Chapter 2 provided an overview of how normalization, the disability rights movement, the right to education in the least restrictive environment, the emphasis on self-determination, the social-ecological model of disability, the focus on human capabilities, and positive psychology have led to the emergence and evolution of strengths-based models of intellectual disability. In this chapter, the focus will be on the supports model, which adopts a strengths-based approach to understanding and building systems of supports for people with intellectual disability based on the social-ecological model of disability. The fundamental premise of the chapter is that understanding children, youth, and adults with intellectual disability by their support needs and arranging supports to address those needs is the key to high-quality education and supports, as well as a high quality of life for children, youth, and adults with intellectual disability.

Social-Ecological Model of Disability

As described in Chapter 1, intellectual disability has traditionally been understood from a deficit-based perspective—and this perspective has led to limited expectations and opportunities for students with intellectual disability to access settings and activities that most others in society value. For example, service models were developed that created separate schools, curricula, and experiences for students with intellectual disability. These schools were established on the erroneous assumption that students with intellectual disability could not learn academic skills or otherwise benefit from access to the general education curriculum. Historically, the rationale for relegating many children and adults with intellectual disability to separate settings was that their deficits posed insurmountable barriers to meaningful participation in school and society.

The social-ecological model of disability (Schalock et al., 2010; World Health Organization, 2001) provides an alternative conceptual model for understanding people with disabilities that focuses on building on strengths and capacities. In the social-ecological model, disability is understood as a state of functioning characterized by a significant and chronic mismatch between a person’s competencies and the demands of settings and activities associated with participating in an inclusive society. Understanding people with disabilities through a social-ecological lens draws attention to people’s unique strengths and support needs instead of their deficits.

Supports and Support Needs in Strengths-Based Models of Intellectual Disability

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In the social-ecological model, information about deficits in personal competence is not the most salient information (as it was in the deficit-based model). While people with intellectual disability do have differences in personal competencies when compared to the general population, particularly in the domains on intellectual functioning and adaptive behavior (Schalock et al., 2010), and there is an association between intellectual functioning, adaptive behavior, and support needs (Thompson et al., 2009), these are not the same constructs and support needs are influenced by a much broader range of personal strengths, competencies, and environmental demands.

Overall, the critical implication of a social-ecological conceptualization of disability is to focus attention on the supports model and on the importance of identifying and arranging the supports people need to negotiate the demands of the settings and activities in which they wish to participate. Figure 3.1 depicts the supports model and the role of supports in bridging the gap between personal competencies and environmental demands. In considering the application of the supports model to students with intellectual disability, it is understood that students with intellectual disability will generally need more supports (i.e., extraordinary support) in order to fully participate in culturally valued activities than people without intellectual disability. From a social-ecological perspective, the chronic mismatch is the disability; the unique profile of strengths and competencies and environment demands demonstrated by each student with intellectual disability influences the pattern and intensity of support needs. Each component of the supports model described in Figure 3.1 is discussed in the following sections.

**Personal Competency**

Personal competence refers to the combination of strengths, skills, and abilities that each person possesses. Each person, including each person with intellectual disability, has a unique profile of strengths and limitations. Individual differences in personal competence are self-evident; no two people are exactly the same. Some people have talents in music; others struggle to carry a tune. Some people are able to do complex calculations quickly; others need longer periods of time and supports such as a calculator. Thompson, McGrew, and Bruininks (1999) provided a “big picture” framework of personal competence, discussing (a) the concepts of maximal and typical performance, and (b) five dimensions of adaptive behavior drawn from their review of factor analytic studies of adaptive behavior scales.
The five dimensions include physical competence, conceptual competence, practical competence, social competence, and emotional competence. As shown in Figure 3.2, the model describes personal competence as an amalgam (i.e., mixture) of the influence of these five dimensions. Although the five dimensions are distinct from one another, they most certainly influence each other. For example, as anyone who has been physically ill and needed to take an exam can attest, physical health (which is part of physical competence) affects conceptual proficiency. In the following sections, we first define

**Figure 3.2  Multidimensional and hierarchical model of personal competency**
maximal and typical performance; then we describe the five dimensions of personal competence and maximal and typical performance within each of them.

