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ABSTRACT
         This study investigated whether a disabled person's
predisposition to technology use can be assessed in order to optimize
the match of person with technological aids. Subjects, most with
cerebral palsy, spinal cord injury, or deafness, were assessed with
newly developed instruments and interviewed. Subjects were determined
to be either technology users or technology non-users. In general,
the use of technologies depended on each individual's unique
background especially characteristics of the disability,
characteristics of the person, psychosocial characteristics, as well
as characteristics of the technology. Specifically, use of assistive
technology devices (ATDs) was influenced by disability type, age at
onset, degree of severity of disability, cognitive abilities and
aptitude, personality traits, judgment and preference, adjustment and
outlook, exposure and opportunity, expectations, social support,
design factors of the ATD, and service delivery. In addition, factors
influencing the decision to use or forego an educational technology
(ET) were identified and grouped into the following categories:
characteristics and nature of the educational goal and purpose of
use; characteristics of the ET; characteristics of the person; and
psychosocial characteristics. The following assessment instruments
are being refined: The Assistive Technology Device Predisposition
Assessment, and The Educational Technology Predisposition Assessment.
(DB)

HIGH-TECH COMMUNICATION DEVICES:
WHAT SEPARATES USERS FROM NON-USERS?

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Presented at the Fourth Biennial International ISAAC Conference on
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There has been a remarkable increase in the availability of technological devices which provide people with options for enhancing their functioning. Examples of such devices are personal or assistive technologies and educational technologies.

A personal technology or assistive technology device (ATD), as defined in the "Technology-Related Assistance of Individuals with Disabilities Act of 1988" (P.L. 100-407), is "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 functional capabilities of individuals with disabilities" (p. 3). An ATD can be low-tech (mechanical) or high-tech (electro-mechanical or computerized) and includes products that compensate for sensory and functional losses by providing the means to move (e.g. wheelchairs, lifts), speak (e.g. voice synthesizers), read (e.g. opticon systems for persons who are blind), hear (e.g. vibrotactile aids) and manage self care tasks (e.g. automatic feeders, environmental control systems).

The purpose of educational technologies (ETs) is to make learning as accessible to as many people as possible. The remarkable increase in the availability of educational technologies provides teachers with many options for addressing the individual's particular learning style and for enhancing the student's learning. Computer supported learning and evaluation through the use of satellite networks, LOGO and other learning environments, integrated media systems, intelligent tutors, and tailored testing, have placed us far beyond mere "computer-assisted instruction."

People with disabilities have differing views about the extent to which personal and educational technologies improve the quality of their lives and they differ in the degree to which they use them. To what are these differences due? Can a person's predisposition to technology use be assessed in such a way that the best possible match of person and technology results?

Method

A *comparative case study* analysis was employed in this research (Bogdan & Biklen, 1982). That is, intensive studies of a small number of people were used to compare and contrast the data obtained from technology users and non-users. Participants primarily represented the disabilities of cerebral palsy (CP) and spinal cord injury (SCI). Persons with hearing loss have also been studied on an on-going basis. Participants with CP were born with their disability, while SCI participants were injured later in life. Deaf participants included both prelingually (prior to the acquisition of language) and post-lingually (after the age of three) deaf individuals.

The research methods included several instruments given to CP and SCI participants to complete and required their involvement in an interview exploring their views of technology use and non-use. Users and non-users were defined as:

A. Technology users. The individual uses the technology according to the suggested frequency, uses it correctly and at 80 percent or better of recommended use.

B. Technology non-user. The individual uses the technology sporadically, at less than 80 percent of optional use, or uses it inappropriately or in violation of recommended uses.

Observation/interview notes were kept on whether or not the individual used a technology and if so, how easily, comfortably and effectively the person operated it and under what conditions and circumstances difficulties were experienced. At the same time, in-depth interviews inquired into the participants' subjective sense of their overall quality of life. A complete description of the samples, instruments, and procedures is found in Scherer (1986, 1988, 1989).

Findings and Results

Persons born with CP or congenital deafness tended to have incorporated their disabilities into their identities and spoke of themselves as being "different from" but not necessarily "less than" others. Many with acquired SCIs or hearing losses, however, referred to themselves as "deficient" or "flawed" and focused on loss.

As a group, SCI participants found it difficult to adjust to their disabilities and new lifestyles. Often, a vicious cycle of personal devaluation seemed to have been in effect: the loss of one's former lifestyle and capabilities led to a perception of the self as flawed which often resulted in strained family and social relations which, in turn, yielded feelings of anxiety and inadequacy and ultimately to introversion and social withdrawal. Inadequate social stimulation lead to loneliness, depression and a focus on the self which was met with le: `han-accepting attitudes on the part of others. On-going experimentation and continuous adjustments and re-adjustments to roles and relationships were made all the more complicated by the varying attitudes and levels of acceptance and support communicated by the general public towards persons with disabilities.

Generally speaking, the use of technologies seemed to depend on each individual's unique combination of past and present experiences, view of the nature and extent of deficit/loss, structure and strength of character, abilities and resources, and the personal meaning they've imputed to the disability and to technology use. Characteristics of the technologies themselves were also important influences on their use or non-use.

Since technology use depends on many factors both within and outside of the individuals involved, a variety of interactive and interdependent relationships need to be considered when planning to equip a person with a technological device. The complexity of the influences on technology use does not preclude, however, a grouping and discussion of them. The following narrative focuses on four broad categories of factors (of necessity, oversimplifications) influencing the use of ATDs with considerable overlap existing both within and between categories. Subsequent to this, ET use is discussed.

ATD use and non-use

Characteristics of the Disability

Disability type. It is important to consider an ATD in relation to each disabled experience. For example, those individuals who have had whole new worlds opened for them. th. gh technology, as is true for many individuals with cerebral palsy (CP), often have different views of the role ATDs have played in their quality-of-life from those who have had to leave an able-bodied world behind because of a spinal cord injury (SCI). For some, ATDs do not just make up for limited function, but open up entire new vistas and make available new experiences. For others, ATDs are reminders of what they have lost. Many people with CP were unable to communicate with others before their communication devices. They did not experience losing something and regaining a portion of that through ATD use. A device that offers individuals the opportunity to speak for the first time in their lives is naturally perceived differently from purely augmentative devices. Someone able to go out to a restaurant for the first time because of the availability of a powered wheelchair, as may be the case for a person with CP, no doubt experiences this differently from a person with a SCI accustomed to walking in with friends.

Different physical disabilities are associated with different complications, courses of treatment and rehabilitation. Participants with CP who use sophisticated ATDs believed they were usually viewed by others as having higher cognitive and linguistic abilities than CP users of simpler devices. However, people with SCI generally perceive a simple device (such as splint giving a 3-point pinch) as a desirable status symbol because it often indicates higher functioning -- and ingenuity.

Disability type, thus, is an important factor that can influence ATD use and the way that use is interpreted. Otherwise, it can occur that an individual is provided with an ATD or other device that is impractical or inappropriate. For example, one woman with CP said that she has the motor control of a three-year-old and "you don't give a three-year-old a reacher."

