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An Investigation Of The Reliability And Validity Of The Enderle-Severson Transition Rating Scale

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AN INVESTIGATION OF THE RELIABILITY AND VALIDITY OF THE ENDERLE-SEVERSON TRANSITION RATING SCALE

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A Dissertation

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Doctor of Education

Grand Forks, North Dakota

August
1993

This dissertation, submitted by Susan J. Severson in partial fulfillment of the requirements for the degree of Doctor of Education from the University of North Dakota, is hereby approved by the Faculty Advisory Committee under whom the work has been done.

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Department: Center for Teaching and Learning

Degree: Doctor of Education

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ACKNOWLEDGEMENTS

I would like to express a special thank you to each of my advisory committee members: Dr. John Hoover, Chairman; Dr. Lynne Chalmers; Dr. John Williams; Dr. David Perry; and Dr. James Navara. Your guidance and support were very much appreciated.

John, you've been an excellent advisor throughout this research project. I am appreciative of his enthusiasm for the project and the time you have invested. You have always treated me as a colleague and I am glad we have become friends.

I am appreciative to my fellow colleagues in the Special Education and Counseling Department at Moorhead State University. Your support was evident to me throughout every step of my doctoral program.

I'd like to thank my friends for never giving up on me and always trying to include me in activities even though I had to say "no" so often.

I am also appreciative to Kathy Smart for all the support she provided. We shared the good and the bad and I feel as though I've gained a life-time friend.

Finally, I wish to thank my family, Steven, Erin, Katti, for understanding and helping me out when I needed it. Your abilities to manage things at home without my assistance has been greatly appreciated.

ABSTRACT

The purpose of this study was to identify the technical characteristics of the Enderle-Severson Transition Rating Scale (ESTR; Enderle & Severson, 1991) and to add to the knowledge base about measurement in transition. Validity was examined by evaluating the scale's concurrent criterion-related validity, construct validity, and content validity. A measure of reliability was performed by examining the internal consistency of subscales and the entire scale.

The samples studied were special education teachers in North Dakota and Minnesota as well as the students they served. The student subjects had identified disabilities of learning disability, emotional disturbance, or mental retardation. All students were 14 and older or in at least the 9th grade.

The concurrent criterion-related validity was examined by correlating the ESTR subscales and Total Score with the subscales and Total Score of the Adaptive Behavior Evaluation Scale (McCarney, 1988). Nearly all correlations between the two scales were found to be significant indicating that the ESTR behaves like an adaptive behavior scale. Content validity was examined via teacher ratings of individual items and the overall completeness of the scale. The completeness rating supported the scale's content validity. To investigate the construct validity of the ESTR Scale, a principal components factor analysis was performed. Three factors, defined as "Higher Order Life Skills," " Simple Home and Community Skills," and "Social/Compliance," were observed. Although these factors do not match the present structure of the ESTR Scale, they logically appear to be areas which influence transition from school to adult life.

The internal consistency of the ESTR was examined by using the KR-20 procedure which indexes the degree of relationship between items within scales. The internal-consistency estimates for all subscales and the total test were above .91.

The factor structure of the skills and characteristics leading to successful transition should be further examined, given the results of this investigation. It is quite possible that current regulated practices do not adequately reflect the correct organization of skills and abilities needed for adult transition.

CHAPTER I

INTRODUCTION

Background for the Study

A primary purpose of education is to prepare students for future responsibility and success in their adult life (Dewey, 1938). To enable every student to become a satisfied, independent, and productive adult, schools must offer curriculum choices that reflect specific post-school outcomes. The general education curriculum usually defines a process or series of actions that all students progress through in a systematic way. Students with disabilities however, often cannot achieve satisfactorily within this curriculum model and require specialized programs which address their specific needs. Even the approaches provided in these programs frequently do not focus on appropriate instructional objectives to achieve success in post-school environments (Lynch & Beare, 1990). Establishing secondary programs that focus on individual learner transition needs improves post-school outcomes for persons with disabilities. To effectively establish such programs for specific individuals, a process must be defined which will comprehensively assess skills related to adult adjustment.

In 1984, Madeline Will, Assistant Secretary of the Office of Special Education and Rehabilitation Services (OSERS), targeted transition as a priority for the decade and defined the concept as follows:

> An outcome-oriented process encompassing a broad array of services and experiences that lead to employment. . . a period that includes high

> school, the point of graduation, additional post-secondary education or adult services, and the initial years in employment. (Will, 1984, p. 6)

Over the past decade both special education and vocational rehabilitation professionals have dedicated their energy to improving transitional services. Several reasons for this interest in adult life can be cited (Blalock, 1988) including recognizing that transitional planning requires a unified process and that the adult service system is fragmented, understanding that changing labor markets affect post-secondary employment, and knowing that inadequate secondary programming is a factor leading to unemployment. Other reasons for developing transition programs include documentation of successful vocational training efforts, media which has increased public awareness, and legislative actions which have authorized funds and established mandates (Wehman, 1988).

Several legislative actions have affected transitional services (Brolin & Schatsman, 1989). The first to authorize funds for research, training and demonstration projects, relating to transition, was the Education for Handicapped Children Amendments of 1983 (PL 98-199). Recently, the Individuals with Disabilities Education Act, PL 101-476 (1990) has mandated transitional planning for all students 16 years of age and over, and for some, by age 14. This mandate requires that all secondary special education personnel develop programs which address students' transition needs. While definitions, models, and information regarding transition processes exist in the literature and have been widely disseminated at national, state, and local conferences, a great deal of confusion still exists about how best to develop transition programs which enable students to achieve satisfactory post-secondary outcomes (Patton & Browder, 1988). Federal and state governments

often mandate services before technology, including assessment instruments, is developed; this is certainly true in the area of transition.

Major issues that make transition a confusing concept, are the variety of proposed definitions and conceptual models (Halpern, 1985; Wehman, 1988; Will, 1984) and the lack of agreement on targeted outcomes (Clark & Knowlton, 1988; Knowlton & Clark, 1987; Rusch & Menchetti, 1987). Another problem is that the population for whom transition services are developed is very heterogeneous with many diverse needs ranging from students with mild learning problems to students with severe and often multiple physical and cognitive challenges. However, several elements are common to most transition models. This list contains functional school curricula, integrated school services, interagency cooperation, cooperative planning, staff development, community-based instruction, parental involvement, employment, and support services (West, 1988).

As students with disabilities exit school they enter a complex service system. Unlike school programs, adult services are not entitlement programs. Graduates are no longer entitled to receive individualized services based on needs and many graduating students have multiple needs. Certainly, parents, team members and students hope that school personnel adequately plan for success by teaching skills needed in vivo and by making timely connections with post-secondary services. Too often however, educational programs are developed based on disability labels rather than individual needs which ultimately results in post-secondary adjustment problems (Boyer-Stephens & Kearns, 1988).

Schools are not adequately preparing students with disabilities for post-school employment (Dowdy, Carter, & Smith, 1990). The dependent status of youth with disabilities is confirmed by outcome studies which show that graduates experience

unemployment, underemployment and continued living in parental homes (Haring & Lovett, 1990; Hasazi, Gordon & Roe, 1985).

The National Commission on Excellence in Education issued a report in 1983 entitled, A Nation at Risk: The Imperative for Educational Reform. This report stimulated the "excellence in education" movement. Within this framework quality education became synonymous with "rigorous, usually standardized curriculum" (Fantini, 1986, p. 45). Following this report, educational leaders supported policy which regarded excellence and equity as noncompeting issues. Kauffman (1989) rebutted these ideas by referring to the approach as a "trickle-down theory of education." He states, "excellence and equity are always competing issues; what is gained in one is lost in the other" (p. 267). Emphasis on a strong core academic curriculum creates problems for those students with mild disabilities who receive most of their educational program within mainstream classrooms. It requires them to succeed in diploma-track programs. Facilitating success for these students obligates special education services to focus on remedial or tutorial instruction geared to the general education curriculum (Patton & Browder, 1988). An academic-skill emphasis can result in negation of life-skill instruction delivered in natural environments. Upon graduation, students for whom post-secondary education or other training is inappropriate are left with few options because vocational or life skills training has not been prioritized in their secondary program (Ianacone & Stodden, 1987).

Students with severe disabilities have historically been placed in specialized classrooms where interactions with individuals without disabilities for the most part are nonexistent or limited to teachers and other paid staff. Curriculum, based on "normal development", required students to progress through hierarchies, sequences and stages (Brown, et al., 1981). Instruction which reflected developmental levels

resulted in unacceptable educational practices as reflected in the following scenario described by Brown, et al., (1979):

> For years parents have been told by professionals, "Yes, Mr. Jones, your child is twenty years old and will complete school in ten months, but he has a Mental Age of four. That is why we are teaching him to sing 'When you're happy and you know it clap your hands, that is why we are teaching him to touch long as opposed to short, to touch big as opposed to little, and to touch a card with four pennies taped to it." (p. 81)

The irrelevance of this type of instruction to adult functioning is obvious. While many programs now claim a functional orientation, skills not taught within a functional context often represent irrelevant transition programming. A functional curriculum approach is one that teaches skills which will prepare students to function in current and subsequent environments. Instead of traditional areas such as reading, writing, and math, a functional curriculum might contain independent living skills (e.g., managing personal finances; buying, preparing, and consuming food; getting around the community) leisure skills (e.g., choosing and planning activities), social skills (e.g., socially responsible behavior, maintaining good interpersonal skills), communication skills (e.g., communicating with understanding, knowing subtleties of communication), vocational preparation skills (e.g., selecting and planning occupational choices; exhibiting work habits and behavior; seeking, securing, and maintaining employment), and skills which will enhance community involvement (e.g., knowledge of traffic rules and safety, use of transportation) (Boyer-Stephens & Kearns, 1988; Brolin, 1986). Even students with mild disabilities, who are experiencing poor outcomes under the current special education service model, benefit from a curriculum that shifts its focus

from academics to a life skills approach (Patton, Cronin, Polloway, Hutchinson, & Robinson, 1989).

Many students who receive special education services in school still experience problems bridging the gap between school and independent community life. Variables associated with successful post-secondary employment include placement in a resource room rather than special classes, participation in vocational education programs, having paid part-time or summer jobs rather than participating in work experience programs, and finding employment through self/family/friends networks (Hasazi, Gordon & Roe, 1985). Kranstover, Thurlow and Bruininks (1989) found few significant differences between high school graduates and non-graduates in employment and social outcomes in a sample of students with mild disabilities. While logically, high school graduates should have better outcomes in areas of gainful employment, longevity of employment, wages and other social variables, it appears in reality that the last few years of school have minimal effect on post-secondary outcomes for students with disabilities.

The responsibility placed on the schools to prepare students with disabilities to be self-sufficient and productive members of society begins with a solid school foundation (Will, 1984). Wehman, Kregel and Barcus (1985) identified functional curricula, integrated schools and community-based service delivery as critical components of secondary programs. Brown, Nietupski and Hamre-Nietupski (1976) articulated the "criterion of ultimate functioning" as a basis for developing curriculum goals that directly relate to adult life. Functional curricula which represent life domains (Brown, et al., 1981) have since become widely available and utilized in programs serving students with mental retardation. Students with learning disabilities or behavior disorders however, have not received a functional curriculum

approach other than vocational coursework (Bullis & Gaylord-Ross, 1991). There has been a reliance on curriculum guides which do not reflect specific, ecologically-valid competencies needed for success in vocational and other adult-living domains (Wehman, 1988).

Educational and community integration are also key components of secondary programs (Wehman et al., 1985). Inclusion, a term that has brought new meaning to the concept of integration, means that all children are welcomed into regular classrooms and communities. This is important because segregated systems, developed to meet the educational needs of students with disabilities, have led to lives that reflect loneliness, rejection and unemployment (Stainback & Stainback, 1992). In inclusive classrooms, teaching strategies and curriculum decisions must address diversity among students (Sapon-Shevin, 1992). Vocational or other life skills training, when provided in segregated settings, does not allow students to learn responses to the social aspects of work, home or community (Wehman, 1988). Inclusive environments provide opportunities for students to develop natural social support systems. These supports not only benefit the student during their school years but may also extend to post-school environments, thus decreasing reliance on service systems and/or paid support.

Secondary programs that provide community-based instructional experiences allow students to practice skills in real situations. Job skill training should be done in employment sites that reflect potential employment for the individual (Wehman, 1988). Other functional skills such as riding the public bus, shopping, or accessing social service agencies need community training to assure competencies which relate to independent functioning (Falvey, 1986).

Statement of the Problem

Secondary programs which lead to post-secondary success require formalized planning. Functional curricula, integrated schools and community-based service delivery are essential to a solid school foundation; individual planning is required for making decisions about each of them. The decision making process that concerns placement, curriculum design, and teaching/learning strategy, should be formalized in an Individual Transition Plan (Wehman, 1988). This transition plan may be part of the Individual Education Plan (IEP) (Moon, Diambra & Hill, 1990) or separate documentation attached to the IEP (Wehman, 1988). Either way, the plan is required to include goals and objectives which relate to adult adjustment and interagency involvement through referral to appropriate agencies and/or services (Blalock, 1988).

Consideration of all these factors makes transition planning a complex process. Teams must make such transition-planning decisions as which adult-adjustment domains need to be addressed; which goals and objectives will best address transition needs; which agencies and training locales can meet these transitional needs?

The assessment of variables related to transition is critical to planning. The overall purpose of assessment is to provide a data base for developing individualized programs. To address transitional needs, procedures must focus on career assessment, including employment-related issues and skills related to community, home, and recreational environments (Brolin, 1983). Psychometric devices are used to assess cognitive ability, aptitude, achievement, interest, personality, and social skills but have limited utility in program development (Greenan, 1989). Criterion-referenced and informal-direct methods, used to evaluate skills in natural environments, are useful in developing programming due to their more direct relationship with curriculum but tend to lack psychometric properties that support the

validity of information they provide. The problem is that there is no assessment device available which directly assesses skills or activities related to transition. What is needed is a comprehensive device designed to assess transition-related variables in natural environments and which has been validated through research studies.

It is within this framework that the Enderle-Severson Transition Rating Scale was developed. In 1987, Minnesota transition legislation provided a mandate for school personnel to address transition-related planning in the Individual Education Plan (IEP). In response to this legislation the Minnesota Department of Education defined five transition areas including Jobs and Job Training, Recreation and Leisure, Home Living, Community Participation, and Post-Secondary Training and Learning Opportunities. Each of these areas was to be assessed to identify needs for inclusion in the IEP. Because no assessment device directly assessed these five areas, the author of this study and a colleague from the public schools devised an instrument which provides assessment information directly relating to the five transition areas. The initial study of the Enderle-Severson Transition Rating Scale (ESTR) was completed as a master's thesis by the first author (Enderle, 1991). Further study on the scale is necessary to determine its usefulness to professionals responding to mandates requiring transition planning.

Purpose of the Study

The purpose of this study was to continue development of the Enderle-Severson Transition Rating Scale (ESTR). Of particular interest to the study was determination of the validity of this instrument; its reliability was a secondary issue.

The following questions were addressed by the study:

1. What is the concurrent, predictive validity of the Enderle-Severson Transition Rating Scale, as evaluated by correlations between the ESTR Scale and subscales and the Adaptive Behavior Evaluation Scale and its subscales (ABES; McCarney, 1988)?
2. What constructs are measured by the Enderle-Severson Transition Rating Scale? Do these correspond to the taxonomy of skills used in development of the instrument?
3. How valid is the content of the Enderle-Severson Transition Rating Scale? That is, will users and potential users of the instrument rate items and scales as closely related to their programming needs?
4. How internally consistent are the Enderle-Severson Transition Rating Scale subscales and total scale?

Delimitations and Limitations

The study was conducted within the framework of the following delimitations and limitations.

1. The study was limited to subjects from North Dakota and Minnesota.
2. Respondents evidenced varying degrees of understanding relating to transition assessment and programming.
3. Responses were generated via a mail survey. Due to the complex nature of the study, some subjects may have benefited from direct contact with the investigator.

Definition of Terms

Coefficient Alpha: The average of all possible split-half combinations. Coefficient alpha is the ratio of the summed variances of individual test items and the variance of

the total test score and reflects the degree to which items within scales or subscales are inter-related (Cronbach, 1951).

Correlation: "The degree of relationship between two or more variables" (Salvia & Ysseldyke, 1991, p. 651).

Correlation Coefficient: The Pearson product-moment correlation coefficient is a numerical index of the relationship between two or more measured variables. A correlation coefficient has possible values from -1.00 to +1.00 (Salvia & Ysseldyke, 1991).

Factor Analysis: A process of data reduction by grouping variables that are moderately or highly correlated with one another due to a third latent variable called a factor (Thorndike, 1978).

Factor Loading: After factors are identified, a factor score (linear combination of variables) is calculated for each subject. Then correlations are calculated between variables and factors. The individual correlations between variables and factors are called loadings (Gorsuch, 1983).

Individual Education Plan: This is a written document, required by federal law, to define the student's plan for the school year. The plan includes statements regarding the students level of present performance, annual goals, short term objectives, specific educational services, relevant dates, participation of general education, and evaluation procedures (Hallahan & Kauffman, 1991).

Inter-Rater Reliability: An estimate of the degree of agreement between two or more scorers on the same test and subject (Salvia & Ysseldyke, 1991).

Internal Consistency: "A measure of the extent to which items in a test correlate with one another" (Salvia & Ysseldyke, 1991. p.653).

KR-20: Coefficient alpha for test items that are dichotomously scored (Salvia & Ysseldyke, 1991).

Reliability: "The extent to which it is possible to generalize from an observation of a specific behavior observed at a specific time by a specific person to observations conducted on similar behavior at different times or by different observers" (Salvia & Ysseldyke, 1991. p. 656).

Sheltered Employment: Employment option where individuals with disabilities work in noncompetitive segregated employment sites (Patton, Beirne-Smith, & Payne, 1990).

Supported Employment: A profitable, competitive job located in an integrated community environment. In this employment model the person must earn a salary, the worksite must be integrated, and the employee must be provided ongoing support (Patton, Beirne-Smith, & Payne, 1990).

Validity: "The extent to which a test measures what it's authors or users claim it measures" (Salvia & Ysseldyke, 1991, p. 658).

Varimax Rotation: In the varimax solution, factors are rotated until maximum possible across-factor variance is achieved. This rotation is said to be orthogonal in that a solution featuring zero between factor correlations (or 90 degree rotation) is sought (Gorsuch, 1983, p. 184-185).

CHAPTER II

REVIEW OF LITERATURE

The assessment of variables relating to transition from secondary to post-secondary environments is essential to program planning which results in successful post-school outcomes for students with disabilities. For this reason, the review of literature for this study focuses on five major areas affecting transition assessment. This discussion begins with a definition of transition in its broadest sense as movement across the life span. Continued discussion narrows the term's meaning as it relates to movement from secondary to post-secondary environments, thus establishing its relationship to this study.

The second section of the review identifies the status of individuals with disabilities in post-school environments by reviewing data presented by follow-up studies of school leavers. These data show that individuals with disabilities experience unemployment, underemployment and limited social outcomes.

The third section identifies and describes current assessment practices utilized in secondary transition programs. Two studies are reviewed, the first of which surveyed transition projects funded by the Office of Special Education and Rehabilitation Services to identify the frequency and purpose of assessment procedures used in the projects. The second study surveyed transition specialists, testing specialists, and secondary-level teachers of 40 school districts in Utah to ascertain both the frequency and reason of eight types of assessment procedures.

In the fourth section various assessment models are described. The strengths and weaknesses of the models and the related assessment procedures utilized within

models are presented. These descriptions relate to the need established in Chapter One, for appropriate and technically-sound assessment relating to transition.

Definition and Characteristics of Transition

Multiple meanings of transition have been presented in the literature. In essence, transition means movement (Webster's College Dictionary, 1991). Frequently, the term has been used to describe all significant life changes and in a programmatic sense has referred to the activities which occur to facilitate these changes. Ianacone and Stodden (1987) describe transition as a "process of movement through life phases" (p. 3). In this view, transition is not a single point in time, but rather includes all actions taken to prepare students for program and ecological changes (Weatherman et al., 1986). These actions or procedures become the transition process which is initiated to assure smooth placement and ensuing adjustment to the next environment (Hutinger, 1981).

One aspect of life adjustment pertains to the specific life circumstances of students leaving special education programs and taking on adult-life roles such as employment and independent living. In 1984, Madeline Will, Assistant Secretary of the Office of Special Education and Rehabilitation Services (OSERS), prescribed a model which viewed transition as a bridge from school to work. This model conceptualized three means of crossing this bridge: no special services, time-limited services and ongoing services. The first of these three bridges, "no special services" identifies a means of movement from secondary environments to the post-secondary job market through generic services. In this model, students attain employment through typical routes used by persons without disabilities. This could include job procurement through state or private job services or attendance at vocational training institutions, colleges, or universities. The second bridge, "time-limited services"

refers to specialized, short-term services which enable individuals to attain community employment. Access to such services typically requires a disability label. Vocational rehabilitation, which provides counseling and financial support on a short term basis, is an example representing movement via this bridge. The last bridge, "ongoing services", reflects services which continue indefinitely. This means of transition is utilized by individuals who need continual support in order to maintain employment. Supported employment is an example of a service delivery model which provides ongoing services (Blalock, 1988).

The bridges, proposed by Will, reflect a variety of post-secondary training options which will meet the needs of diverse students exiting special education programs. As the targeted outcome of the model, employment provides an objective measure for transition but recognizes other dimensions of adult adjustment only as they relate to employment. Will (1984) states, "this concern with employment does not indicate a lack of interest in other aspects of adult living. Success in social, personal, leisure, and other adult roles enhances opportunities both to obtain employment and enjoy its benefits" (p.1).

