>> Welcome to the module entitled, Develop Personal AAC Systems, the third module in the Power AAC training. Power AAC is a project sponsored by the Pennsylvania Training and Technology Assistance network. This training is one of a series of modules designed to build the capacity of local educational agencies to serve students with complex communication needs, who require the use of augmentative and alternative communication systems. This self-directed module reviews the various options for personal AAC systems which should be considered for the students in your classroom, from no tech through low tech and lite tech, and up to high tech. An assessment process will be discussed as a starting point to developing personal AAC systems for your students. You will be given resources to implement an AAC system assessment and provided with a guide for making a simple manual communication board. By the end of this module, you will be able to consider a range of multi-modal AAC options for your students.

Training in the Power AAC project is primarily self-directed. Each module is presented in a variety of formats, including a video format, PowerPoint presentation format and a print version of the PowerPoint with transcription notes. Some of the modules include supplemental presentation materials. Each module includes a pre and post-test assessment.

Developing an AAC system for a student who is at risk for producing intelligible speech is an ongoing process. The AAC system that a student might have when he or she is in elementary school may be different than the AAC system he or she is using when in middle school or high school. The ongoing process of development and redevelopment involves the skills and insights of a team of people, including the parents, and whenever possible, the student who needs the AAC system. In this training module, you will learn basic information about developing multi-modal AAC systems for your students.

Developing multi-modal AAC systems for your students starts by understanding the range of possible communication strategies for people who use AAC. Almost all people who use AAC incorporate some type of unaided communication. The person who uses AAC might have some intelligible speech, interact with natural gestures, express himself with facial expressions and possibly produce some manual signs. These strategies require nothing external to the person's body. They are part of a person's multi-modal communication system and as such, are all valued and useful. On the other hand, aided communication systems require something external to the person's body; an aided AAC system could be as simple as a pen and pad of paper to write messages. It could also be a communication board made out of paper with printed letters, words or pictures. Or, it could be some type of assistive technology that produces speech output.

People who use AAC systems typically need and use a variety of AAC strategies; depending on their abilities, needs and communication environments. Best practices is to support multi-model communication, therefore developing AAC systems for your students does not require you to make an either-or choice between using aided or unaided communication. However, in this training module, the focus will be solely on the development of aided communication systems.

According to a self-study course from the AAC Institute, aided AAC strategies are divided into three technology categories; low tech, lite tech and high tech. You may hear other terms used to classify AAC technology, but for the purpose of this training, we will be using the terms low tech, lite tech and high tech.

Simply put, low tech systems have no power source. That means there is no battery, and nothing to charge. Familiar examples of low tech systems might be tangible symbol boards, picture-based manual

communication boards and various types of communication books. Often, a low tech option like a manual communication board is developed for a student as a simple way to introduce the student to AAC. A manual communication board may be used to begin AAC intervention immediately. Information learned while using the manual communication board may be used by the team to help in the process of assessing the student for a lite tech or high tech AAC system. If it is decided that the student needs lite tech, then a low tech option might be considered as a means to boost access to vocabulary. This is often the case when a lite tech AAC device is selected for a student. The lite tech device might have limited memory or spaces for vocabulary, and the student continues to use a low tech system, like a manual communication board, to boost or increase their access to vocabulary.

However, if a high tech speech-generating device or a mobile technology app is being considered, then low tech, like the manual communication board, can be used as a bridge to support transition to that device. In this scenario, the manual board is often developed and designed to coordinate with the anticipated device or app. This is done to reduce the need to learn two different AAC systems. Finally, since technology can break, and is also not appropriate in all communication environments, like at the beach, low tech options are an important strategy as a backup system to any speech-generating device or mobile technology app.

Low tech options, such as manual communication boards, have historically been useful and efficient AAC systems for many people who use AAC systems. Even today, many people who use AAC systems continue to be successful communicators using manual communication boards. Therefore, even if lite tech or high tech options are never recommended for a student, a low tech AAC system can always serve as a student's primary AAC system.

Lite tech systems are simple, electronic devices that have replaceable or rechargeable batteries. Many have speech output in the form of recorded digital speech. Familiar examples of lite tech systems might be a rotary scanner without speech output, a single or sequential message device with digital recorded speech, or a device with 2 to 32 targets with digitally-recorded speech. A lite tech device is often given to a student as a simple way to introduce the student to AAC. A lite tech device might also be given to a student to provide him or her with some speech output.

There are many different kinds of lite tech AAC options. Some have very limited capacity to serve as a student's primary AAC system. However, others have sufficient memory and vocabulary capabilities to be used as a student's primary AAC system. Lite tech options need to be considered as part of a student's multi-model communication system.

The term high tech brings to mind speech-generating devices, laptop computers with communication software and now, more than ever before, mobile technology devices with communication apps. For some students, a high tech system might be the student's first ever AAC system, and as such would be the student's introduction to the world of AAC. For others, they might start off using a low tech or lite tech option, and transition to a high tech system. High tech AAC options have many communication features built into the device. They generally provide a student with speech output, the ability to generate text and in most cases, computer functions, such as internet access, telecommunication and environmental controls. Additional non-communication functions might also be available, such as the ability to take photographs and play CDs.