Age at onset. The age at onset of a disability may affect ATD use. For instance, an individual born with a disability has likely incorporated the disability into the self-image and has accepted the disability and lifestyle modications it may require. Persons with congenital

disabilities may have had early and frequent interactions with other individuals similarly disabled which may have led to a sense of "community" and feelings of competence and self-worth.

SCI persons who experienced injury at a relatively young age, at a time when their personality characteristics were more malleable, tended to use ATDs, and to have made positive changes in their lives. Those SCI participants injured later in life, and whose injuries were less severe, tended to be ATD non-users.

Varying lengths of time since the onset of the disability is a factor since the experience of coping with a disability may, over time, lead to increasingly adaptive behavior.

The age at onset of a disability as well as its severity can represent a major life change requiring modification in a person's basic identity and established ways of doing things. Active young men who become paralyzed from spinal cord injuries and active middle-aged stroke survivors are examples of persons who experience major life changes.

Degree of severity of disability. The more limited an individual's functioning, the more that person will need an ATD. For example, a C4 spinal cord injured person has little choice but to use a powered wheelchair; a person with CP who has little or no intelligible speech will be a more frequent user of a computerized communication system than someone who has difficulty with only certain words. Not only do more severely disabled individuals require more equipment, but more *expensive* equipment.

Characteristics of the Person

Cognitive abilities and aptitude. People differ in both their desires and aptitudes to effectively use ATDs. Some people are just more "left-brained" than others. Also, many disabilities have concomitant head injuries associated with them that leave persons with cognitive deficits.

Personality traits. People with disabilities attach different meanings to what has happened to them and what their future is likely to be like. Pre-existing temperament and ways of coping are just two factors that can influence the circumstances surrounding onset of

injury or illness, the length and quality of the recovery and rehabilitation process, and the number of rehospitalizations. These factors in turn affect adjustment.

From the data provided by the users and non-users themselves, it appears that the users attribute their successful use of ATDs to inner motivation, desire (to talk, for example), and an unwillingness to be held back from self-expression and the pursuit of their goals and independence. ATD users tend to see their disabilities as obstacles they need to, and can, surmount. They emphasize their new or regained capabilities and try to forget their disability, work around it, relegate it to lesser importance. Non-users, on the other hand, focus on barriers to their independence citing both obstacles posed by society and their own limitations. They exhibit socially withdrawn behaviors which they attribute to a non-accepting society.

While users portray their lives as fulfilling; non-users express less general life satisfaction. Users feel in control of quality-of-life and feel that it can be changed and improved. They actively strive towards societal integration in the workplace and in their interpersonal relationships. Non-users feel societal integration is either unattainable or undesirable and that they have little control over their quality of life. Additionally, they often express a lack of motivation to overcome their disabilities. ATD users present themselves as meeting challenge head-on; ATD non-users present themselves as feeling defeated.

Many individuals with such acquired disabilities as spinal cord injuries have a history of impulsive behaviors and are easily frustrated and discouraged. Such persons may not have developed the necessary self-discipline and patience to become ATD users. For them, the assumption of the role of rehabilitation client entails a submission to rehabilitation professionals that many clients not accustomed to dependency and subordination may be unwilling to make. Thus, the independent client who places a premium on individuality and personal freedom of choice will likely resist premature efforts to adopt an ATD – especially if the person is strong-willed and their basic ways of doing things are being pushed to change.

Persons who more easily adapt to ATD use are emotionally mature, self-directed, patient and persistent, focus on opportunities rather than loss and limitations, and are excited and encouraged by new things and love a challenge.

Judgment and preference. Individuals with disabilities can differentially judge what an ATD will and will not do for them. One person with CP, for example, may determine that an augmentative communication device will not improve her speech intelligibility enough to warrant its use, while another equally affected individual may see the device as not only desirable, but indispensable.

Many persons express a desire to use an attendant or what they themselves have, however limited, as opposed to a mechanical replacement for their limited functions.

Adjustment and Outlook. ATD use requires an admission to the self that one cannot, and possibly never will, do a functional task on one's own. It requires admitting a loss, weakness, or deficit and this can be distressing. A push for pre-mature ATD use can be a mistake for those individuals who, as one SCI person said,"first need time to get used to just the thought of it." Many individuals with disabilities harbor hopes for a cure for their disability or say they are waiting for the mass availabil'ty of prematurely-touted experimental devices that they see as superior to those currently available. Such hopes often serve to hinder their rehabilitation.

Other factors affecting a person's outlook include depression and pessimism arising from the process of adjustment to a disability. For example, it frequently takes SCI persons seven or more years to come to terms with their disability and many refer to the drastic adjustments they must make by talking in terms of their "two lives": One of the participants in this research said, "My first life was one of walking, this life is one of different ways of getting around and doing things." Often the "second life" means one has adopted a different lifestyle, social relations and personality.

Psychosocial Characteristics

Exposure and opportunity. Beyond individual physical and psychological characteristics, functioning depends on such factors as environmental accommodations, available resources (e.g. private insurance for specialized treatment) and special opportunities (e.g. placement in a rehabilitation center with the newest equipment). Often, rehabilitation can seem like a "one-shot chance," as expressed by one spinal cord injured participant:

"I wish it was set up so that you could go home for a year and then come back. Just so you could get more work done in some areas and strengthen points you want to work on and where you'd have a therapist who would give you ideas on how to make things better at home. I mean, don't go just cold turkey. Usually once you're done with rehab, that's it – you're done with rehab. But it would be great to have that individual help after a year or so."

Sex role can have an affect on ATD use. Women in many societies have traditionally received little exposure to technical perspectives and tend to be uninformed about and disinterested in the complex and sophisticated products of rehabilitation engineering efforts. Non-technically-oriented males, on the other hand, can feel even more threatened by technological devices since they may feel an additional assault to their egos because they lack skills that are traditionally male objects of interest.

Another important influence on ATD use is the type of socialization one received. Many individuals born with cerebral palsy have led emotionally, socially, and cognitively impoverished lives and have a history of being dependent and over-protected. As a result, they may have fewer coping skills than spinal cord injured persons (who received a "normal" socialization with "normal" peers in a "normal" educational setting).

Expectations. The attitudes of others and their expectations of the client, as expressed through intimate interactions or through exposure to the values of society as a whole, can have a profound influence on persons and their expectations of themselves. The self concept, motivation and personal aspirations of an individual are shaped by social interactions and support that serve to control positive personal regard, resources and opportunities.

Other influences on a person's achievement of rehabilitation goals are the characteristics of the goal itself (explicit, proximate, not too difficult) and whether the experience of success or failure accompanied the process of goal achievement.

Social support. Social support systems have a profound influence on how people with disabilities interpret their experiences and evaluate their options and alternatives – and they affect what options and alternatives are presented in the first place.

An acquired disability often places sudden strains on family relationships and social resources. When the support network is altered, the person generally experiences further psychological distress. This psychological distress can trigger physical distress and medical complications, which in turn may lead to a rehospitalization. The outcome of this chain of events can be further disorganization, deterioration, and disintegration of the social support system.