Independent living and community adjustment have also been recognized as important transition outcomes (PL 101-476, 1990). While community participation is an aspect of employment, it has broader meanings as a quality-of-life issue. Halpern (1985) praised the three bridges proposed by the OSERS model as a way of categorizing the broad array of post-secondary transition services needed to address the complex needs of school leavers but, viewed employment as an overly-narrow outcome, arguing that nonvocational components of adult adjustment should be recognized as separate from employment. Halpern developed a model which included the three bridges, but which targeted community adjustment as the primary outcome of

transition services. Halpern described residential, personal/social, and occupational as the three pillars which strengthen the individual's ability to adjust to their adult role in the community. Acceptance of the Halpern model changes the primary focus from employment to include residential and personal/social factors. This expanded view of transition has been supported in the literature. Boyer-Stephens and Kearns (1988) stated that functional skills are needed not only to maintain employment, but also to live and recreate in community environments. Ludlow, Turnbull & Luckasson (1988) stated that adjustment to adult living is not limited to employment concerns because personal needs, recreation, and interactions with family, friends, and acquaintances consume much of an individual's life. Transition involves an assessment of quality-of-life factors leading to community adjustment (Bullis & Gaylord-Ross, 1991).

In the Individuals with Disabilities Education Act (IDEA) transition is defined as follows:

> A coordinated set of activities for a student, designed within an outcome-oriented process, which promotes movement from school to post-school activities including post-secondary education, vocational training, integrated work (including supported employment), continuing and adult education, adult services, independent living, or community participation." (PL 101-476, 1990, p. 5)

This definition provides a comprehensive view of transition by identifying further education, employment, independent living, and community participation as targeted outcomes.

IDEA also makes reference to transition by requiring, through the IEP process, "a statement of needed transition services for students beginning no later than age 16, but permits transition services to students . . . beginning at 14 or younger" (Federal

Register, 1992, p. 44815). This needs assessment should identify the activities which will be conducted to facilitate a smooth transition. The design of these activities should consider student preference and include, "instruction, community experiences, the development of employment and other postschool adult living objectives, and when appropriate, acquisition of daily living skills and functional vocational evaluation" (PL 101-476, p. 5). Prior to this legal mandate, Minnesota Department of Education personnel developed regulations which delineated five areas of assessment and planning for transition: work, recreation and leisure, home living, community participation, and post-secondary training and learning opportunities (Minnesota, 1989). Because of the ties between PL 101-476 (1990), its supporting regulations, and state practices, most states have adopted similar domains for transition services.

The Critical Need for Career and Vocational Assessment Practice

Examinations of the adult adjustment of students exiting special education programs provide information regarding the effectiveness of programs and identifies areas for instructional priority. If the goal is for students to succeed as independent and productive adults, the effects of current practices must be examined. Evaluation of secondary programs, through analyses of follow-up data, identifies post-school outcomes and program needs. These studies follow specific groups of students for various periods of time to determine their status on adult-life indicators. Many of these studies provide information regarding employment outcomes for individuals with disabilities. Others report variables relating to personal-social or daily-living skills.

Post-School Outcomes for Persons with Disabilities

Employment Rates. Employment outcomes, for students with disabilities exiting school, have been the target of much research. In a follow-up study of individuals served in special education programs who had graduated, dropped out, or

left school between 1979 and 1983, Hasazi, Gordon and Roe (1985) found that 55% were in paid employment. Ninety-nine percent of those employed were in non-subsidized jobs, but only 67% were employed full-time. Mithaug, Horiuchi, and Fanning (1985) found that 69% of 1978 and 1979 graduates who had received special education services were employed, with 32% reporting full-time employment and 29% reporting part-time employment. In a more recent study, Scuccimarra and Speece (1990), found employment rates of 78.5% for students who were in the 12th grade during the 1983-84 school year. Their sample was defined as any student identified as disabled under PL 94-142, The Education for All Handicapped Children Act (1975). In this sample, 80% of employees with disabilities were in full-time, nonsubsidized work. Evaluating a sample comprised of 1984-1985 aged-out students from all exceptionality categories, Frank, Sitlington, Cooper and Cool (1990) found a 66% employment rate. Two-thirds of these individuals were competitively employed and one-fourth were in sheltered employment. Of employed individuals, 39% were in full-time employment and 51% were in part-time employment. Conducting a study of students identified as learning disabled whose primary placement had been a self-contained classroom, Haring, Lovett, and Smith (1990) found that 60% of the sample was competitively employed. Analysis of follow-up data on a group of students classified as severely behavior disordered who had either graduated or aged-out of school collected by Neel, Meadows, Levine, and Edgar (1988) revealed employment rates of 60% with 78% having held at least one job. Affleck, Edgar, Levine, and Kortering (1990) compared employment rates of individuals without disabilities, individuals with learning disabilities, and individuals with mental retardation. Seventy-three percent of nondisabled individuals were employed, 68% of leavers with learning disabilities and 46% of the group with mental retardation were employed. For a combined group of

students with learning disabilities and mild mental retardation, Haring and Lovett (1990) discovered employment rates at 64% with 10% of students with mental retardation employed compared to 59% of students with learning disabilities. Most of these individuals did not work full time.

Employment rates for school-leavers with disabilities, as reported in these studies, range from 46% to 80%. Comparisons of peers without disabilities to students with disabilities show that individuals with disabilities have lower employment rates with persons with mental retardation having the lowest rates. Many former students with disability conditions are employed in subsidized jobs and many work only part-time.

Quality of Employment. Another employment-related variable identified by various studies is the quality of employment experienced by individuals with disabilities as identified by wages earned and type of job held. Frank, Sitlington, Cooper and Cool (1990) identified mean wages of $3.11 per hour for all individuals with disabilities who were employed with males making $.50 more per hour than females. They also reported that 86% of all employed individuals had low-status jobs, (e.g., laborers, service workers). Affleck, Edgar, Levine, and Kortering (1990) found that 30% of individuals without disabilities, 27% of individuals with learning disabilities, and 11% of individuals with mental retardation surpassed the federal minimum wage of $134 per week. Mithaug, Horiuchi, and Fanning (1985) reported that 43% of the sample with identified mental retardation earned less than $3 per hour and 13% earned less than $4 per hour. Only 33% of the individuals had received a raise at any time. Reports from the Neel, Meadows, Levine, and Edgar (1988) study revealed that 62% of the subjects reported receiving minimum wage with 12% earning less than $50 per week. Haring, Lovett, and Smith (1990) found that only 5% of

individuals were employed beyond entry level positions and only 11% had ever received a raise. Eighty-seven percent of employed subjects however, reported that they were happy with their jobs.

Employment for Women. Employment outcomes for women with disabilities are even more dismal. Haring, Lovett, and Smith (1990) found that women earned weekly wages of $36 while men earned $92 per week. Haring and Lovett (1990) found weekly wage averages for women to be $34 compared to $65 for men. Women working in day activity centers averaged $2 per week, women in sheltered work settings averaged $14 per week and women in competitive work environments averaged $85 per week. Men averaged $3 per week in day activity centers, $4 in sheltered work settings, and $156 per week in competitive work settings.

It is clear that wages for individuals with disabilities who find employment are low, particularly for women. Underemployment characterized by low status/low paying jobs coupled with high rates of unemployment and high incidence of part-time employment portray a dismal outlook for school-leavers with disabilities, particularly those with mental retardation. Problems with residential and social outcomes, possibly a function of employment, have also been reported in the literature and are reviewed in the following paragraphs.

Residential Outcomes. Several research teams have described post-school residential outcomes for individuals with disabilities. Scuccimarra and Speece (1990) reported that 83.1% of their sample lived with their parents while 76.6% indicated a desire to live independently. In a sample of students with behavior disorders 58% lived with their parents (Neel, Meadows, Levine, & Edgar, 1988). Similarly, Hasazi, Gordon, and Roe found that 64% of their subjects continued to reside in parental homes. Comparing independent living situations among individuals without

disabilities, individuals with learning disabilities, and persons with mild mental retardation, one group of researchers found that for individuals without disabilities, independent living rates increased from 32% at 6 months to 57% at 30 months. The independent living rates for the group with learning disabilities increased from 22% to 39% in the same time period and the independent living rates for the group with mild mental retardation increased from 8% to 21% (Affleck, Edgar, Levine, & Kortering, 1990). Factors influencing residential outcomes for subjects with learning disabilities included: (a) wages, (b) employment patterns, (c) availability of residential and community support services, including few group-homes or semi-independent living arrangements (Haring, Lovett, & Smith, 1990); the behavior of parents was not found to systematically inhibit independent living.

Other Outcomes. Other post-school factors relating to the success of transition are independent living skills and social/recreational skills. Haring, Lovett, and Smith (1990) reported that 69% of their subjects had drivers' licenses and 11% used the city bus. Half of the individuals in another study had a driver's license (Scuccimarra & Speece, 1990). Seventy-five percent of female participants and 80% of male participants reported satisfaction with the social/recreational aspects of their lives (Haring, Lovett, & Smith, 1990). The most frequently reported social activities reported by Scuccimarra and Speece were watching television, attending movies, and attending church. Subsequent rankings included: sports participation, visiting the recreation center and "hanging out." Watching television and attending church were primarily family activities while attending movies and the next four ranked activities were done primarily with friends. The seventh ranked activity, hobbies, was the only activity primarily done alone. Nearly 80% stated they had a special friend.

Data regarding personal and social post-school outcomes other than those previously mentioned are nonexistent in the literature. About three-fourths of the respondents communicated satisfaction with their social activities in the Scuccimarra and Speece (1990) study but because the study included students from all disability categories we have no way of knowing whether the 25% who communicated dissatisfaction were individuals with one type of disability or were a representative group across disabilities. This is also true of their data regarding individuals having a driver's license, although Haring, Lovett, and Smith (1990) reported that approximately three-fourths of their participants, identified as learning disabled, had a driver's license.

Improvement of school outcomes is dependent on identifying the relevant transition needs of students with disabilities. Researchers narrowly examined outcomes for school leavers in regards to personal and social factors. The following rank-ordered list of skill deficiencies in adults with mental retardation was reported by Halpern, Close, and Nelson (1986): (a) money management, (b) social networking, (c) home maintenance; (d) food management, (e) conflict over being told what to do versus asking for help, (f) employment, (g) transportation, and (h) avoiding/handling problems. Although this information facilitates our understanding of possible secondary program needs for students with disabilities, it does not provide us with a comprehensive list of specific skills which will enhance post-school outcomes.

Examination of the follow-up data indicates that schools have limited influence on job procurement for students with disabilities. In seven of eight reviewed studies writers reported that students found employment through self, family, or friends networks. Hasazi, Gordon, and Roe (1985) found a significant relationship between current employment status and manner of school exit. Sixty percent who had

graduated were employed compared to 51% of those dropping out before age 18. Those formerly involved in vocational education programs had employment rates of 61% compared to 45% of individuals without such experiences. Of those students not involved in summer employment, 37% were employed. Those students involved in subsidized summer work had employment rates of 46% and those employed in nonsubsidized summer work had employment rates of 69%. Seventy percent of students who held part-time jobs during high school were employed versus 41% of those who did not have summer jobs.

Analysis of post-school outcomes for students with disabilities raises questions regarding the adequacy of secondary curricula. Kranstover, Thurlow, and Bruininks (1989) found few differences between students with disabilities who had graduated and school leavers with disabilities who had not graduated. Of all variables studied, the only difference which approached significance between the groups was employment with 81.4% of graduates employed and 67.5% of non-graduates employed. There were no significant differences in wages earned. Graduates averaged $7.13 per hour and non-graduates averaged $6.30 per hour. There was however, a significant difference between male and female wages. There was no difference between the number of hours worked, number of months on the job, or in yearly wages. Respondents rated job satisfaction in terms of making use of abilities, pay received, amount of work done, and opportunity for advancement. No significant differences accrued between graduate and non-graduates or between males and females in any of these categories. A significant difference in rates of possessing checking accounts between graduates and non-graduates was observed, but there were no significant differences between groups in having a credit card, a charge account, or a driver's license.

Kranstover, Thurlow, and Bruininks (1989) examined leisure activities and their characteristics, activity limitations, vacations taken, and number of close friends. No significant differences in rates of participation in 19 leisure activities for graduates and non-graduates accrued. All subjects reported engagement in interactive activities and most respondents reported no major limitations on their activities. Averages for taking a vacation in 1984 ranged from 59% to 66%. The average number of close friends across graduates and non-graduates was eight.

The findings reported by Kranstover, et al. (1989) and other researchers raise serious questions regarding the relevance of secondary programming. It would be expected that graduates would fare much better than non-graduates in employment, wages, social, and independence outcomes. The few differences identified requires us to evaluate secondary programs to facilitate change. An assessment process which identifies program needs relating to transition is imperative if post-school outcomes for persons with disabilities are to be improved.

Transition Assessment

The Individuals with Disabilities Education Act (PL 101-476, 1990) clearly indicates that transition-related activities should evolve from information gained through an assessment process. An assessment process involves gathering and synthesizing information about a problem (Witt, Elliott, Gresham, & Kramer, 1988). Schloss, Smith, and Schloss (1990) identified the following five functions of assessment: (a) determining appropriate placements, (b) establishing appropriate objectives, (c) designing effective instructional procedures, (d) evaluating procedural effectiveness, and (e) evaluating long-term program effects. To apply each of these functions to transition assessment, special education and vocational specialists must look for an assessment process which addresses each of the aforementioned functions

and which accepts a definition of transition which addresses all aspects of adult adjustment.

Several writers have attempted to identify the frequency and purpose of assessment procedures which had been used in secondary transition programs (Agran & Morgan, 1991; DeStefano, Linn, & Markward, 1987) . DeStefano, Linn, and Markward surveyed 144 OSERS-funded transition projects serving a range of purposes. Information about the assessment procedures was obtained through a review of grant applications. The twelve areas of student characteristics and competencies most often assessed by the projects included general ability, special aptitude, vocational skills, academic skills, language skills, adaptive behavior, social skills, career interests, survival skills, daily living skills, motor skills/dexterity, and lifestyle/consumer satisfaction. Purposes for using the assessment instrument were rated by four choices which included: initial assessment for placement, assessment for program planning, ongoing assessment/monitoring student progress, or evaluation of program outcomes.

Transition specialists, testing specialists, and secondary-level teachers of 40 school districts in Utah were surveyed by Agran and Morgan (1991) to ascertain both the frequency and reason for using eight types of assessment procedures. Purposes of the assessments were grouped into three categories which included: (a) programming and placement, (b) eligibility for services, and (c) communication of assessment results. Intelligence tests, achievement tests, motor performance tests, work samples, direct observation, adaptive behavior scales, survival skill tests, and staff-developed tests were identified.

In the federally-funded projects studied by DeStefano, Linn, and Markward (1987), traditional tests of ability were found to be the most frequently used

assessments. Vocational assessment and achievement tests also appeared frequently. They found little use of contemporary situational assessment which assesses criterion behaviors in real or simulated settings (Halpern, Lehmann, Irvin, & Heiry, 1982). Rather, reliance on traditional tools in the assessment processes was documented.

Discrepancies in the use of various types of assessment devices were found by Agran and Morgan (1991). Many respondents stated that they never used particular types of assessments while almost equal numbers stated that they "always" used these assessments. For example, while 28% of respondents said that they never used intelligence tests, 30% responded that they always used intelligence tests. Furthermore, about 30% stated that they never used adaptive behavior instruments while a comparable number said that they always used them. Following is a description of the assessment procedures and information regarding the frequency and purpose of their use as identified by the two studies.

Types of Assessment Used for Transition

Aptitude Tests. General learning aptitude is typically assessed with standardized measures of intellectual performance. Most intelligence tests essentially measure verbal abilities and ability to work with numbers and other abstract symbols. They are developed with the idea that current performance is an indicator of future performance (McLoughlin & Lewis, 1990).

Aptitude assessments are commonly used measures in secondary special education programs. DeStefano, Linn, and Markward (1987) found that projects serving students with mild disabilities utilized general ability/intelligence tests more frequently than projects serving students with severe disabilities. Overall utility ratings for these assessments identified them as moderately useful. The Wechsler

Intelligence Scale for Children-Revised (Wechsler, 1974) and the Wechsler Adult Intelligence Scale-Revised (Wechsler, 1981) were the two most commonly-used ability tests. While general ability tests were used most frequently for initial assessment/diagnosis they were also used frequently for program planning/IEP development. Eight of the 144 projects used these assessments for program evaluation and 14 projects used them to monitor student progress. Agran and Morgan found that intelligence tests were used most frequently to comply with district and state policy (58%) and for determining training objectives (43%).

The use of general ability/intelligence assessment for initial assessment and placement is acceptable (Salvia & Ysseldyke, 1991). Their use for program evaluation and student monitoring however, is questionable because scores obtained from these instruments are, by design, resistant to change. A value of intelligence tests, beyond placement, may be the information gathered that concerns specific aspects of intelligence that relate to career and life goals. While the global IQ score does not have value in identifying program goals, information from specific subtests such as verbal ability, numerical ability, nonverbal conceptual ability, memory, and perception may correlate with specific transition-related training needs. Also, intellectual efficiency and level of conceptual ability (abstract verbal reasoning and comprehension) may relate to an individual's ability to hold a job and to the employment status the person attains. These two factors relate to daily living skills and social skills in the same way (Clark & Kolstoe, 1990). Cognitive ability tests however, are not specifically designed to make these predictions and users of these assessments generally are not trained to analyze test information at this level.

Achievement Tests. Achievement tests provide a broad appraisal of academic skill development and may be used to identify students needing educational

interventions, evaluate performance on specific academic tasks, or evaluate progress (Salvia & Ysseldyke, 1991; Witt, et al., 1988). DeStefano, Linn, and Markward (1987) found that achievement tests were most frequently used and reported to have the greatest utility in transition projects serving students with mild disabilities. Academic achievement tests were used in about two-thirds of the projects for initial assessment and for program development. They were used much less frequently for monitoring student progress or for program evaluation. The most frequently-used achievement test in federally-funded transition projects was the Wide Range Achievement Test (Jastak & Wilkinson, 1984). This test is not normed on a representative sample and evidences questionable reliability and validity (Salvia & Ysseldyke, 1991).

Like aptitude assessment, achievement tests were used most frequently to comply with state and local policy (53%) and for setting training objectives (51%) (Agran & Morgan, 1991). Achievement tests were used most infrequently for predicting success in future employment or to establish communication with parents (Agran & Morgan, 1991). Frequent use of achievement tests for determining training objectives suggests programming with an academic focus. Higher utility ratings for students with mild disabilities, compared with students with moderate or severe disabilities, suggests a different orientation in programs serving these two groups of students with life skills emphasized in programs for individuals with severe disabilities.

Information gained through achievement testing, may relate to transition but few special educators are adequately trained in psychometric assessment well enough to make these interpretations (Clark & Kolstoe, 1990). An academic achievement test such as the Woodcock-Johnson Psycho-Educational Battery-Revised (Woodcock

& Johnson, 1989) can be used as part of an error analysis process for the identification of a student's learning style, generalization skills, and reasoning ability. The item analysis relates to daily living and occupational skill requirements (Clark & Kolstoe, 1990). These writers also identified a relationship between the math computation subtest of the Woodcock-Johnson Psychoeducational Battery-Revised and competencies of Brolin's Life Centered Career Education Curriculum (Brolin, 1991). They suggest that managing personal finances; buying, preparing and consuming food; and buying and caring for clothing involve numerical calculation.

Error analysis and observations of behaviors exhibited during assessment may also provide information which relates to transition although these evaluations must be made with caution. The evaluator can gather useful information and make appropriate inferences regarding how the student typically approaches intellectually-demanding situations, perseverance, degree of confidence, and level of independence. Evaluators can also draw conclusions about students' responses to environmental (heat, light, sound), emotional (enthusiasm, anxiety, motivation), sociological (responses to coworkers, supervisors, group versus individual) and physical (mobility, perception, coordination) stimuli. Learning styles can also be derived from analysis of responses (Clark & Kolstoe, 1990).

Vocational Tests. Vocational assessment focuses on vocational awareness, orientation, exploration, preparation, and employment experiences. Information can be obtained from vocational aptitude tests, work samples, job tryouts, laboratory work projects, situational assessments, interest surveys, interviews, work experiences, knowledge tests, student self-reports, teachers' reports, and curriculum-based assessments (Greenan, 1989).

A limited number of these types of vocational assessments were reported in the two studies. DeStefano, Linn, and Markward (1987) found that 56 of the 144 projects used vocational tests. The utility ratings of these tests were high across all disability areas. Vocational assessments were used more frequently than any other type of procedure for assessing student outcomes/program evaluation. From this we can surmise that employment was regarded as an important transition outcome in approximately 40% of studied projects.

Data concerning work samples was reported in only the Agran and Morgan (1991) study. Work samples are defined as vocational assessment procedures that simulate real jobs or tasks focusing on hands-on performance (Greenan, 1989). Approximately 68% of their respondents, however, did not use these types of assessments (Agran & Morgan, 1991).

In a review of the literature, Clark and Kolstoe (1990), identified several advantages of work-samples. One advantage is that the real-world, concrete situations on which they are based involve activities closely related to real jobs. A second benefit is that the procedures allow students to respond to meaningful tasks rather than tasks that appear to have no relationship to work environments (e.g., moving pegs from board to board). Work-sample assessment also allows for direct observation thus reducing the need for inferential judgments. They also may eliminate cultural, educational, or linguistic barriers found in other types of assessment. Employers may be more responsive to information gained through work-samples compared to predictions from profiles and other test data. Assumptions that work samples are the criterion for determining job success must be made cautiously; they provide only predictions. Also, careful consideration should be made regarding the types of work samples evaluated. Gathering assessment data through work samples

may be expensive and time consuming requiring constant revision and reconstruction. Equipment may quickly become obsolete or makeshift. Work samples may provide a "one-shot" assessment which may not be predictive of quantity and quality of production.

Vocational aptitude tests are designed to identify abilities or characteristics predictive of individuals' ability to learn specific knowledge or skills (Powers, 1991). DeStefano, Linn, and Markward (1987) found that project personnel used special ability tests less frequently than they did general ability tests. The utility of vocational aptitude tests had their lowest rankings in projects serving students with moderate disabilities. Program planning/IEP development was the most frequently-cited use for these assessments. About one-third of the projects used special ability tests for initial assessment and/or diagnosis. Seven projects reported their use for assessing student outcomes and program evaluation.

Problems with vocational aptitude tests include: (a) a question of validation, precision, durability, and interchangeability of the materials used in the tests; (b) standardization of the assessments on adults; and (c) tests having only face validity. Paper and pencil aptitude tests have limited use because of required reading levels which may distort their validity when used with persons with disabilities (Clark & Kolstoe, 1990). While ability tests may identify potential for meeting training or occupational demands, they are not predictive of job success (Powers, 1991).

