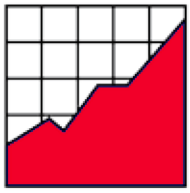

NATIONAL CENTER ON EDUCATIONAL OUTCOMES

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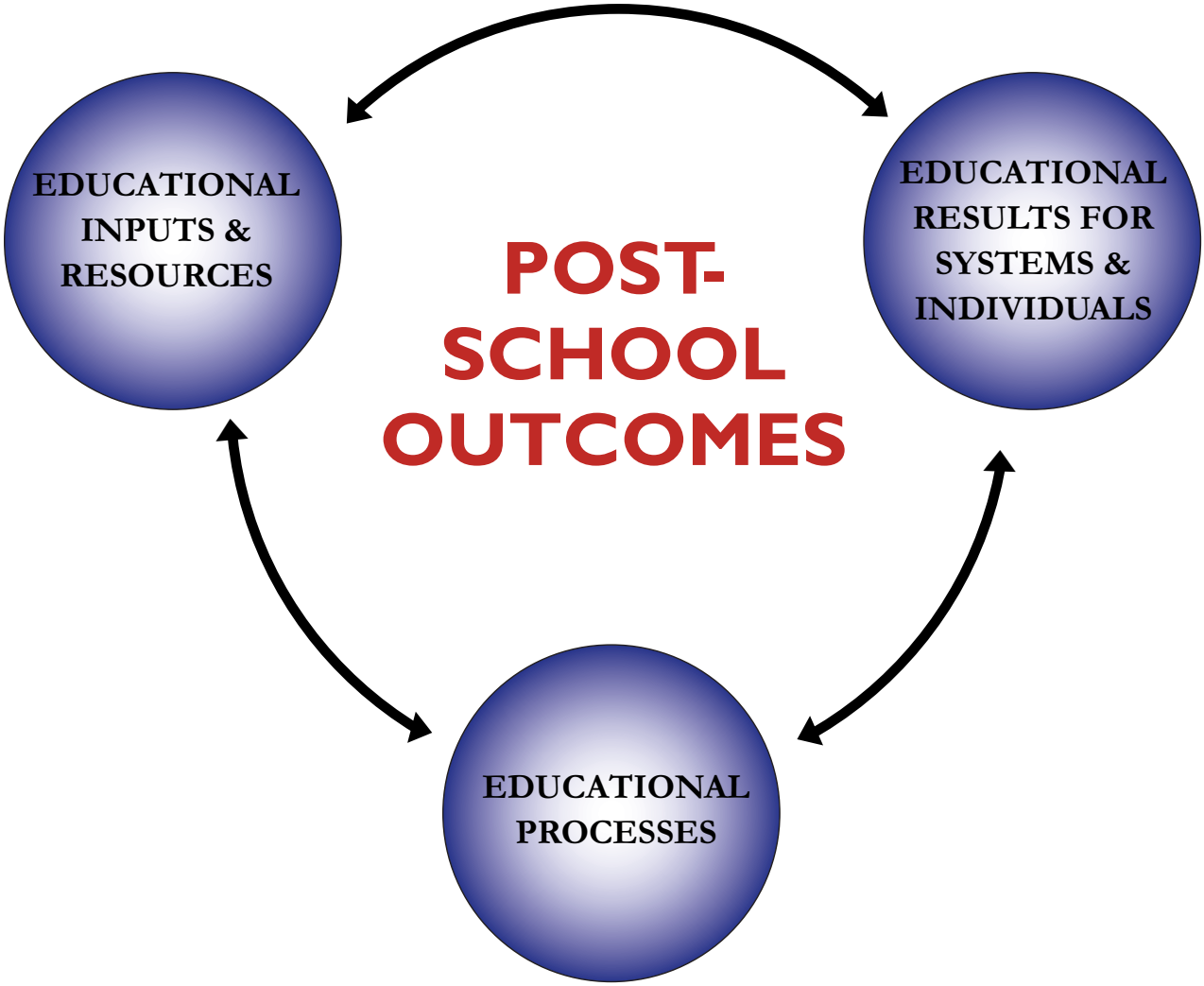
NCEO FRAMEWORK FOR EDUCATIONAL ACCOUNTABILITY



NATIONAL CENTER ON EDUCATIONAL OUTCOMES

In collaboration with:

Council of Chief State School Officers (CCSSO)

National Association of State Directors of Special Education (NASDSE)

NCEO FRAMEWORK FOR EDUCATIONAL ACCOUNTABILITY: POST-SCHOOL OUTCOMES

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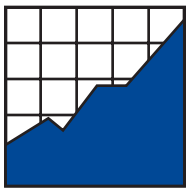
October, 1998



NATIONAL CENTER ON EDUCATIONAL OUTCOMES

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Abstract

Recent federal legislation, from the passage of the Goals 2000: Educate America Act in 1990 to the Amendments to the Individuals with Disabilities Education Act (IDEA) in 1997, has focused greater attention on the issues of accountability and the need for standards-based education reform. The National Center on Educational Outcomes (NCEO) developed a framework for educational accountability that specifies outcomes and indicators for six developmental levels (ages three and six, grades four, eight, and twelve, and post-school). The first five levels were contained in the *Framework for Educational Accountability* (Ysseldyke, Krentz, Elliott, Thurlow, Erickson, & Moore, 1998). In this document we focus on outcomes and indicators for the post-school individual. We also examine the relationship between the NCEO Framework and the SCANS Skills & Competencies. Additionally, we describe the domains, indicators, and sources of information that can be adopted or adapted for use in system-wide or individual accountability.