Generally, a high tech AAC system, when provided to a student, has the full potential to serve as the student's primary AAC system. In a Power AAC classroom, the goal for every student is to have a

primary, personal AAC system. That AAC system might be a low tech manual communication board or a book, a lite tech device or a high tech speech-generating device, laptop computer with communication software or mobile technology app. Each of these primary systems might be supplemented with other aided technology options. The combinations of options is about as variable as the students who need AAC systems.

Developing a multi-modal AAC system for a student begins first and foremost with a team of people who gather and share important information about the student. The makeup of the assessment team may include the student, when appropriate, the parents or other family members, any general or special education teachers with knowledge of the student, the student's speech language pathologist, occupational therapist and/or physical therapist, and a vision and/or hearing specialist as needed, an assistive technology consultant with knowledge of low tech, lite tech and high tech AAC systems and anyone else who has knowledge of, and interest in, the student's communication skills and needs.

What does the team need to consider when assessing a student for an AAC system? According to Beukelman and Mirenda, five areas need to be considered during an AAC assessment. First, the team needs to assess the adequacy of the student's current communication strategies and skill levels in areas that influence AAC system use. For the speech language pathologist on the team, that would include a comprehensive, receptive and expressive language assessment to determine the type of language which the student would be expected to produce with an AAC system. For the occupational or physical therapist, that would include collecting information on the student's physical abilities as they relate to positioning for the use of an AAC system, and strategies for how the student will operate and access the AAC system. For a teacher, that might involve reporting on the student's academic levels, including reading and writing skills. For the parent, it might involve their insight into their child's interaction skills with people in their family and the community. The input from all of the team members creates a comprehensive picture of the student's communication strategies and skill levels.

The team will also discuss the student's current communication needs, and project the student's future needs for the next one to five years. Based on all of this information, the team is responsible to determine which unaided and aided AAC strategies appear to be most appropriate for the student. Once those strategies have been identified, the team develops instructional procedures for conducting both short-term and long-term AAC system trials. It is during those trials that the student is provided with systematic instruction with the AAC strategy. A trial with a no tech AAC strategy, such as a manual communication board, might be conducted over the entire school year, while a trial with a specific speech-generating device, laptop computer with communication software or a mobile technology app might be conducted on a smaller scale. Regardless of the type or length of an AAC system trial, the team develops guidelines for evaluating the outcomes of the trials in order to determine recommendations for an AAC system for the student.

When developing an AAC system for a student, it is not, not, not best practice to require a student to earn the right to use a high tech AAC system. A student is not required to first use a low tech or lite tech AAC system before being considered for a high tech AAC system. However, many AAC assessment and implementation teams begin AAC implementation with a low tech manual communication board for their students who need AAC systems. This is typically done for three reasons; first, it is an effective way to provide the student with an immediate means of communication. Making a manual communication board for a student doesn't usually involve a lengthy trial period, or the time that it take to trial and then fund a speech-generating device or mobile technology app. In a matter of a few days or weeks, an appropriate manual communication board can be developed for a student. There are a number of

resources for pre-made manual communication boards that can be used and customized for your students. Handout 1 lists those resources.

Second, manual communication boards are typically simple systems. You don't have to think about charging them, or what to do to turn them on or off, or the steps for programming vocabulary. Low tech systems are less complicated than many lite tech systems and nearly all high tech systems. This ease of use supports implementation by the classroom team and family. The skills a team can learn by using a manual communication board, such as modeling vocabulary, can later be applied when the student is using a high tech AAC system.

Third, a manual communication board is a valuable way to collect information about the student's current communication skill levels. This information is used to help the team make decisions about the use of various speech-generating devices and mobile technology apps.

The Beginner's Guide to designing a manual communication board is a resource that you can use to help make a manual communication board, or modify a pre-made communication board. This resource asks person-centered questions in the areas of mobility, vision, access, cognition, language and device or mobile technology app issues. Answers to these person-centered questions coordinate with manual communication board design considerations. The Beginner's Guide also includes a listing of additional resources to help you make a manual communication board.

Let's summarize the process of developing personal AAC systems for your students. First off, developing personal AAC systems for your students is an ongoing team process. Based on the skills and needs of the student, the team considers which unaided and aided strategies will help the student become a more effective, competent communicator. The multi-modal AAC system developed for a student might include no tech, lite tech and high tech options.

You are encouraged, following this module, to apply what you have learned. This module includes a copy of a manual communication board from the Pixon Project kit. It is the Pixon77 core board, which means there are 77 locations on the board with core vocabulary in those 77 locations. The board has been modified, with permission from the author, so that there are three versions of this board available for you to use. Version 1 is the original board, and has the vocabulary represented with Pixon pictures. Version 2 has the same vocabulary and configuration, but has the vocabulary represented with SymbolStix. Version 3 has the vocabulary represented with Picture Communication Symbols. Print out multiple copies of the Pixon77 core board. For example, print out five copies of the Pixon77 core board with the vocabulary represented with Pixons. If your students are familiar with SymbolStix pictures, or Picture Communication Symbols, print out multiple copies of those versions of the Pixon77 core board. Use the boards in different activities. Focus on how you would use the available core vocabulary in those five activities. As needed, add activity-specific vocabulary to the blank row on the top of the board.

Please complete the post-test for this module.