Career interest or awareness is a component of vocational assessment. Interest inventories are designed "to assess individual areas of interest and compare subsequent subjective interest scores with the measured interest of successful professionals in a wide variety of occupations" (Powers, 1991, p. 205). These assessments were used most frequently for program planning and were considered to

be most helpful for persons with mild disabilities. Approximately one-third of the respondents reported their use for initial assessment or monitoring of student progress. Only a few verified use of interest inventories for program evaluation (DeStefano, Linn, & Markward, 1987).

Caution should be used in utilizing interest inventories. First, they should be used selectively assuming that only a gross overview is provided. Second, exploration activities should accompany these assessments allowing persons to have experiences in unfamiliar activities and environments. Finally, direct interviews with the students should be utilized to enhance decision making and goal setting (Clark & Kolstoe, 1990).

Adaptive Behavior Scales. Adaptive behavior scales (ABS's) are used primarily for identification and program planning. The legal definition of mental retardation requires identification of deficiencies in adaptive behavior for eligibility. Information obtained from adaptive behavior assessment is utilized in identifying specific goals and objectives, implementing interventions, monitoring student progress, and determining maintenance and generalization of skills (Reschly, 1985). Skills relating to personal care, communication, social, civic, and vocational skills in nonschool settings are listed by McLoughlin and Lewis (1990) as typical components of adaptive behavior devices. Clark and Kolstoe (1990) reported that adaptive behavior assessments measure such career-development domains as basic development, survival mathematics, survival reading, communication, knowledge of self, emotional, personal adjustment, social, interpersonal skills, self-help, independent living, consumer skills, health care, knowledge of community, job-readiness, vocational-behavior, and vocational-social. While all of these competencies are transition-related issues, no one adaptive behavior instrument assesses them all.

Respondents working in the federally-funded transition projects surveyed by DeStefano, Linn, and Markward (1987) reported adaptive behavior assessment to be moderately to highly useful. Initial assessment, program planning, and monitoring student progress were reported uses of ABS's enumerated by two-thirds of the respondents. Less than half of the projects used ABS's for evaluation purposes.

In contrast, Agran and Morgan (1991) reported infrequent use of ABS's in the programs they surveyed. Reportedly, these assessments were used for checking student/worker progress over time (19%), determining needed levels of assistance (25%), or predicting performance in future employment (20%). Agran and Morgan (1991) however, evaluated assessment in relation to employment outcomes. This factor may have caused underidentification of the usefulness of adaptive behavior procedures because employability is seldom addressed via these instruments. The reported uses of ABS's in federally-funded transition projects match the uses identified by Reschly (1985). Relatively frequent use of adaptive behavior assessment in the these projects suggests curriculum orientations addressing functional life skills. Sixty-eight percent of the programmers, serving students with mild disabilities, used adaptive behavior measurements for program planning/IEP development, while this use was reported in 100% of programs for students with moderate disabilities and 53% in programs for students with severe disabilities. Of the 10 projects serving students with learning disabilities, ABS's were used in seven for program planning/IEP development. In comparison, academic skills tests were used for this purpose in 79% of projects serving students with mild disabilities. Almost equal utility ratings for adaptive behavior assessment and academic skill tests suggests either conflicting data or a balance between academic and life-skill orientation. Further information regarding how these assessments were used for

program planning are necessary before determinations can be made regarding appropriateness.

Survival Skill Assessment. Survival skills were defined by Agran and Morgan (1991) as generic or specific behaviors identified by employers as necessary to maintain employment. Agran and Morgan evaluated assessments specific to employment, while it is also evident that survival skills outside the employment area were considered by DeStefano, Linn, and Markward (1987). Only three instruments were identified by DeStefano, Linn, and Markward (1987) as survival skill tests. These tests included the Brigance Diagnostic Inventory of Essential Skills (Brigance, 1983) , Test for Everyday Living (Halpern, Irvin, & Landman, 1979), and Street Survival Skills Questionnaire (Linkenhoker & McCarron, 1979). Their analysis identified that these tests were not viewed as useful in transition projects serving individuals with mild disabilities. Respondents representing projects serving students with moderate to severe disabilities, however, reported high utility ratings for these assessments. Survival skill assessment was used for checking student progress over time (6%), for providing information on level of needed assistance (15%), and for predicting success in future employment (19%).

Motor Skills/Dexterity Tests. Agran and Morgan (1991) did not define or provide examples of motor skills assessment. Examples of Motor Skill/Dexterity Tests found in the DeStefano, Linn, and Markward (1987) study included the Stromberg Dexterity Test (Stromberg, 1951), Vineland Adaptive Behavior Scales (Sparrow, Balla, & Cicchetti, 1984), Bender Visual Motor Gestalt Test (Bender, 1938), Bennet Hand Tool Dexterity Test (Bennet, 1965), and Crawford Small Parts Dexterity Test (Crawford & Crawford, 1956).

DeStefano, Linn, and Markward (1987) discovered that, in projects serving students with mild and severe disabilities, motor skills/dexterity tests were reported to be moderately useful while respondents from programs serving individuals with moderate disabilities identified few uses for these tests. These assessments were used most frequently for initial assessment and program planning. In only a few projects were they used for monitoring student progress or program evaluation.

Approximately 68% of the respondents surveyed by Agran and Morgan (1991) communicated that they never used motor-performance tests. These assessments were infrequently used to predict performance in future employment, communicate with parents/guardian, or provide feedback to students.

Educators should evaluate transition-related psychomotor skills along with various physical attributes, including mobility, endurance, strength, and both fine and gross motor skills. Adequate assessment of these skills leads to appropriate program placement, planning, and adaptations (Greenan, 1989).

Direct Observation. Only Agran and Morgan (1991) studied the use of direct observation methods, reporting that the highest percentage of respondents used these assessments for each of the aforementioned purposes except compliance with state and local regulations. Sixty-eight percent of respondents reported use of direct observation for evaluating student progress over time, 63% for setting training priorities, and 56% for determining level of needed assistance. Informal-direct methods, used to evaluate skills in natural environments, are useful because of their direct relationship to curriculum (Greenan, 1989).

Other Assessments. Information about several other types of assessment instruments was collected by DeStefano, Linn, and Markward (1987). Measures of daily living skills obtained high utility ratings by projects serving students with mild,

moderate, or severe disabilities. Program evaluation was identified as the most useful purpose for these assessments. Lifestyle/Consumer Satisfaction tests were reportedly used only by five projects.

Language tests were common in all types of projects. Those serving students with severe disabilities were the most frequent consumers even though respondents serving individuals with mild disabilities judged these assessments to have the greatest utility. Initial assessment and planning were identified as these tests' most useful purposes. In a few projects, language tests were used for monitoring student progress and program evaluation.

Very high utility ratings were reported for social skills tests. These assessments were used for each of the four listed purposes. Second to vocational skills tests, social skills assessments were used to evaluate student outcomes/program evaluation more than any other assessment type.

Tests of daily living skills for program evaluation purposes, across levels of disability, suggest that functional curricula was employed in many projects. Frequent use and high utility ratings for language assessment identify language as an important transition-related variable. Moreover, high utility ratings of social skill assessment also identify this as a priority transition-related skill.

Assessment Models

The majority of the instruments used in the transition projects can be identified as traditional assessment procedures. Traditional assessment typically occurs through standardized tests. A basic assumption underpinning the use of traditional measures is that they can be used to predict future learning, performance, and adjustment. They have their greatest utility for classification and eligibility purposes. Their relationship to transition-related programming however, must be considered

weak pending further evaluation. One reason their utility in transition planning may be questioned is that behaviors sampled by the tests may be quite different than the behaviors required for successful transition. For example, assessing an individual's ability to place a peg in a hole may not be a true predictor of the person's perceptual and motor skill abilities needed in their daily functioning such as in writing a word, sharpening a pencil, or pouring milk into a glass. Another factor influencing the appropriateness of traditional assessment is that testing environments typically do not approximate the environments in which sampled behaviors are performed. Even if placing a peg in a board was predictive of ability to write, performing this skill in a test situation is very different than writing a word during a spelling test or writing a check at the grocery store. Much of the information attained through traditional assessment procedures will have limited utility in program planning.

Too often assessment ends at the diagnostic phase (Witt, et al., 1988). A model presented by Elliot and Piersel (1982) suggests a funnel approach to assessment involving three phases: a screening decision phase, a diagnostic decision phase, and a program decision phase. The three phases of this model correlate with four of the five types of assessment decisions described by Salvia and Ysseldyke (1991) including referral, screening, classification, and instructional planning. Elliot and Piersel's (1982) model moves assessment through a screening phase and a diagnostic phase to a planning phase which includes the development of the individual program plan. Within this model intervention is based on both contemporary and traditional assessment procedures. These writers however, strongly recommend the use of informal, curriculum-based, functional measures during instructional planning.

Elrod and Sorgenfrei (1988) provide an assessment model for individuals with mild disabilities which incorporates traditional assessment and transition-related

assessment procedures. They identified two main functions of assessment including placement of students in special education programs and making educational decisions. Elrod and Sorgenfrei reexamined traditional assessment practices at the secondary level given the limited relationship between such techniques and post-secondary adjustment. Traditional assessment procedures provide information regarding (a) psycho-educational performance, (b) socio-behavioral tendencies, and (c) academic achievement. A fourth type of assessment, often overlooked in special education programs, is that which focuses on career and vocational assessment. For persons with disabilities, this type of assessment is now a mandated prerequisite to an appropriate educational plan during the transition years (PL 101-476, 1990).

Elrod and Sorgenfrei (1988) proposed two aspects of career/vocational assessment. One of these involves the evaluation of students' interests, aptitude, abilities, and needs as they relate to functioning in home, community, and vocational environments. In the other, students' specific vocational interests and skills are assessed. This model reflects the definition of career education suggested by Brolin (1983) who argued that productive work occurs in several career arenas rather than just the employment site. He believes that career education is an educational perspective that focuses on the total individual and their ability to succeed in home, community, and employment environments.

The model presented by Elrod and Sorgenfrei has four characteristics. First, it is a dynamic model reflecting changes in career and vocational assessment as needed. Second, the career and vocational assessment dimension has a curvilinear relationship to academic assessment. This implies that career/vocational assessment should be undertaken during the elementary years, increase as the student grows older, but should not replace academic assessment. Third, because the model is geared to

individuals with mild disabilities, emphasis in the elementary grades should be on remediating academic and social problems. Career and vocational assessment should begin at this stage, but increase with age. Even at this early age, students should develop the habits and behaviors which will enhance their personal functioning as adults. Finally, career and vocational assessment is to be associated with the other dimensions of assessment. Throughout the school years, psycho-educational assessment and socio-behavioral assessment are depicted as necessary procedures for appropriate placement and annual program review. The relationship between academic and career vocational assessment however, reflects a shift in emphasis. While academic assessment does not become meaningless during high school, it is over-shadowed by career and vocational assessment.

Elrod and Sorgenfrei's (1988) model can be used to analyze information from studies in which transition assessment practices were evaluated (Agran & Morgan, 1991; DeStefano, Linn, & Markward, 1987). In both studies general ability tests evidenced high utility ratings. Elrod and Sorgenfrei legitimized these assessments as they are used appropriately for placement decisions. Both of the studies also found high utility ratings for achievement tests in secondary programs serving individuals with mild disabilities. This finding conflicts with the model proposed by Elrod and Sorgenfrei wherein decreased emphasis on academic assessment and an increased emphasis on career and vocational assessment at the secondary level is advocated. DeStefano, Linn, and Markward (1987) found that 56 of 144 project managers reported high utility ratings for vocational assessments across disability areas. While this represents less then half the projects, no data regarding informal or situational vocational assessment is reported. Work samples were used by 68% of the respondents, however, high utility rates were reported for other direct-observational

methods. DeStefano, Linn, and Markward (1987) found that adaptive behavior assessment had moderate to high utility ratings but survival skills tests had low utility ratings. Agran and Morgan (1991) reported infrequent use of either of the latter assessment types. While adaptive behavior and survival-skill measures relate to the home and community arenas of career education (Brolin, 1983), it appears that assessment practice is not focusing on these critical areas. It can be surmised then that current practice in secondary special education delivery does not reflect best practices as elucidated by Elrod & Sorgenfrei (1988).

Contemporary assessment links the purposes and outcomes of assessment to intervention. Rather than using a sample of behaviors to predict future performance, contemporary assessment directly evaluates criterion behaviors. Assessment of these criterion behaviors leads to evaluation of skills which directly relate to adult life and thus program planning. Behaviors identified for programming will have importance within identifiable contextual settings. This process leads to meaningful program planning and emphasizes student strengths rather than weaknesses.

Halpern, Lehmann, Irvin, and Heiry (1982) described a model for Program-Related Assessment (PRA). The model assumes an orderly, sequential format of service delivery with the following four decision making stages: needs assessment, program planning, program implementation and monitoring, and program evaluation.

The needs assessment stage of this model represents decision-making in which (a) content areas of concern are identified, (b) instruments are selected, (c) current performance is measured, (d) need for services is delineated, and (e) service priorities are determined. Decisions within this stage can be made through both formal and informal assessment procedures.

The second stage of the PRA model moves beyond the diagnostic level to program planning. As service priorities are identified, program planning begins, linking needs assessment and program planning. If needs assessment involves criterion-referenced assessment, then information gained at this stage can be directly translated into IEP goals and objectives. The use of standardized assessment procedures which do not identify specific skill competencies are not useful to assessing transition-related skills.

Development of the instructional goals and objectives leads to program implementation and evaluation. Within these stages the extent to which program plans have been implemented and accomplished is analyzed. The assessment process, which was utilized to identify the needs in the first stage of the PRA model, can be used to evaluate student progress. Evaluation will either verify that outcomes were satisfactory or identify skills needing additional instruction.

The PRA model incorporates the use of formal and informal assessment procedures. Standardized assessments are recommended during the needs assessment phase to allow for individual and program comparisons. Standardized procedures can also be incorporated during program planning, implementation, and monitoring phases only if criterion-referenced measurements were utilized in the needs assessment phase. Utilizing standardized assessment for final program evaluation allows comparisons across individuals and programs.

The assessment models presented by Elliot and Piersel (1982), Elrod and Sorgenfrei (1988), as well as Halpern, et al. (1982) contain significant components relating to transition assessment. Elliot and Piersel (1987) described an assessment process which brings assessment from the initial stages of referral and placement to program planning. Elrod and Sorgenfrei (1988) emphasized the role of career

assessment in their model and present its curvilinear relationship with academic and socio-behavioral assessment. Halpern, Lehmann, Irvin and Heiry (1982) extended the role of contemporary assessment through the stages of needs assessment to program evaluation. All of these models encompass formal and informal assessment procedures in maximizing program efficiency, particularly as they relate to the ultimate need to write programming. A major concern for adequate transition programming, is the identification of the appropriate assessment procedure to fulfill each of the assessment purposes or stages, presented by the models.

Functional Assessment

Assessment has functions beyond diagnosis and classification. It is intended to be a process for the identification of program goals and objectives. Assessors ought to look beyond academic achievement and intellectual abilities to personal-social, daily living, and career performance outcomes. This type of assessment is identified as functional because it relates to the individual's functioning in personal contexts which includes school, home, and community environments (Halpern & Fuhrer, 1984).

Most assessment information, for secondary students, has focused on vocational assessment. Vocational assessment information however, has not been identified as the most useful type of information in secondary program planning. Two research teams found that less than half of the transition projects they studied used these types of assessments (Agran & Morgan, 1991; DeStefano, Linn, & Markward, 1987). Conversely, in both studies high rates of use for both academic and intellectual assessment for identification purposes and for program planning were identified. There is a need to move away from prioritizing just vocational, academic, and intellectual assessment during the secondary years if post-school outcomes for

students with disabilities are to be changed. An assessment process which accepts information obtained from traditional assessment, but which also accounts for transition-related skills is needed. Appropriate assessment will ask the right questions and competent assessment will be reliable and valid (Clark & Kolstoe, 1990). Psychometric assessments which are commonly used in the schools have not been designed to assess transition-related skills. Consequently, secondary personnel currently use instruments to assess transition which have very questionable validity for this purpose. In addition, many of the informal methods used lack the basic psychometric information which would justify their use technically and allow for comparisons across schools, programs, and evaluation studies.

Evaluation Criteria

McLoughlin and Lewis (1990) identified five criteria for evaluating an assessment tool. First, they state that the tool must fit the purpose of assessment. To meet this criteria, the assessment device must provide information which answers the assessment question. Second, the tool must be appropriate for the student. The method of data collection (e.g., direct observation, informant interview) must provide a true representation of students' needs and abilities. Third, the assessment tool must be appropriate for the tester; the person performing the test must have adequate skills. A fourth criteria is the technical adequacy of the assessment device. A competent assessment will produce reliable data and use instruments with demonstrated validity. Finally, the assessment tool should be an efficient data-collection mechanism which produces assessment information with minimal time and effort.

The American Psychological Association (APA, 1985) published standard criteria for test evaluation. These standards categorize specific criteria as being either

primary or secondary. Primary standards are criteria that should be met by all tests before use. Secondary standards are desirable but may go beyond reasonable expectations. The APA (1985) identified 17 primary standards for test validation and 8 primary standards for test reliability.

Summary

Transition models have identified employment, personal-social skills, interpersonal skills, and post-secondary training and learning as important transition outcomes. Post-secondary follow-up studies of individuals with disabilities have identified poor outcomes in all of these areas. To influence favorable outcomes, secondary programs must identify relevant transition needs through an assessment process. While few studies surveying current transition-related assessment procedures have been conducted, those available suggest inconsistency in the use and utility of specific instruments and application of assessment tools for validated purposes.

Transition assessment must incorporate diagnostic and program planning components. Focusing on transition outcomes in secondary programs requires a shift in emphasis of assessment. Traditional assessment practice must be augmented by assessment procedures which focus on career and vocational goals.

CHAPTER III

TRANSITION-RELATED INSTRUMENT DEVELOPMENT

In this chapter development of the Enderle-Severson Transition Rating Scale (ESTR; Enderle & Severson, 1991) is described. Initially, the critical components of test development are described. This is followed by a description of the process and criteria for item selection during ESTR development including a short description of each of the subscales. Finally, the technical characteristics, prior to the present study, are described.

Criteria for Test Evaluation

Technical adequacy of a test is determined by establishing its reliability and validity. Establishing validity involves gathering data which supports the inferences, usefulness, and meaningfulness of the judgments made from the test scores. Construct-related, criterion-related, and content-related are types of validity which must be established for the types of inferences made from the instrument (APA, 1983). Reliability refers to the degree to which an instrument is free of measurement error (Salvia & Ysseldyke, 1991); in other words, a test is reliable if it gives consistent results. Types of reliability include test-retest reliability, equivalent-forms reliability, split-half reliability, and interrater reliability. Establishing the ESTR Scale's technical adequacy requires determining if the scale measures what it purports to measure (validity) and whether assessment results of the ESTR Scale are consistent (reliability).

Development and Technical Characteristics of the ESTR Scale.

The Enderle-Severson Transition Rating Scale (ESTR; Enderle & Severson. 1991) was developed to assess transition-related skills. The rating scale categorizes skills into the following five major areas that include: Jobs and Job Training (JJT), Recreation and Leisure (RCL), Home Living (HOM), Community Participation (CP), and Post-Secondary Training and Learning Opportunities (PST). Item selection during development of the ESTR Scale was guided by completing a review of the literature to identify major components of the transition process. The authors also examined various assessment instruments and curricula that focused on transition-related skills. Included were adaptive behavior instruments such as the Scales of Independent Behavior (Bruininks, Woodcock, Weatherman, & Hill, 1984), the Vineland Adaptive Behavior Scales (Sparrow, Balla, & Cicchetti, 1985), the Comprehensive Test of Adaptive Behavior (Adams, 1984) and the Adaptive Behavior Inventory (Brown & Leigh, 1986). Other formal instruments that served as resources included Tests for Everyday Living (Halpern, Irvin, & Lehman 1979), and Skills for Everyday Living (Irvin, Halpern, & Becklund 1981). Functional curricula served as a resource as did current literature relating to transition and test development. Through review of these resources the authors identified eight major skill areas pertinent to transition planning including domestic activities, recreation and leisure activities, vocational skills, functional academics, socialization skills, motor skills, communication skills, and activities relating to post-secondary training and learning. It was determined that skills relating to functional academics, socialization and communication were essential across all the other domains and were thus incorporated into each of the other five areas, and were ultimately not included as separate subscales. A pool of items was

assembled. Analysis by the following criteria determined each item's appropriateness for inclusion in the scale and influenced the phrasing of items:

1. Does the item reflect a functional skill?

Functional skills referred to those required for success in current and future environments.

2. Does the item respect the principle of normalization?

Normalization referred to the "utilization of means which are as culturally normative as possible, in order to establish and/or maintain personal behavior and characteristics which are as culturally normative as possible" (Wolfensberger, 1972, p. 28)

3. Does the item reflect skill acquisition in, and preparation for, integrated environments?

Whenever possible, the philosophy was utilized that transition-related skill development should occur in integrated school environments. Planning for post-school opportunities should always focus on integrated options.

4. Does the item reflect age-appropriate skills?

Assessment and planning for post-secondary environments should focus on skills that are appropriate to secondary students' chronological ages (Brown, et al., 1981).

5. Does the item reflect individual decision making?

Success in post-school environments depends on the individual's ability to problem solve and make appropriate decisions. This requires analyzing alternatives and anticipating consequences (Brimer, 1990). For example, an item in the Home Living Subscale questions the learner's ability to know when and how to seek medical assistance.

6. Does the item reflect student initiation?

Unless the student is performing the skill independently and consistently, the transition skill is not in place. Initiation of transition related skills is important to post-secondary success.

7. Are social skills involved?

Successful performance in all domains requires social skill competencies (Rojewski, 1992). To avoid duplication of items across subscales the Recreation/Leisure Subscale provided assessment of specific social skills while the other subscales include items relating to abilities in specific social roles.

