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I am submitting herewith a thesis written by Nancy Lynne Mohrlyn entitled "SETT Framework Exploration by Tennessee Public School System Assistive Technology Service Providers". I have examined the final paper copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Teacher Education.



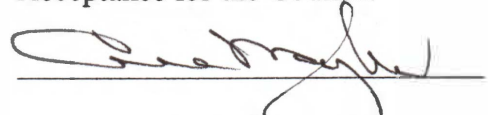
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Vice Chancellor and Dean of
Graduate Studies

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**SETT Framework Exploration
by Tennessee Public School System
Assistive Technology Service Providers**

**A Thesis
Presented for the
Master of Science
Degree
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**Nancy Lynne Mohrlyn
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Abstract

This descriptive study focused on assistive technology (AT) service provider exploration of the Student, Environment, Tasks, Tools (SETT) Framework during assessment and decision-making. Review of the literature is suggestive that employment of an effective model to structure team assessment, such as the SETT Framework, can prevent the phenomenon of device abandonment. Participants used for this study were identified as AT service providers through their participation in Tennessee sponsored training opportunities. All participants were involved in the provision of AT services in public school settings. Completion of an on-line survey designed to assess SETT Framework exploration was required of all participants. Results of this study indicate that the participant group reports SETT Framework exploration in AT practice. Demographic data collected reveal that teachers may be the least familiar with the SETT Framework.

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Chapter One

Introduction

Abandonment of assistive technology (AT) is a common occurrence in public school settings. AT abandonment refers to the phenomenon of technology under use, or complete lack of use, when the need for it remains. Optimally, a user will employ any prescribed AT as long as the need for it continues. According to King (1999), however, significant rates of abandonment have been, and continue to be, a primary concern for professionals providing AT services. Zabala (2005) notes that even when AT is well matched to a user's strengths and weaknesses, abandonment can occur if the environments in which the device is to be used, and the tasks to be supported by the device are not assessed. The Student, Environment, Tasks, Tools (SETT) Framework (Zabala, 1995) provides for AT assessment and decision-making that is based on exploration of the student, the student environments, and the student tasks in relationship to the selection of devices or tools. The purpose of this study was to determine whether the philosophy of the SETT Framework is utilized by AT service providers in Tennessee public school settings.

AT service is provided in public schools to support an identified student's Individual Education Plan (IEP). The IEP Team includes parents and school system personnel who work collaboratively to develop a child's instructional program. The task of designing a viable program with appropriate supports is particularly important to IEP-Teams. In response to studies that address rates and causation for AT abandonment, IEP-Teams are encouraged to select an outcome-driven model with which to guide assessment

and planning (Long, Huang, Woodbridge, Woolverton, & Minkel, 2003). Long, et al. (2003) describe an outcome-driven system as one in which “intervention strategies are developed to promote the attainment of the desired outcome and maximize the skills of the individual” (p. 274). An outcome-driven model provides IEP-Teams with guidance for both data collection and decision-making. Student programming, and any future adjustment to it, is subsequently based on the on-going collection of information.

The goal of an AT assessment, and resultant implementation plan, is to support a student’s participation and success in the educational environment. Specifically, AT is used as a tool to facilitate progress towards mastery of identified IEP goals and objectives. A significant increase in available AT designed to support student functioning has become available in recent years (Lahm, 2002). Lewis (2000) further reports that AT has been proven effective in supporting improved student functioning in school environments. A need is developing, however, for more consistent team use of outcome-driven methods in response to “concerns about quality in relation to costs” (Gelderblom & de Witte, 2002, p. 91). Costs related to poor outcome quality, or AT abandonment, are high and can be viewed either from a dollar or student standpoint. It is not enough for AT to be in place and available; it needs to be appropriate and useable. Employment of outcome-driven decision-making can both reduce AT abandonment rates and improve student functioning. To accomplish this, a clearly identified means of structuring IEP-Team process during AT decision-making is encouraged (Bowser & Reed, 2003).

The SETT Framework “is an organizational tool to help collaborative teams create student-centered, environmentally useful, and tasks-focused tool systems that

foster the educational success of students with disabilities” (Zabala, 2002, p. 1). The SETT Framework was selected as the outcome-driven, team-structuring model for this study due to its inclusion in national AT practice guidelines (Quality Indicators for Assistive Technology Consortium, 2003). In addition, IEP-Team use of the SETT Framework has become prevalent in school settings (Edyburn, 2001). A search for public school system procedural manuals on-line reveals that the SETT is frequently adopted as the model of choice for addressing AT needs.

The purpose of this study was to determine the extent of comprehensive SETT Framework use by AT service providers in Tennessee public school settings. The sample population was comprised of service providers who participated in AT conference trainings sponsored by Tennessee’s State Department of Education during the 1999-2000 through the 2003-2004 academic years.

The following section illustrates the considerations under which AT services are currently provided in Tennessee’s public school settings.

Federal Mandates for Provision of AT

The Individuals With Disabilities Education Improvement Act of 2004 (IDEA 2004) (P.L. 108-446) mandates the provision of AT devices and services in public school systems. Under this Act all identified students with disabilities are entitled access to AT consideration, assessment, and support with regard to educational need. Consideration of need for AT support is specifically mandated by IDEA 2004 during IEP development. This is to be accomplished through IEP-Team discussion and determination of, “whether

the child requires assistive technology devices and services” (IDEA 2004, §614) to support educational goals and objectives.

In 1988, the United States Congress first identified and defined the terms *assistive technology device* and *assistive technology service* within the Technology Related Assistance for Individuals with Disabilities Act (P.L. 100-407). In 1991 these two terms, and their definitions, appeared for the first time in the Individuals with Disabilities Education Act (Cook & Hussy, 2002). With adoption into the education Act, some original wording was changed to improve intent and application to public school-aged individuals. When the Individuals with Disabilities Education Act was again reauthorized in 1997, the terms addressing AT were retained (P.L. 105-17). Today’s school systems are providing special education services under IDEA 2004. This version of the law has retained the historical definitions of assistive technology device and assistive technology services but has added one exception to further clarify the type of devices to be provided in support of educational programming.

Assistive technology device is defined as:

any item, piece of equipment or product system, whether acquired commercially off the shelf, modified or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability. The term does not include a medical device that is surgically implanted, or the replacement of such device, (IDEA 2004, §602).

Assistive technology service encompasses:

any service that directly assists a child with a disability in the selection,

acquisition, or use of an assistive technology device, and includes:

- (a) The evaluation of the needs of such child, including a functional evaluation of the child in the child's customary environment;
- (b) Purchasing, leasing, or otherwise providing for the acquisition of assistive technology devices by such child;
- (c) Selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing of assistive technology devices;
- (d) Coordinating and using other therapies, interventions, or services with assistive technology devices, such as those associated with existing education and rehabilitation plans and programs;
- (e) Training or technical assistance for such child, or, where appropriate, the family of such child; and
- (f) Training or technical assistance for professionals (including individuals providing education or rehabilitation services), employers, or other individuals who provide services to, employ, or are otherwise substantially involved in the major life functions of such child, (IDEA 2004, §602).

To further support the use of AT in public schools IDEA 2004, Section 670 mandates that “appropriate technology and media are researched, developed, and demonstrated to improve and implement early intervention, educational, and transitional services and results for children with disabilities and their families”.

Public school systems will primarily provide AT consideration, devices, and

services under IDEA 2004. However, two additional federal Acts also have an impact on the provision of AT services to students identified as having a disability.

(a) Section 504 of the Rehabilitation Act of 1973 (Section 504):

does not specifically address AT devices and services. It does, however, identify the necessity for “special education and related aids and services” as well as “supplementary aids and services” in its prohibition of discrimination against any individual with a disability who is placed in a program receiving federal funding (P.L. 93-112).

(b) The Americans with Disabilities Act of 1990 (ADA):

indicates that all government agencies are prohibited in withholding access to services, programs, and activities from individuals with disabilities (P.L. 101-336).

IDEA 2004, Section 504, and ADA mandate that a public school system must address the educational need of any student identified with a disability. The disability itself may be temporary or permanent. If it has an impact on educational functioning, however, the student is eligible for individualized services that include AT.

In addition to the above federal legislations, the No Child Left Behind Act (NCLB) of 2001 has implications for the provision of AT services (Wahl, 2004). NCLB requires school systems to improve academic performance throughout their population, and students with disabilities are identified as in particular need. With regard to NCLB, more students with disabilities must now access regular standardized testing. To assist these students, NCLB mandates the provision of AT as a testing accommodation. The

decision of what specific AT is allowed during testing is being left up to individual states at this time. By mandating AT accommodation for typical testing, NCLB is essentially encouraging increased participation in regular curriculum as well (Wahl, 2004). For students with disabilities, this can only mean increased use of accommodations, including AT, throughout their educational programming.

The Assistive Technology Act of 1998 (P.L. 105-394) was passed to support states in their efforts to comply with federal mandates regarding provision of AT. This Act authorized federally recognized *Assistive Technology Projects* at the state level, and provided funding avenues for their development. With this federal support, Tennessee has developed training programs and guidelines for its school systems.

Tennessee AT Practice Standards

The *Assistive Technology Supervisor's Guide Implementation Guidelines* was published to support Tennessee education teams as they address the AT needs of their students (Tennessee State Department of Education Division of Special Education, 2002). The document provides an overview of federal intent with regard to provision of educationally related AT services to students with disabilities. In addition, the document includes general guidelines for AT consideration, assessment, inclusion on an IEP, training, funding, and transition services.

Tennessee guidelines for AT consideration reinforce the federal mandate that the possible need for devices and services must be addressed during the development of every IEP. The guidelines also confirm that the IEP-Team is held responsible for determining what AT is necessary, as well as how it will be implemented. AT

assessments are to be completed by a multidisciplinary team and include parent participation.