It is important, therefore, to distinguish persons who report being "lonely" from those who are "isolated." Loneliness is a subjective sense of being alone, even when surrounded by significant others; isolation, on the other hand, implies a dearth of social contacts. "Loneliness" requires a more psychological intervention whereas "isolation" suggests a need for increased social opportunities which may be greatly facilitated by ATD use.

While not all social ties are supportive--and when effective supportive aid is given it is important to know under what conditions the aid was actually given (i.e., what was said or done to attract that positive aid)--it was found that ATD users tended to have more social support than non-users. For example, their families built ramps and modified the family home or their employer held a job for them. Family reluctance to have the person return home unaided, stable family relations, and being the person responsible for family maintenance, were all positively associated with ATD use.

The families of ATD non-users tended to view ATDs as requiring too much work and effort and said they didn't want them.

Characteristics of the ATD

Design factors. ATDs have a high rate of use when they are lightweight and portable, easy to use and set up, are cost effective to obtain and maintain, and are the same as or similar to devices used by the non-disabled population.

Disincentives to ATD use include their expense, lack of flexibility (e.g. they can only be used in a few settings), and user frustration with their speed, size or complexity. ATDs are unlikely to be used if they "never seem to be there when needed," are seen as "not worth all the effort," are clumsy to operate, and are not portable.

Often ATDs are designed to look functional and utilitarian for funding sources and, as a result, leave many users feeling deviant and stigmatized. An ATD that looks "unusual" and does not meet the user's real needs and desires is one that will end up stored in the closet, as will ATDs that are difficult to operate, cause discomfort, inconvenience the user, and require a lot of effort to use.

Non-use is also associated with family reluctance to have it used and the existence of easier alternatives (for example, families will do a lot to try and understand their child's speech before adopting a communication ATD). Too, many people with disabilities have an aversion to replacing a natural function, however limited, with a technical device.

Service delivery. ATDs are not used if other support services are not there. For example, a specially-equipped van is less useful when there are no handicapped parking spaces. People in rural areas may be unfamiliar with many ATDs because they haven't been exposed to them and may not have access to trained professionals to help them learn to use them properly.

People develop and change and unless they have on-going access to rehabilitation professionals, they may stop using an ATD when all it may require to become useful again is some small adjustment or modification. Also, people outgrow ATDs (either physically or developmentally) and need to be able to go to rehabilitation centers for upgrades and more developmentally appropriate devices.

Finally, the secondary gains associated with a disability and the economic disincentives to rehabilitation continue to exert an influence on ATD use.

ET use and Non-Use

Teachers today are under unprecedented pressures to be accepting of a wide variation in student intelligence, emotional maturity, and physical characteristics. They are expected to generate enthusiasm, teach and motivate students in spite of their widely varying abilities and characteristics. Educational technologies have promised considerable assistance, yet teachers, therapists, parents and learners have differening views about the extent to which

technological advances have actually improved the quality of learning for students with disabilities.

A variety of factors influencing the decision to use or forego an educational technology were identified. The factors were grouped under the general categories of:

1. Characteristics and nature of the educational goal and purpose of use (e.g. drill-and-practice, information acquisition, art and recreation).

2. Characteristics of the ET (design factors, teacher's facility with it).

3. Characteristics of the person (e.g. cognitive abilities, personality traits and temperament, and preferences).

4. Psychosocial characteristics (exposure and opportunity, expectations, peer support, educational setting).

Implications for Practice

Once the characteristics differentiating users and non-users of personal and educational technologies were identified, the focus of the project turned to a method of making such information widely accessible so that: a) Other professionals and consumers could verify the existence and importance of the influences on ATD a.:d ET use that emerged from this research, and b) possible mismatches between a proposed technology and a potential user could be flagged. Two assessment instruments were developed in the hopes that an early identification of potential mismatches could reduce the incidence of non-use or inappropriate use of personal and educational technologies and the disappointment and frustration that often accompanies less than ideal use.

The two assessment instruments are: 1) **The Assistive Technology Device Predisposition Assessment (ATD PA)** (Scherer & McKee, 1989), and 2) The **Educational Technology Predisposition Assessment (ET PA)** (Scherer, McKee & Young, 1990). These instruments, currently in pilot form, are undergoing further refinement as information concerning their usefulness is collected across the U.S.

Conclusions

A; the numbers of people living with a disability continue to increase, as technologica!
devices proliferate and enable persons with disabilities to assimilate into all aspects of social
functioning, there will be more concern directed towards the quality of the devices, their
provision, and the ways they impact quality of life. Therefore, it is important to analyze the
constellation of factors serving to influence the individual client's predisposition toward
technology use or non-use so that the most appropriate technology for that person can be
provided and the person's rehabilitation course and quality of life will be enhanced to the
greatest extent possible.

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For additional information about the Assistive Technology Device Predisposition Assessment
(ATD PA) or the Educational Technology Predisposition Assessment (ET PA), please contact:

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Also, if you would like to receive a complimentary set of materials and participate in the pilot
testing of one or both of these instruments, please contact the authors at the above address.
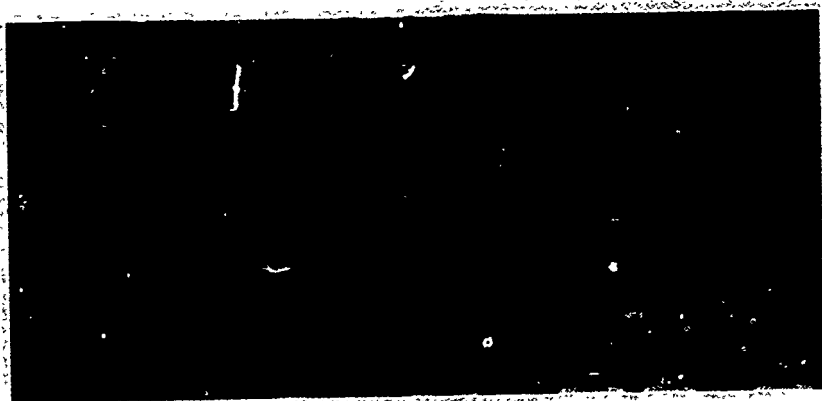
ASSISTIVE
TECHNOLOGY
DEVICE
PREDISPOSITION
ASSESSMENT

Marcia J. Scherer, Ph.D., CRC
Barbara G. McKee, Ph.D.

15

◤ SSISTANCE

◤ ECHNOLOGY

�", EVICE

◖ REDISPOSITION

◤ SSESSMENT

Technology Being Considered

Client Name/I.D.. Number

Person Completing , TD PA

Date

1

ASSISTIVE TECHNOLOGY DEVICE PREDISPOSITION ASSESSMENT

A variety of factors determine a person's predisposition to ATD use. It is important to analyze these factors so that:
- the most appropriate ATD for the individual can be provided, and
- the person's rehabilitation course and quality of life will be enhanced to the greatest extent possible.