Maximal and Typical Performance

The model of personal competency in Figure 3.2 describes the five dimensions of personal competency in terms of maximal performance (i.e., what people are able to do under the very best conditions) and typical performance (i.e., how people normally perform). In the field of intellectual disability, the distinction between typical and maximal performance has traditionally been made in relation to assessing intelligence and adaptive behavior. Because tests of intellectual functioning (i.e., IQ tests) were intended to measure general aptitude, it was essential to assure that assessment data were gathered under maximal performance conditions because a person's best performance was needed for the results of an IQ test to be valid. For example, an IQ test would not be considered valid if the assessor felt that the person was not displaying his or her best performance, whether it be due to testing conditions (e.g., a person who became fatigued because the testing session was too lengthy or distracted because the testing setting was too noisy) or motivation (e.g., a child who lost focus because he or she was missing out on a preferred classroom activity during the time of the assessment). In contrast, measures of typical performance, such as adaptive behavior scales, focus on identifying a person's performance in everyday “real life” tasks (e.g., assessors want to know if a person can cross a busy street safely on a regular basis, not just on their best day; Salvia, Ysseldyke, & Bolt, 2013).

The distinction between maximal and typical performance is conceptually important when attempting to understand personal competency because personal competency must be considered in terms of what a person is capable of doing at the current time as well as how a person actually functions in daily life. In the framework of personal competency shown in Figure 3.2, no ceiling on what someone might be able to accomplish in the future is implied. Not only is it impossible to make definitive claims on what any human being will or will not be able to do in the future, but history is replete with examples of deleterious effects stemming from making judgments about people’s long-term abilities or potentials (see Gould, 1996).

Listed under each dimension of personal competency (Physical, Conceptual, Practical, Social, and Emotional) are examples of what measures could be used to understand maximal and typical performance. It is important to note that these are examples; we make no pretense that there was any attempt to validate any of the measures in relation to the various factors, nor are we claiming that our examples fully capture the universe of potential measures related to any factor. The purpose of Figure 3.2 is to illustrate that personal competency is a comprehensive, multidimensional construct, and attempts to understand a person holistically in regard to personal competency requiring multiple measures and considerations. It is also important to note that while examples are provided of intelligence tests and adaptive behavior scales, and their alignment with maximal and typical performance, as shown in Figure 3.2, these are not sufficient nor necessarily the only or most useful measures for understanding personal competency. Personal competencies cut across multiple domains, and they reflect strengths and abilities often not typically measured on traditional tests of intelligence and adaptive behavior.

Maximal Performance

The maximal performance indicator examples provided in Figure 3.2 draw heavily on broad ability domains associated with the Cattell-Horn-Carroll Theory of Cognitive Abilities, or CHC Theory as it has come to be known. CHC Theory is recognized by many contemporary intelligence theorists as the most comprehensive and empirically supported theory regarding the structure of human intelligence (McGrew, 2009; Schneider & McGrew, 2012), and thus provides important (but not comprehensive) information on a range of personal competencies. It is a multiple intelligence psychometric-based
theory, with the multiple intelligences arranged in a hierarchical structure. At the top is a single general factor (the “g factor”), although there is debate among CHC theorists on whether a general factor (that influences all of the multiple intelligences below) actually exists. Depending on one’s perspective, either below the “g factor” or at the top of the pyramid are 10 broad ability domains, and at the most specific level are more than 80 narrow ability domains (Flanagan & Dixon, 2014; McGrew, 2005, 2009; Schneider & McGrew, 2012; Taub & McGrew, 2014).

McGrew (2009) and Schneider and McGrew (2012) pointed out that CHC Theory has been, and continues to be, dynamic in the sense that structure of intelligence posited by CHC theorists evolves over time in response to new data and analyses. For example, recent research findings from Taub and McGrew (2014) suggested “intermediate factors” that may operate between the broad ability domains and narrow ability domains. If these findings are replicated, additional layers may be added to the theory. In an effort to encourage future researchers to continue to refine CHC Theory, McGrew (2009) described six additional broad ability domains (16 total), emphasizing that only 10 of the 16 have extensive empirical support, but that the additional six factors had some empirical support and should be further investigated. McGrew suggested the additional domains as a means of encouraging researchers to identify new assessment items that may align with the new domains (but not align with existing domains), as well to encourage a broader perspective regarding the nature of personal competency and intelligence. Because we wanted to be as comprehensive as possible in the personal competency model shown in Figure 3.2, we included all 16 of McGrew’s (2009) broad ability domains as potential measures of maximal performance in the competency dimension with which they were most aligned. Because these domains are associated with aspects of intelligence, they would be assessed under the umbrella of maximal performance. Additional measures are also included and are noted in Figure 3.2 and will be further discussed with regard to each domain of personal competency.