Related Adjudication

The reauthorization of the Individuals with Disabilities Education Act in 1997 included increased specificity for provision of AT services including: (a) consideration of need for AT during IEP development; (b) additional assessment as needed to be completed by knowledgeable individuals; (c) provision of devices throughout school environments; and (d) increased opportunity for participation (Day & Huefner, 2003). These requirements have resulted in a gradual increase in the presentation of parent-motivated cases to hearing officers and court judges. As time passes more parents and attorneys will become increasingly knowledgeable with regard to legal provisions regarding AT. Day & Huefner (2003) suggest that school systems prepare by becoming equally knowledgeable and proactive with AT and service provision. Based on recent cases, school systems need to pay particular attention to: (a) the federal requirements as noted above; (b) avoiding a time lapse between IEP development and provision of specified devices and services; (c) prevention of any service lapse during student transitions; (d) outcome measurement in relation to AT use; and (e) use of AT to support student access to general education (Day & Huefner, 2003).

Quality Indicators for Assistive Technology Services in School Settings (QIAT)

The QIAT (Zabala et al., 2000) was authored by a group of AT professionals from various parts of the United States. Within their professional practices the QIAT authors had identified the need for specific parameters to guide the practice of providing effective

and quality AT services in public school settings. Federal law defines and mandates AT and its related services. It also mandates AT consideration during IEP development. The federal law does not, however, provide a description of “high quality” AT service provision (Zabala et al., 2000). The authors of QIAT also noted that extensive study had been focused specifically on AT devices and materials. Minimal attention had been paid, however, to “standards that can be used to support the development, provision, and the determination of merit or worth of assistive technology services in school settings” (Zabala et al., 2000, p. 25). The QIAT written in 2000 contained six areas, each with several parameters, to be addressed for the assurance of quality AT service provision.

In 2003 the QIAT authors updated the original version of their document, and added areas to address transition and professional development and training. In its present form the document includes AT quality indicators for eight areas: administrative support; consideration; assessment; documentation; implementation; evaluation of effectiveness; transition; and professional development and training (QIAT Consortium, 2003). Each of the eight QIAT areas is comprised of descriptors necessary for a comprehensive and effective AT service delivery program. As a whole the document strives to guide the development of new programs and the improvement of existing ones.

Miscellaneous Practice Standards

In addition to federal mandates, state guidelines, and guidance from the QIAT authors, AT service providers in Tennessee must adhere to the policies and procedures of their local school systems. Many AT service providers in school systems have a professional degree anchoring their practice. These professionals must also practice

within relevant Tennessee licensing or certification practice codes. Lastly, AT service providers must adhere to their employer and/or professional organization code of ethics.

Ethics

In 2001 Scherer and Coombs reported that AT users identified their own lack of involvement in the decision making process as a primary reason for device abandonment. As a result of this finding, Scherer and Coombs (2001) posed the following ethical considerations to AT service providers:

- (a) Consumers require a comprehensive assessment by a qualified person;
- (b) Consumers have the right to choose the technologies they receive and use;
- (c) A technology must be adapted to user needs and preferences; consumers should not have to adapt to a technology's features;
- (d) Differing consumer-professional perspectives and priorities need to be openly discussed;
- (e) Professionals should not impose their view of what is best;
- (f) Cost of technology should not be the deciding factor in which technology a consumer selects and receives; and
- (g) Failure to follow-up is, indeed, a failure (pp. 3-12).

Chapter Two of this study will define AT abandonment in more detail. In addition, factors relating to abandonment will be presented. The SETT Framework as a team structuring process will also be examined.

Chapter Two

Review of Literature

Chapter two reviews and defines AT abandonment in more detail. In addition, practices associated with abandonment and means for prevention will be discussed. A means of providing effective assessment and programming through IEP-Team use of the SETT Framework will also be reviewed.

AT Abandonment

The term “abandonment” is defined by Webster’s Dictionary (Random House, 2002) as “to cease from maintaining, practicing, or using” (software). While this definition has clear application to the phenomenon of AT abandonment in describing lack of device use, service providers also use the term in reference to underutilization. In addition, the term, non-compliance, is used to describe a type of AT abandonment (Scherer, 2002a). In their review of current literature on the subject, Wessels, Dijcks, Soede, Gelderblom, & DeWitte (2003) identify at a minimum the following types of device abandonment:

- The device is not used at all;
- The device is not used full-time;
- The device is not used voluntarily;
- The device is not used at the time of questioning;
- The device is not used frequently;
- The device is not used for a substantial part of the day;
- The device is not used at any given point post-discharge;

The average use is low;

The device has not been used at least three times since prescription;

The device is not used correctly;

The device is not used for (all) the activities it was prescribed for (pp. 232-233).

Kurtz (2003) finds that AT for IEP support is frequently abandoned in classroom settings, and notes that devices are often located “in a corner or closet waiting to be rediscovered” (p. 16). This observation is evident in many classrooms in spite of good AT assessment and team investment in IEP implementation. While federal mandates have increased the rate at which AT is used to support IEPs, and has encouraged the identification of service providers to support its use, statistics on abandonment are high (Riemer-Reiss, 2000). Reported rates of AT abandonment vary between authors and service provision settings, however, the overall rate may be as high as 75 to 80 percent (Ebner, 2004). Reasons associated with the rate cited by Ebner (2004) include poor matching of the user with the device, inadequate user training, and a poor degree of educational, professional, or home acceptance of the user’s technology.

Whereas the literature suggests that various factors are responsible for the rate of AT abandonment, no generally accepted philosophy for viewing and addressing this problem is yet evident. The practice of measuring outcomes in a standardized way is currently under development within AT practice (Gelderblom & de Witte, 2002). As school systems have increased funding allocations for AT, the question of whether or not it is effective, and if so to what degree, is moving to the forefront of administrative thought (Edyburn, 2003). A benefit of continued work in the area of outcomes

measurement will be to determine the usefulness of specific AT for defined needs. From studies of this type, AT service providers and IEP-Teams will refine their assessment and decision making techniques. Cook and Hussey (2002) state that “one of the most tangible indicators of lack of consumer satisfaction is when the consumer stops using a device even when the need for which the device has been obtained still exists” (p. 121). Edyburn (2003) indicates that, “central to the definition of assistive technology is the expectation of enhanced performance” (Repeated Measures of Performance With and Without AT section, ¶ 1). AT service providers are learning, however, that, there exists a complex interplay between multiple factors that predicts, or results, in a functional and successful match between AT and a student (NCREL, 1999).

At present there is consensus in the literature that rates of AT abandonment are too high. To assist AT service providers in finding a solution, researchers are beginning to identify the underlying causes for abandonment (Wessels et al., 2003).

Factors Related to AT Abandonment

Clinical versus Functional Model. A clinical, or medical, model of treating diagnosis was prevalent in AT’s early stage of development. AT service provision in school settings was born from the clinical practice of improving an isolated component of function in an individual perceived as medically passive. The clinical model paid little attention to the notion of using an increase in function to fulfill an individual’s need to participate in or complete a task. While a clinical perspective is concerned with altering an actual disability, a functional model of AT provision focuses on improvement in engagement (Lahm, 2002). As AT has proven itself useful in school settings, it has

become evident that a move away from the clinical model is necessary. Student users of AT are not medically passive with deficits in specific areas of functioning. Rather, they are individuals who require a tool to aid accomplishment of a task. This shift in perception is necessary for the improvement of AT outcomes (Wielandt & Scherer, 2004). Scherer (2002a) stresses that as professionals, AT service providers must discard the philosophy that individuals with disabilities have a medical diagnosis that requires treatment. In contrast, providers of AT must view individuals as having a functional need in relation to an “environmental demand” (Lahm, 2002, Assistive Technology Decision Making Process section, ¶ 8). A shift from clinical concern about changes in degree of functioning to a social model that considers an individual’s evaluation of change in overall life satisfaction needs to become a component of measuring AT success (Scherer, 2002b).

Need Consideration. Lack of consideration for user need is an often-cited reason for AT failure. Scherer (2002a) is adamant that teams supporting student function need to avoid looking at specific AT until a clear context of needs and goals is established. Assessment and decision-making must start with the recognition of what the student needs to accomplish in order to access and participate in his or her educational program. In other words, the identification of “functional needs in school” (Beigel, 2000, Purpose of Assessment section, ¶ 5) must become one of the initial tasks of any AT assessment team. The process of assessment should never revolve around a specific piece of AT (Scherer, 2002a). A search for AT in support of functional need will help teams avoid

abandonment by discouraging provision of equipment that does not improve quality of function within needed tasks (Lueck, Dote-Kwan, Senge, & Clarke, 2001).

Analysis of the task(s) to be supported with AT use and attention to the “functional requirements of the user” (Hawley, O’Neill, Webb, & Roast, 2002, p. 44) in relation to the task will also move team planning away from risk of AT abandonment. Team avoidance of becoming “too enamored of gee-whiz technology” (Beigel, 2000, Learner Focus During Assessment section, ¶ 1) and removed from a common focus on the student, can be seen as the ultimate goal of any assessment and decision-making process.

User Attributes. Within the context of AT assessment and decision-making, the user must be viewed from the standpoint of their individual abilities (Scherer, 2002b). Consistent consideration of user strengths and weaknesses in relation to tasks within contextual environments can guide team process towards successful AT planning. King (1999) further notes that the task-related needs and desires of the potential AT user must remain a central focus for the evaluation team. He also states that a failure to consider human factors of the individual user is a primary reason underlying AT abandonment. Cravotta (2001), describes his realization of the necessity for human factor consideration during the course of a technology search to assist the functioning of friends; he states:

I learned throughout this project ... that people are not statistics. You can describe the behavior of a group of people using statistics, but it does not follow that the final numbers represent any of the people surveyed. Case in point: No one has 2.3 children (Help Yourself section, ¶11).

In essence, any potential for successful AT device use must be the result of an individualized matching of “device features to the user (not the user to device)” (King, 1999, p. 244).