This instrument, the **Assistive Technology Device Predisposition Assessment (ATD PA)**, was created from the actual experiences of ATD users and non-users. It will help you obtain a comprehensive profile of the client you are planning to equip with an ATD. Four major areas assessed for their influence on ATD adoption and use are:

A   Characteristics of the particular ATD under consideration.

T   Characteristics of the individual's **temperament** (such as interests and goals, aptitudes and attitudes) that may influence ATD use.

D   Characteristics of the person's **disability** that will affect the choice of ATD and any necessary or desirable modifications to it.

A   Characteristics of the person's psy**·** social arena, such as the existence of a supportive family and their attitudes towards the person's ATD use.

The items in this instrument have been coded with one of the above symbols to indicate the ATD PA area with which it is mostly closely associated. This is designed to help you organize the information into "problem areas" which are then recorded on the "Summary" flap as you complete each section of this instrument.

While ATD use (or non-use) is the outcome of a complex constellation of factors, the ATD PA will give you insights into those factors contributing to (or alternately, detracting from) ATD adoption or use. With such information you can diagnose and intervene in potential or existing problem areas and, thus, better assure than an individual's ATD use will promote an enhanced quality of life.

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IS THERE A MATCH BETWEEN THE PERSON & THE ATD?

Consider each of the following pairs of device and person descriptions. Mark each box in the next column as follows:

3 – a good match exists between the device and person

2 – the match is close, but not perfect

1 – the person will have difficulty with this ATD characteristic

0 – a clear and obvious mismatch exists

Degree of Match

#

	Assistive Technology Device	Person	
Weight and Size	Is the device useable with little or no assistance from others?	Does the person have the physical capabilities to appropriately use the ATD?	
Expense	Is the cost of the device within reason for the expected increased functioning?	Does the person have the resources and/or support to purchase or rent ATD?	
Service Delivery	Can it be delivered in a timely fashion?	Does the person possess the patience to wait for the ATD?	
Cognitive Demands	Does the device require special training/education or special abilities?	Does the person have the training and intellectual abilities needed?	
Physical/Sensory Requirements	What types of physical requirements are inherent in appropriate use (e.g. finger dexterity, hearing, sight)?	Does the person possess or can they be trained for the necessary physical demands?	
Support Services/ Training	Is training/support and upgrading available for the device? Can the individual try it out, etc., to make sure a good match exists?	Does the person have the resources and skills to benefit from training and/or support?	

After you have determined how closely the assistive device characteristics match or do not match those of the person—**add up the numbers in the boxes.** Look at this total. Is it four or less?

No (total is greater than four). Proceed with the questions on page six.

Yes (total is four or less). Some modifications may be needed to the device or in the skills and capabilities of the individual. Look at the characteristics with matches of 0, 1, or 2. The following are some guidelines for considering modifications within each of the characteristics.

Weight and Size   Can the device be made lighter, smaller, or can the individual be given assistance in moving it? For example, can the device be incorporated into the frame of a wheelchair?; can it be used in one place? If the weight and size of the device mismatch the person's strength, a different choice may need to be made.

Expense   When the cost of the device is clearly beyond a person's resources, funds must be found through various rehabilitation agencies or the device is not a viable option. The situation is less clear when the device might strain the resources of the individual (or his/her family), but could be purchased. If this situation occurs, it is important that the most suitable device be chosen and that the potential for appropriate use be high.

Service Delivery   The length of time from device requisition to delivery can be lengthy. If the device will need additional work upon delivery and the client loses interest in it, or physically or developmentally outgrows it, then a mismatch exists.

Cognitive Demands   Many computerized devices require normal intelligence and some special training. It is important that the person have the cognitive abilities necessary to use the device. If this is not the case, it may be possible to simplify the cognitive demands placed on the user by modifying the device through the use of picture instructions, special software, etc.

Physical/Sensory Requirements   This is one of the most obvious, but also most crucial, device characteristics that must match the abilities of the user. A device that requires hearing cannot be used by a deaf person without modification. In some cases, modification can be made easily (a flashing light is added to a warning buzzer). However, in other cases, the device should simply be judged inappropriate for the individual.

Support Services/Training   It is important that the requirements for support and/or training match the resources and skills of the individual. If these needs and skills do not match, and neither can be feasibly modified, then the device is probably not a good choice.

Were there no mismatches or were you able to resolve any important mismatches through modification of the device or training of the individual?

☐ **YES▶**

If yes, continue with the remainder of this instrument.

☐ **NO**

If no, the device under consideration is probably not appropriate for the person and an alternative device should be selected.

▼

When you are confident that the characteristics of the device and the characteristics of the individual are a good match, you are then ready to continue with the remainder of this instrument and consider the personal and psychosocial variables that influence ATD use.

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|5|

PERSONAL & PSYCHOSOCIAL CHARACTERISTICS AFFECTING ATD USE

Once you have established the *feasibility* of ATD use, the *likelihood* of use often depends on the individual's particular expectations and aspirations—both for ATD use and habilitation in general.

First...answer the five questions below and total the number of *yes*, *possibly*, and *no* responses. Definitions and discussions of each item are on the next page.

1. Will the ATD give the user positive status in the eyes of:

    ☞ peers?

    ☞ the family?

    ☞ the general public?

    🗡 him or herself?

2. 🗡 Does the user have goals that s/he judges will be better or more easily achieved by using the ATD as opposed to any alternatives to its use?

3. 🗡 Will ATD use fit with the person's basic style of doing things?

4. ☞ Will ATD use be independent of assistance from, and the cooperation of, others who may feel inconvenienced by it?

5. 🗡 Is the user excited/encouraged about new things and feel in control of his/her quality of life?

                                                    TOTAL

One or more *no* responses to the above questions suggest a lowered probability of ATD adoption and use. The likelihood of ATD use is further decreased by *possibly* responses. Please continue with the assessment to identify any further barriers to use.

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Positive Status   The most used ATDs are the same as or similar to devices used by the general population. ATDs are often designed to look functional and utilitarian for funding sources but leave users feeling self-conscious and stigmatized. A peer culture may also exert a strong influence on the acceptability of ATDs (hearing aid users are viewed as rejecting the Deaf Culture).

Alternatives to ATD Use   Successful ATD use depends on individuals' judgement that:
- they will benefit from using the ATD
- it will help them achieve a goal they might not otherwise achieve
- more benefit will result from the ATD than from alternatives (e.g., families will do a lot to understand their child's speech before adopting a communication ATD).

Basic Style   ATDs that do not fit individuals' ways of doing things have a low probability of use. For example, an ATD that requires patience and perseverance and supplies "delayed gratification" may not appeal to a young, strong-willed, spinal cord injured man who took great pride in his freedom and spontaneity. Alternately, persons born with a disability have frequently developed fewer coping skills than those injured later in life who experienced "normal" development. Their self-esteem (and that of others who are not technically oriented), can be threatened by ATDs.

Independence From the Assistance of Others   ATDs that require a lot of help and effort from others to set-up, maintain, or use, probably will not be utilized to the extent desirable (communication systems require a lot of listener cooperation in standing by patiently and reading a digital display or waiting for a printout).