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NCEO FRAMEWORK FOR EDUCATIONAL ACCOUNTABILITY: POST-SCHOOL OUTCOMES

Accountability in Educational Reform

The passage of the Goals 2000: Educate America Act in 1990, and subsequent federal legislation such as the Improving America's Schools Act, has focused the attention of the nation on accountability and the need for standards-based education reform. The passage of the 1997 Amendments to the Individuals with Disabilities Education Act (IDEA) has placed even greater emphasis on the issue of accountability. States are required to have established goals for performance of students with disabilities, and assess progress toward achieving those goals. The performance of students with disabilities will be accounted for by indicators such as test scores, dropout rates, and graduation records. Every two years, states will report their progress to the public and, based on that progress, each state will be expected to revise its state improvement plan. Students with disabilities will be included in general state and district-wide assessment programs with appropriate accommodations where necessary. Reports on the number and performance of students with disabilities who take regular assessments began on July 1, 1998. In addition, states must also develop guidelines for the participation in an alternate assessment for those students with disabilities who cannot be included in the regular assessment with accommodations. The alternate assessments must be developed and implemented by July 1, 2000. Whether motivated by federal legislation or through their own initiative, states are investing significant time, energy, and resources developing and modifying assessment and accountability systems.

If accountability systems are to be meaningful, assessments must align with standards and curricula. Both of these, in turn, must be based on consensus about *what* is important for students to know, and *when* and *how* to identify the extent to which they have mastered the necessary skills and knowledge. States and districts will want to build on what is currently available, and modify and adapt existing assessments to provide the needed information.

Development of the NCEO Framework for Educational Accountability

In the early 1990s, NCEO personnel worked with hundreds of stakeholders to develop a conceptual model of educational results and indicators to guide the accountability process. NCEO used a multi-attribute consensus-building (MACB) process to help generate and reach agreement on the outcomes and indicators included in the model at six developmental levels (ages three and six, grades four, eight and twelve and post-school). (See *Outcomes and Indicators*, Ysseldyke & Thurlow, Number 1, NCEO Report, October 1993*; Outcomes and Indicators*, Vanderwood, Ysseldyke & Thurlow Number 2, NCEO Report, November 1993).

Different groups of stakeholders, meeting over a two-year period, were used to identify

results and indicators for each developmental level. Because this information was developed over time, it was contained in a series of 12 different documents, two per developmental level (one giving the outcomes and indicators, a second giving the sources of data). We have always assumed that a conceptual framework of educational accountability should be dynamic, subject to change and responsive to review, criticism, and changes in assessment practices over time. And, we have solicited external review and critique of the model from individuals and professional groups. The revised and consolidated framework included levels ranging from Age 3 through Grade 12, but did not include the post-school age group.

The comprehensive framework is designed to be used for the development or revision of district and state assessment and accountability systems. This framework can also be used to design alternate assessment systems and guide the IEP planning process for students with disabilities, ensuring that individual goals are comprehensive and aligned with state and/or district standards.

We examined the domains of results and indicators at each age level and looked for ways to simplify the format. Before making these simplifications to the framework, we sought the input of several people who had worked on the development of the model, or were currently adapting it for their own use. We were ever mindful of the process of developing the initial framework, but at the same time, sensitive to the fact that if it is not in a usable format, it will not be used. We attempted to eliminate redundancy and overlap among the age level indicators and provide a consistent format. By changing the way we identify the indicators at each level, we have accommodated suggestions that the framework be modified to use as a basis for an alternate assessment, to guide the development of IEPs, or to structure accountability for the performance of individuals (see Kratochwill & Elliott, 1997).

We also modified the framework so that it can be used on both an individual level and in large scale systems. For example, under the domain Physical Health, one of the results is "Individuals Make Healthy Lifestyle Choices." An indicator for this result is "Participate regularly in sports, recreational, exercise and/or leisure activities." When used as part of an individual accountability system, evaluators would record whether or not an individual participated in such activities. When used as a system indicator, evaluators would count the number or percentage of individuals who participated in the various types of activities.

States and school districts increasingly look to measure the performance of students over time. In this paper we present desired results and indicators for the post-school individual. We have aligned these results and indicators with those for the earlier age ranges as much as possible. We included outcomes such as "Demonstrate Competence in Pre-academic Skills" because there is a small proportion of the population to whom this would apply.