User Participation. Cook and Hussey (2002) found that consumer motivation is a key factor in whether or not technology is ultimately utilized or abandoned. They describe motivation issues surrounding use of the device itself, as well as towards actual participation in the activity for which the device was obtained to support. The user’s desires, concerns, and ideas must be considered and accommodated during AT selection. While a user may not select what professionals consider to be the best device for a given situation, he or she will choose what fulfills the need from his or her unique perspective (Beigel, 2000). Beigel (2000, Summary section, ¶ 2) clarifies that “the learner’s reality, not the assessment team’s, ultimately determines device selection and utility” (pp. 237-43). Scherer (2002a) also found that a primary cause for AT abandonment was lack of user participation in the decision-making process. Riemer-Reiss (2000) noted that the more a user is involved in the match process with AT, the less likelihood of device abandonment exists.

Environment. The task the user is to perform must be examined within its environmental context prior to consideration of specific AT (Lueck, et al., 2001). Assessment in an educational environment will allow examination of user and task requirements in relation to school needs. A study completed in 2000 by Riemer-Reiss identified that functional and continued use of a device is strongly connected with fit between user and device, as well as between device and task/environment. Lahm (2002)

further finds that a direct correlation exists between assessment environment and AT recommendations made. The further “the assessors were from the individual’s daily setting, the more complex and expensive the recommended technologies were” (Lahm, 2002, Assistive Technology Decision Making Process section, ¶ 10). Wielandt & Scherer (2004) clarify that the balance and interaction between student, environment, task, and device itself is a composite that will ultimately determine the outcome of the user and technology match. The AT user must be viewed from a social standpoint as a participant in various community environments (Wielandt & Scherer, 2004). Any technology adopted to improve participation and success in an educational program must fit the environment, tasks, and the user himself. Evidence has accumulated that as IDEA 2004 mandates, AT assessments need to occur within natural environments. Students often demonstrate excellent skill in terms of ability to utilize AT, but are often identified as not using their devices because there is no clear role for them within the educational context (Beigel, 2000). Long, et al. (2003, p. 279) conclude that “AT and AT services become more inadequate or inappropriate the further removed the assessment takes place from the environment in which the device is to be used.” Early studies to identify whether or not AT could be useful to enhance the functioning of students with learning disabilities occurred in isolated, clinical type settings (Lewis, 2000). These studies revealed that the answer is yes; AT can contribute positively to the performance of students with disabilities. In addition, students can successfully learn to use a variety of AT devices. Lewis (2000) concludes, however, that AT assessment must move beyond clinical environments and be completed with consideration for integration into the classroom.

Long et al. (2003) also support this conclusion with the finding that when assessment does not occur within a natural environment and in relation to specific tasks AT abandonment is likely.

Collaborative Team. A study designed to identify the dominant predictors for successful laptop use in children required *stakeholders* to rank a list of related factors in order of importance (Priest & May, 2001). The stakeholder group included the laptop users themselves, teachers, school services support officers, parents, and occupational therapists. Interestingly, the results of this study noted “each stakeholder group considered different factors to be the most important” (Priest & May, 2001, p. 19). A primary conclusion of the study was that a team collaborative approach was necessary during both AT assessment and AT service provision to ensure that all viewpoints were addressed.

The need for a collaborative, and multi-disciplinary, assessment team to make AT decisions is well documented in the literature. A multi-disciplinary team is viewed as best able to meet the need for a comprehensive assessment due to the differing areas of expertise that each team member is able to bring to the assessment process (Hawley, et al., 2002). Pisano (2002) clarifies that with the existence of an established team with common goals and a team plan for follow-up services, the risk of AT abandonment can be avoided. Lahm (2002, Assistive Technology Decision Making Process section, ¶ 13) further notes that a collaborative assessment model for AT is “emerging as the model of choice.”

An integral member of any collaborative team formed to assess and make AT decisions must be the student's family (Reed, 2003). Inclusion of the family and consideration of its unique needs and perspectives can increase the chance for accurate AT selection and integration into an educational program (Parette & McMahan, 2002). Current studies also suggest that the degree of satisfaction with AT felt by all individuals in a child's multiple environments has a direct impact on actual use of AT (Benedict, Lee, Marrujo, & Farel, 1999). Parette and McMahan (2002), have concluded that device abandonment can occur as a result of the different desires and expectations between school and home. They further identify four questions that need to be addressed with the family of any potential AT user:

- (a) What are the family's expectations for child independence?
- (b) To what extent does the family want the child accepted by others?
- (c) What are family expectations regarding immediacy of benefits?
- (d) What are family resource commitments to the implementation of assistive technology? (Parette & McMahan, 2002, What Questions Should Team Members Ask family Members section, ¶ 1, 3, 6, & 9)

It is recommended that the answers to the above questions be considered and accommodated during both AT decision-making and implementation planning (Parette & McMahan, 2002).

AT Integration. A frequently cited reason for abandonment is that the AT itself never became "successfully integrated into the student's school program" (Pisano, 2002, ¶ 3). The establishment of a multidisciplinary team with a collaborative approach to AT

assessment and decision-making can contribute tremendous support towards device integration. The development of an AT service plan with necessary supports clearly identified is also needed to avoid abandonment. Scherer & Coombs (2001) indicate that follow-up AT services provided once devices are in place can be the key to ultimate success. In addition, there must be an ongoing exchange of information between the AT service provider and those individuals working directly with the user in order to achieve a positive result (Scherer & Coombs, 2001). Ongoing adjustments to strategies, technology use, or to the device itself may be needed to eventually achieve successful AT integration. While a student may quickly master the use of AT, research is indicating that successful integration of AT into classroom settings is a difficult task for many teachers. Bausch and Hasselbring (2005) note that when teachers receive AT training it is often limited to information regarding operation of a specific device. Teachers rarely receive information that addresses the integration of AT into classrooms and educational programming. On-going training and support from AT service providers can assist teachers in overcoming the obstacles they face (Ditzhazy & Poolsup, 2002).

Avoiding AT Abandonment Through Effective Assessment

Federal mandate requires AT consideration for all students receiving special education services through an IEP. It further requires AT and service support when need has been identified. Federal mandate, however, has not specified guidelines for school systems to follow as they consider need and provide AT. From the studies that describe the reasons underlying AT abandonment above, it can be concluded that effective assessment is critical. AT assessment - and ultimately decision-making - needs to

include: the establishment of a collaborative multi-disciplinary team; identification of precise user need; consideration of student attributes; assessment of educational environment(s); and analysis of tasks.

While there is not a significant research base with which to support a particular approach of AT consideration or assessment, models designed to guide the process are beginning to emerge in the literature (Watts, O'Brian, & Wojcik, 2004). The QIAT identifies seven indicators for quality AT assessment in school settings:

- (a) Assistive technology assessment procedures are clearly defined and consistently used;
- (b) Assistive technology assessments are conducted by a multidisciplinary team that actively involves the student and family or caregivers;
- (c) Assistive technology assessments are conducted in the student's customary environments;
- (d) Assistive technology assessments, including needed trials, are completed within reasonable time limits;
- (e) Recommendations from assistive technology assessments are based on data about the student, environments, and tasks;
- (f) The assessment provides the IEP team with documented recommendations about assistive technology devices and services;
- (g) Assistive technology needs are reassessed by request or as needed based on changes in the student, environments and / or tasks. (QIAT Consortium, 2003, Quality Indicators for Assessment of Assistive Technology Needs section).

One team-structuring model to emerge, the SETT Framework (Zabala, 1995), has clarified the process by providing guidance for the assessment process.

The SETT Framework

The SETT Framework was initially presented at a Minneapolis, Minnesota, Closing the Gap Conference in 1995 (Zabala, 1995). Research prior to 1995 had indicated that the provision of educationally relevant AT could effectively reduce the amount of various service supports needed for students and allow greater numbers of children increased access to regular education settings (Zabala, 1996). Zabala notes that educational teams, armed with these findings, subsequently moved to put AT in place for student use. Ultimately, however, the outcome of this increase in AT placement was “students who were marginally involved and devices which were underutilized or abandoned” (Zabala, 1996, Establishing the Need for SETT section, ¶ 1). Zabala indicated that while devices were being well-matched with users, minimal consideration was being given to a match between environment and task. She further noted that it “became increasingly clear that those who were getting higher rates of success for users and lower rates of device abandonment were those who routinely considered the person within the context provided by the environments and the tasks” (Zabala, 1996, Establishing the Need for SETT section, ¶ 3). A statement made to a colleague:

“To get the best shot at putting together a system of tools, you need to explore the student, the environments in which the student is expected to use the tools, and the tasks which are an inherent part of communicating, participation and being productive in those environments!”

became a defining moment in the conceptualization and eventual development of the SETT Framework (Zabala, 1996, Establishing the Need for SETT section, ¶ 4).

Intended use of the SETT Framework is as a student-focused “organizational tool” (Zabala, 2002, ¶ 1) to help teams gather and manage information related to a potential AT user’s attributes, educational environments, and tasks. Zabala (2000) further describes the SETT Framework as a process as opposed to a defined assessment task. It promotes active student engagement and success in the educational environment (Zabala, Bowser, & Korsten, 2005). One way it accomplishes this is by assisting IEP Teams in the collection of student related data. It further guides teams through the process of developing effective implementation plans for AT use. Critical elements for effective use of the SETT Framework include: “collaboration, communication, multiple perspectives, pertinent information, shared knowledge, flexibility, and on-going process” (Zabala, 2002, ¶ 2).

The SETT Framework itself consists of four areas to be explored through information gathering and data collection as a team works towards defining AT and service needs for an individual student (Zabala, 1995). Each area is comprised of several factors that represent the kinds of issues or topics to be explored. The SETT Framework is designed to provide “a way of thinking about assistive technology devices and services” (Zabala, 2000, What is the SETT Framework section, ¶ 1) prior to any focus being placed on devices themselves. Zabala further indicates that the first three areas of the SETT are to be explored fully before any discussion of AT use occurs. This is to ensure that the team ultimately arrives at “a system if [*sic*] tools that is student centered,

environmentally useful (or compatible), and task focused” (Zabala, 2000, What is the SETT Framework section, ¶ 1).