User Excitement and Sense of Control   Persons who easily adopt ATDs are emotionally mature, self-directed, and are excited by new things. ATD users appear to be meeting challenge head-on and are actively trying to improve their quality of life. Non-users feel they have little control over their quality of life and express a lack of motivation to overcome their disabilities.

7

INCENTIVES & DISINCENTIVES TO ATD USE

Read each of the items below and give *all that apply in this case* an **importance rating.** Total the scores separately for *incentives* and *disincentives.*

Importance Rating

Unimportant		Somewhat Important		Very Important
1	2	3	4	5

Incentives to ATD Use

- ☐ supportive family/ friends
- ☐ cooperative attitude
- ☐ enhanced independence
- ☐ wants/needs to work or go to school
- ☐ generally positive life experiences

- ☐ believes ATD will enhance quality of life
- ☐ demonstrates self-discipline and patience
- ☐ s image has incorporated the disability
- ☐ not intimidated by technology
- ☐ positive and hopeful general outlook

Total Importance of Incentives

☐

Disincentives to ATD Use

- ☐ depression
- ☐ unrealistic expectations
- ☐ poor self-concept
- ☐ very hostile
- ☐ socially withdrawn, quiet, indifferent
- ☐ focuses on limitations/ barriers

- ☐ inadequate coping skills/socialization
- ☐ resists therapist or treatment
- ☐ believes ATD may interfere with social interactions
- ☐ social integration not felt possible

Total Importance of Disincentives

☐

The likelihood of ATD use is lessened when there are more important *disincentives to use* than *incentives to use.* Alternately, significantly more important *incentives* than *disincentives* would increase the chance of an ATD being adopted and used.

Incentives to ATD Use   Users see ATDs as valuable enablers for their goals, activities, and independence. Users:

- attribute ATD use to inner motivation, desire (for example, to hear or to talk), and an unwillingness to be held back from self-expression, the pursuit of goals, and independence;
- emphasize new or regained capabilities and try to work around their disabilities and relegate them to lesser importance;
- actively strive for social integration in school, the workplace and in their interpersonal relationships.

ATD users tend to have more social support than non-users—their families build ramps and modify the family home; their employers hold jobs for them. Family reluctance to have the person return home unaided, stable family relations, and having a key role in family caretaking, are all associated with ATD use.

Disincentives to ATD Use   While ATD users appear to be fighting limitations, non-users seem to be defeated by them. Non-users:

- exhibit little motivation to overcome their disabilities and focus on barriers (due to both their own limitations and societal obstacles);
- believe "societal integration" to be unattainable and are socially withdrawn (which they often attribute to a non-accepting society);
- admit to little life satisfaction and say they are better off financially by not working or going to school;
- are waiting for a cure for their disability or for the availability of devices far superior to those currently available.

Non-users feel they will not benefit from ATDs, which they see as unhelpful and inferior replacements for (or constant reminders of) their own, unaided, functioning. A person born with CP—in a restaurant for the first time because of a new power wheelchair—may take more delight in the situation than a spinal cord injured person accustomed to walking in with friends. For many, the assumption of the role of rehabilitation client requires a submission to professionals and a loss of individuality which they resent. They may easily become frustrated and discouraged.

OVERALL RECOMMENDATIONS

Go back over the characteristics you assessed for your client and the ATD being considered. You now have ideas about which factors may indicate problems for the person's ATD use. To intervene in these:

1. Write below the specific problems in need of intervention according to the four primary ATD PA areas.

2. Rank order the ATD PA areas from 1 to 4, beginning with the one having the most important or largest number of problems. This will help you focus on problems as they form a unit.

Rank in order of importance

Problem Rank

ATD PA Area	Specific Problems
A	_____
T	_____
D	_____
PA	_____

3. The area with the *problem rank of 1* is the first to target for intervention. Note below specific interventions you feel are needed, considering their feasibility for *this person, this ATD* (while a person's personality or disability can't be changed, psychotherapy or additional physical rehabilitation may help).

4. Finally, record below the intervention, referral or alternative plans you feel should be pursu 1 and their start and completion dates. Then note your first follow-up or re-assessment date (use back of page for additional notes, if desired).

Plan

1. _____

_____

_____

2. _____

_____

_____

3. _____

_____

_____

4. _____

_____

_____

25

ADDITIONAL NOTES

26

PLEASE TELL US WHAT YOU THINK

The ATD PA is a new instrument still in the experimental stage. We would appreciate your comments concerning its usefulness, practicality and relevance to your work with different individuals. Please take a few minutes to respond to the items below, then **tear off this page and mail it in the enclosed postage paid, addressed envelope.**

You

_____

Your current position

_____   _____

The agency/institution for which you work

☐ Private health care   ☐ Public health care   ☐ Private practice

☐ Educational institution   ☐ Other? _____

Your Typical Clients

_____ _____ _____

Age. range   Sex   Current educational level

_____

Disability

_____

Age at onset

The ATD PA

I found the instrument to be:	Very 1	Somewhat 2	3	Not at All 4	5
Useful in matching client and ATD	1	2	3	4	5
Helpful in pinpointing problems	1	2	3	4	5
Easy to follow and use	1	2	3	4	5
Useful in giving me new insights	1	2	3	4	5
Comprehensive in scope	1	2		4	5
A time saver	1	2	3	4	5

Please use the back of this page to make any general comments you wish about the ATD PA and to offer suggestions for its improvement.

If you wish to be on the mailing list for revised editions of the ATD PA, please include your name and address on the back. **Thank you for using the ATD PA and giving us your feedback.**

▶ ACTION PLAN

Record here the intervention, referral or alternate plans you feel should be pursued, and the follow-up you will be doing.

Technology Being Considered

Client Name/I.D. Number

Person Completing ATD PA

Date

✎

SUMMARY

As you read through the booklet, note on the flap the **mismatches** between the individual and the technology according to ATD PA area. This will help you to organize the information needed to resolve the mismatches.

A _____

_____

_____

T _____

_____

_____

O _____

_____

_____

PA _____

_____

_____

Record your Action Plan on reverse side of this flap. Remove and keep for your files. ▼

Please check any of the following that interest you and then provide your name and address below.

☐ Please put me on your mailing list for revised editions of the ATD PA.

☐ Please contact me about piloting the ATD PA for
___ complimentary copies of the ATD PA
___ Continuing Education Units (CEUs)

☐ Please contact me about a workshop especially tailored to my organization.

_____
Name

_____
Address

_____
City   State   Zip

_____
Telephone (V/TDD)

<center>
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</center>

INSTRUCTIONS FOR TECHNOLOGY OVERLOAD ASSESSMENT
M. J. Scherer, Ph.D and R. M. Weissberger, Ed.D.

The intent and purpose of this evaluation is to assist you in identifying and modifying major areas which inhibit your clients' sense of wellness, self esteem, identity, etc., as they are increasingly exposed to a high-tech society.

Forms are designed to be used in sets.

1. **Client Technology Overload Questionnaire**
   Place check marks in columns according to the client's response to each item in each major category.