8. Does the item represent a realistic skill?

Some learners may require ongoing support in the performance of transition-related skills. By recognizing adaptations and planned assistance in the scoring system, students should be able to participate in almost all skills assessed by the items. A few items were included which may not be appropriate for students with severe to profound disabilities.

9. Does the item respect adaptations?

The scale's scoring system accounts adaptations by allowing credit for items successfully achieved through an adaptation, (e.g., grocery shopping using a picture grocery list).

10. Is mobility a factor?

Mobility is assessed in relation to functioning in transition-related skills. Also, the scoring system gives credit for adaptations that accommodate problems with mobility.

11. Do items reflect skills required in school and non-school environments?

Performance in both school and non-school environments are important to the transition planning process. Assessment must focus on functioning in both types of environments.

12. Does the item consider natural and relevant environments?

The heterogeneity of the students involved in the transition planning process requires items to reflect environments that are relevant to each particular student's needs and his/her current and future environments. For this reason the items do not identify specific environments but only those which are natural or relevant to the individual student. For example, question 11 of the Community Participation subscale evaluates whether "the learner is able to locate needed items in relevant grocery stores" (Enderle & Severson, 1992, p. 7). Using this format allows a "yes" score on the item if it is determined that the student is able to perform skills within meaningful contexts.

13. Is assistance needed from school or agencies?

Some students will need ongoing agency support. The scoring system reflects this need by recognizing planned supports.

Through analysis with the aforementioned criteria, the pool of items was reduced to 150. These 150 items were then categorized into a taxonomy of five topical subscales.

1. The Jobs and Job Training subscale included skills which concerned home and classroom observable traits, career awareness, job search skills, social behaviors, personal appearance, and job skills.

2. The Recreation and Leisure subscale included friendships, individual activities, interactive games, social skills and interactions.

3. The Home Living subscale included skills relating to food, personal care, home management, money and finances, medical aspects, sexual awareness, and telephone use.

4. Community Participation included skills which related to awareness of community environments, accessing community environments, orientation to the community and relevant environments beyond, transportation to meaningful environments, and consumer behaviors.

5. Post-Secondary Training and Learning addressed vocational assessment, post-secondary planning, financial planning, and conservatorship or guardianship.

Technical Adequacy of the ESTR Scale

Twenty-nine experts from North Dakota and Minnesota established content validity by reviewing the initial draft of the ESTR Scale (Enderle & Severson, 1991). An "expert" was defined as a person knowledgeable about transition and secondary programming. The list included university professors, secondary public school teachers and one individual from the Minnesota Department of Education. University personnel were identified by having department chairs of 19 university special education programs identify individuals knowledgeable about transition within their programs. Nine secondary special education teachers representing nine different disability areas were also targeted. The director of the Office of Transition of the Minnesota Department of Education also reviewed the scale. Phone contacts with the reviewers secured agreements to analyze the instrument.

The reviewers were asked to evaluate each item and provide feedback regarding its clarity and relevance. They were asked to (a) eliminate any items considered to be inappropriate, (b) modify or reword items, (c) suggest components not addressed in the scale, (d) determine if items were placed into correct categories,

and (e) rate each item to its importance in transition assessment (1=very important, 2=fairly important, 3=not important).

Thirteen of the 19 university personnel, six of the nine secondary teachers, and the director of the Office of Transition, Minnesota Department of Education responded. Their feedback was used to clarify, modify, delete or add items. Seven of the experts completed item rankings. Mean rankings and standard deviations of mean rankings of items within subscales are presented in Table One.

Revisions of the scale were made based on feedback from reviewers. This revised version of the scale contained 137 items. Subsequent removal of one item, due to content duplication, reduced the number of items to 136. Note that three pages of the instrument in its final format is included as Appendix A of this document. Appendix B contains all selected items albeit presented in a slightly modified response format used in the present investigation.

A study completed as a research project for a master's thesis produced reliability and validity data for the ESTR Scale (Enderle, 1991). The study, conducted with 82 participants, included students with specific learning disabilities, emotional and/or behavioral disorders, mild to moderate mental handicaps, moderate to severe mental handicaps, hearing impairments, and visual impairments. Correlations with a Likert-type transition rating scale established content validity. The Likert-type transition rating scale (Enderle, 1991) consisted of a statement concerning student competencies in each of the ESTR Scale's five subscale areas and a sixth statement concerning the student's overall competency for successful transition into post high school environments. A five point Likert scale with 1 representing strong agreement and 5 representing strong disagreement was used to rate each student. All subscales correlated with total performance at the .001 level of significance. The Pearson r

Table 1.

Mean Rankings of Items by Raters

Rater	JJT[a]	RCL[b]	HOM[c]	CP[d]	PST[e]
Rater 1 MMMH (S)[f]	1.48	1.74	1.00	1.00	1.00
SD	.570	.541	0.00	0.00	0.00
Rater 2 MMMH (U)[g]	1.13	1.00	1.13	1.21	1.00
SD	.341	0.00	.337	.415	0.00
Rater 3 MSMH (S)	1.55	1.35	1.68	1.88	2.33
SD	.624	.487	.887	.947	.985
Rater 4 MSMH (S)	1.22	1.22	1.79	1.58	1.63
SD	.518	.518	.463	.504	.518
Rater 5 MSMH (U)	1.00	1.00	1.66	1.96	1.89
SD	0.00	0.00	.522	.806	1.05
Rater 6 LD (S)	1.03	1.04	1.02	1.00	1.00
SD	.180	.209	.146	0.00	0.00
Rater 7 E/BD (S)	1.07	1.39	1.00	1.00	1.00
SD	.254	.499	0.00	0.00	0.00

[a] Jobs and Job Training
[b] Recreation and Leisure
[c] Home Living
[d] Community Participation
[e] Post-Secondary Training and Learning Opportunities
[f] School Personnel
[g] University Personnel

scores ranged from a low of .51 in the Post-Secondary Training and Learning Opportunities area to a high of .73 in both the Recreation/Leisure area and the Home Living areas.

Test-retest reliability was determined by randomly selecting returned ESTR Scales and then sending another copy of the ESTR Scale ten days later, asking the teacher to re-rate the student. Using the Pearson-product-moment correlation coefficient formula, test-retest reliability was estimated as: $r = .93$ ($N = 16$, $df = 14$, $p < .0005$).

To determine interrater reliability, the classroom teacher, and another professional who knew the student equally well, completed the ESTR Scale. Calculations using the Pearson's r showed: $r = .90$ ($N = 19$, $df = 17$, $p < .005$).

While the reliability and validity of the ESTR Scale has been supported in prior research additional study is needed to further substantiate the technical adequacy of the scale. So far, no research has examined the reliability of the scale in reference to its internal consistency. Also, the scale's content validity needs further examination and construct validity needs to be established. Overall, much more evidence exists for the scale's utility in programming and reliability than for its validity. The validity of the instrument will be the focus of the study to follow.

CHAPTER IV

METHODOLOGY

In this chapter the methodology of the study is presented. Contained in the chapter is a description of how the subjects were contacted and permission for their participation was obtained. Following this is a description of the mechanics of delivering and collecting the surveys. Descriptive data for teacher participants in each aspect of the study (e.g. content validity, concurrent criterion-related validity, construct validity, and internal consistency reliability) are presented in Tables Two, Four, and Five. Demographic information about student subjects who were rated with ESTR Scales is presented in Table Three. Also included is a description of the instrumentation utilized in the study followed by a description of statistical procedures.

Selection of Subjects

The population sampled for this study included selected special education teachers from North Dakota and Minnesota and students served by these teachers. For some questions, such as those related to content validity, teachers served as the unit of analysis; for others, the rated performance of students was at question.

Teacher participants were certified special education teachers providing services to students with identified disabilities of emotional/behavior disorders, learning disabilities, or mental retardation. The student participants all met either Minnesota's or North Dakota's identification criteria, which includes all components provided in the federal definition (PL 94-142, 1975) for these disabilities and were currently being served by special education programs. All student participants were

at least 14 years of age or in at least the 9th grade at the time the instrumentation was completed.

Teacher respondents were identified through contacts with the special education directors. A list of special education directors was obtained from the Minnesota Department of Education and from the North Dakota Department of Public Instruction. Directors were numbered in the order they appeared on the lists, keeping the two lists separate. A random number list was then used to select the directors to be contacted. Each identified director was phoned to determine if they would approve the study and identify teachers for participation. Information provided to the director included the purpose of the study, the tasks expected of each teacher participant, timelines for the mailing, and a description of the process of mailing and collecting surveys. If the director agreed to have his/her cooperative or district participate, the director was asked to identify the number of available teachers. The random selection of directors continued until enough teachers were identified to complete 86 packets. Demographic information about the teachers who completed the ESTR Scales is reported in Table Two. Because some subjects did not report certain demographic information the totals for specific categories are not equal.

Table 2

Descriptive Data for Teachers Completing ESTR Scales

Gender		Age/Experience		Highest Degree	
Male	Female	Age	Yrs. of Tchg.	BS	MA
N(%)	N(%)	X(sd)	X(sd)	N (%)	N (%)
15(30)	35(70)	39.5(8.13)	13.0(7.73)	29(59)	20(41)

During the selection process the researcher received a phone call from a special education coordinator working in a special education cooperative in south-central Minnesota. This special education coordinator was interested in information regarding the ESTR Scale and inquired about possible inservice. An agreement was reached that inservice would be provided in exchange for teacher participation. From this agreement 15 additional teacher participants were identified and 30 extra student participants.

Student participants were selected by the teachers who agreed to cooperate in the study. The only guidelines provided to the teacher in the selection process was to choose students who met the 14 and older age requirement and who were identified with specified disability labels and currently receiving services. Demographic information regarding primary disability and gender of student participants is reported in Table Three.

Table 3

Gender and Primary Disability of Student Subjects

Primary Disability	Male		Female		Total	
	N	%	N	%	N	%
Learning Disability	29	25.4	8	7.0	37	30.3
Emotional/Beh. Dis.[a]	23	20.2	10	8.8	33	27.5
Mild Mental Ret.[b]	18	15.8	13	11.4	31	32.3
Severe Mental Ret.[c]	9	7.9	4	3.5	13	13.5
Total	79	69.3	30	30.7	114	100

[a] Emotional/Behavior Disorders

[b] Mild Mental Retardation

[c] Severe Mental Retardation

Instruments

The instruments used in this study were the Adaptive Behavior Evaluation Scale (ABES; McCarney, 1983) and a revised format of the Enderle-Severson Transition Rating Scale (1992) (Appendix B). The ABES was used as a criterion to establish concurrent criterion-related validity for the ESTR Scale. The ABES is designed to assess adaptive behavior of individuals experiencing learning and behavior problems in school environments. It is a general measure of adaptive behavior of students regardless of severity level.

The normative sample for establishing concurrent criterion-related validity for the ABES consisted of 58 students ranging from 4.5 to 21 years of age who were identified as having mental retardation and who were receiving special education services. The small sample for establishing the validity of the ABES is a weakness. The criterion to establish the correlation was the Vineland Social Maturity Scale (Doll, 1965). The relationship between the Vineland and two of the ABES scales yielded significant correlations at the .001 level. The third scale yielded a significant correlation at the .05 level. Construct validity of the ABES was investigated by studying diagnostic validity, subscale interrelationships, and item validity. Diagnostic validity was established through comparisons between individuals with and without mental retardation. The group with mental retardation received a mean total Adaptive Behavior Quotient of 75 whereby the regular education students scored at 99. Measures of subscale intercorrelations ranged from .77 to .98.

The ABES is comprised of the following three subscales: Environmental/ Interpersonal, Self-Related, and Task-Related. The majority of the items of the ABES are part of the Environmental/Interpersonal subscale. This area reflects skills associated with adapting to school and community expectations and interactions with

peers and adults. The second subscale, Self-Related, is described by McCarney as tapping the, "ability to accept consequences and responsibility as well as the ability to maintain oneself in the environment relative to self-help and independent functioning" (p. 8). The subscale includes such behaviors as toileting, dressing, hygiene, and eating. McCarney defined the third subscale, Task-Related, as "work-study skills including task focus, task completion, following directions, and classroom participation" (p. 8).

The researcher chose the ABES as a criterion for several reasons. In developing the ESTR scale the authors considered "adult adjustment" to be the targeted outcome of the transition planning process. The formal definition of adapted behavior, provided by the American Association on Mental Deficiency (AAMD; now the Association on Mental Retardation (AAMR)) is "the effectiveness or degree with which the individual meets the standards of personal independence and social responsibility expected of his age or cultural group" (Grossman, 1973, p. 157). Age-appropriate independent functioning, personal responsibility, and social responsibility are accepted as components of adaptive behavior (Heber, 1961) and should be considered as priorities of transitional planning (Brolin, & Schatzman, 1989). Because there appeared to be a relationship between the constructs of adaptive behavior and transition, an adaptive behavior measurement would provide an appropriate criterion for concurrent validation of a scale which assesses transition-related skills. The ABES was used because it was "designed to . . evaluate the adaptive behavior of students who experience behavior and learning problems in the educational environment" (McCarney, 1988, p. 4) and because the AAMR definition of adaptive behavior was used in the development of the scale. The ABES was also chosen because of its length and administrative format. The length of the scale was

important because the amount of time and effort required of teacher participants was presumed a priori to be a participation factor. The sixty ABES items would require minimal teacher time. The ABES is administered by having teachers or other persons most familiar with the student rate the items by completing the protocol. Other adaptive behavior scales require an interview format which was not logistically possible in this study. For example, in administering the Vineland Adaptive Behavior Scales (Sparrow, Balla, & Cicchetti, 1984), the examiner must ask questions of a person who is familiar with the subject without directly reading the test item. The format for administering the Scales of Independent Behavior (Bruininks, Woodcock, Weatherman, & Hill, 1984) involves using an easel with the question read by the examinee as the examiner reads each item.

The ABES was also chosen because the items were developed to be educationally relevant, thus appropriate, for programming (McCarney, 1983). Unlike other adaptive behavior assessments such as the Vineland Adaptive Behavior Scales (Sparrow et al., 1985) and the Scales of Independent Behavior (Bruininks et al., 1984), the items do not reflect normative development. It was expected that low scores on an adaptive behavior scale would correspond to the types of behaviors of interest to teachers in planning transition programming. The correlations however, would be expected to be less than perfect because the adaptive behavior scales are not designed to generate transition programming as is the ESTR Scale. Also, the relationship between the ABES and the ESTR Scale is important in determining the psychometric behavior of the ESTR Scale.

Sixty pairs of ESTR Scales and ABES's were completed for the concurrent validity study. Teachers who completed the ESTR Scales and the ABES's are

data for teachers who participated in the content validity study. Because some subjects did not report demographic information totals across categories are not equal.

Table 5

Descriptive Data for Teachers Participating in the Content Validity Study

Gender		Age/Experience		Highest Degree	
Male	Female	Age	Yrs. of Tchg.	BS	MA
N(%)	N(%)	X(sd)	X(sd)	N (%)	N (%)
5(23)	17(77)	40.6(8.86)	12.6(8.82)	7(39)	20(61)

Procedure

The special education directors distributed the packets to teachers working with students identified as having the specified disabilities. Each packet contained specific directions for the teacher to follow. One-half of the teachers received the content-validity form of the ESTR Scale and two ESTR Scales to complete on two different students. Remaining teacher participants received a packet containing two ESTR Scales and two ABES's. The teacher was requested to rate two students with each of the scales, matching the two scales by placing either a one or a two in the upper right hand corner.

When completed, teachers were requested to return the packets to their special education director. The director returned the packets to the researcher in a postage pre-paid envelope. Human subjects procedures were followed; the anonymity of both teacher respondents and student subjects was carefully protected.

Some of the teachers who had originally agreed to participate decided not to complete the surveys. The only explanation available to explain this nonparticipation was a note from one of the special education directors explaining that several teachers, who had originally agreed to participate later realized they did not have enough time to complete the surveys. No other explanations were furnished. The returns consisted of 148 ESTR scales, 60 ABES's which had corresponding ESTR scales to be used for the correlational study, and 25 Likert-type scales which were to be used to assess content validity.

Statistical Procedures

Concurrent Criterion-Related Validity. In order to examine the behavior of the ESTR subscales, Pearson-product-moment correlation coefficients were calculated between ABES (McCarney, 1983) and ESTR subscales. In addition, the ESTR total scale was correlated with ABES subscales and the total ABES scale. Raw scores were used in each case because ABES derived scores are adjusted for age, thus eliminating variability from statistical analyses.

Content Validity. In order to determine if the ESTR examined relevant content, each item of the scale was rated by half of the teacher respondents. Teachers answered two questions by rating the importance of each item on a 3-point Likert scale. The means and standard deviations for each of the responses were calculated. These descriptive measures were used to evaluate the ESTR Scale's content validity and to assess the relative importance of individual items with an eye toward future revisions.

Construct Validity. In order to determine dimensionality of the proposed subscales of the ESTR, a principal component factor analysis was performed (Gorsuch, 1983). The Scree method (Cattell, 1966) was used to extract the

appropriate number of factors. The resulting factors were rotated orthogonally via the Varimax procedure in order to maximize simple structure (Kaiser, 1965; SAS, 1983).

Internal Consistency. The KR-20 procedure was used to measure the homogeneity of the ESTR Scale. This estimate of the test's reliability is based on the average correlation between all possible split halves and is the coefficient alpha (Cronbach, 1951) for items which have dichotomous response formats (Salvia & Ysseldyke, 1991). Because KR-20 is based on the average of all split-halves, it underestimates reliability systematically since it is based on a subscale only half as long as the one intended for use. This shortcoming was corrected by means of the Spearman-Brown method which adjusts the reliability estimate upward slightly (Ghiselli, Campbell, & Zedeck, 1981).

CHAPTER V

RESULTS

This chapter is organized around the four research questions proposed in Chapter One. The first question deals with the concurrent criterion-related validity of the Enderle-Severson Transition Rating Scale (ESTR; Enderle & Severson, 1991). This measure was established by performing Pearson-product-moment correlations with the Adaptive Behavior Evaluation Scale (ABES; McCarney, 1983).

The second research question addressed the validity of the ESTR Scale by determining the number of factors measured by the scale. Would the factors measured by the scale correspond to the subscales identified during scale development?

Content validity of the ESTR Scale was the focus of the third research question. This issue was addressed by having teacher participants rate individual items of the ESTR Scale for importance and the entire scale for degree of completeness.

The fourth question addressed in this chapter concerns the internal consistency of the ESTR Scale. This measure was done by performing a KR-20 procedure which averages all possible split-halves of the subscales and the total score and reflects the degree to which items within scales intercorrelate.

Research Question One: What evidence exists for the concurrent, criterion-related validity of the Enderle-Severson Transition Rating Scale, as evaluated by correlations between the ESTR subscales and measures derived from the Adaptive Behavior Evaluation Scale?

The behavior of the ESTR Scale subscales was examined by correlating the raw scores from the subscales and the total score of the ABES with the raw scores from the subscales and the total score of the ESTR Scale. The raw scores were used because derived scores (other than age or grade equivalent) are adjusted for age. The correlation coefficients obtained through this analysis were generally moderate ranging from .25 to .74. Four of the correlations were .38 and below while ten were above .60.

Correlational data between the ESTR subscales and total score and the ABES subscales and total score are presented in Table Six. Included in the table are the correlation coefficients and the significance levels. Note that these correlations, as indices of validity, will be slightly low due to the problem of attenuated variance as only students with disabilities, most of whom are below the average of 100 in general ability, were used in the present investigation thus limiting normally-expected variability on both scales.

The correlation between the Total score of the ESTR Scale and the Total score of the ABES was .62 (p =.0001). The two subscales of the ABES with the highest correlation with the ESTR Total Score are the Environmental/Interpersonal subscale (r = .58, p = .0001) and the Self-Related subscale (r = .63, p = .0001). The correlation between the Task-Related subscale of the ABES shows a more moderate correlation with the ESTR Scale Total Score (r = .50, p = .0005).

The correlation between the Jobs and Job Training subscale of the ESTR Scale and the ABES Total Score was .74 (p = .0001). A similar correlation exists between the ESTR Jobs and Job Training subscale and the ABES Environmental/Interpersonal subscale (r = .71, p = .0001). A somewhat lower correlation was calculated between the ESTR Jobs and Job Training subscale and the Self-Related Behaviors subscale

Table 6

Concurrent, Criterion-Related Validity: Correlations Between ESTR Subscales, Total Score, ABES Subscales, and Total Score (N=60)

	ABES Subscales and Total Score			
ESTR Subscales and Total Score	Total	Environmental/ Interpersonal	Self-Related	Task-Related
Total Score				
r	.62	.58	.63	.50
p	.0001	.0001	.0001	.0001
Jobs & Job Training				
r	.74	.71	.62	.64
p	.0001	.0001	.0001	.0001
Recreation & Leisure				
r	.69	.70	.60	.52
p	.0002	.0001	.0006	.0282
Home Living				
r	.50	.42	.60	.41
p	.0001	.0007	.0001	.0011
Community Participation				
r	.40	.35	.52	.28
p	.0017	.0060	.0001	.0330
Post-Secondary Training & Learning				
r	.36	.37	.25	.31
p	.0044	.0034	.0592	.0146

(r = .62, p = .0001) as well as the Task-Related subscale (r = .64, p = .0001) of the ABES.

The correlation coefficient between the ESTR Recreation and Leisure subscale and ABES Total Score was .69 (p = .0001). The Recreation and Leisure subscale of the ESTR was most related to the ABES Environmental/Interpersonal subscale (r =

.70, p= .0001). A somewhat lower correlation was found between the ESTR Recreation and Leisure subscale and the Self-Related subscale of the ABES (r = .60, p = .0006). An even lower correlation was observed between the ESTR Recreation and Leisure subscale and the ABES Task-Related subscale (r=.52, p=.0282).

The correlation between the Home Living subscale of the ESTR and the ABES Total Score was .50 (p = .0001). The lowest correlations for the ESTR Home Living subscale were with ABES Environmental/Interpersonal (r = .42, p = .0007) and ABES Task-Related (r = .41, p = .0011). The ESTR Home Living subscale correlated the highest with the ABES Self-Related subscale (r = .60, p = .0001).