SCANS Skills and Competencies and the NCEO Framework

One of the most important indicators of a successful adult life is employment. With this in mind, we wanted to show the fit between the results and indicators described in the NCEO framework with a well known effort to determine the skills young adults need to succeed in their careers. In 1991, the federal government commissioned a report by the Secretary's Commission on Achieving Necessary Skills (SCANS) to determine the skills young adults need to succeed in the world of work. The Commission was composed of 30 representatives of education, business, labor, and state government and was charged with "defining a common core of skills that constitute job readiness in the current economic environment." The primary objective of SCANS was to help teachers understand how curriculum and instruction must change to enable students to develop those high performance skills needed to succeed in the high performance workplace.

This report, entitled, *What Work Requires of Schools: A SCANS Report for America 2000* (1991), addressed the foundation areas of basic skills, thinking skills, and personal qualities that are needed in work and other cultural settings by all adults, including those with disabilities. It summarized the results of a national survey of employers' responses to questions about the most important skills and competencies that students should have when leaving high school in order to pursue successful careers. The SCANS report recognized that these critical competencies are taught and learned too infrequently and are rarely assessed by standard educational measures. The competencies identified in the SCANS report go far beyond the basic skills required to complete a technical task. The report found that high-performance workplaces also require other competencies: the ability to manage resources, to work amicably and productively with others, to acquire and use information, to master complex systems, and to work with a variety of technologies (See Appendix A).

Recent legislative initiatives, such as the School-To-Work Opportunities Act of 1994, have furthered the work of the SCANS report by promoting the need of young adults to "acquire the knowledge, skills, abilities and labor market information they need to make a smooth and effective transition from school to career-oriented work or to further education or training" (Federal Register, 1194:5266). The Act calls on states to plan and implement systems that enable all learners to make successful education to employment transitions. The intent of the Act is for every learner to (a) access a relevant education; (b) experience a combination of classroom, community and work-related experiences; and (c) receive an individualized education that is based on needs, interests, and abilities.

The School-to-Work Opportunities Act is administered by the National School-to-Work Office under the joint direction of the U.S. Departments of Labor and Education. In 2001, the legislation sunsets, with the expectation that school-to-work systems will be institutionalized at the state and local levels.

The SCANS Skills and Competencies present a framework with which educators can cross-reference their curriculum's skills and competencies to those demanded by the workplace. It can provide a foundation for developing, adapting, or revising curricula for successful programs. Comparing the SCANS skills and competencies with the NCEO Framework for Educational Accountability reveals many similarities:

SCANS Basic Skills:	**NCEO Framework:**
• Reading, Writing, Mathematics	• Individuals Demonstrate Competence in Academic Skills (AFL-4)
• Listening, Speaking	• Individuals Demonstrate Competence in Communication (AFL-1)

SCANS Thinking Skills:	**NCEO Framework:**
• Creative Thinking, Decision-Making, Problem Solving, Reasoning	• Individuals Demonstrate Competence in Problem-Solving Strategies and Critical Thinking Skills (AFL-2)

SCANS Personal Qualities:	**NCEO Framework:**
• Responsibility, Self-Management	• Individuals are Responsible for Self (RI-2)
• Sociability	• Individuals Cope Effectively with Personal Challenges, Frustrations, and Stressors (PSW-1) Individuals Get Along with Other People (PSW-3) Individuals Respect Cultural and Individual Differences (PSW-4)
• Self-Esteem Image	• Individuals Possess a Good Self (PSW-2)

Certain aspects of the SCANS Five Workplace Competencies are comparable to the NCEO framework:

SCANS Competency/ Interpersonal:	**NCEO Framework:**
• Participates as Member of a Team, People Negotiates, Works with Diversity	• Individuals Get Along with Other (PSW-3) Individuals Respect Cultural and Individual Differences (PSW-4)

SCANS Competency/ Technology:

- Selects Technology, Applies Technology to Task

NCEO Framework:

- Individuals Demonstrate Competence in Using Technology (AFL-6)

The SCANS document and the NCEO Framework of Accountability complement each other, and reinforce the importance of the domains contained in each model.

IDEA Amendments and the NCEO Framework

As previously mentioned, the 1997 Amendments to IDEA place a new focus on accountability for establishing and measuring student results. The definition of transition services, however, was not changed from that developed in PL 101-476:

> "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 employment (including supported employment), continuing and adult education, adult services, independent living or community participation. The coordinated set of activities must: (a) be based on the individual student's needs; (b) take into account student's preferences and interests; and (c) must include instruction, community experiences, the development of employment and other post-school adult living skills and functional vocational evaluation."
> (*Individuals with Disabilities Education Act, P.L. 101-476, 34, CFR, Section 300.18*)

As can be seen in this definition, IDEA refers to a variety of post-school activities that could be targeted when thinking about transition assessment and evaluation, placing focus on the outcomes of the process, rather than the process itself. The specific outcomes found in the NCEO model are directly relevant for transition planning. The model provides a framework for evaluating how well transition services meet students' needs. It can also provide a framework for thinking about the assessment of students for transition planning. The following table shows each component of the federal definition of transition in relationship to the NCEO Framework for Educational Accountability.