2. **Technology Overload Scoring**
   Total the number of check marks for each of the four (4) major categories, respectively. Personal/Social Characteristics and Activities categories are designed to characterize the client as an individual. Technologies Used and Predisposition Toward New Technology categories are designed to characterize your client's attitude toward a technological environment. The form will assist you in assessing how individual and environmental characteristics interact.

   The intent of Predisposition Toward New Technology is to assess the client's predisposition toward new technologies and new combinations of old technologies. For example, computers, security alarm systems, and fax machines may be considered new technologies while remote controlled television, cordless telephones, and combination bake/microwave ovens may be considered new combinations of old technologies. Some may consider microwave ovens as new technology although gas and electric ovens are old technology. This category is, of necessity, highly subjective as the client's upbringing, education, and recent experience determines what is old and what is new.

   Client comfort with technology, and thereby with a high-tech environment, is demonstrated by positive responses and discomfort is demonstrated by negative responses. The larger the difference between the positive and negative summations derived under Technology Overload Scoring, the more comfortable or uncomfortable the client is likely to be with technological developments and exposure. The information gained from the overall score and from consideration of responses to and within the major categories will help you to develop and assess plans for enhancing client comfort with technology. Enhancing Technological Comfort is a vehicle you may use to this end.

3. **Enhancing Technological Comfort**
   This form will help you formulate ideas with which you will be able to help your client become more positive toward and comfortable with his/her technological environment.

4. **Order Form for Technology Overload Assessment**
   An order/evaluation form is included at the end of each packet for your convenience. The cost of the forms includes mailing. Please allow four to six weeks for delivery. We will appreciate any comment that you may have regarding the utility and effectiveness of *Technology Overload Assessment*.

TECHNOLOGY OVERLOAD ASSESSMENT

CLIENT TECHNOLOGY OVERLOAD QUESTIONNAIRE

Client's Name: _____ Evaluator Name: _____

Client's Presenting Issue/Concern/Goal: _____

_____ Date: _____

PERSONAL/SOCIAL CHARACTERISTICS

NEGATIVE	NEUTRAL	POSITIVE
Anxious		Composed/Calm
Depressed		Happy
Angry/Hostile		Tolerant
Negative Outlook		Positive Outlook
Quiet/Withdrawn		Expressive/Outgoing
Impatient		Patient
Unmotivated		Motivated
Easily Discouraged		Persevering
Socially Isolated/Inactive		Socially Active
Family/Spouse		Family/Spouse
Non-Family		Non-Family
Poor Sense of Well-Being		Sense of Well-Being
Dependent		I¯dependent
Physically		Physically
Emotionally		Emotionally

ACTIVITIES

NEGATIVE	NEUTRAL	POSITIVE
Passive (Reading/TV)		Active (Sports/Walking)
Hobbies (Frustrating)		Hobbies (Satisfying)

CLIENT TECHNOLOGY OVERLOAD QUESTIONNAIRE   Page 2

TECHNOLOGIES USED
List of those used (list as many as are appropriate)

1. _____

2. _____

3. _____

4. _____

5. _____

NEGATIVE	NEUTRAL	POSITIVE
Isolating		
Frustrating		Socially Enhancing
Inhibiting Creativity		Satisfying
Discouraging		Enhancing Creativity
Reduced Self Esteem		Encouraging
		Improved Self Esteem

PREDISPOSITION TOWARD NEW TECHNOLOGY

The intent in this category is to assess the client's predisposition toward new technologies and new combinations of old technologies. For example, computers, security alarm systems, and fax machines may be considered new technologies while remote controlled television, cordless telephones, and combination bake/microwave ovens may be considered new combinations of old technologies. Some may consider microwave ovens as new technology although gas and electric ovens are old technology. This category is, of necessity, highly subjective as the client's upbringing, education, and recent experience determines what is old and what is new.

NEGATIVE	NEUTRAL	POSITIVE
Not Exposed		Exposed
As Child		As Child
In Education		In Education
Recently		Recently
Intimidated		Challenged
Cognitive Approach		Cognitive Approach
Emotional		Logical
Discomfort with Equipment		Comfortable with Equipment
Anxiety Reinforced		Use Reinforced

TECHNOLOGY OVERLOAD SCORING

For each major category, add the number of check marks under **negative**, **neutral**, and **positive** and enter the numbers under the corresponding heading.

MAJOR CATEGORY	NEGATIVE	NEUTRAL	POSITIVE
Personal/Social Characteristics			
Activities			
Technologies Used			
Predisposition Toward New Technologies			

Assessment Totals
(Sum of the above)

ENHANCING TECHNOLOGICAL COMFORT

DIAGNOSTIC APPLICATION AND SKILLS TRAINING

INTERVENTION MODALITIES

1. **Personal/Social Enhancement**

   1.1. Self-Esteem Enhancement

   1.2. Self Image

   1.3. Assertiveness

   1.4. Networking/Social Interaction

   1.5. Anxiety and Stress Reduction

2. **Activities**

   2.1 Expansion of Possibilities

   2.2. Social Risk Taking

3. **Hands-on Knowledge and Predisposition Regarding Technologies**

   3.1. Information of equipment being used

   3.2. Skill Training/Familiarity with equipment

   3.3. A new language or skill - A new social life

4. **Follow-up Questions**

5. **Plans for Next Session**

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EDUCATIONAL
TECHNOLOGY
PREDISPOSITION
ASSESSMENT

Marcia J. Scherer, Ph.D.
Barbara G. McKee, Ph.D.
Marsha A. Young, M.S.

E DUCATIONAL
T ECHNOLOGY
P REDISPOSITION
A SSESSMENT

_____

Technology Being Considered

_____

Student

_____

Instructor

_____

Class

_____

Person Completing ET ?^

_____

Date

EDUCATIONAL TECHNOLOGY PREDISPOSITION ASSESSMENT

There has been a remarkable increase during the last few years in the availability of educational technologies which provide teachers with many options for addressing a student's particular learning style and for enhancing the student's learning.

Teachers and students have differing views about the extent to which educational technologies improve the quality of learning/education. Hence, they also differ on the degree to which they use such technologies.

The ET PA was designed to help teachers and administrators obtain a comprehensive profile of their student(s) and the educational technology they are planning to use and to determine if the needs of the situation match the characteristics of the educational technology.

This instrument was created from the actual experiences of ET users and non-users. Four major areas are assessed for their influence on ET adoption and use:

E Characteristics of the **educational** goal or problem that a teacher is attempting to influence through the use of a specific technology.

T Characteristics of the particular educational **technology** under consideration.

P **Psychosocial** characteristics that may influence ET use (such as supportive family, peers, and/or teachers).

A Characteristics of the individual student(s) that may influence ET use (such as interests and goals **aptitudes** and **attitudes**).

The items in this instrument have been coded with one of the above symbols to indicate the ET PA area with which it is most closely associated. This is designed to help you organize the information into "problem areas" which are then to be recorded on page 12.
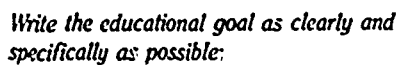
While ET use (or non-use) is the outcome of a complex constellation of factors, the ET PA will give insights into those factors contributing to (or alternately, detracting from) ET adoption and use. With such information, you can diagnose and intervene in potential or existing problem areas and, thus, better assure that ET use will enhance the educational experience.