The correlation coefficient between the Community Participation subscale of the ESTR and the ABES Total Score was .40 (p = .0017). The ESTR Community Participation subscale correlated the highest with the ABES Self-Related subscale (r = .52, p = .0001). A more moderate correlation was calculated between the ESTR Community Participation and ABES Environmental/Interpersonal (r = .35, p = .006). The ESTR Community Participation subscale correlated the lowest with the ABES Task-Related subscale (r = .28, p = .0330).

The correlation coefficient calculated between the ESTR Post-Secondary Training and Learning Opportunities subscale and the ABES Total Score was .44 (p = .0069). A similar correlation was found between the ESTR Post-Secondary Training and Learning Opportunities subscale and the ABES Environmental/Interpersonal subscale (r = .37, p = .0054). The Self-Related (r = .352, p = .0592) and Task-Related (r = .31, p = .0146) subscales of the ABES showed the lowest correlations with the ESTR Post-Secondary Training and Learning Opportunities subscale.

A component which is not part of the first research question but provides important information about the ESTR Scale is the correlations of the subscales and

Total Score with IQ. The data describing these correlations are presented in Table Seven.

Table 7

Correlations Between ESTR Subscales, Total Score and IQ

	Total	JJT[a]	RCL[b]	HOM[c]	CP[d]	PST[e]
r	.67	.49	.48	.68	.78	.34
p	.0001	.0010	.0012	.0001	.0001	.0257

[a] Jobs and Job Training
[b] Recreation and Leisure
[c] Home Living
[d] Community Participation
[e] Post-Secondary Training and Learning Opportunities

All subscales correlated significantly with IQ. These data would reflect the degree to which the ESTR scale and subscales tapped general cognitive ability.

To the extent that the ABES has desirable properties, the concurrent criterion-related validity data suggests that the ESTR is a useful instrument with psychometrically reasonable properties. This will be discussed further in Chapter Six.

Research Question Two. What constructs are measured by the Enderle-Severson Transition Rating Scale? Do these constructs correspond to the taxonomy of skills used in development of the instrument?

In order to examine the construct validity of the ESTR Scale a principal components factor analysis was performed with items as variables. The Scree method (Cattell, 1966) was used to select the number of interpretable factors. The scree plot, shown in Figure 1, suggested that the ESTR Scale has a very dominant first factor (Eigenvalue of 40.35) and two other common factors (eigenvalues of 7.9 ' and 7.22)

which diverged from a random scree. Approximately 56% of total variability was explained by the three factor solution (55.55). The communality estimate for the three factors were 40.35, 7.97, and 7.23, respectively. The three factors identified by this procedure were subsequently orthogonally rotated via a Varimax solution to seek simple structure. Table Eight lists the items which had the largest loadings on the three factors. The items are listed in the order of the dimension of the loading (item-factor correlations) on each factor. Loadings are provided for items which correlated .40 or above on factors other than the primary loading. Factor loadings for all ESTR items are listed in Appendix C. Only items correlating .60 and above with factors are listed in Table Eight.

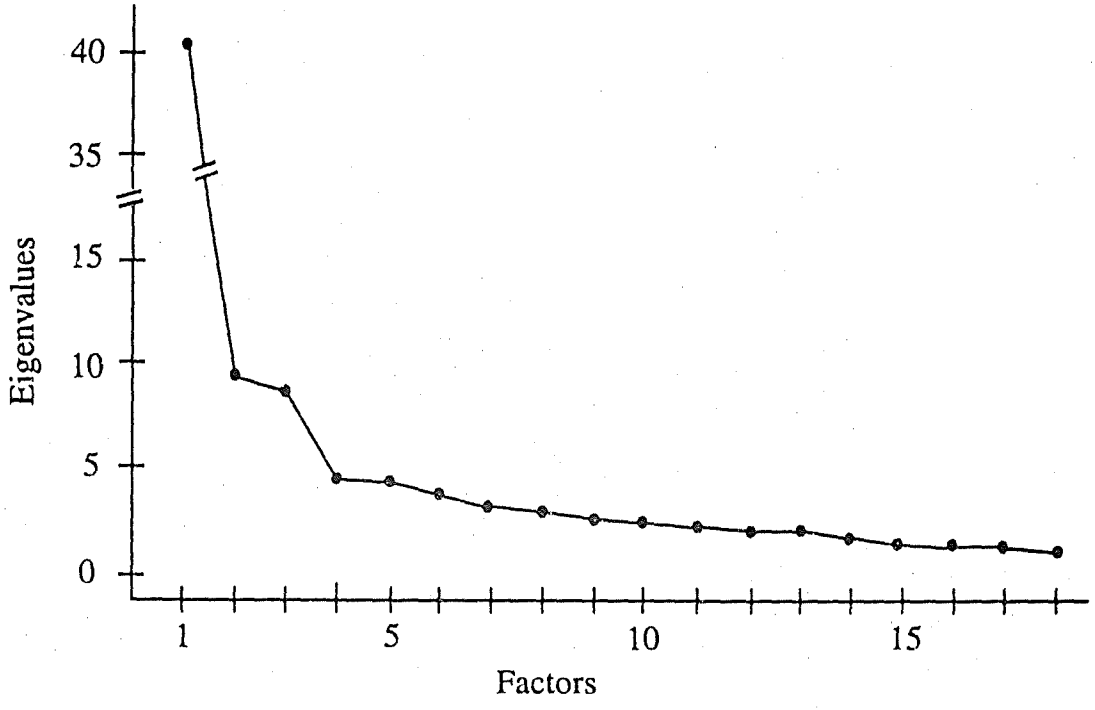

Figure 1. Scree plot of eigenvalues for the first eighteen factors in the correlation matrix.

Table 8

Factor Loadings of Selected Variables for a Three-Factor, Principal Components Varimax Solution

Variable with Brief Description	Factor Loadings		
Variable	Factor 1	Factor 2	Factor 3
CP 20 Pay for large purchases	.74	--	--
CP 9 Locate unfamiliar destination.	.73	--	--
HL 34 Advanced telephone skills	.71	--	--
HL 36 Managing checking account	.72	--	--
HL 17 Managing own medicine	.72	.40	--
HL 28 Respond to household em.	.70	--	--
HL 30 Treat minor illnesses	.70	.45	--
HL 31 Developing shopping list	.69	--	--
HL 29 Can seek medical assist.	.69	.42	--
HL 40 Pays bills on time	.69	--	--
CP 23 Criteria for housing choice	.69	--	--
JJT 25 Acc. res. for job search	.68	--	--
HL 24 Light household maint.	.68	.44	--
CP 22 Plan for addressing housing	.67	--	--
JJT 28 Skills for job application	.67	--	--
JJT 27 Skills for job interview	.66	--	--
HL 15 Performs basic first aid	.66	--	--
PST 4 Ident. post-sec. tr. options	.66	--	--
HL 35 Understands relocation proc.	.65	--	--
CP 19 Und. cost saving tech.	.65	--	--
CP 21 Understands insurance	.65	--	--
CP 4 Makes and keeps appts.	.65	--	--
HL 37 Plan simple budget	.64	--	--
HL 39 Understands savings acc.	.64	--	--
HL 43 Understands measurement	.64	--	--
HL 18 Judgment in food storage	.63	.44	--
CP 18 Comparative shopping skills	.63	--	--
HL 22 Understands nutrition	.62	--	--
HL 32 Understanding sexuality	.61	--	--
HL 45 Understands parenting	.61	--	--
CP 7 Get to social serv. agencies	.61	--	--
CP 10 Use community resources	.61	.41	--
CP 1 Cross street with traffic lights	--	.77	--
HL 4 Dress and undress	--	.74	--
CP 16 Paying for small purchase	.44	.71	--
HL 33 Make, resp. to phone calls	--	.70	--

(Table 8 continued)

Variable	Factor 1	Factor 2	Factor 3
CP 6 Find areas in sch. & neighb.	--	.67	--
HL 3 Toileting needs	--	.66	--
HL 13 Maintain room temperature	.45	.65	--
CP 12 Use pay telephone	.49	.63	--
HL 14 Dem. safety precautions	.51	.62	--
CP 5 Acc. things in constant loc.	--	.62	--
HL 12 Communicate personal info.	--	.61	--
HL 7 Prepare simple foods	--	.60	--
HL 9 Wears appropriate clothing	--	.60	--
RL 10 Cooperative skills,	--	--	.79
JJT 20 Maintains work	--	--	.76
RL 5 App. social beh. during rec.	--	--	.72
HL 27 Cares for own/others prop.	--	--	.69
RL 4 Acts app. in public places	--	--	.67
HL 44 Good citizenship	--	--	.67
JJT 17 Responds to auth. figures	--	--	.67
RL 6 Modify behavior	--	--	.64
JJT 18 Respond to verbal correction	--	--	.64
JJT 21 Organization in work beh.	--	--	.63
JJT 13 Follows directions	--	--	.62
JJT 9 Makes effort to do best	--	--	.60

Thirty-two items loaded on factor one at a correlation of .60 and above. Six of these items also loaded on factor two. The items from the Jobs and Job Training subscale which loaded on factor one included skills related to completing a job application, accessing resources for a job search, and job interview skills. None of the Recreation and Leisure items loaded on factor one. Items from Home Living which loaded on factor one included advanced telephone skills, managing a checking account, managing one's own medicine, responding to household emergencies, developing a shopping list based on needs, seeking medical assistance, paying bills on time, treating minor illnesses, household maintenance, performing basic first aid, planning a simple budget, proper judgment in food storage, understanding the process of

relocating, planning a simple budget, understanding a savings account, understanding of measurement, understanding of concepts related to sexual awareness, and understanding of basic parenting skills. Items from the Community subscale loading on factor one included paying for large purchases, locating unfamiliar destinations, understanding cost saving techniques, understanding criteria for choosing housing options, having a plan for addressing future housing, making and keeping appointments, understanding of basic insurance and where to purchase coverage, comparative shopping skills, identifying locations of and getting to social service agencies, and locating and getting to community resources. Only one item from the Post-Secondary Training and Learning subscale loaded on factor one. This item addressed identifying a variety of post-secondary training options.

No Jobs and Job Training or Recreation and Leisure subscale items appear among the 14 loadings on factor two. Factor two items from Home Living included dressing and undressing, making and responding to phone calls, toileting needs, maintaining appropriate room temperature, demonstrating safety precautions, communicating personal information, preparing simple foods, and wearing appropriate clothing. The items from the Community Participation subscale which loaded on this factor included crossing streets with traffic lights, paying for small purchases, finding areas in school and neighborhood, using a pay telephone, and accessing services and items which have a constant location. No items from the Post-Secondary Training and Learning subscale loaded on factor two.

There were ten items which loaded on both factors one and two. The items with the highest correlations on factor one but, with correlations above .40 on factor two were treating minor illnesses, managing own medicine, light household maintenance, seeking medical assistance, and proper judgment in food storage. The

items which had their highest loading on factor two but which also loaded on factor one with a correlation above .40 were paying for small purchases, using a pay telephone, demonstrating safety precautions in the home, and maintaining an appropriate room temperature.

Twelve items loaded on the third factor using a cut off of .60. This factor best meets the simple structure criterion, with no items showing multiple loadings. The items from the Jobs and Job Training subscale which loaded on factor three were ability to maintain appropriate work habits when supervisor is not present, responding appropriately to authority figures, accurately following given directions without complaint, responding appropriately to verbal correction from others, organization in work behaviors, following directions, and making effort to do best job. Four items from the Recreation and Leisure subscale loaded on factor three including cooperative skills in routine situations, exhibiting appropriate social behaviors in recreation/leisure activities, modifying behavior to fit specific situations, and acting appropriately while in public places. The Home Living items loading on factor three were good citizenship and caring for own/others property. None of the Post-Secondary Training and Learning items loaded on factor three.

Nine items did not load on a factor. Two of these items were from Jobs and Job Training, three from Recreation and Leisure, and four from Post-Secondary Training and Learning. Four of the items addressed were extremely low-level activities such as ability to initiate tasks, shows interest in environment, participates in age-appropriate activities, and takes part in simple interactive games. The other items focused on number of community work experiences, understanding the rights of persons with disabilities, application to post-secondary training, application for financial assistance, and addressing conservatorship/guardianship.

The factor analysis has yielded a reasonably-interpretable structure with three factors identified. These factors appear to be related to cognition (Factor One), simple home and community skills (Factor Two), and social/compliance behaviors (Factor Three). These will be further interpreted in Chapter Six. The complete factor structure is included as Appendix C of this dissertation.

Research Question Three: How valid is the content of the Enderle-Severson Rating Scale? Will users and potential users of the instrument rate items and scales as closely related to their programming needs?

The content validity of the ESTR scale was examined by having teachers rate the importance of each item in relation to two statements. The first statement was, "Item reflects an important skill to this student." To respond, the teacher was asked to reference one of the students they had just rated with an ESTR Scale. The second statement rated by the teachers, was "Item reflects an important aspect of adult adjustment in our society" (See Appendix B). Teacher participants used three-point Likert Scales to evaluate each question. The Likert-type ratings were 1=very important, 2=fairly important, and 3=not important. The short, simple scale was developed to foster participation as teachers were asked to rate 136 items, two times each. Teacher participants were also asked to rate the overall completeness of the ESTR Scale on a 10 point Likert scale with 1=not complete and 10=very complete. Table Nine presents the data describing teacher responses. Mean ratings and standard deviations are reported for each of the subscales by teacher/student type.

Table 9

Average Ratings of Scales Across Items by Teacher/Student Type (scale = 1 to 3; 1=most important)

Subscale and Level of Importance	Teacher and Student Type: LD M(sd) (n=12)	E/BD M(sd) (n=6)	Mild MR M(sd) (n=4)	Sev. MR M(sd) (n=2)	Overall M(sd) (n=24)
Jobs and Job Training					
Students[a]	1.46(0.45)	1.57(0.33)	1.53(0.36)	1.68(--)[c]	1.50(.371)
Adults[b]	1.23(0.25)	1.51(0.58)	1.17(0.20)	1.27(--)[c]	1.29(.353)
Recreation & Leisure					
Students	1.84(0.43)	1.63(0.34)	1.73(.156)	1.63(.092)	1.71(.340)
Adults	1.59(0.46)	1.75(0.42)	1.53(.350)	1.52(.043)	1.57(.392)
Home Living					
Student	1.59(0.40)	1.58(.42)	1.73(0.25)	2.09(0.06)	1.63(.394)
Adults	1.29(0.37)	1.57(0.41)	1.42(0.34)	1.57(0.50)	1.39(.381)
Community Participation					
Students	1.66(0.56)	1.49(0.49)	1.63(0.31)	2.10(0.09)	1.62(.495)
Adults	1.27(0.35)	1.41(0.43)	1.37(0.30)	1.50(0.28)	1.33(.345)
Post-Secondary Training & Learning Opportunities					
Student	1.66(0.39)	1.66(0.41)	1.96(0.47)	2.50(0.30)	1.78(.495)
Adults	1.38(0.44)	1.36(0.28)	1.23(0.17	1.28(0.10)	1.34(.332)
Comp. of Scale[d]	8.4 (1.90)	7.8 (1.64)	9.0 (.816)	7.0 (2.83)	8.3 (1.70)

[a] Important to your student.
[b] Important for adult adjustment in our society.
[c] Reflects too few subjects to generate a standard deviation.
[d] Relative completeness of ESTR in tapping transition skills (scale=1 [low] to 10 [high]).

The ratings ranged from 1.23 to 2.50; only two ratings were above two, the "fairly important" rating. All ratings were better (meaning "more important") for the second question "Item reflects an important skill for adult adjustment in our society"

than for the first question, "Item reflects an important skill for this student." The only subscale and disability group for which this was not true was the Recreation and Leisure subscale as evaluated by teachers of students with emotional/behavior disorders (E/BD). Both of the ratings above two were from teachers using a student with severe retardation as their reference. Only two teachers in this category responded.

The subscale receiving the highest overall ranking (most important) was Jobs and Job Training with a mean of 1.50 (sd=.371). The disability class that provided the highest rating was teachers of students with learning disabilities who ranked the items at a mean of 1.46 (sd=0.45). Ratings of teachers referencing students with emotional/behavior disorders (1.57, sd=0.33) and mild mental retardation (1.53, sd=0.36) rated the items of Jobs and Job Training similarly.

The subscale receiving the lowest rating across teacher/student categories was Post-Secondary Training and Learning Opportunities (1.78, sd=.449). The teachers providing the lowest rating for this scale were those working with students with mental retardation (mild=1.96, sd=0.47, n=4 and severe 2.50, sd=0.30, n=2). Rankings across Home Living and Community Participation were very similar (1.63, sd=.394 and 1.62, sd=.495, respectively). Ratings were somewhat lower for the Recreation and Leisure subscale (1.71, sd=.340).

Ratings for evaluating an item's importance for overall adult adjustment in our society showed even distributions across subscales except for Recreation and Leisure. The mean ranges were from 1.29 to 1.39 for four of the subscales while mean ratings for Recreation and Leisure, which received the lowest rating were 1.57. The most positive ratings were again for Jobs and Job Training (1.29, sd=.353) although, Community Participation (1.33, sd=.345) also received very favorable ratings.

The Post-Secondary Training and Learning subscale received the "lowest" ratings. This same subscale received a mean rating of 1.34 with a range of 1.29 to 1.57 when items' importance was tied to overall adult adjustment. The mean value for the overall completeness of the scale was 8.3 (sd=1.70; 10-point scale).

Average ratings across categories and items ranged from 1.28 to 1.78. These data along with a favorable rating of the overall completeness of the scale would indicate that the scale items provide a content-valid assessment of transition-related variables, at least as perceived by this sample of special education teachers.

Research Question Four. How internally consistent are the Enderle-Severson Transition Rating Scale and subscales?

A KR-20 procedure, based on the average correlation between all possible split halves for binary variables and is equivalent to coefficient alpha for these data, was used to measure the ESTR Scale's internal consistency or reliability (Salvia & Ysseldyke, 1991). The internal consistency data for each of the ESTR subscales and Total test are reported in Table Ten; the adjustments are via the Spearman-Brown method (r_{XX}[adjusted] = $2r_{XX}/1+r_{XX}$) (Ghiselli, Campbell, & Zedeck, 1981).

Coefficients were universally high, ranging from .83 to .97. Since KR-20 is based on a scale half the length of the actual instrument, the correlations were adjusted using the Spearman-Brown method (Ghiselli, et al., 1981). This resulted in correlations ranging from .94 to .99. The internal consistency measure for the total scale was found to be .96.

Table 10

Internal Consistency Reliability Estimates Based on the KR-20 Method Adjusted Via the Spearman-Brown Formula

Subscale	r_{xx}	r_{xx}(adj.)
Jobs and Job Training	.92	.96
Recreation & Leisure	.89	.94
Home Living	.97	.99
Community Participation	.94	.97
Post-Secondary Training & Learning	.83	.91
Total Test	.93	.96

Summary

Data regarding the ESTR's criterion-related validity, construct validity, content validity, and the reliability as measured by internal consistency have been reported in this chapter. Concurrent criterion-related validity data suggest that the ESTR Scale is a useful instrument with desirable characteristics. Findings obtained from the factor analysis indicate that the scale has a reasonably interpretable structure with three factors identified, though these differ considerably from the scale's current taxonomy. The favorable ratings obtained from teachers on individual items and overall completeness of the scale provide support for the content validity of the ESTR Scale. Finally, the uniformly high values of the reliability measure indicate that the ESTR subscales provide a consistent measure within subscales. Further review and interpretations of data presented in this chapter are provided in Chapter Six.

CHAPTER VI

SUMMARY, INTERPRETATIONS, AND RECOMMENDATIONS

In this study the technical adequacy of the Enderle-Severson Transition Rating Scale (Enderle & Severson, 1991) was examined. In addition, an attempt was made to increase the base of knowledge about measurement in transition. The following measures of validity were employed: construct validity, concurrent-criterion validity, and content validity. A measure of reliability was performed by examining the internal consistency of the scale. Previously, reliability measures had been conducted, with a test-retest reliability of .93 and an interrater reliability estimate of .90 reported (Enderle, 1991).

The populations sampled for this study were special education teachers from North Dakota and Minnesota, and students served by these teachers. Transition ratings were collected on students with learning disabilities, emotional/behavior disorders, and mental retardation; they were either age 14 and older or in at least the 9th grade. All student subjects were selected by teacher participants.

Packets were mailed to special education directors for dissemination to teachers. Each participating teacher rated two students with ESTR Scales. Half of these teachers then also rated the same two students with the Adaptive Behavior Evaluation Scale (ABES; McCarney, 1983), the criterion measure employed in the study. Remaining teachers used a revised format of the ESTR Scale to rate individual items on a three-point, Likert-type scale as to the item's importance. An overall rating of the scale's degree of completeness was also obtained from the latter sample.

Concurrent Criterion-Related Validity

Criterion-related validity is an estimate of the extent to which an evaluation measure correlates with another validated measure (Salvia & Ysseldyke, 1991). The scores on one variable are used to estimate the scores on the other. Criterion-related validity was measured for the ESTR Scale by comparing it to the Adaptive Behavior Evaluation Scale, (McCarney, 1988). Sixty students identified as having a learning disability, emotional/behavior disorder, mild mental retardation, or severe mental retardation, who were currently receiving services in special education programs in Minnesota or North Dakota, were used as subjects for evaluating concurrent criterion-related validity. Students were rated by their primary instructor who was considered to be most knowledgeable about their abilities.

Pearson-product-moment correlation coefficients were calculated between ESTR subscales and total score and ABES subscales and total score. Correlations ranged from .25 to .74 with all being significant except that between the ESTR Post-Secondary Training and Learning Subscale and ABES Self-Related subscale (Table 6, p. 66). Low, but significant, correlations were obtained between ESTR Community Participation and the ABES Task-Related subscale; and between the ESTR Post-Secondary Training and Learning Opportunities (PST) subscale and the ABES Task-Related subscale. The ESTR PST addresses career awareness, aspirations, and application to further post-secondary training and housing options. This scale's low correlations with the ABES Self-Related (.25) and Task-Related (.31) is not surprising considering that ABES Self-Related focuses on dressing, eating, and hygiene issues and the ABES Task-Related subscale focuses on work-study skills. It appears that planning and instruction in skills related to post-secondary training and learning will not necessarily enhance abilities specific to self care or work. The other

low but significant correlation was observed between the ESTR Community Participation subscale and the ABES Task-Related subscale; this indicates that skills related to functioning in the community tend not to be predictors of work-study skills. The general tendency for all scales and subscales to correlate, probably results from both scales tapping general ability, a problem of long standing in psychological scale building (Futterman & Arndt, 1983). This theme will be addressed frequently in the following pages.

