written work, but as he grew, so did the writing demands of his school program. He found it increasingly difficult to keep up. This year, as Jacob entered middle school, he and his team took a close look at his specific needs and abilities, the various aspects of the new middle school environments, and the writing tasks that he was responsible for in each of his classes.

Because he would be working with three general education teachers and a resource teacher in the middle school, Jacob and his team determined that it was important for him to be as independent and efficient as possible when working on writing tasks that were getting longer and more complex. They decided that he needed assistive technology in order to benefit from his educational program in the middle school. They determined that Jacob could use a portable word processor at his desk in the regular classrooms where he was expected to write and that he could easily transport it from class to class. They decided that he could use the resource room computer during the day for editing and printing and that he would also use his family's computer for editing and printing at home.

Jacob's team felt confident that he would be able to make good progress in his written work as long as his tools (as identified using the SETT Framework) included the supports from others that were necessary for him to learn to use the portable word processor and to take responsibility for getting his work done. They realized that for this to happen, it was important for staff and supporters to be able to take active roles in providing the initial and ongoing support he would need. They knew, however, that in order for them to do this, they also needed support.

As they were planning, one team member said, "Hey! We used the SETT Framework to think about the tools Jacob needs. Why couldn't we use the SETT Framework to think about the tools WE need to be able to use to help Jacob succeed? What are our collective skills as staff and

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

Phone
507-248-3294

Fax
507-248-3810

Web site
www.closingthegap.com

E-mail
info@closingthegap.com

This article originally appeared in the April / May 2005 issue of *Closing The Gap*, Vol. 24, No. 1.

supporters? What are our environments like? What tasks do we need to do to be able to support Jacob? What tools do we need to be able to do all that?" By adjusting the questions under each section of the SETT Framework, Jacob's team was able to get a clear and shared understanding of who they were as a team, what their environments were like, and what specific tasks they needed to think about doing so that they could be successful in helping Jacob, and in doing some of the other things they were expected to do in their typical environments. .

Questions that guided the team's discussion about staff and supporters included:

- Who is involved in the support of this student?
- What are their individual and collective strengths and challenges?
- Are they familiar with this student?
- What is their prior experience with students with similar or same devices?
- What is their comfort level with students using devices?
- Does support staff (SLP, IA, OT or PT) have knowledge and/or skills of the device?
- What are each person's specific roles in Jacob's educational program?

Jacob's general education teachers and his resource room teacher thought about their knowledge, skills and expectations related to his technology use in the classroom. The English teacher and the social studies teachers both have students using computers on a regular basis in their classrooms and are very comfortable with integrating computers into their classrooms. They have each had students with similar disabilities in their classrooms before, however, neither has had a student who used a portable word processor for writing. They are each concerned that they will need some assistance with how the device works, when Jacob should be expected to use it, and what level of support he will need from them. The math and science teachers are less concerned. Neither of their classes requires intensive writing and they believe that Jacob will be successful in their classes without using the word processor.

The resource room teacher has used portable word processors with several students and is very comfortable with them. Jacob's mother would prefer that Jacob had a computer for use at school since he uses one well at home, but she has agreed to try the portable word processor to see if it will provide adequate support for Jacob.

Questions that came up during the team's discussion included:

- Who will teach Jacob to use the device?
- Who do I call when I need help with Jacob's portable word processor?
- Who do I call when my classroom computer is broken?
- Who will train the resource room teacher, the fifth grade teacher and the mom in the use of the technology?
- Who will provide the training that Jacob needs?
- Where will training for all these people be provided?

The teacher who had first suggested the use of the SETT Framework noticed that many of their questions revolved around tasks that someone needed to be able to do so that they could successfully work together to help Jacob and all of their other students. He suggested that they explore their environments and tasks further before attempting to answer these questions.

Questions that guided the team's discussion about their Environments included:

- What are the conditions in the environments in which staff and supporters will be working with this student?
- What is the availability of support?
- What level of administrative support is available to this team?
- What are the team's responsibilities in addition to support for this student?
- What is the number of other students in the environments? Are there issues in classroom dynamics that must be addressed?
- What needed resources regarding devices, time, money, people and physical resources like furniture and space should be considered as the team plans?

In Jacob's school, there are at least two computers in every classroom. The district's curriculum at the fifth grade level includes use of computers for writing up to three paragraphs, so each student in the fifth grade is given regular opportunities to practice this skill on the classroom computers. The resource teacher typically uses all computers in the resource room to provide drill and practice aimed at increasing student skills in areas of concern. Jacob was the first student to use a portable word processor in this school.

The social studies teacher was concerned about the lack of available power outlets in his classroom. The English and Science teachers shared this concern and were also concerned that with so many other students in their classes, they would not have time to teach Jacob to use his device for writing. Jacob's team realized that the resource teacher had the knowledge, skills, and experience needed to provide support to both Jacob and to the rest of the team members. They felt fortunate that they had someone close by to call upon, however, the resource teacher was concerned because she did not know how she would find extra time to support teachers. Jacob's mother was willing to learn more about the device by herself but did not know how to do this.