A synthesis of some of Zabala’s published work (1995, 1996, 2000, & 2002) has provided a list of factors to be explored as a team works through the four SETT Framework areas. Table 1 in Appendix A provides the factors for the Student and Environment areas. Factors for the Tasks and Tools areas are shown in Table 2 of Appendix B. As teams collect information in the first three SETT Framework areas, a tremendous amount of data can be accumulated. For this reason it is extremely important that teams initially seek and identify the precise need that a student has for AT support prior to beginning the assessment process (Zabala, 1996). Once a focus for the assessment has been achieved, the team can begin to work toward agreement regarding data validity and relevance within the assessment context. Lastly, the team can arrive at consensus for device selection and implementation planning (Zabala, 1996).

Once AT devices and programming are in place, school teams are encouraged to modify and maintain SETT Framework information as an accurate reflection of student participation and academic progress. This current base of data can be invaluable both for guiding future modification of AT and related programming and as a means to document student progress (Zabala, Bowser, & Korsten, 2005).

The SETT Framework promotes student success by structuring team process as it moves through comprehensive data collection and decision-making. It was selected as the assessment model for this study because it constructively addresses current research findings related to AT abandonment. The SETT Framework strives to predict, address,

and ultimately avoid the issues that contribute to the phenomenon of device abandonment. A step towards determining the effectiveness of the SETT Framework is to evaluate the extent to which its philosophy of exploration or consideration for four distinct areas is employed during AT assessment and decision-making.

Research Questions

As a result of Tennessee AT training opportunities a large group of service providers have had exposure to the SETT Framework philosophy. Determining the extent to which the SETT Framework's philosophy impacts AT service delivery during assessment and decision-making among this population was the purpose for this study.

Specific questions which guided this study included:

Are factors, within each SETT Framework area, explored during AT assessment and decision-making?

Are all four SETT Framework areas explored during AT assessment and decision-making?

Are there any relationships between demographic data collected and comprehensive SETT Framework use?

(Note that use of the term *area(s)* refers to Student, Environment, Task, and Tools. Use of the term *factor(s)* is in reference to the exploration or consideration guidelines under each of the SETT Framework areas.)

Chapter Three

Method

Chapter Three describes the groups of potential and actual participants used in this study. The development of the survey instrument is discussed along with the means by which it was placed on the World Wide Web for participant access. In addition, a review of the method of participant recruitment and follow-up is provided.

Participants

The potential participant group for this study numbered 318. During the 1999-2000 through the 2003-2004 academic years, the state of Tennessee sponsored AT training opportunities through its Department of Education. During these years many school systems in the state were in the process of establishing AT service provision programs. Tennessee supported this process by offering Center Grants that funded staff training, equipment purchase, and general program startup. To further support the identification and education of AT service providers a yearly training opportunity was provided.

Attendance at the annual AT Institute trainings, held in Nashville, was open to all interested individuals. The group each year was primarily comprised of professionals working in public school systems across Tennessee. Sometimes a parent or a teaching assistant was also in attendance. Typical attendees included speech therapists, vision specialists, occupational and physical therapists, classroom teachers, school administrators, and university level instructors. Some individuals were the sole representatives from their local school systems. Other school systems sent entire AT

teams to be trained. Many attendees had assumed the role of AT contact person within their work settings. In addition, many attendees were in the process of establishing AT service provision in their settings through the state's Center Grant program. For some attendees, the trainings were their initial exposure to AT. Other individuals had worked in the area of AT for numerous years.

The study's actual participant group of 23 included nine teachers, six administrators, six speech therapists, one physical therapist, and one social worker. Participants identified length of time in professional practice prior to current academic year ranging from as little as two years, to as many as 31 years. Mean length of professional practice was 19 years.

Formal AT credentials held by study participants included California State University, Northridge (CSUN) and Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) Certificates, or university graduate degrees with an AT focus. Some participants also reported attendance at various conferences. Of the 23 participants, 10 held CSUN and/or RESNA certification or had completed graduate work in the area of AT. Ten participants indicated that they held no formal credential in AT.

Study participants reported years of experience providing AT services in public school settings prior to current academic year as ranging from none to 24 years. Mean length of time as an AT service provider was 5.78 years. Participants identified that the percentage of their time currently devoted to providing AT services ranged from two percent to 100 percent with a mean of 33.6 percent. Table 3 in Appendix C provides a

view of professional and AT service provision experience in relationship to participants as grouped by profession. All tables reporting analysis of data for this study can be found in the Appendixes section.

Of the 23 study participants, 12 specifically indicated that their professional educations had not prepared them adequately to function as AT service providers. Only four participants stated that they had been prepared to provide AT services by their professional educations. This group included two teachers, one speech therapist, and one supervisor. One participant indicated that partial preparation had been received from professional education. Ten participants stated that most of their preparedness for AT service provision had come from workshops and conferences, or that they were self-taught.

Twenty-one of the 23 participants indicated that participation in Tennessee sponsored training programs had assisted in preparing them to provide AT services. Two participants stated that the chance to network with peers during the conferences had been a positive learning experience in itself. One participant described “practical application and trial and error” as also contributory towards mastery of AT service provision.

Instruments

Survey. The survey instrument used was developed specifically for the purposes of this study. It was designed to reveal the extent of the SETT Framework philosophy use during AT assessment and decision-making. The survey was not identified as being based on the SETT Framework in an effort to examine use of its philosophy whether or not participants identified its actual use in practice. While many authors have discussed use

of the SETT Framework, only Zabala's (1995, 1996, 2000, & 2002) published work was the basis for the survey development. A synthesis of Zabala's descriptions of parameters to be considered within each SETT Framework area resulted in the list of factors as presented in Tables 1 and 2 of Appendixes A and B respectively. This list became the basis of the survey tool. Tables 1 and 2 also show the survey item number assigned to each factor. The survey is shown in Appendix D. It is titled *Assistive Technology Assessment (Data Gathering and Decision Making Practice)*. The survey is comprised of instructions for its completion, a main body of 26 SETT Framework factors each to be rated on a five-point scale, and seven demographic questions.

Once the list of SETT Framework factors was established the order in which they would appear on the survey was randomly assigned. This was to avoid clustering of factors by SETT Framework areas, and thereby prevent the survey from being readily recognizable as Zabala's work.

When the final draft of the survey was complete, a hard copy was provided to seven individuals for feedback regarding clarity. This group was comprised of one classroom teacher, two speech pathologists, one physical therapist, one school administrator, and two university professors. All individuals with the exception of one university professor were familiar with AT and its related service provision. Feedback was received from all individuals with the exception of one speech pathologist. As a result of feedback received, subtle changes were made in grammar and wording. No factor items were deleted, added, or significantly reworded. One university professor suggested that the survey be organized with concrete, straightforward items at the

beginning, and items requiring more thought at the end. This was seen as a means to encourage survey completion. In response to this suggestion survey items were repositioned, maintaining a randomly assigned order in relation to the SETT Framework areas.

On-Line Survey Tool. An online survey research tool, Zoomerang (MarketTools, 1999-2005), was used to web-host the survey. Zoomerang collected data and provided results by individual respondent, as well as in group format. Survey results pages were password protected. Only the principal investigator and the primary academic advisor had access to the online data obtained.

Upon clicking on, or cutting and pasting into a web-browser, the web-link in an introductory email, participants were taken to a Zoomerang hosted consent page. The introductory email is shown in Appendix E, and the consent page in Appendix F. The consent page briefly described the study and the survey to be completed. Participants were also informed as to how they had been selected. Confidentiality was assured through lack of any connection between email addresses and submitted surveys. In addition, participants were told that only one principal investigator and one academic advisor would have access to the raw data generated. Participants were further informed that no potential risks were associated with participation in the study. Email addresses for the principal investigator and the academic advisor were provided at the bottom of the consent page for contact in the event of any concerns or questions.

Clicking on a button at the bottom of the consent page moved participants to the first page of the survey. Upon completion of the survey, participants were asked to click a

button to submit their responses. A page then appeared thanking them for their participation, and again providing the contact information for the principal investigator in the event of questions or concerns regarding the study.

Procedure

Participant Recruitment. The state level Assistive Technology Consultant for the Division of Special Education coordinated the AT Institute trainings each year in Nashville. This individual provided five email contact lists for all training participants from the 1999-2000 through the 2003-2004 academic years. Five original training participant lists, and one updated list were obtained throughout the course of the study. When the first five lists were received they were combined into a master list and then sorted alphabetically. Duplicate email addresses were removed. When the updated list was received it was treated in the same manner and eventually combined with the original master list.

Participant self-selection was requested in the introductory email. Email recipients were asked to complete an on-line survey if they: (a) were providing AT services; (b) in a public school setting; (c) in the state of Tennessee.

The introductory email was sent to 314 potential participants on November 6, 2004. Of the 314 emails sent, 111 were returned as undeliverable. All addresses of returned emails were checked against the master list for accuracy. In six cases an error was found in the outgoing email address. Those six email addresses were corrected and the message resent to them. One email recipient sent a reply indicating that she was now

residing in another state and therefore the survey was not appropriate for her. Of a master list of 314 email addresses, 203 were assumed successfully delivered.

After a period of three weeks, 13 participants had completed the on-line survey. As this was not considered an adequate number for the study, contact with the Tennessee Assistive Technology Consultant was made requesting assistance in encouraging participation from past AT Institute attendees. In response to this request an updated list of 104 email addresses was received. A second emailing containing the original introductory message was sent out on December 4, 2004 to the updated list. This resulted in a return of 33 as undeliverable. After comparing the returned emails to the second master list, it was noted that 10 were undeliverable due to error. These 10 were corrected and resent with an additional return of four, as undeliverable. Of the 104 addresses on the second list obtained, 77 were assumed successfully delivered.