**Typical Performance**

In regard to indicators of typical performance in Figure 3.2, we provided a truncated list of sample indicators that are commonly associated with developmental motor scales (e.g., BOT-2; Bruininks & Bruininks, 2005), adaptive behavior scales (e.g., VABS; Sparrow, Cicchetti, & Balla, 2005), and behavioral checklists (e.g., CTP 3; Conners, 2015). It is worth repeating that the purpose of typical performance indicators is to assess how people function in their daily life, which may or may not correspond with how they function in maximal performance situations. For example, two people may have a combination of competencies across the five dimensions of personal competency that would suggest their skills are aligned with a specific job in the community; thus, they would have similar competency profiles in terms of maximal performance. Under typical performance conditions, however, there could be vast differences. For a variety of reasons, to be successful in the job environment one person might need limited supports while another might need multiple supports. In the following sections, we discuss each personal competency dimension in regard to maximal and typical performance measures.

**Personal Competency Dimensions**

**Physical Competency**

The first dimension, Physical Competency, is one that has not traditionally been considered in association with the construct of intellectual disability, but it most certainly has a significant impact on personal competency and support needs. Protocols used by physicians (see Bickley & Szilagy, 2009) to conduct annual physical examinations in regard to general physical health and well-being, and several broad CHC domains (e.g., psychomotor, tactile, kinesthetic, olfactory) capture the essence of
the Physical Competency domain. In terms of everyday, typical performance, tasks associated with locomotion, ambulation, mobility, and activities involving fine and gross motor skills would be critical to consider (e.g., getting up off the floor by oneself; walking short, intermediate, and long distances; coordinating the fine motor muscles to operate household technologies).

Conceptual Competency

This factor, along with Practical Competency and Social Competency, are the three domains that have traditionally been most closely associated with intellectual disability. Maximal performance indicators of Conceptual Competency are focused on the power of the “mental machine” (i.e., the brain), and measuring them involves assessing mental processes such as those which have been of interest to human information processing researchers (see Chubb, Dosher, Lu, & Shiffrin, 2013). These include how effectively and efficiently people use their brains to process sensory information (e.g., visual and auditory processing) as well the power of their short- and long-term memory. Other influences on Conceptual Competency include fluid reasoning ability, reaction and decision speed, and mental processing speed. Proficiency in core academic areas (i.e., Grw and Gq in Figure 3.2), as well as domain-specific knowledge (i.e., Gkn in Figure 3.2), have also been considered essential to measures of Conceptual Competency, especially in terms of ease of learning and speed of acquisition. In regard to typical performance, the acquisition and use of language and communication skills, the extent of achievement in areas of literacy and mathematics, and reasoning/problem-solving skills (e.g., perceiving cause-and-effect relationships) are plausible indicators of the Conceptual Competency factor.

Practical Competency

In contrast to Conceptual Competency, Practical Competency is not concerned with mental processes, but rather the focus is on knowledge that has been acquired and that can be applied. Although three of the same CHC competencies under the Conceptual Competency factor are listed under the Practical Competency factor (i.e., Grw, Gq, and Gkn), the critical distinction is that in Practical Competency the focus is on how competent one is in applying what has been learned. Maximal performance indicators would examine proficiency in using literacy skills (i.e., reading, writing, and speaking) as well as numerical/quantitative reasoning and application. Demonstration of advanced knowledge and the ability to use the knowledge in any field (mathematics, history, cosmetology, plumbing, etc.) would also be reasonable maximal performance indicators. Typical performance indicators of the Practical Competency factor would include the multitude of practical adaptive skills that can be found on adaptive behavior scales. These include daily living skills (e.g., cooking), personal care skills (e.g., getting dressed), and community living skills (e.g., riding a bus), as well as functional academic skills (e.g., reading instructions for a recipe, making correct change).

Social Competency

Social Competency is the third factor that has been historically linked to intellectual disability, although many have argued that it has not been given the emphasis it deserves (see Greenspan & Grandfield, 1992; Greenspan, Loughlin, & Black, 2001; Greenspan, Switzky, & Woods, 2011). Social Competency refers to proficiency in socially interacting with others, maintaining positive relationships with others, and successfully negotiating a variety of social contexts (including recognizing when one is being manipulated or exploited). Because people live in an interdependent world (i.e., everyone depends on others in order to meet basic needs such as food, safety, and shelter, as well as higher-order needs such as love/belonging and esteem), Social Competency is critical to success in modern society. For maximum performance indicators of Social Competency, we elected to use the factor structure proposed
by Schneider, Ackerman, and Kanfer (1996) that forms the basis of the Social Competency Questionnaire. We did, however, leave out two of their factors (Extraversion and Social Openness) as these were redundant with dimensions of the Emotional Competency factor in Figure 3.2 (discussed next).