1

EDUCATIONAL GOAL OR PROBLEM

Have the educational goals or problems been clearly articulated?

Guidelines for recognizing and identifying learning problems are beyond the scope of the ET PA. However, in order to predict a good match between an ET and the situation to which it is being applied, the educational goal must be specified.

- The goal may involve a particular cognitive skill (e.g., compare, classify, apply), motor skill (operate, measure, adjust, assemble), or personal-social skill (increase attending behavior, resolve conflict, clarify values, increase empathy).

- It may involve study and/or problem solving skills (outline, follow directions, predict).

- It may focus on a particular content area (math, reading, science, history).

- The goal may be to resolve a problem of access to education (due to distance, time, learning disabilities, physical handicaps).

- The goal may be to match a learning style or provide variety to the learning environment/experience.

- The skills or content being sought may be remedial, curriculum specific or enrichment.

Write the educational goal as clearly and
specifically as possible:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Does student(s) and
teacher agree on the
identified problem(s)?

☐ YES ▶

☐ NO

▼

If not, goal
resolution will
need more work.
Make note of this on
page 13 under
Educational
Goal/Problem
before continuing
to page 4.

TECHNOLOGY AND THE STUDENT

*Is there a match
between the students
and the technology?*

	Technology	**Students***	
Physical Requirements	What types of physical requirements are inherent in appropriate u᾿ ᾿ (e.g. strength, agility, endurance, speed)	Does the student possess or can they be trained for the necessary physical demands?	☐
Sensory Requirements	Does the ET rein-force the student's appropriate learning modality? (auditory, visual, motor)	Does the student respond positively to instruction in this modality?	☐
Support Services/ Training	Is training/support and upgrading needed and available for the teachers or students? Is the ET dependable?	Does the student have the necessary skills to benefit from training and/or support?	☐
Ease of Use	Is the ET useable with little or no assistance from others? Is the system easy to set up, use, store, and maintain? Are reference materials, on-line help, or illustrated instructions available?	Is the student able to perform the series of steps required for using the ET with precision, logic, and patience?	☐

	Technology	**Students** *
Cognitive Demands	Does the technology require minimal intellectual abilities?	Does the student possess the minimal intellectual abilities required?
Accessibility	Is accessibility to the ET easy, immediate and non-disruptive? Are there any use constraints with regard to access time, location and/or number of students involved?	Does the student have the needed access to the location, equipment and/or materials involved with the ET?
Expense	Is the technology reusable? Is one required per student? Are support personnel, special facilities, additio⁻·l equipment, or environmental modifications needed for this ET? Is the system durable? What are the one-time and continuing costs involved with using this delivery system?	Does the school/ agency have the resources and/or support to purchase or rent the ET and pay for the related one time and on-going expenses?

Many mismatches can be resolved through intervention. Several unresolvable mismatches indicate an inappropriate ET for the situation. Note mismatches here and on page 12.

---

* An initial mismatch between skills needed and skills possessed may be the result of as yet unachieved educational goals.

5

EDUCATIONAL GOAL & THE TECHNOLOGY

Is there a match between the educational goal/problem and the technology?

Consider separately the delivery system, the instructional strategies, and the subject content which together comprise the ET.

The match between some educational goals and ETs may be evaluated strictly at the delivery system level. With other educational goals, the slickness of the delivery system will be immaterial to the match. Instead, the strategies and content that the delivery system makes available will be the aspect to examine in determining a match.

Check if mismatch exists

	Educational Goal	Technology
Delivery System	✔ Does the goal involve any issues of access?	◄ How does the technology address the access issues?
	✔ Does this delivery system emphasize a particular learning modality?	◄ What will be the classroom impact of this delivery system?
Instructional Strategies	✔ Does the goal involve particular instructional strategies?	◄ What are the instructional strategies of the ET?
Subject Content	✔ Does the goal include content specific objectives?	◄ Does tne ET match the content aspects of the educational goal?

Does the ET appear appropriate and logical for the identified problem or goal? If this seems to be an inappropriate ET for the goal, note the conflicts on page 12 under ET Problems. Regardless of ET appropriateness, continue with this instrument to gain an understanding of the psychosocial and attitudinal factors involved with the use of this ET.

Delivery System   The means of accessing the instruction or learning activity is the delivery system. This may be, for example, a basic computer or one with raised keyboard, enlarged display or voice output; a closed caption decoder; a teleconferencing satellite system; a large screen projection system; a VCR; interactive videodisc equipment; self-correcting workbooks; or electronic questioning devices. Not all ETs have an aspect that can be considered the delivery system. In general, consider this the physical equipment and/or the electronic system that serves as the vehicle to the instruction.

Instructional Strategies   This is a consideration of how the delivery system will be used as a tool.
- What is the intent of the instruction: development of new skills, improvement of acquired skills, changes in attitude or behavior?
- How is the instruction structured: drill, tutorial, discovery?
- What is the rate and length of the learning episodes?
- How is prompting, feedback, reinforcement, and record keeping handled?
- How is turn taking facilitated?
- Are learning episodes controlled by learner, teacher, or technology?
- Is there a consistency to presentation format and cueing?
- Does text, graphic, auditory, and experiential redundancy exist?
- Is the visual material of high quality and resolution? Is the auditory message clear?
- Is an adequate variety and amount of practice material available?

Subject Content   Does the actual content being covered conform to your curicular and instructional goals? Is the terminology consistent with that used by the teacher/program? Is the language level appropriate? Is the presentation of the content appropriate to the maturity, experience and interest level of the student audience?

PSYCHOSOCIAL CHARACTERISTICS AFFECTING ET USE

Once you have established the *feasibility* of ET use, the *likelihood* of use often depends on the individual student's particular expectations and aspirations—both for ET use and their education in general.

First...answer the five questions below and total the number of *yes*, *possibly*, and *no* responses. Definitions and discussions of each item are on the next page.

1. Does the student receive encouragement to succeed academically from his/her family?

2. Will the ET give the user positive status in the eyes of:

   peers?

   him or herself?

3. Will the educational goals be better or more easily achieved by using the ET as opposed to any alternatives to its use:

   in the eyes of the student?

   in the eyes of the teacher?

4. Will ET use be independent of assistance from, and the cooperation of, others who may feel inconvenienced by it?

5. Is the student curious and excited/encouraged about new things?

   TOTAL

One or more *no* responses to the above questions suggest a lowered probability of ET adoption and use. The likelihood of ET use is further decreased by *possibly* responses.

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DISCUSSION & INTERPRETATION OF INDIVIDUAL ITEMS

Encouragement to Succeed The student who is not encouraged to learn and whose family minimizes the value of education will likely not approach ET use with a great deal of enthusiasm and desire to perform well.

Positive Status The most used ETs are those viewed as giving the user positive status because they are fun, exciting or are seen as being "cool" by the student's peers. ETs should not be perceived as being for "dumb kids only."