Three additional completed surveys were submitted as a result of the second emailing. On December 15, 2004 the updated list was combined with the master and a third and final request for participants was sent out. This email included a brief message identifying the need for additional survey submissions along with the original introductory information. The second email message is shown in Appendix G. Combining the two lists yielded 318 individual email addresses. A total of 120 were returned as undeliverable, with 198 assumed successfully delivered. The third emailing resulted in submission of seven additional surveys. A total of 23 completed surveys were obtained for the purposes of this study.

After the third email message was sent, two individuals responded with information regarding difficulty with survey access. One individual indicated that the link in the email did not work. The other stated that within their web-browser Zoomerang's opening page did not display a button to start the survey.

Survey Access. Upon placement of the survey instrument on-line, the introductory email message was sent out on November 6, 2004 to 314 potential participants. On December 4, 2004 the same message was sent to the second list of 104 individuals. Both email lists were then combined, duplicate addresses removed, and a final request for participants was sent on December 15, 2004 to 318 individual addresses. On January 24, 2005, after 80 days of availability, survey access was removed.

Participant Follow-Up. On February 4, 2005 a follow-up email message was sent to the combined list of 318 addresses. This message requested feedback from those individuals who either did not complete the survey, or were unable to do so. The follow-up message is shown in Appendix H. Of 318 emails sent, 124 were returned as undeliverable, with 194 assumed successfully delivered. After a period of 10 days, five follow-up messages regarding the survey had been received. Three individuals indicated that the survey was not appropriate for them; one stated that they had misplaced the link and forgotten about it, and one responded with the information that they had completed the survey without difficulty.

Over the entire course of the study, feedback from six individuals indicated that either they were unable to complete the survey, or that it was not appropriate for them. Based on the number of emails assumed to have been successfully delivered, the potential

participants for this study numbered 192. This figure is the number of emails assumed successfully delivered (n=198) based on the combined list, minus the six individuals who did not complete the survey due to link difficulties or survey inappropriateness. The participant rate for this study was 12% of the potential.

Chapter Four reviews the data collected in relation to the study's focus questions as presented in Chapter Two.

Chapter Four

Results

The Zoomerang survey research tool recorded a total of 27 submitted surveys in its base of data. Three of the 27 were blank with no responses entered. A fourth survey had only two entries on it. Item number one of this fourth survey, *family preferences and needs*, was rated at 0-25%, and item two was not rated but the comment “... schools are currently not using any AT” had been entered. The four surveys referred to above were not considered in the results.

A total of 23 completed surveys were collected for a response rate of 12%. This percentage relates to the potential pool of participants (n=192) on the combined email list, and is in consideration of feedback emails (n=6) received. The data collected will be analyzed in relationship to the three questions posed in Chapter Two.

As discussed in Chapter Two, use of the SETT Framework philosophy as a guide for IEP-Team AT assessment and decision-making involves exploration of four areas in relation to a student. The factors presented by the SETT Framework within each of its four areas are broad guidelines only in that they represent the kinds of issues or topics requiring exploration. As the SETT Framework factors on the survey are guidelines only, for the purpose of this study exploration was determined to have occurred when participants reported that an item was considered at least 51% of the time. This criterion allows for individualization of IEP-Team process on behalf of student need, as not every SETT Framework factor is relevant in each case 100% of the time. It also allows for the consideration of other factors, not included on the survey, that are case specific.

Consideration of SETT Framework Factors

The first question addressed whether factors, within each SETT Framework area, are explored during AT assessment and decision-making. A total of 26 SETT Framework factors were available for response from each participant. The Student area contained six factors for consideration, the Environment area had 11, Tasks had four, and the Tools area five.

Group Rates of Factor Consideration. Tables 4, 5, 6, and 7 in Appendixes I, J, K, and L respectively provide a review of the rate at which each factor was reportedly considered 51% of the time or more by all 23 participants. The tables are organized by SETT Framework area. They are ordered within each area by rate of participant consideration, from high to low. Participant comments are provided in relationship to their relevant factors. Only one factor consideration rate, that of *family preference and needs*, within the Environment area fell below the study's criterion rate for exploration when responses were viewed in group format.

Individual Rates of Factor Consideration. To further analyze the factor consideration rates, each completed survey was examined individually. Table 8 in Appendix M provides the rates at which each participant considered the factors under the Student area of the SETT Framework based on this study's criterion. The response pattern for each survey item is also provided by individual participant. Note that survey numbers one, two, three, and 25, as recorded by Zoomerang, are not provided. These are the four surveys discussed at the beginning of this chapter and not considered in the results. Table 9 in Appendix N provides the same information as above for the

Environment factors. The data related to the Tasks factors are provided in Table 10 of Appendix O, and the Tools factor data in Table 11 of Appendix P.

Under the Student area the least explored factor was *student preferences* with eight of the 23 participants reporting exploration below the criterion rate. The most explored factor was *abilities and strengths of the student* with all 23 participants indicating consideration of this area. Twenty-two of the participants also reported exploration of *difficulties and weaknesses of the student* and *identification of precise student needs requiring AT support*.

The most explored Environment factor was that of *barriers to student functioning in educational environment* with 22 participants reporting consideration in this area. *Family preferences and needs* was the least explored with only 10 of the 23 participants registering consideration at the criterion rate.

Among the four Tasks factors the least explored by individual participant was that of *opportunity for the student to participate in tasks related to the identified area of need* with six individuals failing to respond to the survey item at the criterion rate. The most explored factors in this area, both with 21 participants indicating consideration, were *modification of instructional or environmental tasks to improve student participation*, and *what the student specifically needs to do within identified tasks to demonstrate participation or success*.

Within the Tools area the least explored factor was that of *AT trials in natural environment* with 16 of 23 individuals reporting consideration in this area. *Technology features required to accommodate student ability, need, and educational*

environment had the highest exploration rate with 22 participants reporting consideration at criterion.

The only SETT Framework factor reported as explored by all 23 participants was that of *abilities and strengths of the student* under the Student area. Ten additional factors were explored at the study's criterion rate by 20 or more participants however. The least explored factor was within the Environment area, *family preferences and needs*, with only 10 participants reporting consideration at the criterion rate. The remaining 25 of the 26 SETT Framework factors on the survey were explored by at least 15 of the 23 study participants.

Consideration of SETT Framework Areas

Question two addressed whether all four SETT Framework areas are explored during AT assessment and decision-making. Individual rates of comprehensive SETT Framework exploration appear in Table 12 of Appendix Q. For ease of reference to the previous section this table is also organized by individual survey. When the surveys were examined individually it was noted that SETT Framework exploration ranged from 54% to 100%, with the exception of one individual who reported at a 35% rate.

The data collected was also analyzed by SETT Framework area and in participant group format. The result of this analysis is shown in Table 13 of Appendix R.

Participants as a group are reporting exploration of all SETT Framework areas during AT assessment and decision-making. It is noted that rates of SETT Framework area exploration by the participants as a group range from 74% to 90%. The most explored area of the SETT Framework by participants is that of Tasks. The least explored area is

Environment. The rate of overall SETT Framework exploration by the participant group was 83%. This figure is also provided in Table 13.

SETT Framework Exploration and Demographics

The third question of this study examined relationships between demographic data collected and comprehensive SETT Framework use. To address this question data were separately reviewed based on participant professional background, years of professional experience, length of time in an AT service provider role, percentage of work time devoted to provision of AT services, and formal AT credentials.

Impact of Professional Background. Teachers comprised the largest professional group, with nine individuals submitting completed surveys. Two of the teachers held a CSUN Certificate, one held both CSUN and RESNA Certificates, and one had completed a graduate degree with an AT focus. Professional experience in this group ranged from two to as many as 30 years, for a total of 188 years, with a mean of 20.89. Amount of experience providing AT services ranged from two to as many as 24 years, with a total of 59 years among them. Mean was 6.56 years in an AT service provision role. Current amount of time devoted to provision of AT services ranged from five percent to 100%, with a mean of 32.23%. The rate of teacher exploration of SETT Framework factors based on this study's criterion was 73%.

A total of six speech therapists participated in the study. Of these six, three held CSUN Certificates. Professional experience ranged from six up to 28 years. Total years of experience was 120, with a mean of 20 years. Experience in provision of AT services ranged from three to as many as 14 years, with a total of 32 years between them. Mean

years of AT experience was 5.34. Percentage of time devoted to AT services ranged from 10% to 100%, with a mean of 46.67% Rate of speech therapist exploration of SETT Framework factors was 88%.

Six individuals identifying themselves as administrators submitted completed surveys. Two of them held certificates from CSUN. As a group, their professional experience ranged from three to as many as 31 years. Total years of professional experience for this group was 87, with a mean of 14.5 years. Length of time providing AT services ranged from none to as many as 17 years, with 33 years total between them, for a mean of 5.5 years. Current work time devoted to AT service provision ranged from none to as much as 70%, with a mean of 18.67%. Rate of administrator exploration of SETT Framework factors was 81%.

One physical therapist, holding a CSUN Certificate, participated in the study. This individual reported a total of 27 years in professional practice and five years experience providing AT services. Current time devoted to provision of AT services was reported at 20%. Report of SETT Framework factor exploration was at 100%.

A single social worker also submitted a completed survey. This individual held no formal AT credential. Years of professional experience reported were 17, with a four year history of AT service provision. Current amount of time devoted to providing AT services was reported at 70%. Report of SETT Framework factor exploration was at a rate of 65%.

Table 14 in Appendix S provides a summary of comprehensive SETT Framework exploration according to professional background. The highest rate of comprehensive

SETT Framework exploration based on profession was reported by the group comprised of one physical therapist at 100%. Review of data by individual survey revealed that a total of five participants reported at this rate of consideration however. In addition to the physical therapist were two speech therapists and two teachers reporting the same comprehensive rate of SETT Framework exploration. Speech therapists as a group held the second highest exploration rate at 88%. Administrators were not far behind at 81%. Teachers as a group were at 73%, and the social worker at 65%.