The resource teacher told the team that when she was learning to use these devices, support was available from the district's technology team. She also mentioned that she was able to go to the manufacturer's Web site and work through a brief tutorial that provided her with an overview of the functions of the device and even had some suggestions about how to integrate it into classroom activities. The other teachers thought this is a nice idea, but they are concerned that they may not have time. Jacob's mother, however, was very interested in this opportunity.

Questions that guided the team's discussion about the Tasks they will need to do included:

- What do staff and supporters need to be able to do to help this student / these students succeed?
- How will the team implement collaborative planning and shared delivery of services?
- How will the team set and share information about expectations of the student?
- How will team members learn the basics of device operation?
- Who will be responsible for maintenance to keep devices "operational"?
- Who will be responsible for troubleshooting?
- If the device needs programming, who will take that responsibility?
- How will each staff member and supporter learn strategies for integrating devices into educational programs?

• How will the device use be evaluated? Who will be responsible for data collection and analysis?

When the team discussed what they, collectively, needed to know and be able to do to support Jacob's use of the new portable word processor, they realized that there were many tasks that had do be done by someone. The tasks they listed included:

• Jacob needs to be taught to use the device.

• The device needs to be maintained (batteries, recharging, general care)

• Computer and printer connection cables are needed for use in all classrooms, the resource room, and at home.

• A means for transporting the portable word processor must be determined.

• Adults will need to understand when Jacob is required to use the device and for what tasks.

• Jacob will need consistent cues that help him determine when to use it and when to use other tools or strategies.

• Jacob's use of the device will need to be monitored.

• Changes in Jacob's writing when using the device must be evaluated.

Because Jacob's team spent time building their shared knowledge of themselves as a team, their environments and responsibilities, and the tasks that needed to be done to support Jacob's successful use of the portable word processor, they were able make good decisions about the tools – additional devices, supports, training, technical assistance, etc. – they needed to successfully do their tasks and support Jacob's achievement.

Tools and strategies the team determined they needed:

As they reviewed the list of tasks, the team reflected upon what they knew about the knowledge and skills of each team member and the demands of their environments. Each of the identified tasks was designated as the responsibility of the most logical person to handle it. The team then went on to identify tools and strategies that would enable them to fill their roles and successfully do the tasks that they had taken on.

Here are the tools that Staff and Supporters decided they needed:

Time:

• The resource room teacher will help Jacob learn to use the device. She will receive some extra help from a classroom assistant for six weeks so that the she can help Jacob fine-tune his use of the device in the English and social studies classes.

• Because the resource teacher has no time in her schedule to provide initial training to other team members, they asked for time to work with someone from the district AT resource team. They will all attend training together, so they have requested that their classes be covered for two blocks of two hours each. The team will invite Jacob's mother to participate in these sessions

• Team members have agreed to spend part of their weekly joint planning period on any issues that come up about Jacob's use of the device and discussing the results on Jacob's written productivity. The resource teacher will be routinely involved with the team as will Jacob's mother.

Training and technical assistance:

• A member of the district AT resource team will conduct two initial training sessions for all team members on how the device works, how to connect it to computers, how to integrate it into instructional activities, and what they should expect of Jacob when he is using the device.

• When team members have questions, they can go to the device manufacturer's Web site and work through a brief tutorial about the functions of the device. They can also get suggestions from other teachers on how to integrate the device into classroom activities.

• All team members, including Jacob's mother, have joined the QIAT List where they know they can ask questions and get lots of ideas and suggestions any time they need it.

Material resources maintenance:

• In addition to providing the device, the special education department will purchase:

• A backpack for Jacob to carry the word processor and cables.

• Extra batteries to be kept in the resource room.

• An extra power cable to be kept in Jacob's pack in case batteries fail.

• Two extended power strips that can be placed in classrooms when needed.

• General care and maintenance of the device will be done by Jacob with supervision by his teachers at school and his mother at home.

Implementation and evaluation plan development:

• The team will develop an implementation and evaluation plan to be used across environments that includes:

• The specific changes they expect to see in Jacob's work.

• When Jacob is expected to use the device.

• What cues they will provide to help Jacob succeed.

• Strategies for helping Jacob become increasing independent in his use of the device.

• The minimum criteria that will indicate successful use.

• The type of data to be collected.

• A schedule for collecting the data.

• A schedule for analyzing data and making changes if indicated.

By looking at each aspect of the SETT framework from their own perspective, the team has learned a great deal about the importance of working together and the benefits of sharing responsibility. By careful examination of their collective knowledge, skills, and concerns, the responsibilities of their customary environments, and the tasks that must be accomplished for Jacob to be well-supported in using his device for educational achievement, the team has been able to clearly identify the tools – time, support, training, technical assistance, plans, etc. – they need and determine how to get them. They know that there will be things that they have not thought of, but they are confident that the steps they have taken will serve them and their time – the learning time of Jacob and his classmates – will be used productively.

For more information, contact the authors:

Dr. Joy Zabala; E-mail: <joy@joyzabala.com>; Web site: <www.joyzabala.com>.

Gayl Bowser, Coordinator, Oregon Technology Access Program, Douglas ESD, 1871 NE Stephens, Roseburg, OR 97470; Phone: 541-440-4791; Fax 541-957-4808; E-mail: <gayl.bowser@douglasesd.k12.or.us>.