Alternatives to ET Use ET use depends on the student's and teacher's judgement that:

- benefits will arise from ET use beyond what would be achieved through the use of such alternatives as extra remedial homework;
- the ET will help achieve a goal that might not otherwise be achieved.

Independence From the Assistance of Others ETs that require a lot of help and effort from others to set-up, maintain, or use probably will not be utilized to the extent desired (for example, multi-media programs that are especially complex to set up and coordinate).

User Excitement and Sense of Control Students who learn best with ETs are curious, self-directed, enjoy a challenge, and are excited by new things and opportunities. ET users meet challenge head-on and actively participate in their learning.

Non-users, on the other hand, feel they have little control over their education and often express a lack of motivation to learn.

If one of the educational goals is to provide the student with opportunities to control pace and difficulty of the material (and hence succeed for the first time with academic materials), overcoming initial lack of excitement may be worth the effort.

9

STUDENT APTITUDES & ATTITUDES AS INCENTIVES OR DISINCENTIVES TO ET USE

Read each of the items below and give *all that apply in this case* an "importance rating." Total the scores separately for *incentives* and *disincentives*.

Importance Rating

Not at all		Somewhat		Very
1	2	3	4	5

Incentives to ET Use

☞

- ☐ has peer support
- ☐ cooperative attitude
- ☐ motivated to learn
- ☐ is flexible/adaptable
- ☐ believes ET use will be fun/helpful
- ☐ self-image has incorpoated the self as learner

Total Importance of Incentives

☐

Disincentives to ET Use

☞

- ☐ depression
- ☐ unrealistic goals/expectations
- ☐ poor self-concept, outlook
- ☐ intimidated by technology
- ☐ focuses on limitations/barriers
- ☐ ET may interfere with peer social interactions

Total Importance of Disincentives

☐

The likelihood of ET use is lessened when there are more important *disincentives* to use than *incentives* to use. Alternately, significantly more important *incentives* than *disincentives* would increase the chance of an ET being adopted and used.

Please mark all items below that are characteristics of this student as follows: ⊞ if it is an *incentive* for using this *particular* ET and ⊟ if it is a *disincentive* for using *this* ET.

Student Characteristics

☞

- ☐ makes an easy transition from task to task
- ☐ desires to control learning pace
- ☐ prefers to work alone
- ☐ receives criticism/correction well
- ☐ accepts teachers advice and offers of assistance
- ☐ easily bored, distracted, is inattentive
- ☐ needs frequent reinforcement/stimuli
- ☐ acts impulsively and is impatient
- ☐ generally negative educational experiences
- ☐ needs non-judgmental one-on-one instruction

Total ⊞

☐

Total ⊟

☐

More ⊟ than ⊞ marks mean there are additional disincentives to use.

More ⊞ than ⊟ marks increase the incentives for the use of this ET.

Now look over all the general and specific incentives/disincentives affecting this student's use of this particular ET and note any problems on page 12.

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DISCUSSION & INTERPRETATION OF INCENTIVES/ DISINCENTIVES

Incentives to ET Use   Successful users see ET as valuable enablers for their goals and learning activities. Users:
- attribute ET use to inner motivation, desire (for example, to obtain a BA degree), and an unwillingness to be held back from self-expression, the pursuit of goals, and independence;
- emphasize new capabilities and try to work around limitations.

They tend to have more social support than non-users—for example, their peers are ET users.

Disincentives to ET Use   While ET users appear to be fighting limitations, non-users seem to feel they are stuck with them. Non-users:
- exhibit little motivation to overcome their limitations and focus on barriers (due to both their own limitations and societal obstacles),
- have unrealistic views of minimizing their educational deficits and achieving success (e.g. by winning the lottery),
- are intimidated by technology and may have a general anxiety towards education.

Non-users feel they will not benefit from ETs and may appear to be depressed and have a poor general outlook. An ET that will set them apart from their peers or interferes with social interactions may exaccerbate this.

Student Characteristics   ETs that are forced on students and do not fit with their preferences or ways of doing things have a decreased probability of use. For example, an ET that requires discipline, patience, perseverance and supplies "delayed gratification" may not appeal to a strong-willed, excitement-oriented teenager Technologies that preclude interactions with teachers and other students are often not helpful to students who are socially or emotionally deprived or who have an external locus of control.

11

OVERALL RECOMMEN-DATIONS

You now have ideas about which factors may indicate problems for the student's ET use. To intervene in these:

1 Write below the specific problems you have not previously noted and that are in need of intervention.

ET PA Area   **Specific Problems**   **Problem Rank**

E Educational Goal/Problem

_____

_____

_____

☐

T Educational Technology

_____

_____

_____

☐

P Psychosocial Environment

_____

_____

_____

☐

A Attitudes/Aptitudes

_____

_____

_____

☐

2 Now, rank order the ET PA areas from 1 to 4, beginning with the one having the most important or largest number of problems. ▶

3 The area with the problem rank of 1 is the first to target for intervention. Note below specific actions you feel are needed, considering their feasibility for *this student or group of students* and *this ET.* (While a student's personality or learning style can't be changed, the type and frequency of training and support provided is adjustable.)

4 Finally, record below the actions, referrals or alternative plans you feel should be followed and their beginning date (add a completion or ending date if appropriate). Finally, note your first follow-up or testing date (use back of page for additional notes, if desired).

Start Date | **Completion Date** | **Follow-up Date**

Plan

1 _____

_____

_____

2 _____

_____

_____

3 _____

_____

_____

4. _____

_____

_____

Scherer Associates
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PLEASE TELL US WHAT YOU THINK

The ET PA is a new instrument still in the experimental stage. We would appreciate your comments concerning its usefulness, practicality and relevance to your work with different students. Please take a few minutes to respond to the items below, then **tear off this page and mail it in the enclosed postage paid, addressed envelope.**

You

_____
Your current position

_____
The agency/institution for which you work

Your Typical Students

_____   _____
Age range   Current educational level

Educational problems _____ _____

_____ _____

_____

The ET PA

I found the instrument to be:	Very		Somewhat			Not at All
	1	2	3	4	5	
Useful in matching students and FTs	1	2	3	4	5	
Helpful in pinpointing problems	1	2	3	4	5	
Easy to follow and use	1	2	3	4	5	
Useful in giving me new insig ;	1	2	3	4	5	
Comprehensive in scope	1	2	3	4	5	
A time saver	1	2	3	4	5	

Please use the back of this page to make any general comments you wish about the ET PA and to offer suggestions for its improvement.

Thank you for using the ET PA and giving us your feedback.

*Please check any of the following that interest you and then
provide your name and address below.*

☐ Please put me on your mailing list for revised editions of the
ET PA.

☐ Please contact me about piloting the ET PA for
_____ complimentary copies of the ET PA
_____ Continuing Education Units (CEUs)

☐ Please contact me about a workshop especially tailored to my
organization.

_____

Name

_____

Address

_____

City   State   Zip

_____

Telephone (V/TDD)

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