Years of Professional Experience. The 23 participants were divided into three groups for the purposes of examining the relationship between years of professional experience and comprehensive SETT Framework exploration. Survey question number 28 specifically asked: Not counting this school year, how long have you practiced within that profession? The first group (n=6) had one to 10 years of experience. The second group (n=5) had 11 to 20 years of professional experience, and the third (n=12) had twenty-plus years. The rate of SETT Framework factor exploration in relation to years of professional experience is shown in Table 15 located in Appendix T.

Years of AT Service Provision Experience. Participant experience providing AT services ranged from none to as many as 24 years, with a mean of 5.78. This demographic item specifically asked: Not counting this year, how long have you provided AT services in public school settings? One participant who reported 24 years also commented that this was “not officially”. Most of the study participants (n=13) reported three to five years of experience providing AT services.

The twenty-three participants were divided into two groups based on AT service provision experience. Group one reported zero to five years of AT experience (n=17), and group two (n=6) reported five years and over. The rates for SETT Framework factor exploration based on AT service provision experience for these two groups are in Table 16 of Appendix U.

Percentage of Time Devoted to Providing AT Services. Percentage of participant time allotted for provision of AT services ranged from none to as much as 100%, with a mean of 33.6%. Participants were divided into three groups to evaluate this demographic characteristic. Group one (n=9) reported none to 10% of time devoted to AT services. Group two (n=8) reported 11% to 49% of time available, and group three (n=6) 50% or more time for AT service provision. The three group rates for exploration of SETT Framework factors based on time devoted to AT service provision are shown in Table 17 of Appendix V.

Formal Credentials. For the purpose of evaluating report of SETT Framework factor exploration in relation to credentials held, participants were divided into two groups. The first group (n=13) reported no formal AT credential held. The second group (n=10) reported CSUN Certificate, RESNA Certificate, both CSUN and RESNA Certificates, or a graduate degree with an AT focus. The result of this data analysis based on whether or not formal AT credentials were held is located in Table 18 of Appendix W.

An interpretation of this study's results is provided in Chapter Five. In addition, the relative strengths and weaknesses of the study are identified, along with recommendations for future research.

Chapter Five

Discussion

This descriptive study was designed to explore the extent to which the philosophy of the SETT Framework guides AT service provider process during assessment and decision-making. The participant group was comprised of Tennessee AT service providers working in public school settings. The study's guiding questions were focused on the extent of SETT Framework factor and area consideration, as well as on any relationships between participant demographics and rates of SETT Framework exploration.

SETT Framework Exploration

When study participants were viewed as a group, rate of consideration for SETT Framework factors by area was fairly consistent. Only one factor consideration rate, within the Environment area, that of *family preferences and needs*, fell below the study's criterion for exploration. In relation to this, of some interest is the consideration rate of the Environment area as a whole, which was at 74%, the lowest of the four. The highest rate of full exploration for SETT Framework area was that of Tasks, at 90%. Analysis of SETT Framework factor exploration by individual survey revealed that consideration for *family preferences and needs* was considered at the criterion rate by fewer than half of the study's participants. No other factors received a criterion based exploration rate from fewer than 15 of the 23 participants.

Participants identifying themselves as speech therapists, administrators, and a physical therapist reported the highest rates of SETT Framework factor exploration

during AT assessment and decision-making when data were viewed according to professional groupings. Teachers, who by nature of their employment role devote the most time to individual students, reported one of the lower rates of comprehensive SETT Framework exploration.

The relationship between years of professional experience and exploration of SETT Framework factors was not significant, with the three group rates all within 10% of each other. Even less significance was noted in the association between years of AT service provision experience and rate of factor exploration. The difference between these two groups was only one percent. The three participant group rates based on percentage of time allotted to address AT service provision were interesting in terms of SETT Framework factor exploration. There was only one percentage point difference between the group with less than 10% of their time devoted to AT service needs, and the group with 50% or more of work time available. The middle group, reporting 11% to 49% of available time for AT service needs had the highest rate for SETT Framework exploration at 87%. This may indicate that not having enough time available to address AT needs can impact on degree of SETT Framework exploration. In kind, it may also indicate that 50% to full time devoted to AT practice might not be the best scenario either. Comprehensive SETT Framework factor and area exploration may be connected with dual practice, namely, time devoted both to fulfilling one's primary professional role, and to the provision of AT services. Whether or not participants held any formal credential related to AT did not appear to have significant impact on SETT Framework

factor exploration. The percentage rates between the two participant groups in this area varied by only seven percent.

In summary, years of professional or AT practice experience, and whether or not formal AT credentials were held by participants, all appeared to have minimal impact on reported rates of comprehensive SETT Framework factor and area consideration. The amount of time an individual is able to devote to AT service provision may, however, have an impact on the degree to which SETT Framework factors and areas are explored.

In relationship to the current literature's recommendations regarding the need for effective AT assessment and decision-making, the findings of this study are encouraging. The literature has suggested that requirements for provision of effective AT services include (a) establishment of a multi-disciplinary team, (b) identification of precise user need, (c) consideration of student attributes, (d) assessment of educational environment(s), and (e) analysis of tasks. Zabala's SETT Framework accommodates all of these requirements. The data obtained through this study indicate that rates of SETT Framework exploration among Tennessee AT service providers are generally good, with factors and areas considered for the most part 51% of the time or more.

In practice, the SETT Framework becomes a perspective, or means of viewing AT service provision. It ultimately functions as both a structure for assessment and a lens through which findings are interpreted. As decision-making unfolds, this too is guided by the SETT Framework's outcome-driven design. The SETT Framework's ability to guide the development of a system of strategies and tools designed to build on the abilities of a student, to support educational participation and function can evolve into a philosophical

base for AT service provision. It is encouraging to note that whether or not Tennessee AT service providers are actually identifying use of the SETT Framework in their practices, they are considering its underlying factors and areas at fairly high rates.

Of some concern, however, is the lower consideration rate for the *family preferences and needs* factor under the SETT Framework area of Environment. One comment received on this item stated that; “parents must complete questions during referral”. It is hoped that this is not an indication of the extent of parent involvement in the AT assessment and decision-making process. As the literature has noted, family involvement and acceptance of AT devices and strategies is a strong predictor of programming success. Of greater concern was the comment under the same item indicating that; “parents are generally not aware of AT services”. This is suggestive of a separation between AT as an educational support and the IEP process itself. The compartmentalization either of AT as a service, or of the AT service provider, does not lend itself to functional integration of AT into a student’s programming.

In educational settings, it is expected that some IEP identified AT devices would travel between school and home on a daily basis, and therefore would be dependent on family acceptance and comfort for successful integration. These traveling tools might include such items as communication aids and materials necessary for the completion of homework. It is recognized, however, that some AT related materials might only be utilized within the school environment itself. Families may tend to defer decisions regarding these specific devices and materials to the educational staff. While this is

suggested as one possibility for viewing the depressed exploration rate of *family preferences and needs*, the reasons underlying the data are unknown.

An additional concern generated by this study was that teachers as a group reported a lower rate of SETT Framework exploration than that of administrators or related service personnel. As teachers are typically the dominant figure in a student's academic life and a primary school contact for family members, this is discouraging. It is expected that of all professionals involved with a student the teacher needs the benefit of the SETT Framework's perspective the most. On behalf of most students, a teacher is probably functioning as case manager and subsequently assuming a leadership role in guiding the IEP-Team process and plan implementation.

Study Limitations

Strengths of this study included the collection of data from individuals: actively providing AT services in school settings; all of whom had previous exposure to AT training opportunities that included methods of assessment and decision-making and; who as a group were generally reflective of the annual Tennessee AT Institute attendance in terms of professional background and AT service provision experience. A significant limitation of this study, however, was the low number of participants. The specific reasons for the low participation rate are unknown. Some individuals who had attended the AT Institute may not be currently identified as service providers in their work settings. In addition, a greater number of individuals may have had difficulty with the web-link or the functioning of the survey itself than reported it. As is common in school settings, lack of professional time to complete a survey may have been a factor. A clear

difficulty was the significant rate of undeliverable emails. Today it is considered common for email addresses to change more frequently than physical ones, and this made it difficult to conduct a study of this type in electronic format.

Due to the low number of participants in this study, the findings must be viewed cautiously. In addition, participants were practicing specifically in Tennessee, and all had the benefit of previous training provided by a state program. The degree of state support and commitment to the development of effective AT professionals and programs may not be the norm in other areas. This study also limited itself to AT service provision in public school settings. Many other practice settings employ individuals with AT expertise, and the findings presented here may not be applicable to other areas of service provision.

Recommendations for Additional Research

Additional research focused on use of the SETT Framework is encouraged. Is there a difference in student engagement and progress in settings that identify use of the SETT Framework versus settings that do not? Do teachers who adopt the SETT Framework's perspective as their own, integrate AT into the classroom differently than teachers who are unfamiliar with it? What is the rate of AT abandonment in systems that utilize the SETT Framework philosophy in assessment and decision-making versus systems that do not? Answering these types of questions will move AT service provision toward greater success in promoting active student engagement and progress in educational programming.

Conclusion

The advantage of the SETT Framework becomes evident when it is employed in practice. When the goal of maintaining team focus on a student becomes a shared commitment on the part of all parties, many personal or hidden agendas can disappear. The act of adhering to the guideline for exploration of Student, Environment, and Task areas prior to any discussion of Tools also serves to diffuse preconceived ideas that team members may harbor as they enter the process. The collaborative, communication based emphasis of the SETT Framework encourages input from all team members. In addition, it places value on all input, therefore on all team members, in its search for multiple perspectives and knowledge regarding a student. Parents, who often report feeling unheard in IEP-Team meetings, indicate feelings of satisfaction and hope when the SETT Framework is employed. The SETT Framework, as an on-going process, can serve as a unifying force for a team over time. Above all, through its ability to guide and structure team process, the SETT Framework can promote effective and positive student programming.