Table 1. NCEO Framework Compared to IDEA Transition Components

IDEA Transition Components	NCEO Framework
Postsecondary education, tional training, integrated employment, tinuing and adult education	Individuals Demonstrate Competence in voca- Communication (AFL-1) Individuals Demonstrate Competence in con- Problem-Solving Strategies and Critical Thinking Skills (AFL-2) Individuals Demonstrate Competence in Academic Skills (AFL-4) Individuals are employed (P-3)
Adult services	Families Demonstrate Access to Resources to Support Individuals (F-1)
Independent living	Individuals are Physically Fit (PH-3) Individuals are Aware of Basic Safety, Fitness, and Health Care Needs (PH-4) Individuals Make Healthy Lifestyle Choices (PH-5) Individuals Function Independently (RI-1) Individuals are Responsible for Self (RI-2)
Community participation	Individuals are Present in Community (P-1) Individuals Participate in Community (P-2) Individuals Have Access to Basic Health Care (PH-2) Individuals Get About in Environment (RI-3)
All transition areas	Academic and Functional Literacy (AFL) Accommodation (A) Citizenship (C) Personal and Social Well-Being (PSW) Satisfaction (S)

The Revised NCEO Framework for Educational Accountability

The revised Framework of Educational Accountability begins with a brief review of terminology.

Terminology

Accountability:	A systematic method to assure stakeholders — educators, policymakers, and the public — that schools are producing desired results. Accountability includes common elements such as goals, indicators of progress toward meeting those goals, measures, analysis of data, reporting procedures, and consequences or sanctions.
Assessment:	The process of collecting information (including test data), for the purpose of making decisions about individuals, groups, or systems.
Domains:	Clusters of inputs, processes, or outcomes.
Educational Processes:	Educational opportunities; includes student participation, family involvement, the availability of accommodations, state/school district practices, school building level practices, and classroom instructional practices.
Educational Results:	The outcomes of interactions between individuals and educational experiences, both individually and system-wide.
Indicators:	Symbolic representations of one or more inputs, processes, or results that can be used in making comparisons or evaluations. They can be numbers, percentages, or other representations such as test scores, levels of participation, or perceptions of student accomplishments. Indicators can be used for comparisons over time, for comparisons to an absolute standard, or for comparisons among and within groups.
Inputs and Resources:	Characteristics and resources that impact and support student learning, including student characteristics, fiscal and physical factors, personnel, family characteristics, community characteristics, and policies.
Sources of Information:	Tests, existing data banks, etc. that can be used to provide information on indicators.

Fundamental Assumptions

As we developed the conceptual framework of educational accountability we made some fundamental assumptions. These were as follows:

- A framework of inputs, processes, and results is needed for *all* students, and at the broadest level, should apply to all students regardless of the characteristics of individuals.

- The framework should primarily focus on intended results (e.g., high levels of student achievement), but be sensitive to unintended results (e.g., high levels of dropout) as well.

- The framework should include both direct (e.g., math skills) and indirect (e.g., getting a job) results.

- Indicators of results for students receiving special education services should be related, conceptually and statistically, to those identified for students without disabilities.

- Indicators should reflect the diversity of gender, culture, race, and other characteristics of students in today's school population.

- While indicators ideally should meet research standards, those that do not could still be used. (For example, we should not have to wait until we can reliably and validly assess a result before considering it important enough to assess.)

- A comprehensive system of indicators should provide information needed to make policy decisions at the national, state, and local levels.

- A comprehensive system of indicators should be flexible, dynamic, and responsive to review and criticism. It should also change to meet identified needs and future developments in the measurement of inputs, contexts, educational processes, and results.

Using the Framework for Educational Accountability

A complete model of educational accountability takes into account educational results, educational inputs and resources, and educational processes. All of these are reflected in

NCEO's framework for educational accountability, which is illustrated in Figure 1. The framework is presented in a circular format to express its dynamic nature and the interdependence of all its elements. It is intended that this NCEO framework be adopted or adapted by states and local districts as they design or modify assessment and accountability systems.

Information can be collected on inputs, processes, and results indicators, as well as on various domains. For each indicator, different kinds of data can be collected and reported. Indicators of inputs include elements such as adequacy of physical facilities and teacher/pupil ratio. Educational process indicators include instructional accommodations, opportunities to learn, and partnerships with the community.

Over the past several years numerous focus groups of stakeholders identified six domains of educational results, along with three domains that have been designated as educational processes. Within each of the results domains, stakeholders specified important educational results for which school personnel should be gathering data. The indicators are listed in a way that will enable district and state personnel to adapt them for use in either system or individual accountability. See Tables 1–9 for domains and indicators for post-school outcomes. Appendix B provides sources of data for the post-school domains and indicators.

For further information on NCEO's Framework, see *Framework for Educational Accountability* (Ysseldyke, Krentz, Elliott, Thurlow, Erickson, & Moore, 1998).