The highest obtained correlation was between ESTR Jobs and Job Training (JJT) subscale and the ABES Total Score (.74). This may indicate that a student's score on JJT is predictive of their overall or global adaptive behavior. The Recreation and Leisure subscale was substantially related with the Total score of the ABES (.69). These two subscales are also highly correlated with the ABES Environmental/Interpersonal subscale (.71 and .70, respectively). These data indicate that successful performance on job related skills and, active involvement in recreation activities would indicate successful adaptation to school and community expectations and interactions with adults and peers. This observation echoes one made by Schumaker, Pederson, Hazel and Meyen (1983) who indicated that social skills are closely related to job success. Likewise, social and communication abilities have been identified as collateral skills to recreation and leisure instruction (Schleien, Green, & Heyne, 1992). The correlation between the Environmental/Interpersonal subscale of the ABES and the Jobs and Job Training and ESTR Recreation and Leisure subscales further substantiate the views expressed in the literature that social skills affect success in vocational and recreational environments.

The ESTR subscale which had the overall highest correlations with the total and subscale scores of the ABES was Jobs and Job Training (range .62 to .74).

Scores on this subscale then, would be predictive of overall adaptive behavior functioning. This finding provides support for employment as a priority outcome for transition. Madeline Will (1984) identified employment as the targeted outcome for transition planning because it was considered to be a measurable outcome. While other aspects of adult adjustment were not ignored in Will's model, they were addressed only in relationship to employment. Rusch and Menchetti (1988) concurred stating that, "to focus on other outcomes [rather than vocational], in our opinion, would dilute Will's transition initiative and probably . . . not substantially change the quality of life of persons with handicaps" (p. 364). They advocated that the focus of transition outcomes remain on employment. The high correlations between the job-related skills and general adaptive behavior functioning, indicating that one is predictive of the other, would provide support for the viewpoint expressed by Rusch and Menchetti (1988). Successful functioning in work-related tasks is predictive of personal independence and social responsibility, as defined by McCarney (1988). This also would mean that high adaptive behavior scores may be predictive of employability. However, it is also possible that overall adjustment predicts work adjustment.

The ESTR subscale with the overall lowest correlations with all ABES measures was the Post-Secondary Training and Learning Opportunities subscale (range .25 to .37). A possible explanation for this low correlation is that this subscale targets issues directly related to post-secondary planning (e.g., expressed aspirations for a career, identify financial resources to access post secondary training/learning, discussed appropriate post secondary housing options, made application to post secondary training/learning options) whereas the ABES was developed to assess learning and behavior problems in school. The skills on the ABES are directly related

to current functioning while the Post-Secondary Training and Learning subscale addresses planning for the future. The idea of planning and initiating activities to access post-secondary housing, schooling, and a career does not correlate, and thus does not predict success in personal independence and social responsibility as defined by McCarney (1988). In addition, the "tone" of items is different in the Post-Secondary Training and Learning subscale, with many of them relating to programming (e.g., the learner's team has discussed appropriate post-secondary housing options) rather than student skills or characteristics.

The ESTR subscales correlated moderately with the ABES Total Score. As previously mentioned, the subscale showing the lowest correlation with the ABES Total Score was Post-Secondary Training and Learning followed by Community Participation. This would indicate that skills related to participation in community environments are not necessarily strong predictors of adaptive behavior. McCarney developed the ABES in response to "a need expressed by educators for an instrument that would better evaluate the adaptive behavior of students who experience behavior and learning problems in the educational environment" (p. 4). This emphasis on the educational environment perhaps explains the lower correlations for the Community Participation subscale and the Total Score of the ABES. Other adaptive behavior instruments such as the Vineland Adaptive Behavior Scales (Sparrow, Balla, Cichetti, 1984) and the Scales of Independent Behavior (Bruininks, Woodcock, Weatherman, & Hill, 1984) contain many more community adjustment items than does the ABES. The third lowest correlation for the Total Score of the ABES was with the ESTR Home Living subscale. This correlation again, may be the result of the ABES measuring in-school skills and the ESTR Home Living subscale measuring out-of-school skills. These correlations would suggest that we need to be cautious about predicting out-of-

school success based exclusively on how learners behave in the educational environment. Rather than contravening evidence for validity, these data indirectly support the use of the ESTR with secondary students and young adults. Because of the ESTR's focus, near-perfect correlations with the ABES would not be considered desirable.

The highest correlation for the ABES Total Score was with Jobs and Job Training. As discussed earlier, this correlation suggests a strong relationship between adaptive functioning and job-related skills and ability to benefit from post-secondary training.

The correlation for the ESTR Total Score and the ABES Total Score was .62. This score indicates that the ESTR Scale behaves somewhat like an adaptive behavior measure. Since adaptive behavior, as defined by McCarney when developing the ABES, refers to personal independence and social responsibility, this correlation would provide evidence of support for the criterion-related validity of the ESTR Scale. A correlation of .62 also indicates that there are differences in what the ABES measures and what the ESTR Scale measures. Possible reasons for a correlation at this level have been previously discussed. The use of the ESTR instead of more well-established adaptive behavior instruments is justified by the ESTR Scale's direct link to measurement needs generated by the post-age-14 programming now required by law (PL 101-476, 1990). This feature is not available on any commercially-available adaptive behavior scale. Perhaps best practice would be for teachers to use adaptive behavior scales early in a student's career, then switch to a transition instrument, resting assured that a program generated by reliable adaptive behavior measures would lead to effective transition. Specialized adult-life skills, such as those found on

the ESTR, need to predominate programming for students who continue to have skill deficits in these areas after age 14.

Construct Validity

Construct validity refers to the ability of a test to measure the individual trait or characteristic of interest (Ghiselli, Campbell, & Zedeck , 1981). To study the construct validity of the ESTR Scale, a factor analysis was performed. By examining how the items of the ESTR subscales load on factors, judgments can be made about the instrument's structure. This is particularly salient in a case such as the ESTR where a specific multivariate taxonomic structure was proposed a priori. The initial principal components analysis identified the eigenvalues of the correlation matrix. The 18 greatest eigenvalues were then plotted on a graph and used to identify the number of factors which could reasonably be rotated. The first factor had the highest eigenvalue and therefore accounted for the largest percentage of variance in the matrix. From the first eigenvalue the numbers decreased. The early factors are generally the most important because they account for most of the variance (Thorndike, 1978). The Scree method was used to identify the proper number of principal factors to interpret, in this case, three. These factors were then rotated via the Varimax method to assure that each factor accounted for the greatest possible amount of independent variance and that the factors would be statistically independent, hopefully providing an interpretable simple structure (Thorndike, 1978). It is much more feasible to interpret a few factors rather than 136 individual items. One important purpose of factor analysis is data reduction (Gorsuch, 1983). Both confirmatory (theoretical) and data reduction purposes for factor analysis were employed here. Factor-item correlations are presented in Table Eight, pages 70-71 and more completely in Appendix C. Items with correlations above .60 are reported

for all factors. Of the 32 items loading on factor one, 18 were from Home Living, ten were from Community Participation, three were from Jobs and Job Training, and one was from Post-Secondary Training and Learning. It is clear that more than one ESTR subscale is represented by factor one. In fact, items come from all subscales, except Recreation and Leisure. What is evident in factor one is a strong cognitive component as represented by such items as paying for large purchases and understanding cost saving techniques (Community Participation); advanced telephone skills, managing a checking account, and planning a simple budget (Home Living); skills for a job interview and skills for job application (Jobs and Job Training); and identifying post-secondary training options (Post-Secondary Training and Learning). The construct identified as factor one can probably best be called, "Higher Order Life Skills" and most likely reflects general cognitive ability.

Fourteen items loaded on factor two with correlations of .60 and above. Eight of these items were from the Home Living subscale and six were from the Community Participation subscale. The Home Living items included dressing and undressing, making and responding to phone calls, maintaining an appropriate room temperature, demonstrating safety precautions, communicating personal information, preparing simple meals, wearing appropriate clothing, and meeting toileting needs. Items from Community Participation included crossing streets with traffic lights, paying for small purchases, finding areas in the school and neighborhood, accessing services and things that have a constant location, and using a pay telephone. These items appear to be general community and home living skills which do not require high levels of cognitive ability. Factor two has less cognitive involvement and could be identified as "Simple Community and Home Living Skills".

Several items loaded on both factors one and two. The items with their highest correlations on factor one but which also loaded on factor two with correlations of .40 and above included treating minor illnesses, managing own medicine, completing light household maintenance, exercising proper judgment in food storage, and seeking medical assistance. The items loading on factor two with the highest correlation but also loading on factor one with correlations at .40 or above included paying for small purchases, using a pay telephone, and demonstrating safety precautions.

It is evident that the items loading on factors one and two differ slightly from those items which are independent of all other factors in the amount of cognitive skills required. The best example of the cognitive influence of loadings are the items "paying for large purchases" and "paying for small purchases." Paying for large purchases loaded on factor one at .74. Paying for small purchases loaded on factor two at .70 but also loaded on factor one at .45. These two items, while very similar, differ primarily in their degree of cognitive involvement as reflected by their overall level of complexity.

Cognition has been found to be a factor in adaptive behavior assessment. For example, Guarnaccia (1976) completed a factor analysis on the Adaptive Behavior Scale (Nihira, Foster, Shellhaas, & Leland, 1969) and found that the first factor of this scale was Personal Independence, represented by five scale areas all of which related to cognitive and motivational elements. These scales included independent functioning, economic activity, number and time concepts, language development, and self direction. On the ESTR Scale, factor one accounted for 72.64% of variance explained by the three factors (40.35% of overall variability) while on the Adaptive Behavior Scale it accounted for 40 percent of the variance.

A possible reason for items loading on factors influenced by cognitive ability is the demographics of the population used in the normative sample. All participants evidenced a disability such as learning disabilities, emotional/behavior disorders, mild mental retardation, or severe mental retardation. The variance in cognitive abilities among the individuals in this sample may account for some of the differentiation of the first two factors, but this would be even more true if subjects without disabilities were employed (Guarnaccia, 1976).

The third factor, easily defined, represents social factors with an emphasis on compliance. The items with the highest correlations with this factor include having cooperative skills in routine situations, maintaining a productive work rate when the supervisor is not present, demonstrating appropriate social behavior in recreation activities, being a good citizen, and caring for others and owning property. This factor is independent of the other factors with no dual item loadings observed (Table Eight, pp. 70-71). Of the eleven highest correlations, four are from the Recreation and Leisure subscale and six from the Jobs and Job Training subscale. These correlations would indicate that social skill abilities and compliance skills are important to success in work and recreation arenas. Caring for one's own and other's property, while placed on the Home Living subscale could have also been placed in the Jobs and Job Training or Recreation and Leisure subscales. It is probably an important skill to participation in life domains. The other Home Living item which loaded on factor three was good citizenship, another which could have been placed in any domain.

In his analysis of the Adaptive Behavior Scale (Nihira, et al., 1969), Guarnaccia also identified social behavior as a factor. He labeled this factor "Social Responsibility" because it was associated with work habits, consideration for others, cooperativeness, and participation in group activities. Guarnaccia summed this factor

up as "other-directedness." This construct appears to be quite similar to the compliance component which is indicative of the third ESTR Scale factor.

The factor analysis was performed as a measure of the ESTR Scale's construct validity. Analysis of the factors should provide information regarding the theoretical traits or characteristics which the ESTR Scale measures. The ESTR Scale was developed in response to a legislative mandate for transitional planning as interpreted by the Minnesota Department of Education. For this reason the development of the scale focused on five areas which included: Jobs and Job Training, Recreation and Leisure, Home Living, Community Participation, and Post-Secondary Training and Learning Opportunities. The previous discussion describes the three factors apparently measured by the scale on the populations in question. From the factor analytic results it can be surmised that the ESTR Scale measures home living and community skills at two cognitive levels. It also measures job related and post-secondary skills that require higher-order cognitive ability. Several items, which did not load on a factor may be interpretable as a fourth factor focusing on planning or programming issues.

The first factor, representing items across subscales could be identified as cognition. This would indicate that the ESTR Scale behaves somewhat like a test of general ability. This finding would be supported by the correlations between IQ and the Home Living and Community Participation subscales and the ESTR Total Score (see Table Seven, p. 68). The first two factors of the ESTR Scale are somewhat similar to the Daily Living Skills curriculum area of the Life Centered Career Education Curriculum (Brolin, 1991). The competencies addressed by Brolin are managing personal finances; selecting and managing a household; caring for personal needs; raising children and meeting marriage responsibilities; buying, preparing and

consuming food; buying and caring for clothing; exhibiting responsible citizenship; utilizing recreational facilities; and getting around the community. Many of the subcompetencies within these competencies are nearly identical to items from the ESTR which loaded on factors one and two.

The third factor is a measure of social/compliance skills. Almost all of the items comprising this factor are from the Jobs and Jobs Training and Recreation Leisure subscales. This would indicate that these are the two primary components of successful employment. Research by Heal et al., (1990) provides support for the importance of social and cognitive abilities to post-school success. They argued that work quality, attitude, social skills, and the absence of asocial behaviors contributed to successful employment and, intelligence, living skills, and maladaptive behavior were found to be predictive of residential restrictiveness. It is often observed, for example, that most job terminations, for persons with disabilities are due to social-behavioral problems (Hanley-Maxwell, Rusch, Chadsey-Rusch, & Renzaglia, 1986).

Maladaptive behavior or problem behavior is not addressed by the ESTR Scale. Because this factor influences personal adaptation and community adjustment (Bruininks et al., 1984; Hanley-Maxwell et al., 1986), creation of such a subscale in future versions should be considered.

The ESTR Scale measures social skills as primary components of recreation and leisure domains. Brolin (1978) identified occupational and personal/social as separate competencies in his career education model. The ESTR Scale reflects the personal/social domain but not occupational competence. While employment has been identified as a primary outcome of transition (Rusch & Menchetti, 1988; Will, 1984), this did not appear as a clear factor in the current investigation. The measurement of

the ESTR Scale relating to recreation is a social factor while the measurement relating to work involves both cognitive and social factors.

It appears that a social competence score (i.e., factor three) could profitably be reported from the ESTR Scale if the decision is made to retain the current structure for programmatic reasons. This would increase the instrument's flexibility in both describing student abilities and writing meaningful programming.

Several items did not load on any of the three factors. Some of these did not correlate because a ceiling effect reduced variability. Some of these items may comprise a factor which would appear if a larger sample were obtained. Items which appear to relate to one another include: has had a variety of community work experiences, application to a post-secondary training/learning option has been made, application has been made for financial assistance to access post-secondary training/learning options, and the issue of legal guardianship or conservatorship has been addressed. These items reflect a planning component rather than skill performance. Many of them come from the Post-Secondary Training and Learning subscale. If this factor appeared in future investigations, it could be identified as "Planning for Post-Secondary Training and Learning."

The factors measured by the ESTR Scale are "Higher Order Life Skills", "Simple Community and Home Living Skills", and "Social/Compliance." While these are not the five general areas around which the ESTR Scale was developed it is logical that these areas influence transition. In the legal definition of mental retardation, proposed by the American Association on Mental Retardation (Grossman, 1983), deficits in intellectual functioning and adaptive behavior are identified as necessary components of identification. The concept of adaptive behavior was added to the definition of mental retardation in response to concern for identification using IQ as the

single criterion. Adding adaptive behavior to the definition suggests that these two constructs are separate entities. The idea that intelligence emphasizes thought processes and adaptive behavior emphasizes daily living skills is a distinction that has been made between them. Another distinction is that some adaptive behavior subscales, such as maladaptive behavior, do not correlate with IQ. Nihara (1976) however, found that three adaptive behavior factors, including Personal Self-Sufficiency, Community Self-Sufficiency, and Personal-Social Responsibility, had moderately high correlations with general intellectual ability. Futterman and Arndt (1983) found a considerable overlap between mental age and adaptive behavior suggesting that the two assessment methods demonstrate poor discriminative validity. These authors questioned whether intelligence and adaptive behavior truly are distinctive entities (56 percent of the variance in mental age was shared with adaptive behavior). By classifying program levels, these researchers found adaptive behavior assessment to be a better predictor of program placement than mental age and suggested that, instead of combining measures, adaptive behavior measurement replace mental age measurement. Similarily, Jenson (1980) stated that "high IQ predicts very good adjustment somewhat better than low IQ predicts very poor adjustment" (p. 357). Because adaptive behavior scales have been developed primarily for persons with mental retardation, they are better discriminators for persons with low IQ's than for those with higher IQ's. The ceiling is too low for those individuals with above average functioning (Jenson, 1980). Doll, author of the Vineland Social Maturity Scale (1965), pioneered assessment of adaptive behavior. His goal was to identify the relationship between mental deficiency and social competence. The data from the present research study provides supporting evidence for the relationship between intellectual functioning and social competence as

advocated by Doll. All subscales and the total score of the ESTR Scale correlated significantly with subjects' IQ scores.

Adaptive behavior has been defined as "the effectiveness or degree with which the individual meets the standards of personal independence and social responsibility expected of his age or cultural group" (Grossman, 1983, p. 157). Adjustment to adult life (Gajar, Goodman, & McAfee, 1993) or community adjustment (Halpern, 1985), have been identified as outcomes of transition and can easily be associated with this definition of adaptive behavior. If adaptive behavior correlates with intellectual measures we would expect that transition-related skills will also be influenced by cognitive ability. Thus, factor one as observed in the present study would be expected.

Cognition across domain areas, except recreation and leisure, appears to be measured by the ESTR Scale. Also measured are simple home and community living skills and social/compliance. The Post-Secondary Training and Learning components can also be considered a component of the scale's construct in that they did not load on any factor due to sample size.

Content Validity

Content validity refers to the adequacy of an assessment in terms of measuring the content it was designed to cover (Salvia & Ysseldyke, 1991). To examine the content validity of the ESTR Scale, teachers were asked to rate the importance of each item to a student with a specific type of disability and to its importance to overall adult adjustment in society. They were also asked to rate the overall completeness of the scale on a ten point scale.

The ratings for the various subscales ranged from 1.23 to 2.50 with only two ratings above two. Possible ratings were 1=very important, 2= fairly important, and

3=not important. These data indicate that teachers serving students across disability areas were generally satisfied with the importance of items and subscales. On average, ratings were favorable than "fairly important" with the exception of teachers rating a student with severe disabilities which was only two raters.

The Jobs and Job Training subscale received the most favorable ratings, especially from teachers serving students with learning disabilities. This subscale rating may be due to teachers viewing this area as a priority for transition programming. The degree to which the populations served by teachers color their perceptions of importance deserves further research attention.

The subscale which received the lowest rating by teachers, particularly teachers referencing a student with mental retardation, was Post-Secondary Training and Learning. This finding is disconcerting considering the types of post-secondary supports available and required by individuals with mental retardation (Wehman, 1988).

The overall ratings for "importance to overall adult adjustment in our society" were higher on average than those referenced to specific students. Recreation and Leisure received the lowest ratings in response to this question but again all ratings exceeded "fairly important."

When rating the "importance to overall adult adjustment in our society" (and discounting severe MR because of the small n) teachers of students with mild mental retardation rated Jobs and Job Training most favorably. Recreation and Leisure items received the most positive ratings by teachers working with students with learning disabilities (1.59) and mild mental retardation (1.53). Home Living (1.29) and Community Participation (1.27) items were rated most favorably by teachers of students with learning disabilities. Finally, teachers of students with mild mental

retardation rated Post-Secondary Training and Learning items (1.23) higher than did teachers representing other disability areas.

It is puzzling why teachers gave lower ratings when referencing specific students than when rating the item as important to overall adult adjustment. There are several possible reasons for this occurrence. One reason may be that teachers of students with mild disabilities do not wish to address life skills versus academic remediation or tutoring. Thus they do not view skills related to transition as important to their students. The "excellence in education movement," as described in Chapter One may be an impetus for supporting the emphasis on academics, possibly at the expense of age-appropriate, functional skills.

Another possible reason for the differences in teacher ratings between items may be a misunderstanding of the question. Qualitative information, collected from the surveys, suggests that some confusion may have occurred. When completing the survey the teachers had just rated a student with an ESTR Scale. They were subsequently asked to refer to this student when rating items on the modified content-validity scale. One teacher, when rating the item "the learner responds appropriately to authority figures," gave the item a rating of three (not important) and then added a statement, "he always responds appropriately." Another item, "the learner acts appropriately in public places" was also rated with a three and then qualified with "he has these skills." Another example was in the response to "practices preventive health care" where the teachers responded to the example presented in the item (manages body weight) with a note "he's a wrestler." This item was then rated with a one (very important). These qualifying statements suggest that this teacher was rating the items with only one particular student in mind rather than rating the skill's global importance to students with specific types of disabilities. It is otherwise

difficult to understand how teachers could rate items such as caring for one's toileting needs, choosing and wearing appropriate clothing, making local calls and responding to incoming calls, or responding to emergency situations as "not important."

The ratings for the overall completeness of the scale were very positive across disability areas ranging from 7.0 to 8.4. The lowest rating was from teachers of students with severe disabilities. It must be remembered however, that this represents only two teachers. The highest ratings were from teachers of students with mild mental retardation (9.0) and the lowest was from teachers of students with emotional/behavior disorders (7.8). It might be expected that ratings by LD and E/BD teachers would be similar because programming for both of these disability areas have traditionally focused on remedial academics. The ratings from LD teachers however, were more positive (8.4) than for E/BD teachers (7.8). Overall, an 8.3 average provides evidence for the content validity of the ESTR Scale.

Internal Consistency Reliability

The internal consistency of the ESTR Scale was examined by using the KR-20 procedure which is the average split-half correlations for all possible two-part divisions of the test (Salvia & Ysseldyke, 1991). As noted in Table Ten (p. 78) the internal-consistency estimates for all subscales and Total test were above .91 when adjusted via the Spearman-Brown method, the Total Test reliability coefficient was .96.