The results of this study indicate that to a significant degree, Tennessee AT service providers report assessment and decision-making practice in line with the philosophy of the SETT Framework. With continued research the SETT Framework philosophy may evolve into an assessment and decision-making model that is accepted as a means to reduce the likelihood of AT abandonment. In addition, it may one day gain acceptance as an approach to ensure student participation and academic progress in school settings.

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Appendixes

Appendix A

Table 1

SETT Framework Student and Environment Factors by Area and Survey Item Number

Survey Item	Factor
<i>Student</i>	
2	Student preferences
3	Abilities and strengths of the student
6	Difficulties and weaknesses of the student
8	History and outcome of previous AT use by the student
10	Identification of precise student needs requiring AT support
16	Variations in student functioning across educational environments
<i>Environment</i>	
1	Family preferences and needs
5	Predictable future changes in student's educational setting or environment
7	Barriers to student functioning in educational environment
12	Needs of the educational staff
13	Modifications and/or strategies currently in place to support student functioning
17	Supports currently in place for school staff working with the student
18	Materials and equipment typically available to all students in the educational environment
21	Current methods utilized to instruct the student
23	Materials and equipment currently identified as supports for student functioning on IEP
25	Positive physical aspects of educational environment that support student functioning
26	Expectations that the educational staff have for the student

Appendix B

Table 2

SETT Framework Tasks and Tools Factors by Area and Survey Item Number

Survey Item	Factor
<i>Tasks</i>	
9	Modification of instructional or environmental tasks to improve student participation
14	What the student specifically needs to do within identified tasks to demonstrate participation or success
19	Opportunity for the student to participate in tasks related to the identified area of need
24	Opportunity for the student to work toward goal mastery while engaged in typical activities across the educational environment
<i>Tools</i>	
4	AT trials in natural educational environment
11	Exploration of a range of AT materials from low to high tech
15	Services and support required for effective implementation of AT
20	Technology features required to accommodate student ability, need, and educational environment
22	Additional modifications or strategies to support student functioning

Appendix C

Table 3

Mean Years of Professional and AT Experience by Participant Group

Profession	Total Professional Experience (mean)	Total AT Experience (mean)
Teacher (n=9)	188 years (20.88)	59 years (6.55)
Speech (n=6)	120 years (20)	32 years (5.33)
Administration (n=6)	85 years (14.17)	33 years (5.5)
Physical Therapy (n=1)	27 years	5 years
Social Worker (n=1)	17 years	4 years

Appendix D

Survey

ASSISTIVE TECHNOLOGY ASSESSMENT

(Data Gathering and Decision Making Practice)

The following survey items are factors that may be addressed while gathering data and making decisions regarding a student's need for assistive technology (AT) to support an Individual Education Program (IEP). Due to limited time and/or resources you have probably placed more focus on some than others.

In relation to your typical delivery of AT assessment services please indicate the percentage of time each item applies.

To clarify your response selections please include comments as needed. Please be sure to check the comment box if you enter information in that space.

1. Family preferences and needs.

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

2. Student preferences.

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

3. Abilities and strengths of the student (physical, cognitive, social-emotional, etc.).

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

4. AT trials in natural educational environment.

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

5. Predictable future changes in student's educational setting or environment.

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

6. Difficulties and weaknesses of the student (physical, cognitive, social-emotional, etc.).

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

7. Barriers to student functioning in educational environment (physical, communication, opportunity, etc.).

- ☐ Not Applicable

- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

8. History and outcome of previous AT use by the student.

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

9. Modification of instructional or environmental tasks to improve student participation.

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

10. Identification of precise student needs requiring AT support.

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

11. Exploration of a range of AT materials from low to high tech.

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%

☐ 76% or more

COMMENT:

12. Needs of the educational staff (professional, environmental, in relation to student success, etc.).

☐ Not Applicable

☐ 0-25%

☐ 26-50%

☐ 51-75%

☐ 76% or more

COMMENT:

13. Modifications and/or strategies currently in place to support student functioning.

☐ Not Applicable

☐ 0-25%

☐ 26-50%

☐ 51-75%

☐ 76% or more

COMMENT:

14. What the student specifically needs to do within identified tasks to demonstrate participation or success.

☐ Not Applicable

☐ 0-25%

☐ 26-50%

☐ 51-75%

☐ 76% or more

COMMENT:

15. Services and support required for effective implementation of AT (set-up, training, follow-up, etc.).

☐ Not Applicable

☐ 0-25%

☐ 26-50%

☐ 51-75%

☐ 76% or more

COMMENT:

16. Variations in student functioning across educational environments (regular classroom vs. lunchroom vs. resource, etc.).

☐ Not Applicable

☐ 0-25%

☐ 26-50%

☐ 51-75%

☐ 76% or more

COMMENT:

17. Supports currently in place for school staff working with the student (administrative, training opportunities, collaborative team, etc.).

☐ Not Applicable

☐ 0-25%

☐ 26-50%

☐ 51-75%

☐ 76% or more

COMMENT:

18. Materials and equipment typically available to all students in the educational environment (manipulatives, visual supports, software, etc.).

☐ Not Applicable

☐ 0-25%

☐ 26-50%

☐ 51-75%

☐ 76% or more

COMMENT:

19. Opportunity for the student to participate in tasks related to the identified area of need (potential opportunity for technology integration/use).

☐ Not Applicable

☐ 0-25%

☐ 26-50%

- ☐ 51-75%
- ☐ 76% or more

COMMENT:

20. Technology features required to accommodate student ability, need, and educational environment (access, portability, ease of use, dependability, etc.).

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

21. Current methods utilized to instruct the student (teacher style, curriculum, etc.).

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

22. Additional modifications or strategies to support student functioning.

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

23. Materials and equipment currently identified as supports for student functioning on IEP.

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

24. Opportunity for the student to work toward goal mastery while engaged in typical activities across the educational environment.

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

25. Positive physical aspects of educational environment that support student functioning.

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

26. Expectations that the educational staff have for the student.

- ☐ Not Applicable
- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76% or more

COMMENT:

27. What is your professional education? (teacher, speech, occupational/physical therapy, etc.)

28. Not counting this school year, how long have you practiced within that profession?

29. Not counting this school year, how long have you provided AT services in public school settings?

30. What percentage of your time is currently devoted to providing AT services?

31. Do you feel that your professional education prepared you to provide AT services? Please explain.

32. Do you feel that your participation in Tennessee sponsored training programs has assisted in preparing you to provide AT services? Why, or why not?

33. Do you hold any formal credential in AT, such as a university degree with AT focus, RESNA certification, or CSUN certificate? If so, please describe.

Thank you for your participation. If you have any questions, or would like additional information regarding this study please email mohrlyn@aol.com.

PRESS THE SEND BUTTON TO TRANSMIT YOUR INPUT

Appendix E

Introduction Email

Subject Line: Assistive Technology Service Provider Survey

Hello,

I am an occupation therapist, providing assistive technology services in Sevier County Schools, Tennessee. I am working on a Masters degree at the University of Tennessee, Knoxville and am writing to request your assistance in my research project.

If you are providing assistive technology services, in a public school system, in the state of Tennessee I am asking that you consider responding to a web-hosted survey regarding your assistive technology data gathering and decision making process.

If you would like to consider participating please click the link below. It will take you to a page that describes the study in more detail. From that page you can then go directly to the survey, or decline to participate by closing the web page.

<http://www.zoomerang.com/survey.zgi?p=WEB223WMVQR9YK>

Thank you for your time and please contact me if you have any concerns or questions.

Nancy Mohrlyn, OTR

mohrlyn@aol.com

Appendix F

Participant Consent

Assistive Technology Assessment

(Data Gathering and Decision Making Practice)

This project is designed to identify the degree to which specific factors are considered by assistive technology (AT) service providers in the assessment data collection and decision-making process for students in Tennessee public education settings.

Participation in this study requires that you complete a survey that should consume approximately ten minutes of your time. The main body of the survey consists of twenty-six factors that you will rate in terms of the degree to which you consider them in your AT data collection and decision making process. Each item also includes a line for comments. The final section of the survey is comprised of seven questions requesting information about your professional and AT education, your specific AT practice setting, and your perception of your AT training.

The sample population for this study is those individuals who are currently providing AT services in a Tennessee public school setting, and have participated in conferences sponsored by the State of Tennessee's Assistive Technology Program at any time during the 1999-2000 through the 2003-2004 academic years.

Your responses on this survey will be confidential, your submission of a completed survey will not be linked with your email address, and all data collected will be destroyed at the conclusion of this project. During the course of this study the survey

data will only be available to one principal investigator and one academic advisor. No potential risks are associated with participation in this study

The data collected will be used and presented within the context of a thesis to fulfill the requirements of a Masters Degree from the University of Tennessee, Knoxville.

For additional information about this study please contact Nancy Mohrlyn (Principal Investigator) at mohrlyn@aol.com or Michael Hannum, Ed.D. (Student Advisor) at mhannum@utk.edu.

If you are willing to participate please click the button below and the survey will appear.

If you do not wish to participate please close this window, and thank you for your willingness to consider this project.

Appendix G

Second Email Message

Subject Line: Assistive Technology Service Provider Survey

My apologies to those of you who are receiving this for the second, and possibly third, time. I am sending this out again to request additional participants to complete an online survey, as more submissions are needed for my study.

To those of you who have already participated, I thank you so much.

Hello,

I am an occupation therapist, providing assistive technology services in Sevier County Schools, Tennessee. I am working on a Masters degree at the University of Tennessee, Knoxville and am writing to request your assistance in my research project.

If you are providing assistive technology services, in a public school system, in the state of Tennessee I am asking that you consider responding to a web-hosted survey regarding your assistive technology data gathering and decision making process.

If you would like to consider participating please click the link below. It will take you to a page that describes the study in more detail. From that page you can then go directly to the survey, or decline to participate by closing the web page.