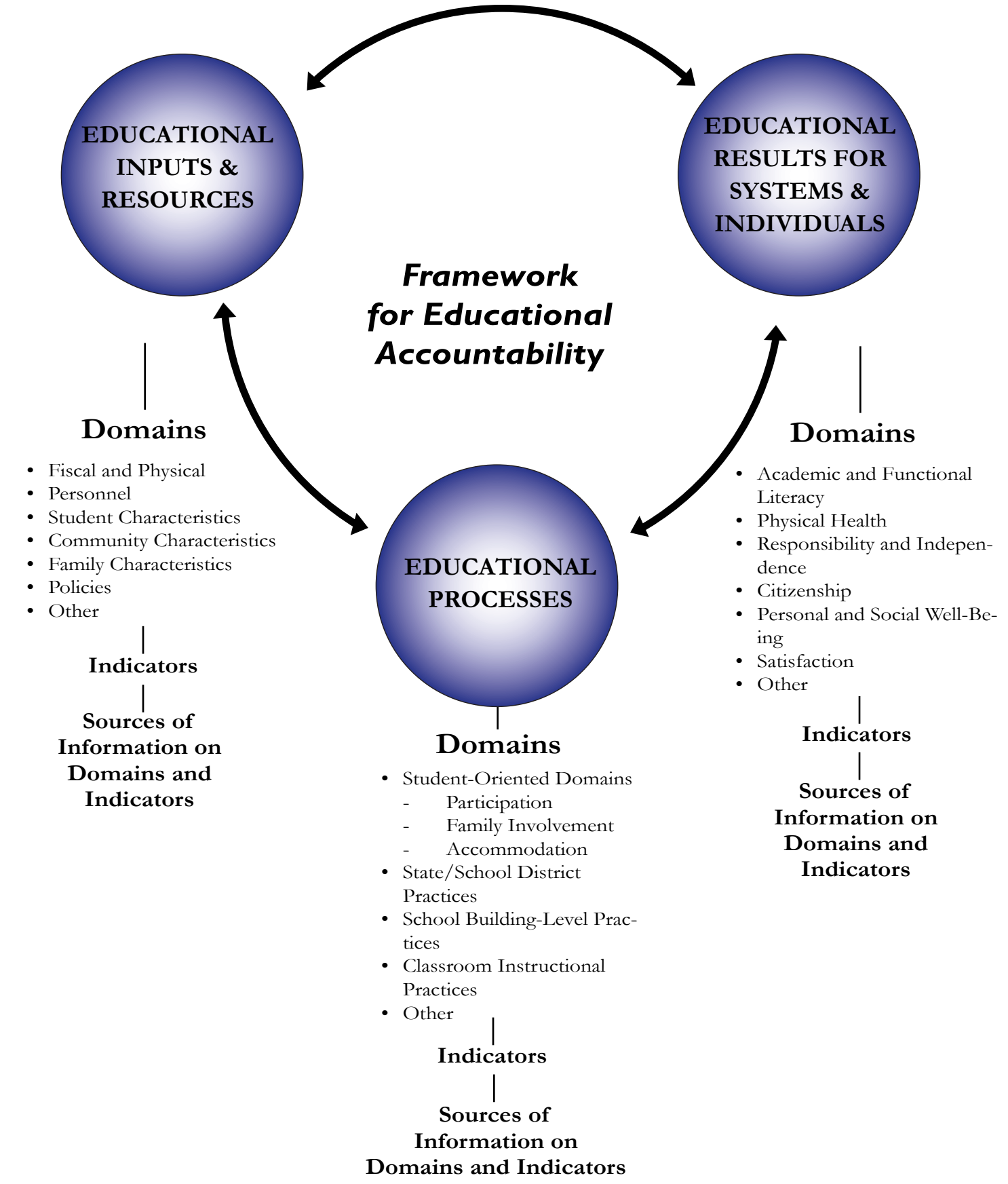

Figure 1. Framework for Educational Accountability with Domains, Indicators, and Sources of Information

Table 2. Academic and Functional Literacy

Academic and Functional Literacy (AFL)	Post-School
AFL-1. Individuals Demonstrate Competence in Communication	
Use and comprehend language that effectively accomplishes the purpose of the communication	■
Demonstrate competence in listening and comprehending language necessary to function in home, school, work, and community environments	■
AFL-2. Individuals Demonstrate Competence in Problem-Solving Strategies and Critical Thinking Skills	
Demonstrate problem-solving and critical thinking skills	■
AFL-3. Individuals Demonstrate Competence in Pre-Academic Skills	
Demonstrate early literary skills	❊
Demonstrate basic mathematical concepts	❊
Demonstrate skills in listening and attending	❊
Become motivated and actively involved in learning tasks	❊
AFL-4. Individuals Demonstrate Competence in Academic Skills (math, reading, and writing)	
Demonstrate competence in math to function in home, school, work, and community environments	■
Demonstrate competence in reading to function in home, school, work, and community environments	■
Demonstrate competence in writing to function in home, school, work, and community environments	■
Read the newspaper	■

Items marked with an asterisk (*) are included for that portion of the population for whom these outcomes and indicators would be appropriate.