Reliability of the ESTR Scale had been previously studied (Enderle, 1991). Measurements of test-retest reliability were found to be .93 ($p=.0001$) and interrater reliability was .90 ($p=.005$). These data, along with the measures of internal consistency, indicate that the ESTR is a reliable instrument.

Criteria for Evaluating an Assessment Tool.

Chapter Three described the five criteria for evaluating an assessment tool as identified by McLoughlin and Lewis (1990). The first criteria stated that the tool must fit the purpose of assessment. To meet this criteria, information gained from the assessment must answer the research question. The ESTR Scale was developed to assess transition-related skills. The factor analysis completed in this study indicates that the three factors, measured by the ESTR Scale are cognition, simple home and community living skills, and social/compliance. Although these do not directly reflect the areas considered in scale development they logically appear to be areas which will influence successful adjustment in adult life.

The second factor, identified by McLoughlin and Lewis, concerned the appropriateness of the assessment to the student and the tester. Although this study did not examine these factors, they were considered during test development. A yes/no format was used because it was determined that if the student did not exhibit the skills consistently and independently, programming should address them. The format also simplified the rating procedure for parents and teachers. The scoring system recognized adaptations, making it possible for individuals to receive credit for performing the skill in a way different than the norm (see Appendix A).

The fourth criteria for test evaluation is the technical adequacy of the assessment device. To be technically adequate the assessment must demonstrate reliability and validity. Other than construct validity, two types of validity were examined in this study. Concurrent validity was examined by correlating the ESTR subscales and Total Score with an adaptive behavior scale as a criterion measure. Nearly all correlations were found to be significant indicating that the scale behaves like an adaptive behavior scale, but one better suited to its purpose (writing mandated

secondary programming). Content validity was also examined through teacher ratings of individual items and overall completeness of the scale. The overall rating supported the content validity of the scale. Reliability of the scale was substantiated by the measures of internal consistency calculated in this study.

The final criterion for evaluating an assessment instrument is the efficiency of the data-collection mechanism. Does it produce assessment information with minimal time and effort? The ESTR Scale can be completed by the teacher or someone who knows the student well. The 136 items are rated with a yes or no response. These factors make the assessment a usable tool for classroom teachers.

Interpretations

The assessment of skills related to transition planning is a key issue in development of programs leading to successful adult adjustment for school leavers with disabilities. Reviews of assessment procedures utilized in transition programs conducted by two research teams indicated inconsistency in the use and utility of specific instruments and application of assessment tools for validated purposes (Agran & Morgan, 1991; DeStefano, Linn, & Markward, 1987). These researchers found that some transition coordinators used general ability/intelligence tests for program evaluation and monitoring student progress. These are both unacceptable uses of these tests because scores from these assessments are resistant to change. The studies also confirmed that achievement tests were frequently used for setting training objectives.

One might surmise, from the identification of cognition as a factor of transition assessment in the current study, that the use of aptitude and achievement assessment is appropriate. Relying on these assessments for programming however, may lead to a remedial academic approach which will not contribute to students' adult

success. The ESTR scale is an appropriate instrument for identifying and evaluating skills over and above those typically found on intelligence tests, skills related to successful adult-life and recommended by teachers as important. For many students, including most of those with mental retardation, this will be appropriate because a community-focused curriculum has been identified as contributing significantly to postschool employment (Heal & Rusch, 1990).

In the present investigation, the Enderle-Severson Transition Rating Scale is shown to be a reliable assessment of transition-related skills; validity data were mixed, but mostly supported use of the instrument until federal and state regulations are changed. Data supporting the scale's content validity and concurrent criterion-related validity were described. This study identified mixed evidence for the ESTR Scale's construct validity. The factor analysis, performed to examine construct validity, revealed that the scale measures three principal factors. These identified factors however, do not directly correspond with the ESTR subscales as they are presently organized. While the internal consistency measure was completed to examine the scale's reliability it also has been proposed as an indicant of construct validity (Heal, & Chadsey-Rusch, 1985). Analysis of internal consistency revealed that items within scales are highly related to one another (Table Ten, page 78). This may be because the entire scale taps general cognitive ability, but many psychological measures have this problem.

State and federal regulations have defined specific areas to be addressed in transition planning. Presently, the ESTR Scale is arranged around these defined areas and so, even though the three principal factors differ from the subscales, the internal consistency measures provides limited support for the ESTR Scale's construct validity, though interpreting internal consistency this way is controversial (Salvia &

Ysseldyke, 1991). Until a consensus evolves that transition skills should be arranged more in line with the results of the factor analysis, maintenance of the present taxonomy of skills provides greater utility for teachers, with perhaps two exceptions: the scale reflecting factor three could be added and the lack of a problem behavior scale may be of concern. Over and above the correlation with general cognitive ability the scale also measures social/compliance skills which influence employment success.

Recommendations

1. The factor structure of the skills and characteristics leading to successful transition should be further examined, given the results of this investigation. It is quite possible that current regulated practices do not adequately reflect the correct organization of skills and abilities needed for adult transition.
2. Consider changing the subscales of the ESTR Scale to reflect the three factors identified through the factor analysis completed in this study. Alternative subscales might be Higher Order Living Skills, Simple Home and Community Skills, and Social/Compliance Behaviors.
3. Consider adding a social/compliance component to the next revision of the ESTR as this factor was exceptionally clean of extraneous variance. It appears that this factor may comprise a scale which provides useful information for practitioners on a dimension shown to be relevant to successful vocational placement and retention (Hanley-Maxwell et al., 1986).
4. Since general cognitive ability is so ubiquitous, a larger sample should be collected to factor analyze a matrix residualized for general cognitive ability. Because the cognitive component seems to be a strong influence in adaptive behavior and transition assessment, this would provide a way to study the underlying constructs independent of the cognitive factor. It is also possible that such a

procedure combined with a larger sample size may reveal that at least a fourth "postsecondary adjustment" factor.

5. Since problem behavior has been found to have such a negative impact on employment and community adjustment (Heal et al., 1990) the authors should consider adding this component to the scale.

APPENDIX A

ENDERLE-SEVERSON TRANSITION RATING SCALE
ESTR SCALE

Learner Information

Name_____ Parent/Guardian_____

School/Agency_____ Primary Disability_____

Grade_____ Birth Date____/____/____ Age____ Sex____

Evaluator Information

Name_____ Title_____

Relationship to Learner_____ Date of Evaluation_____

ESTR SCALE PROFILE:

No. of Items		1 Yes Total	1a Adaptation Total	Raw Score (1+1a)	%*	1b** Assistance Total
(31)	JOBS AND JOB TRAINING	_____	_____	_____	_____	_____
(23)	RECREATION AND LEISURE	_____	_____	_____	_____	_____
(45)	HOME LIVING	_____	_____	_____	_____	_____
(23)	COMMUNITY PARTICIPATION	_____	_____	_____	_____	_____
(14)	POST SECONDARY TRAINING/ LEARNING	_____	_____	_____	_____	_____
(136)	TOTAL PERFORMANCE SCORE	_____	_____	_____	_____	_____

*raw score divided by no. of items

**not added into raw score

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I. Jobs and Job Training

YES

Performs Independently and Consistently = 1

NO

Does not Perform = 0
Performs with Adaptation = 1a
Performs with Assistance = 1b

1.	The learner exhibits the fine motor skills necessary to perform simple tasks, (e.g., grasping, stacking, turning, unwrapping, transferring)	YES	NO ____
2.	The learner exhibits the gross motor skills necessary to perform simple tasks, (e.g., lifting, carrying, ambulation)	YES	NO ____
3.	The learner demonstrates an awareness of time as it relates to events over the course of a day	YES	NO ____
4.	The learner understands the concept of how much time is needed, (e.g., getting to an appointment, catching the bus, getting ready for school)	YES	NO ____
5.	The learner demonstrates the ability to initiate tasks	YES	NO ____
6.	The learner demonstrates the necessary interpersonal skills to be successful in a job	YES	NO ____
7.	The learner adapts to changes in schedules and routines	YES	NO ____
8.	The learner demonstrates appropriate hygiene and grooming	YES	NO ____
9.	The learner makes an effort to do his/her best	YES	NO ____
10.	The learner responds to relevant time-related events over the course of a month, (e.g., keeps appointments, follows work schedule, remembers special dates)	YES	NO ____
11.	The learner makes appropriate decisions regarding work-related tasks, (e.g., what to do next, correcting a mistake, when to ask for help)	YES	NO ____
12	The learner completes tasks within the alloted time	YES	NO ____
13.	The learner accurately follows given directions without complaint	YES	NO ____
14.	The learner demonstrates good attendance	YES	NO ____
15.	The learner is punctual	YES	NO ____
16.	The learner recognizes the need to eventually support himself/herself financially	YES	NO ____
17.	The learner responds appropriately to authority figures	YES	NO ____
18.	The learner responds appropriately to verbal correction from others	YES	NO ____
19.	The learner is able to maintain a productive work rate relevant to the situation	YES	NO ____
20.	The learner demonstrates the ability to maintain appropriate work habits when supervisor is not present	YES	NO ____
21.	The learner demonstrates organization in his/her work behaviors, (e.g., has necessary materials, works efficiently)	YES	NO ____

YES

Performs Independently and Consistently = 1

NO

Does not Perform = 0
Performs with Adaptation = 1a
Performs with Assistance = 1b

22. The learner has had a variety, (at least 3), of community-based work experiences..... YES NO ____

23. The learner has a realistic expectation of his/her vocational potential, (e.g., salary, interests, location, working conditions, abilities)..... YES NO ____

24. The learner demonstrates an understanding of factors which influence job retention, dismissal, and promotion..... YES NO ____

25. The learner is able to access various resources for assistance in job searching, (e.g., want ads, employment agencies, friends, relatives)..... YES NO ____

26. The learner demonstrates an understanding that different jobs require varying levels of training, (e.g., college, technical colleges, high school, other)..... YES NO ____

27. The learner demonstrates the skills necessary to perform successfully in a job interview..... YES NO ____

28. The learner demonstrates the skills necessary to accurately complete a job application..... YES NO ____

29. The learner demonstrates an understanding of the information on a paycheck, (e.g., gross pay, net pay, deductions)..... YES NO ____

30. The learner understands the purpose of a timecard and knows how to use it..... YES NO ____

31. The learner has earned money doing part time jobs, (e.g., mowing lawns, shovelling snow, babysitting)..... YES NO ____

Total of YES Responses ____

Total of 1a's ____

Total of 1b's ____

II. Recreation/Leisure

1. The learner shows interest in his/her environment, (e.g., objects, family, peers, activities)..... YES NO ____

2. The learner participates in age-appropriate individual activities, (e.g., drawing, hobbies, painting, music, books, magazines, television, radio), [must participate in at least 3 to score yes]..... YES NO ____

3. The learner takes part in simple interactive games, (e.g., catch, Frisbee, cards)..... YES NO ____

4. The learner acts appropriately while in public places..... YES NO ____

5. The learner exhibits appropriate social behaviors in recreation/leisure activities, (e.g., sharing, cooperating, taking turns, respecting rules)..... YES NO ____

6. The learner demonstrates the ability to modify behaviors to fit specific situations, (e.g., appropriate reactions to setting, people, redirection)..... YES NO ____

APPENDIX B

Revised Enderle-Severson Transition Rating Scale

Teacher Response Format

Teacher Information

Licensure Areas:_____

Years of Teaching Experience:_____ Age_____

Gender: Male Female

Highest Degree Earned BS MA Ph..D/Ed.D.

Have you had prior experience with the ESTR Scale?_____

If yes, how have you used the scale?_____

_____

How many times have you used the ESTR Scale?_____

Please read each of the following items and rate their importance one each of the three point Likert-type scales by addressing the statements located on the top of each column.

To address the statement in the first column, use one of the students you assessed with the Enderle-Severson Transition Rating Scale as your reference.

The student you are using as a reference in completing this rating._____

(the number printed in red at the top of the ESTR Scale)

Jobs and Job Training

1 = Very Important
2 = Fairly Important
3 = Not Important

	Item reflects an important skill to this student.	Item reflects an important aspect of adult adjustment in our society.
1. The learner exhibits the fine motor skills necessary to perform simple tasks, (e. g., grasping, stacking, turning, unwrapping, transferring).	1 2 3	1 2 3
2. The learner exhibits the gross motor skills necessary to perform simple tasks, (e. g., lifting, carrying, ambulation).	1 2 3	1 2 3
3. The learner demonstrates an awareness of time as it relates to events over the course of the day.	1 2 3	1 2 3
4. The learner understands the concept of how much time is needed, (e. g., getting to an appointment, catching the bus, getting ready for school).	1 2 3	1 2 3
5. The learner demonstrates the ability to initiate tasks.	1 2 3	1 2 3
6. The learner demonstrates the necessary interpersonal skills to be successful in a job.	1 2 3	1 2 3
7. The learner adapts to changes in schedules and routines.	1 2 3	1 2 3
8. The learner demonstrates appropriate hygiene and grooming.	1 2 3	1 2 3
9. The learner makes an effort to do his/her best.	1 2 3	1 2 3
10. The learner responds to relevant time-related events over the course of a month, (e. g., keeps appointments, follows work schedule, remembers special dates).	1 2 3	1 2 3
11. The learner makes appropriate decisions regarding work-related tasks, (e. g., what to do next, correcting a mistake, when to ask for help).	1 2 3	1 2 3
12. The learner completes tasks within the alloted time.	1 2 3	1 2 3
13. The learner accurately follows given directions without complaint.	1 2 3	1 2 3
14. The learner demonstrates good attendance.	1 2 3	1 2 3
15. The learner is punctual.	1 2 3	1 2 3

1 = Very Important 2 = Fairly Important 3 = Not Important	Item reflects an important skill to this student.	Item reflects an important aspect of adult adjustment in our society.
16. The learner recognizes the need to eventually support himself/herself financially.	1 2 3	1 2 3
17. The learner responds appropriately to authority figures.	1 2 3	1 2 3
18. The learner responds appropriately to verbal correction from others.	1 2 3	1 2 3
19. The learner is able to maintain a productive work rate relevant to the situation.	1 2 3	1 2 3
20. The learner demonstrates the ability to maintain appropriate work habits when supervisor is not present.	1 2 3	1 2 3
21. The learner demonstrates organization in his/her work behaviors, (e. g., has necessary materials, works efficently).	1 2 3	1 2 3
22. The learner has had a variety, (at least 3), community-based work experiences.	1 2 3	1 2 3
23. The learner has a realistic expectation of his/her vocational potential, (e. g., salary, interests, location, working conditions, abilities).	1 2 3	1 2 3
24. The learner demonstrates an understanding of factors which influence job retention, dismissal, and promotion.	1 2 3	1 2 3
25. The learner is able to access various resources for assistance in job searching, (e. g., want ads, employment agencies, friends, relatives).	1 2 3	1 2 3
26. The learner demonstrates an understanding that different jobs require varying levels of training, (e. g., college, technical colleges, high school, other).	1 2 3	1 2 3
27. The learner demonstrates the skills necessary to perform successfully in a job interview.	1 2 3	1 2 3
28. The learner demonstrates the skills necessary to accurately complete a job application.	1 2 3	1 2 3
29. The learner demonstrates an understanding of the information on a paycheck, (e. g., gross pay, net pay deductions, F. I. C. A.).	1 2 3	1 2 3

1 = Very Important 2 = Fairly Important 3 = Not Important	Item reflects an important skill to this student.	Item reflects an important aspect of adult adjustment in our society.
30. The learner understands the purpose of a timecard and how to use it.	1 2 3	1 2 3
31. The learner has earned money doing part-time work, (e. g., mowing lawns, shovelling snow, babysitting).	1 2 3	1 2 3
Recreation/Leisure		
1. The learner shows interest in his/her environment, (e. g., objects, family, peers, activities).	1 2 3	1 2 3
2. The learner participates in age-appropriate individual activities, (e. g., drawing, hobbies, painting, music, books, magazines, television, radio).	1 2 3	1 2 3
3. The learner takes part in simple interactive games, (e. g., catch, Frisbee, cards).	1 2 3	1 2 3
4. The learner acts appropriately in public places.	1 2 3	1 2 3
5. The learner exhibits appropriate social behaviors in recreation/leisure activities,(e. g., sharing, cooperating, taking turns, respecting rules).	1 2 3	1 2 3
6. The learner demonstrates the ability to modify behaviors to fit specific situations, (e. g., appropriate reactions to setting, people, redirection).	1 2 3	1 2 3
7. The learner initiates interactions with peers.	1 2 3	1 2 3
8. The learner initiates interactions with adults.	1 2 3	1 2 3
9. The learner converses with others appropriately, (e. g., greetings, interesting topics, social cues).	1 2 3	1 2 3
10. The learner demonstrates cooperative skills in routine situations, (e. g., helping others, making reasonable demands, being courteous, getting along).	1 2 3	1 2 3
11. The learner makes friends.	1 2 3	1 2 3

1 = Very Important 2 = Fairly Important 3 = Not Important	Item reflects an important skill to this student.	Item reflects an important aspect of adult adjustment in our society.
12. The learner interacts with non-handicapped peers in non-academic school situations, (e. g., hallways, cafeteria, assemblies, buses, restrooms, extra-curricular activities).	1 2 3	1 2 3
13. The learner goes places with friends during non-school hours.	1 2 3	1 2 3
14. The learner chooses appropriate free time activities.	1 2 3	1 2 3
15. The learner chooses television and/or radio, and/or music for entertainment purposes.	1 2 3	1 2 3
16. The learner shows interest in current events.	1 2 3	1 2 3
17. The learner uses television and/or radio for information purposes, (e. g., news, weather, sports, area of interest).	1 2 3	1 2 3
18. The learner shows an interest in physical activities regularly, (e. g., walking, biking, exercising, jogging).	1 2 3	1 2 3
19. The learner takes part in a variety of integrated recreation/leisure activities during non-school hours, (e. g., movies, bowling, hunting, fishing, spectator sports, social dancing).	1 2 3	1 2 3
20. The learner takes part in extra-curricular activities,(e. g., yearbook, theatre, golf, debate, football, [includes team managers].	1 2 3	1 2 3
21. The learner initiates involvement in recreation/leisure activities.	1 2 3	1 2 3
22. The learner makes plans to attend activities outside the home.	1 2 3	1 2 3
23. The learner entertains friends and others in the learners' home.	1 2 3	1 2 3
	Home Living	
1. The learner maintains a clean body, (e. g., bathes, uses deodorant, brushes teeth, cares for menstrual needs, washes/dries hair).	1 2 3	1 2 3
2. The learner maintains a neat appearance, (e. g., hair styled, proper use of make-up, appropriate shaving, clean clothing).	1 2 3	1 2 3

1 = Very Important 2 = Fairly Important 3 = Not Important	Item reflects an important skill to this student.	Item reflects an important aspect of adult adjustment in our society.
3. The learner cares for personal toileting needs.	1 2 3	1 2 3
4. The learner dresses and undresses self.	1 2 3	1 2 3
5. The learner is able to prepare and serve simple foods which require cooking, (e. g., hamburgers, frozen pizza, eggs, hot dogs, T. V. dinners).	1 2 3	1 2 3
6. The learner maintains responsibility for his/her own bedroom, (e. g., makes bed, changes linen, puts belongings away).	1 2 3	1 2 3
7. The learner is able to prepare and serve foods which require little or no cooking, (e. g., sandwiches, toast, cereal, beverages, simple microwave items.	1 2 3	1 2 3
8. The learner dresses appropriately for specific situations, (e. g., weather, special events, casual, seasonal).	1 2 3	1 2 3
9. The learner chooses and wears clothing appropriate in size, color, pattern and style.	1 2 3	1 2 3
10. The learner recognizes when clothing repair is necessary and can either mend the item or arrange for assistance.	1 2 3	1 2 3
11. The learner demonstrates acceptable eating behaviors, (e. g., uses utensils appropriately, chews with mouth shut, takes appropriate sized bites, uses napkin, practices good manners).	1 2 3	1 2 3
12. The learner is able to communicate personal information, (e. g., name, address, sex, telephone number, age).	1 2 3	1 2 3
13. The learner is able to maintain a comfortable room temperature in the home, (e. g., open and close windows, adjust thermostat, open and close doors).	1 2 3	1 2 3
14. The learner demonstrates safety precautions in the home, (e. g., use of locks, proper use of appliances).	1 2 3	1 2 3
15. The learner is able to perform basic first aid skills,(e. g., treating cuts and burns, performing the Heimlich maneuver).	1 2 3	1 2 3

1 = Very Important 2 = Fairly Important 3 = Not Important	Item reflects an important skill to this student.			Item reflects an important aspect of adult adjustment in our society.		
16. The learner demonstrates an understanding of words found in the home environment, (e. g., on appliances, on medicines, on recipes).	1	2	3	1	2	3
17. The learner is able to take prescription and non-prescription medicines appropriately.	1	2	3	1	2	3
18. The learner demonstrates proper judgement in food storage.	1	2	3	1	2	3
19. The learner is able to perform household cleaning skills, (e. g., sweeping, vacuuming, trash removal, kitchen clean-up, bathroom cleaning, dusting).	1	2	3	1	2	3
20. The learner is able to sort, wash, dry, fold and put away laundry.	1	2	3	1	2	3
21. The learner recognizes when specific things need cleaning, (e. g., sinks, floor, clothing).	1	2	3	1	2	3
22. The learner demonstrates an understanding of nutrition and is able to plan balanced meals.	1	2	3	1	2	3
23. The learner is able to prepare and serve at least 3 simple meals which require little or no cooking.	1	2	3	1	2	3
24. The learner is able to perform light household maintaince, (e. g., simple repairs, change light bulbs, unclog drain).	1	2	3	1	2	3
25. The learner is able to prepare and serve at least 3 complex meals which require a variety of cooking procedures, (e. g., mixing, measuring, following a recipe, cutting).	1	2	3	1	2	3
26. The learner practices preventive health care, (e. g., manages body weight, gets sufficient sleep, does not abuse alcohol/ drugs, makes and keeps routine medical/ dental appointments).	1	2	3	1	2	3
27. The learner acts responsibly in caring for own and others' property.	1	2	3	1	2	3
28. The learner knows how to respond to household emergency situations, (e. g., plumbing problems, heating problems, fire, accidents, poisoning).	1	2	3	1	2	3