<http://www.zoomerang.com/survey.zgi?p=WEB223WMVQR9YK>

Thank you for your time and please contact me if you have any concerns or questions.

Nancy Mohrlyn, OTR

mohrlyn@aol.com your assistive technology data gathering and decision making process.

If you would like to consider participating please click the link below. It will take you to a page that describes the study in more detail. From that page you can then go directly to the survey, or decline to participate by closing the web page.

Appendix H

Follow-Up Email

Subject Line: AT Service Provider Survey Follow-up

Hello,

My study on AT data gathering and decision-making is nearing its conclusion. Some of you have emailed me describing difficulties with the survey link that was provided in my initial email, or with the function of the survey itself.

If you did not, or were not able to submit a completed survey for this study I would appreciate receiving feedback from you.

Please send me a blank email with one of the following in the subject line:

- Link in email did not work
- Survey did not work
- Survey not appropriate for me

I will open all emails, so if you wish to elaborate please do so. If one of the above is not appropriate in your case, feel free to send a different message.

Again, my thanks to all of you for your patience and help.

Nancy Mohrlyn

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Appendix I

Table 4
Student Factors Consideration Rates by Participants as a Group

Factor	Rate of Consideration
Abilities and strengths of the student.	100%
Difficulties and weaknesses of the student.	96%
Identification of precise student needs requiring AT support.	96%
History and outcome of previous AT use by the student.	83%
Variations in student functioning across educational environments.	70%
Student preferences.*	65%

* One comment: "Depending on age".

Appendix J

Table 5

Environment Factors Consideration Rates by Participants as a Group

Factor	Rate of Consideration
Barriers to student functioning in educational environment.	96%
Modifications and/or strategies currently in place to support student functioning.	91%
Materials and equipment currently identified as supports for student functioning.	87%
Expectations that the educational staff have for the student.	78%
Current methods utilized to instruct the student.	78%
Materials and equipment typically available to all students in the educational environment.	70%
Needs of the educational staff.	70%
Positive physical aspects of educational environment that support student functioning.	65%
Supports currently in place for school staff working with the student.	65%
Predictable future changes in student's educational setting or environment.	65%
Family preferences and needs.*	43%

* Two comments: "Parents must complete questions during referral".
 "Parents are generally not aware of AT services".

Appendix K

Table 6
Tasks Factors Consideration Rates by Participants as a Group

Factor	Rate of Consideration
What the student specifically needs to do within identified tasks to demonstrate participation or success.	91%
Modification of instructional or environmental tasks to improve student participation.*	91%
Opportunity for the student to work toward goal mastery while engaged in typical activities across the educational environment.**	83%
Opportunity for the student to participate in tasks related to the identified area of need.	74%

* One comment: "No AT on reserve for practice before purchase".

** Two Comments: "Question unclear to me"
"Many are not engaged in typical activities".

Appendix L

Table 7
Tools Factors Consideration Rates by Participants as a Group

Factor	Rate of Consideration
Technology features required to accommodate student ability, need, and educational environment.	91%
Exploration of a range of AT materials from low to high tech.	87%
Additional modifications or strategies to support student functioning.	87%
Services and support required for effective implementation of AT.	83%
AT trials in natural educational environment.	70%

Appendix M

Table 8
Student Factors Exploration by Individual Survey

Survey Number	X=Exploration of Survey Item Numbers:						Exploration Rate
	2	3	6	8	10	16	
4	x	x	x	x		x	83%
5	x	x	x	x	x	x	100%
6		x	x		x		50%
7	x	x	x		x		67%
8		x	x	x	x	x	83%
9	x	x	x	x	x	x	100%
10	x	x	x	x	x	x	100%
11	x	x	x	x	x	x	100%
12		x	x	x	x	x	83%
13	x	x	x	x	x		83%
14		x	x	x	x	x	83%
15	x	x	x	x	x	x	100%
16		x		x	x		50%
17	x	x	x	x	x	x	100%
18		x	x	x	x	x	83%
19		x	x	x	x	x	83%
20	x	x	x	x	x		83%
21	x	x	x	x	x	x	100%
22	x	x	x	x	x	x	100%
23	x	x	x		x		67%
24	x	x	x	x	x	x	100%
26	x	x	x	x	x	x	100%
27		x	x		x		50%
Totals	15	23	22	19	22	16	85%

Appendix N

Table 9
Environment Factor Exploration by Individual Survey

Survey Number	X = Exploration of Survey Item Numbers:											Exploration Rate
	1	5	7	12	13	17	18	21	23	25	26	
4	x		x	x	x	x	x					55%
5	x	x	x	x	x	x	x	x	x	x	x	100%
6	x		x	x	x				x		x	55%
7			x	x	x			x	x			45%
8		x	x		x	x	x	x	x	x	x	82%
9	x	x	x	x	x	x	x	x	x	x	x	100%
10	x	x	x	x	x			x	x	x	x	82%
11			x			x	x	x	x	x	x	64%
12		x	x	x	x	x	x		x		x	73%
13	x	x	x		x	x	x	x	x			73%
14			x	x	x		x		x	x	x	64%
15	x	x	x	x	x	x	x	x	x	x	x	100%
16		x	x		x	x	x	x	x	x		73%
17			x	x	x	x		x	x		x	64%
18			x	x	x	x	x	x	x	x	x	82%
19		x	x	x	x	x	x	x	x	x	x	91%
20		x	x		x		x	x	x	x	x	73%
21	x	x	x	x	x	x	x	x	x	x	x	100%
22	x	x	x	x	x	x	x	x	x	x	x	100%
23	x		x		x			x	x	x	x	64%
24		x	x	x	x		x	x	x		x	73%
26		x	x	x	x	x		x		x	x	73%
27		x										1%
Totals	10	15	22	16	21	15	16	18	20	15	18	73%

Appendix O

Table 10
Tasks Factor Exploration by Individual Survey

Survey Number	X=Exploration of Survey Item Numbers:				Exploration Rate
	9	14	19	24	
4	x	x		x	75%
5	x	x	x	x	100%
6	x			x	50%
7	x	x			50%
8	x	x	x	x	100%
9	x	x	x	x	100%
10	x	x		x	75%
11	x	x	x	x	100%
12	x		x		50%
13	x	x	x	x	100%
14	x	x	x	x	100%
15	x	x	x	x	100%
16		x	x	x	75%
17	x	x			50%
18	x	x	x	x	100%
19	x	x	x	x	100%
20	x	x	x	x	100%
21	x	x	x	x	100%
22	x	x	x	x	100%
23		x	x	x	75%
24	x	x	x		75%
26	x	x	x	x	100%
27	x	x		x	75%
Totals	21	21	17	19	85%

Appendix P

Table 11
Tools Factor Exploration by Individual Survey

Survey Number	X=Exploration of Survey Item Numbers:					Exploration Rate
	4	11	15	20	22	
4	x	x	x			60%
5	x	x	x	x	x	100%
6	x	x	x			60%
7		x		x	x	60%
8		x	x	x	x	80%
9	x	x	x	x	x	100%
10		x	x	x	x	80%
11	x		x	x	x	80%
12	x	x	x	x	x	100%
13		x	x	x	x	80%
14	x	x		x		60%
15	x	x	x	x	x	100%
16	x	x	x	x	x	100%
17	x	x	x	x	x	100%
18		x	x	x	x	80%
19	x	x	x	x	x	100%
20	x	x		x	x	80%
21	x	x	x	x	x	100%
22	x	x	x	x	x	100%
23			x	x	x	60%
24	x	x	x	x	x	100%
26	x	x	x	x	x	100%
27				x	x	40%
Totals	16	20	19	21	20	83%

Appendix Q

Table 12
SETT Framework Exploration Rates by Individual Survey

Survey Number	SETT Framework Exploration Rate
4	65%
5	100%
6	54%
7	54%
8	85%
9	100%
10	85%
11	81%
12	77%
13	81%
14	73%
15	100%
16	73%
17	73%
18	85%
19	92%
20	81%
21	100%
22	100%
23	65%
24	85%
26	88%
27	35%

Appendix R

Table 13

Rates of SETT Framework Area Exploration by Participants as a Group

Area	Rate of Exploration
Student	85%
Environment	74%
Tasks	90%
Tools	83%
Total	83%

Appendix S

Table 14

Rates of SETT Framework Exploration by Professional Background

Profession	Rate of Exploration
Teacher (n=9)	73%
Speech Therapist (n=6)	88%
Administrator (n=6)	81%
Physical Therapist (n=1)	100%
Social Worker (n=1)	65%

Appendix T

Table 15

Rates of SETT Framework Exploration by Years of Professional Experience

Years of Professional Experience	Rate of Exploration
One to 10 years (n=6)	79%
11 to 20 years (n=5)	73%
21 plus years (n=12)	82%

Appendix U

Table 16

Rates of SETT Framework Exploration by Years of AT Experience

Years of AT Experience	Rate of Exploration
None to five years (n=17)	79%
Five plus years (n=6)	80%

Appendix V

Table 17

Rates of SETT Framework Exploration by Time Devoted to AT Services

Time for AT Service Provision	Rate of Exploration
None to 10% (n=9)	75%
11% to 49% (n=8)	87%
50% plus (n=6)	76%

Appendix W

Table 18

Rates of SETT Framework Exploration by AT Credential Held or Not Held

Group	Rate of Exploration
Credential held (n=10)	86%
Credential not held (n=13)	79%

Vita

Nancy Lynne Mohrlyn was born in Chicago, Illinois on July 3, 1953. She was raised in Thailand, the daughter of medical and educational missionaries. After graduating from high school in 1972 she served as a medic in the United States Air Force until 1977. In 1982 she graduated from Indiana University with a B.S. in occupational therapy.

Nancy is currently employed by the Sevier County Board of Education in Tennessee. She provides occupational therapy and assistive technology services to students in their educational environments.

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MRB