Table 2. Academic and Functional Literacy (continued)

Academic and Functional Literacy (AFL)	Post-School
AFL-5. Individuals Demonstrate Competence in Other Academic and Non-Academic Areas	
Demonstrate competence in other academic areas (science, foreign language, geography, social studies, etc.) to function in home, school, work, and community environments	■
Participate in and enjoy the arts (fine and performing)	■
Demonstrate home management skills	■
Demonstrate money management skills	■
Demonstrate employability skills	■
Demonstrate ability to deal with community agencies	■
Able to identify, organize, and allocate non-monetary resources effectively (e.g., time, materials, space, human resources)	■
AFL-6. Individuals Demonstrate Competence in Using Technology	
Apply technology to enhance functioning in home, school, work, and community environments	■

Table 3. Physical Health

Physical Health (PH)	Post-School
PH-1. Individuals Demonstrate Age-Appropriate Development	
Growth and physical development in expected range	*
PH-2. Individuals Have Access to Basic Health Care	
Know when, where, and how to access health care	■
PH-3. Individuals are Physically Fit	
Meet individualized standards of physical fitness	■
PH-4. Individuals are Aware of Basic Safety, Fitness, and Health Care Needs	
Aware of basic safety precuations and procedures	■
Aware of basic fitness needs	■
Aware of basic health care needs	■
Recognize signs of drug and alcohol use, and dependence	■
Aware of human reproduction and prevention of sexually transmitted diseases	■
Aware of first aid and emergency health care procedures	■

Items marked with an asterisk (*) are included for that portion of the population for whom these outcomes and indicators would be appropriate.

Table 3. Physical Health (continued)

Physical Health (PH)	Post-School
PH-5. Individuals Make Healthy Lifestyle Choices	
Make good nutritional choices	■
Participate regularly in sports, recreational, exercise, or leisure activities	■
Indicate use of tobacco, alcohol, or drugs	■
Indicate having had unprotected sex	■

Table 4. Responsibility and Independence

Responsibility and Independence (RI)	Post-School
RI-1. Individuals Function Independently	
Make choices and exercise self-determination	■
Obtain basic life necessities (e.g., housing, food, work, social relationships)	■
Act responsibly in a family, group, or individual situation	■
RI-2. Individuals are Responsible for Self	
Feed self and participate appropriately in mealtime routines	❊
Dress self	❊
Attend to own hygiene needs	❊
Effectively advocate for self	■
Can prioritize and set goals and persevere toward them	■
Can manage personal care and safety	■
RI-3. Individuals Get About in Environment	
Can get to and from a variety of destinations	■
Complete transactions in the community (e.g., shopping, going to the library, banking, etc.)	■
Know how to access community services (e.g., rehabilitation, counseling, employment, health, etc.)	■
Obtain a driver's license	■

Items marked with an asterisk (*) are included for that portion of the population for whom these outcomes and indicators would be appropriate.

Table 5. Citizenship

Citizenship (C)	Post-School
C-1. Individuals Comply with Rules, Limits, and Routines	❊
C-2. Individuals Accept Responsibility for Tasks	❊
C-3. Individuals Comply with Community Rules	
Act as responsible citizen (e.g., recycle, help others, care about the environment, respect property)	■
Act as law-abiding citizen (indicators can include vandalism rate and magnitude, crime rate and magnitude, and reported involvement in the legal system)	■
C-4. Individuals Volunteer	
Volunteer time to help others and improve community resources through school, civic, community, or nonprofit activities	■
C-5. Individuals Vote	
Know civic structures and the roles and responsibilities of citizenship	■
Know the procedures necessary to register and vote	■
Vote in local, state, and national elections	■
C-6. Individuals Pay Taxes	
Are taxpaying citizens	■

Items marked with an asterisk (*) are included for that portion of the population for whom these outcomes and indicators would be appropriate.

Table 6. Personal and Social Well-Being

Personal and Social Well-Being (PSW)	Post-School
PSW-1. Individuals Cope Effectively with Personal Challenges, Frustrations, and Stressors	
Cope effectively with personal challenges, frustrations, and stressors	■
Behavior reflects an appropriate degree of self-control and responsibility	■
Behavior reflects an acceptance of the consequences for behavior (e.g., makes restitution)	■
PSW-2. Individuals Possess a Good Self Image	
Demonstrate or acknowledge a positive sense of self-worth	■
Perceive self as competent	■
PSW-3. Individuals Get Along with Other People	
Have friends and are part of a social network	■
Engage in productive group work in home, school, work, and community environments	■
Demonstrate skill in interacting and in making decisions in social situations, including during interpersonal conflict	■
Relate effectively to authority figures	■
Relate effectively to peers	■
Interact with parents or other family members on a regular basis	■

Table 6. Personal and Social Well-Being (continued)

Personal and Social Well-Being (PSW)	Post-School
PSW-4. Individuals Respect Cultural and Individual Differences	
Respect and show concern for others	■
Accept cultural, racial, ability, and family differences	■
Participate in making the community welcoming and inclusive of diversity	■

Table 7. Satisfaction

Satisfaction (S)	Post-School
S-1. Individuals Satisfied with Current Status	
Satisfied with current status and life experiences (e.g., general well being)	■
Satisfied with post-secondary school experiences	■
Satisfied with current employment experience	■
Satisfied with current living arrangements	■
Satisfied with social network	■
Satisified with community services available	■
Satisfied with level of involvment in leisure activities	■
S-2. Parents/Guardians are Satisfied with Current Status of Individual	
Satisfied with individual's current status (e.g., general well being)	■
S-3. Community is Satisfied with the Current Status of Individual	
Community (employers, general public, service agency personnel, and policymakers) satisfied with individual's current status	■