1 =Very Important 2 =Fairly Important 3 =Not Important	Item reflects an important skill to this student.			Item reflects an important aspect of adult adjustment in our society.		
29. The learner knows how and when to seek medical assistance.	1	2	3	1	2	3
30. The learner is able to treat minor illness, (e. g., headaches, nausea, fever, body aches).	1	2	3	1	2	3
31. The learner is able to develop a shopping list based on recognized household and personal needs.	1	2	3	1	2	3
32. The learner has an acceptable understanding of concepts related to sexual awareness.	1	2	3	1	2	3
33. The learner demonstrates the ability to make local calls and respond appropriately to incoming calls.	1	2	3	1	2	3
34. The learner demonstrates advanced telephone skills, (e. g., long distance, phone card, directory, directory assistance, taking messages).	1	2	3	1	2	3
35. The learner understands the process of relocating, (e. g., address change, telephone hook-up, cable T. V. hook -up, utility company contact).	1	2	3	1	2	3
36. The learner demonstrates the skills necessary to manage a checking account.	1	2	3	1	2	3
37. The learner demonstrates the skills necessary to plan a simple budget.	1	2	3	1	2	3
38. The learner manages his/her own money responsibly.	1	2	3	1	2	3
39. The learner demonstrates an understanding of savings accounts, (e. g., interest, deposits, withdrawal).	1	2	3	1	2	3
40. The learner demonstrates the skills necessary to pay bills on time.	1	2	3	1	2	3
41. The learner is able to determine temperature by reading a thermometer.	1	2	3	1	2	3
42. The learner has the skills necessary to perform written correspondence.	1	2	3	1	2	3
43. The learner has an understanding of measurement as it applies to everyday living, (e. g., measuring rooms, measuring materials, measuring liquids).	1	2	3	1	2	3

1 =Very Important 2 =Fairly Important 3 =Not Important	Item reflects an important skill to this student.	Item reflects an important aspect of adult adjustment in our society.
44. The learner demonstrates qualities of a good citizen, (e.g., obeys rules and laws, shows consideration for others, respects the environment).	1 2 3	1 2 3
45. The learner demonstrates an understanding of basic parenting skills.	1 2 3	1 2 3
Community Participation		
1. The learner is able to safely cross streets including those with traffic lights.	1 2 3	1 2 3
2. The learner is able to respond to emergency situations in the community, (e. g., missing the bus, contact with strangers, being lost).	1 2 3	1 2 3
3. The learner knows the dangers of accepting assistance or goods from strangers.	1 2 3	1 2 3
4. The learner makes appointments in the community and keeps them.	1 2 3	1 2 3
5. The learner is able to access services and items which have a constant location, (e. g., items in restroom, classroom and school, ordering counter, ticket booth, bus stop).	1 2 3	1 2 3
6. The learner is able to find specified areas within his/her own school and neighborhood.	1 2 3	1 2 3
7. The learner is able to identify the locations of and get to social services agencies, (e. g., employment agencies, vocational rehabilitation, welfare, county social services agency).	1 2 3	1 2 3
8. The learner is able to locate and get to other relevant community resources, (e. g., health care facilities, bank, library, laundromat, grocery store, restaurant, hair stylist).	1 2 3	1 2 3
9. The learner is able to locate unfamiliar destinations by asking for directions and/or using a map.	1 2 3	1 2 3
10. The learner is able to use relevant community resources, (e. g., health care facilities, bank, library, laundromat, postal services, church, restaurant, hair stylist).	1 2 3	1 2 3

1 = Very Important 2 = Fairly Important 3 = Not Important	Item reflects an important skill to this student.			Item reflects an important aspect of adult adjustment in our society.[10]		
11. The learner has a means of transportation for accessing the revelant community environments that will be useable after high school.	1	2	3	1	2	3
12. The learner is able to use a pay phone.	1	2	3	1	2	3
13. The learner demonstrates an understanding of revelant community signs,(e. g., Men. Women, Do Not Enter, Danger.	1	2	3	1	2	3
14. The learner is able to locate needed items in relevant grocery stores.	1	2	3	1	2	3
15. The learner is able to select and order his/her own food in restaurants.	1	2	3	1	2	3
16. The learner is able to recognize and understand cost and pay for small purchases in the community.	1	2	3	1	2	3
17. The learner demonstrates appropriate social behaviors in the community, (e. g., tipping, asking for assistance, standing in line, being quiet in relevant places).	1	2	3	1	2	3
18. The learner demonstrates comparative shopping skills to identify the best buy, (e. g., checking ads, going from store to store, calling around).	1	2	3	1	2	3
19. The learner demonstrates an understanding of cost savings techniques, (e. g., coupons, sales, discount stores, second hand stores).	1	2	3	1	2	3
20. The learner is able to to recognize and understand cost and pay for large purchases, (e. g., $100 or more), in the community, (e. g., cash, credit cards, loans).	1	2	3	1	2	3
21. The learner demonstrates an understandir g of basic insurance needs and where to purchase coverage.	1	2	3	1	2	3
22. The learner has a realistic plan for addressing post secondary housing needs, (e. g., has appliedfor residential services, if relevant, or demonstrates the ability to secure appropriate housing).	1	2	3	1	2	3
23. The learner demonstrates an understanding of the various criteria that influence housing choices,(e. g., cost, location, types of housing, renting v. buying, living alone v. with a roommate, related costs).	1	2	3	1	2	3

1 = Very Important 2 = Fairly Important 3 = Not Important	Item reflects an important skill to this student.			Item reflects an important aspect of adult adjustment in our society.		
Post Secondary Training/Learning						
1. The learner has undergone a vocational evaluation. (for learners going on to higher education, evaluation may mean entrance testing).	1	2	3	1	2	3
2. The learner has expressed aspirations for a career.	1	2	3	1	2	3
3. The learner has aspirations for a career that match his/her interests and skills.	1	2	3	1	2	3
4. The learner can identify a variety of post secondary training/learning options. (e. g., college, technical college, employment agencies, adult services, community education).	1	2	3	1	2	3
5. The learner can identify financial resources to access post secondary training/ learning.	1	2	3	1	2	3
6. The learner has a workable plan for accessing post secondary training/learning that match his/her career choice.	1	2	3	1	2	3
7. The learner can communicate his/ her needs for accommodations, (e. g., preferential seating, assistance with notetaking, modified assignments), (if accommodations are not needed, score yes).	1	2	3	1	2	3
8. The learner has an understanding of the rights of persons with disabilities defined by state and federal statutes, (e. g., Carl Perkins Act, Americans with Disabilities Act, Rehabilitation Act).	1	2	3	1	2	3
THE FOLLOWING ITEMS RELATE TO PLANNING RATHER THAN SKILL ASSESSMENT, BUT ARE ESSENTIAL COMPONENTS FOR EFFECTIVE TRANSITION.						
9. The learner's transition team has discussed appropriate post secondary housing options.	1	2	3	1	2	3
10. Relevant supports have been identified and included in the student's transition plan, (e. g., rehabilitation services, county social services, higher education support services).	1	2	3	1	2	3

1 = Very Important 2 = Fairly Important 3 = Not Important	Item reflects an important skill to this student.	Item reflects an important aspect of adult adjustment in our society.
11. Application to a post secondary training/learning option has been made. (if learner is directly entering employment, score yes).	1 2 3	1 2 3
12. Application has been made for financial assistance to access post secondary training/learning options, (if financial assistance is not required, score yes).	1 2 3	1 2 3
13. Application has been made for post secondary housing options, (if support services for housing are not needed, score yes).	1 2 3	1 2 3
14. The issue of legal guardianship or conservatorship has been addressed, (if not relevant, score yes).	1 2 3	1 2 3

On the following scale please rate the completeness of the ESTR Scale for assessing transition-related skills.

1 2 3 4 5 6 7 8 9 10

Not Complete — Very Complete

APPENDIX C

APPENDIX C
ROTATED FACTOR PATTERN

Final Communality Estimate 55.546

Subscale and Item	Factor 1	Factor 2	Factor 3
Jobs and Job Training			
1 Fine motor skills	.098	.429	.103
2 Gross motor skills	.098	.429	.103
3 Awareness of time	.086	.332	.314
4 Time concepts	.366	.430	.251
5 Inititates tasks	.185	.129	.226
6 Interpersonal skills	.535	.179	.500
7 Adapts to changes	.168	.153	.438
8 App. hygiene and groom.	.187	.358	.317
9 Makes effort to do best	.075	-.033	.604
10 Responds to events in fut.	.383	.254	.463
11 Decis. in work-rel. tasks	.347	082	.533
12 Completes work on time	.129	.024	.547
13 Foll. dir without compl.	.144	.030	.615
14 Demonstrates good att.	-.106	-.132	.436
15 Is puntual	-.038	.151	.432
16 Finan. self-support	.449	.390	.372
17 Resp. app. to auth. fig.	.028	-.006	.653
18 Responds to verbal corr.	.107	.210	.589
19 Maintain prod. work rate	.265	.092	.544
20 Maintain app. work hab.	.162	.066	.756
21 Dem. org. in work beh.	.319	.082	.625
22 Had comm.work exper.	.225	-.172	.201
23 Real. expect. of voc. pot.	.404	.099	.386
24 Und. factors aff. job ret.	.446	.225	.520
25 Access res. for job search	.675	.261	.216
26 Und. training level of jobs	.525	.362	.130
27 Dem. skills for job interv.	.660	.052	.228
28 Dem. skills for job applic.	.674	.057	.081
29 Und. info. on paycheck	.594	.061	.079
30 Can use timecard	.456	.091	.169
31 Had part-time job	.359	.280	.097
Recreation and Leisure			
1 Shows interest in envir.	-.072	.006	.147

Subscale and Item	Factor 1	Factor 2	Factor 3
2 Part. in age-app. ind .act.	.254	.201	.279
3 Part in simple inter. games	.109	.232	.290
4 Acts app. in public places	.099	.134	.665
5 Exhibits app. social beh.	.043	.008	.716
6 Mod. behavior to fit sit.	.281	.151	.636
7 Inititates inter. with peers	.090	.177	.046
8 Inititates inter. with adults	.369	.113	.103
9 Converses with others app.	.301	.112	.447
10 Cooperative skills	.045	.063	.788
11 Makes friends	.398	.161	.322
12 Int. in non-acad. situat.	.330	.295	.139
13 Part. friends non-sch hrs	.503	.395	.135
14 App. free time activities	226	.272	.452
15 Tel., radio, music for ent	.178	.373	.066
16 Shows int. in curr. events	.376	.210	.421
17 Uses telev/radio for info.	.434	.217	.379
18 Regular physical activity	.293	.149	.300
19 Integrated rec/leis act.	.386	.227	.158
20 Part in extra-curr. act.	.344	.086	.192
21 Init. inv. in rec/leis act.	.413	.302	.224
22 Plans to att. outside act.	.528	.405	.118
23 Entertains others in home	.499	.331	.056
Home Living			
1 Maintains clean body	.211	431	.319
2 Maintains a neat appear.	.255	.471	.329
3 Cares for per. toilet. needs	.075	.655	.290
4 Dresses and undresses self	.061	.744	.236
5 Make simp. cooked food	.570	.562	-.035
6 Maintains own bedroom	.434	.397	.130
7 Make simp. uncook. food	.224	.597	.072
8 Dresses app. for spec. sit.	.319	.543	.148
9 Chooses app.clothing	.342	.600	.010
10 Does clothing repair	.353	.532	.042
11 Acceptable eating beh.	.067	.437	.309
12 Comm. personal info.	.198	.607	.152
13 Maint. comf. room temp	.450	.660	.135
14 Dem. safety precautions	.511	.621	.174
15 Perform basic first aid	.656	.227	.147
16 Und. words in home env	.414	.511	.097
17 Takes medicines approp.	.718	.375	.091
18 Prop. judg. in food stor	.629	.436	.051
19 Perform househld. clng.	.343	.440	.231
20 Perform laundry skills	.545	.235	.093
21 Recog. cleaning needs	.548	.453	.113

Subscale and Item	Factor 1	Factor 2	Factor 3
22 Und nutr and plans meals	.618	.154	.304
23 Makes 3 simp. meals	.579	.468	.004
24 Perf. light househ. tasks	.684	.437	-.062
25 Make 3 complex meals	.647	.046	.187
26 Practices prev. health care	.426	.197	.344
27 Cares for property	.037	.186	.678
28 Resp. to household emerg	.698	.217	.140
29 Seeks medical assistance	.685	.415	.070
30 Treats minor illnesses	.700	.453	.066
31 Develop a shopping list	.689	.315	.177
32 Sexual awareness	.606	.323	.236
33 Basic telephone skills	.365	.653	.090
34 Advanced telephone skills	.708	.218	.039
35 Und. proc. of relocating	.654	.021	.081
36 Manage checking account	.717	.044	.119
37 Plan a simple budget	.637	.093	.077
38 Manages money	.495	.206	.427
39 Und. of savings acc.	.644	.178	.211
40 Skills nec. to pay bills	.686	.046	.363
41 Determine temperature	.541	.469	-.037
42 Perform written corr.	.522	.288	.066
43 Und. measurement	.638	.225	.025
44 Dem qual. of good citizen	.063	.141	.671
45 Basic parenting skills	.606	.038	.315
Community Participation			
1 Cross str.with traff. lights	.224	.770	.167
2 Resp. to emerg. in comm.	.574	.518	.142
3 Awareness of strangers	.365	.531	.247
4 Makes app. &keeps them	.646	.235	.235
5 Acc. services in const. loc.	.136	.621	.119
6 Find familiar locations	.108	.667	.125
7 Get to social service agenc.	.612	.103	.116
8 Access comm. resources	.511	.423	.013
9 Ask for dir.or use a map	.734	.175	.104
10 Use relevant comm. res.	.613	.405	.151
11 Has a means of transp.	.459	.185	.193
12 Uses a pay telephone	.489	.627	-.017
13 Und. of rel. comm. signs	.162	.473	.181
14 Loc. items in groc. store	.437	.526	-.036
15 Order food in restaurants	.303	.541	.033
16 Pay for small purchases	.444	.708	-.044
17 Dem. app. social beh.	.410	.150	.422
18 Comparative shop. skills	.628	.151	.239
19 Und. of cost saving tech.	.655	.226	.196

Subscale and Item	Factor 1	Factor 2	Factor 3
20 Pay for large purchases	.743	.107	.038
21 Und. of insurance needs	.648	.038	.182
22 Add. post-sch. housing	.669	-.121	.322
23 Criteria influencng hous.	.685	.054	.213
Post-Secondary Training and Learning Opportunities			
1 Has had vocational eval.	.280	-.198	.218
2 Expressed asp. for career	.389	.194	.215
3 Appropriate career asp.	.384	.030	.293
4 Ident. post-sec. tr. opt.	.663	.241	-.044
5 Identify financial res.	.519	-.071	.137
6 Work. plan for further trg.	.555	-.090	.225
7 Comm. need for accomod.	.546	.199	.134
8 Und. rights of per with dis	.306	.010	.045
9 Team has disc. housing	.135	-.528	-.042
10 Rel. supp. been ident.	.285	-.488	.064
11 App. to trg. opt. made	.336	-.387	.002
12 App. for financial assist.	.236	-.313	-.078
13 Application for housing	.313	-.408	-.131
14 Guard/consv. addressed	.153	-.231	.111

APPENDIX D

APPENDIX D
MEANS AND STANDARD DEVIATIONS
FOR INDIVIDUAL ITEMS, SUBSCALES, AND THE TOTAL SCALE

Subscale and Item	Mean	Standard Deviation
Jobs and Job Training	20.10	2.509
1 Fine motor skills	.98	.148
2 Gross motor skills	.98	.148
3 Awareness of time	.94	.239
4 Time concepts	.75	.437
5 Inititates tasks	.72	.448
6 Interpersonal skills	.59	.494
7 Adapts to changes	.78	.418
8 App. hygiene and grooming	.78	.414
9 Makes effort to do best	.60	.492
10 Responds to events in future	.65	.480
11 Decisions in work-related tasks	.56	.498
12 Completes work on time	.52	.502
13 Follows directions without comp.	.58	.495
14 Demonstrates good attendance	.89	.318
15 Is puntual	.75	.437
16 Rec. need for fin. self-support	.69	.463
17 Responds app. to auth. figures	.69	.466
18 Responds to verbal correction	.60	.491
19 Maintain productive work rate	.59	.494
20 Maintain app. work habits	.58	.495
21 Dem. org. in work behaviors	.57	.497
22 Has had comm-based work exp.	.34	.475
23 Realistic expect. of voc. potential	.40	.491
24 Under. factors affecting job ret.	.63	.486
25 Access resources for job search	.61	.489
26 Understand training level of jobs	.67	.471
27 Dem. skills for job interview	.43	.496
28 Dem. skills for job application	.41	.494
29 Und. info. on paycheck	.42	.496
30 Can use timecard	.66	.474
31 Earned money at part-time job	.78	.414
Recreation and Leisure	16.53	5.451
1 Interest in environment	.96	.190
2 Part. in age-app. individual act.	.85	.358

Subscale and Item	Mean	Standard Deviation
3 Takes part in simple inter. games	.90	.297
4 Acts app. in public places	.77	.418
5 Exhibits app. social behaviors	.75	.432
6 Modify behavior to fit situation	.63	.486
7 Inititates interactions with peers	.84	.372
8 Inititates interactions with adults	.86	.351
9 Converses with others app.	.66	.474
10 Cooperative skills	.71	.457
11 Makes friends	.69	.463
12 Int. with peers in non-acad. sit.	.78	.418
13 With friends in in non-sch. hours	.70	.459
14 Chooses app. free time activities	.80	.398
15 Chooses tel., radio, music for ent	.95	.224
16 Shows interest in current events	.53	.501
17 Uses tel./radio for information	.59	.493
18 Regular physical activity	.67	.472
19 Integrated rec/leis activities	.67	.471
20 Takes part in extra-curr. activities	.29	.457
21 Initiates involv. in rec/leis act.	.70	.460
22 Makes plans to attend outside act.	.69	.466
23 Entertains other in home	.56	.498
Home Living	30.35	12.343
1 Maintains clean body	.77	.423
2 Maintains a neat appearance	.78	.418
3 Cares for personal toileting needs	.96	.207
4 Dresses and undresses self	.96	.207
5 Prep. and serve sim. cooked food	.79	.410
6 Maintains own bedroom	.69	.463
7 Prep. and serve sim. uncook. food	.94	.239
8 Dresses app. for spec. situation	.86	.349
9 Chooses approp. clothing	.82	.385
10 Does clothing repair	.79	.409
11 Acceptable eating behaviors	.91	.286
12 Comm. personal information	.95	.224
13 Maintain comfortable room temp.	.84	.372
14 Demonstrates safety precautions	.81	.391
15 Perform basic first aid	.57	.497
16 Und. words in home envir.	.79	.409
17 Takes medicines appropriately	.66	.475
18 Proper judgment in food storage	.71	.456
19 Perform household cleaning	.86	.351
20 Perform laundry skills	.63	.486
21 Rec.when things need cleaning	.75	.432
22 Und. nutrition and plans meals	.49	.502

Subscale and Item	Mean	Standard Deviation
23 Prep. and serve 3 simp meals	.72	.448
24 Perform light household tasks	.68	.469
25 Prep. and serve 3 complex meals	.33	.472
26 Practices preventive health care	.51	.502
27 Cares for own and others' prop.	.79	.409
28 Respnds to household emerg.	.51	.502
29 Seeks medical assistance	.71	.459
30 Treats minor illnesses	.70	.460
31 Develop a shopping list	.64	.482
32 Sexual awareness	.64	.482
33 Basic telephone skills	.88	.326
34 Advanced telephone skills	.54	.500
35 Und. process of relocating	.34	.474
36 Manage checking account	.40	.492
37 Plan a simple budget	.34	.475
38 Manages money	.47	.501
39 Understand of savings account	.56	.498
40 Skills necessary to pay bills	.49	.502
41 Determine temp. by reading ther.	.74	.440
42 Perform written correspondence	.54	.500
43 Under. and use measurement	.56	.499
44 Dem. qualities of good citizen	.67	.472
45 Basic parenting skills	.39	.491
Community Participation	15.64	6.177
1 Cross street with traffic lights	.91	.286
2 Resp. to emerg. in community	.79	.409
3 Awareness of strangers	.82	.385
4 Makes appointments & keeps them	.56	.498
5 Access services in const. location	.95	.224
6 Find areas in school and neighb.	.96	.190
7 Get to social service agencies	.45	.500
8 Locate and get to comm. resources	.76	.429
9 Ask for directions or use a map	.54	.500
10 Use relevant comm. resources	.70	.459
11 Has a means of transportation	.56	.498
12 Uses a pay telephone	.81	.398
13 Und. of relevant comm. signs	.96	.207
14 Locate items in grocery store	.89	.316
15 Order food in restaurants	.92	.276
16 Pay for small purch. in comm.	.85	.358
17 Approp. social beh. in comm.	.69	.463
18 Dem. compar. shopping skills	.50	.502
19 Und. of cost saving tech.	.61	.489
20 Pay for large purchases	.42	.496

Subscale and Item	Mean	Standard Deviation
21 Und. of insurance needs	.31	.463
22 Plan for add. post-sch. housing	.48	.475
23 Und. criteia influencng housing	.38	.488
Post-Secondary Training and Learning Opportunities	6.04	3.578
1 Has had vocational evaluation	.48	.502
2 Expressed aspirations for career	.63	.486
3 Appropriate career aspirations	.46	.500
4 Identify post-sec. training opt.	.59	.494
5 Identify financial resources	.20	.398
6 Workable plan for further training	.22	.415
7 Communicate need for accomod.	.53	.501
8 Und. of rights of persons with dis	.14	.348
9 Team has discussed housing	.47	.501
10 Relevant supports been ident.	.66	.477
11 Application to training opt. made	.33	.472
12 Application for financial assist.	.31	.464
13 Application for housing	.34	.475
14 Guardianship/consv. addressed	.79	.410
Total Test	89.04	29.960

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