Table 8. Participation

Participation (P)	Post-School
P-1. Individuals are Present in Community	
Enrolled in post-secondary schooling (including college, technical training in a non-college setting, adult basic education, etc.)	■
Living in regular community settings with varying degrees of support	■
Attendance rate from educational programs/work opportunities	■
P-2. Individuals Participate in Community	
Participate in family activities	■
Participate in community-based activities, groups, and organizations	■
P-3. Individuals are Employed	
Participate in the workforce (differentiated by full-time, part-time, homemaker)	■
Employment is partially subsidized by non-employer funds	■

Table 9. Family Involvement

Family Involvement (FI)	Post-School
F-1. Families Demonstrate Access to Resources to Support Individual	
Families are knowledgeable about community resources and programs needed by the individual	❊
Families are connected to appropriate service providers/agencies	❊
Families have adequate social and economic resources to support individual	❊
Families live in safe environments (free of community and family violence and substance abuse)	❊
F-2. Families Demonstrate the Presence of Family Support and Coping Skills	
Families use community resources and programs needed by individuals	❊
Families cope with individual's needs after leaving school	❊

Items marked with an asterisk (*) are included for that portion of the population for whom these outcomes and indicators would be appropriate.

Table 10. Accommodation

Accommodation (A)	Post-School
A-1. Individuals Use Enrichments, Adaptations, Accommodations, or Compensations Necessary to Achieve Outcomes in Each of the Major Domains	
Individuals use accommodations to participate in activities in home, school, work, or community environments	*
Individuals use accommodations to get around in their environments	*
Individuals use accommodations to communicate	*
Individuals use accommodations to manage their personal needs	*
Individuals aware of necessary enrichments, adapatations, accommodations, or compensations needed to function in a variety of home, school, work, and community settings	*
Individuals demonstrate ability to ask for assistance to access needed enrichments, adaptations, accommodations, or compensations	*

Items marked with an asterisk (*) are included for that portion of the population for whom these outcomes and indicators would be appropriate.

Appendix A

The SCANS Skills and Competencies

The SCANS Skills and Competencies
Secretary's Commission on Achieving Necessary Skills
excerpted from *What Work Requires of Schools*,
National Technical Information Service (NTIS), 1991.

A Three-Part Foundation

Basic Skills:

Reads, writes, performs arithmetic and mathematical operations, listens, and speaks

- A. **Reading** - locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules
- B. **Writing** - communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts
- C. **Arithmetic/ Mathematics** - performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques
- D. **Listening** - receives, attends to, interprets, and responds to verbal messages and other cues
- E. **Speaking** - organizes ideas and communicates orally

Thinking Skills:

Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn, and reasons

- A. **Creative Thinking** - generates new ideas
- B. **Decision Making** - specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative
- C. **Problem Solving** - recognizes problems and devises and implements plan of action
- D. **Seeing Things in the Mind's Eye -** organizes and processes symbols, pictures, graphs, objects, and other information
- E. **Knowing How to Learn** - uses efficient learning techniques to acquire and apply new knowledge and skills
- F**. Reasoning** - discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem

Personal Qualities:

Displays responsibility, self-esteem, sociability, self-management, integrity, and honesty

- A. **Responsibility** - exerts a high level of effort and perseveres towards goal attainment
- B. **Self-Esteem** - believes in own self-worth and maintains a positive view of self
- C. **Sociability** - demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings
- D. **Self-Management** - assesses self accurately, sets personal goals, monitors progress, and exhibits self-control.
- E. **Integrity/ Honesty** - chooses ethical courses of action

Five Workplace Competencies

Resources:

Identifies, organizes, plans, and allocates resources

- A. **Time** - selects goal-relevant activities, ranks them, allocates time, and prepares and follows schedules
- B. **Money** - uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives
- C. **Material and Facilities** - acquires, stores, allocates, and uses materials or space efficiently
- D. **Human Resources** - assesses skills and distributes work accordingly, evaluates performance, and provides feedback

Interpersonal:

Works with others

- A. **Participates as Member of a Team** - contributes to group effort
- B. **Teaches Others New Skills**
- C. **Serves Clients/ Customers** - works to satisfy customers' expectations
- D. **Exercises Leadership** - communicates ideas to justify position, persuades and convinces others, responsibly challenges existing procedures and policies
- E. **Negotiates** - works toward agreements involving exchange of resources, resolves divergent interests
- F. **Works with Diversity** - works well with men and women from diverse backgrounds

Information:

Acquires and uses information

- A. **Acquires and Evaluates Information**
- B. **Organizes and Maintains Information**
- C. **Interprets and Communicates Information**
- D. **Uses Computers to Process Information**

Systems:

Understands complex inter-relationships

- A. **Understands Systems** - knows how social, organizational, and technological systems work and operates effectively with them
- B. **Monitors and Corrects Performance** - distinguishes trends, predicts impacts on systems operations, diagnoses deviations in systems' performance and corrects malfunctions
- C. **Improves or Designs Systems** - suggests modifications to existing systems and develops new or alternative systems to improve performance

Technology:

Works with a variety of technologies

- A. **Selects Technology** - chooses procedures, tools, or equipment, including computers and related technologies
- B. **Applies Technology to Task** - understands overall intent and proper procedures for setup and operation of equipment
- C. **Maintains and Troubleshoots Equipment** - prevents, identifies, or solves problems with equipment, including computers and other technologies

Appendix B

Possible Data Sources for Post-School Indicators

Possible Data Sources for Post-School Indicators

Academic and Functional Literacy

- Individual interview or survey
- Parent/guardian interview or survey
- Parental or peer rating scales
- Observation
- Supervisor or co-worker interview or survey
- Performance-based assessment results
- Scores on achievement tests
- Performance on language, mathematics, reading or writing tests
- Functional reading measures (for example, cloze technique, reading rate)
- Supervisor ratings of functional use of applied mathematics
- Supervisor reports of applied reading performance
- Supervisor reports of writing proficiency
- Roommate or spouse interview or survey
- Selected items from adaptive behavior scales or checklists
- Surveys from community agencies (for those individuals receiving services)
- Review of individual's job search activities and outcomes
- Agency staff interview or survey

Physical Health

- Individual interview or survey
- Parent/guardian interview or survey
- Peer interview or survey
- Medical records
- Pre-existing follow-up research data
- Body mass testing
- Finger-prick cholesterol check
- National Household Survey on Drug Abuse
- Department of Corrections data
- National Health Information Survey
- Participation records from community agencies or groups
- Knowledge test
- Performance assessment results
- Health examinations and fitness tests
- Select items from adaptive behavior scales or checklists
- Licensing regulations reviews of community residences
- Center for Disease Control's *Youth Risk Behavior Survey*
- Data from existing national surveys
- Report from physician or health care provider

Responsibility and Independence

- Individual interview or survey
- Parent/guardian interview or survey
- Supervisor or parent/guardian rating scales
- Knowledge test
- Performance assessment
- Reports from national orientation and mobility organizations (e.g., American Commission for the Blind)
- Reports from disability determination services within state mental health or human service agencies
- Selected items from adaptive behavior scales or checklists
- Reports from rehabilitation counselors or social services case managers
- Direct observational recordings by supervisors
- Results of federal projects dealing with transition services for youth
- Self-report of employment status and volunteer activity

Contribution and Citizenship

- Individual interview or survey
- Parent/guardian interview or survey
- Police records of crime rate and frequency of illegal acts
- State Education Agency (SEA) or Local Education Agency (LEA) developed interviews or surveys
- State Department of Corrections records
- Community records of individuals voting in elections
- Records of service organizations
- Follow-up study using computerized match of SSN and Internal Revenue Service (IRS) records

Personal and Social Adjustment

- Individual interview or survey
- Parent/guardian interview or survey
- Supervisor or co-worker interview or survey
- Performance results on items selected from adaptive behavior measures, social skills scales, and/or social/personal adjustment measures
- Scores on self-concept scale
- Screening for depression and suicide using scales like the *Reynolds Adolescent Depression Scale*
- Individual survey on attitudes toward diversity
- Social network analysis results
- Direct observation by supervisor

Satisfaction

- Individual interview or survey
- Parent/guardian interview or survey
- Case manager interview or survey
- Post-secondary service provider interview or survey
- Post-secondary completion data
- Review of community services case records
- Community member interview or survey
- Satisfaction surveys of employers and community agencies
- Data collected by community agencies as part of an accreditation process

Participation

- Individual interview or survey
- Parent/guardian interview or survey
- Data from state agencies
- Case manager interview
- Department of Mental Health data
- Pre-existing follow-up research data
- Independent living center records
- State Department of Rehabilitation records
- State Department of Welfare records
- State Job Training Partnership Act (JTPA) data
- Follow-up study using a computerized match of social security numbers (SSN) and post-secondary institution databases
- University or college disability support service records
- Section 504 compliance forms
- Adult literacy program records
- Community agency records
- Employment Security Commission data
- U.S. Department of Labor statistics
- Employer or agency records of subsidized wages
- State Departments of Employment Development records

Family Involvement

During the consensus-building process that identified post-school outcomes and indicators, participant groups recommended that no separate outcomes or indicators be identified in this domain. For anyone wishing to review possible outcomes, indicators and sources of data for Family Involvement, please refer to the publication *NCEO Framework for Educational Accountability* (1998, Ysseldyke, Krentz, Elliott, Thurlow, Erickson, and Moore).

Accommodation and Adaptation

This domain refers to the compensations or adjustments demonstrated by individuals as they attempt to achieve the other outcomes, such as learning American Sign Language or Braille. During the consensus-building process that identified post-school outcomes and indicators, participant groups recommended that no separate outcomes or indicators be identified in this domain. Instead, they suggested that outcomes, indicators, and sources of data reflecting Accommodations and Adaptation strategies be incorporated within the other domains of the model.

The College of Education
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