In regard to intellectual disability, Greenspan (1999) pointed out that intellectual disability “is not a global disorder of social competency per se, but rather involves significant deficits in one aspect of social competency, namely social intelligence” (p. 14). Greenspan’s discussion of social intelligence most closely corresponds to the “social insight” factor provided by Schneider et al. (1996). It can be true that limitations in social insight create additional needs for support. All aspects of Social Competency are important to consider, however, because relative strengths and limitations in any aspect can have important implications in regard to people’s functioning. In terms of typical performance, indicators of Social Competency include gullibility (e.g., naiveté), interpersonal skills (e.g., manners, conversational skills), social responsibility (e.g., personal boundaries, respect for others’ property), and social problem solving (e.g., how to resolve a conflict).

Emotional Competency

Emotional Competency refers to the ability to understand and regulate one’s emotions, as well as to express or release emotions in a constructive manner. There is certainly an overlap between the Emotional and Social Competency factors, but we believe there is enough distinction between the two to justify considering them separately (versus a combined Social-Emotional factor). In terms of indicators of maximal performance, we chose to draw from McCrea and Costa’s (2003) “Big Five” Personality Theory, which was developed through extensive factor analytic studies. The Big Five dimensions of personality are understood as traits on which people can be high, low, or anywhere in between. Extraversion refers to how active, assertive, energetic, and outgoing people are. Agreeableness is related to people’s gratefulness, kindness, trustworthiness, and cooperativeness. Conscientiousness refers to the extent to which people are dependable, organized, capable planners, and responsible. Neuroticism is concerned with how anxious, insecure, and distressed people are. Openness to Experiences refers to people’s ranges of interests, level of curiosity, originality, and extent of imagination.

Unlike the other dimensions of personal competency in Figure 3.2, being relatively “high” or “low” in any of the Big 5 personality traits is not necessarily advantageous nor detrimental. For instance, the qualities associated with Agreeableness are generally considered to be positive human characteristics, but people who are too agreeable may lack the healthy dose of skepticism and cynicism that is necessary to reject bad ideas or question the status quo. Likewise, although being extremely high in Neuroticism would seem to have few advantages, being extremely low on the trait could also be a concern. For instance, a person especially low in terms of Neuroticism could be extremely calm, but calmness taken to the extreme might translate into a lack of passion/excitement about anything. In contrast to the maximal performance indicators, the sample typical performance measures within the Emotional Competency factor are all stated positively. These include control of temper (i.e., managing anger), dependability and trustworthiness, poise, self-discipline and self-awareness, understanding the perspectives of others, and carefulness (i.e., regulating impulsivity).

The Big Picture of Personal Competency

Taking a “big picture” view of personal competency has several advantages over a narrow perspective (e.g., just focusing on Conceptual Competency) or a simplistic indicator (e.g., an IQ score). The advantages of understanding differences between maximum and typical performance were alluded to earlier. Understanding whether discrepancies exist (as well as the extent of the discrepancies), and examining potential reasons for discrepancies has critical implications when planning supports and services. For example, on one hand if a discrepancy between maximal and typical performance is due
mostly to low motivation, then addressing issues of motivation is a reasonable course of action. On the other hand, if there are no meaningful discrepancies between typical and maximal performance, attempts to further motivate a person to perform better may do more harm than good. In such cases, using strategies to accommodate an area of relative weakness/difficulty would be a more productive course of action.

A “big picture” perspective on personal competency is useful to counteract the potentially negative effects that disability labels have on understanding people, because it provides a far more complete understanding of a person’s strengths and competencies compared to a diagnostic term. Disability labels tend to draw attention away from individual differences. As was discussed earlier, intellectual disability has been traditionally understood in relation to Conceptual, Practical, and Social Competency. People with intellectual disability, however, not only have relative strengths and limitations in these three areas of personal competency, but they also have relative strengths and limitations in the other areas—including those not traditionally connected to the diagnosis (i.e., Physical Competency and Social Competency). Knowing that a person has a diagnosis of intellectual disability actually provides very little information about a person, and the “information void” gets filled by oversimplified images and/or preconceived notions about people with intellectual disability.

A “big picture” approach to understanding people’s competencies can encourage a better description and appreciation of people’s unique abilities and needs, and can counteract the “myth of homogeneity” that seems to inevitably accompany disability labels. Theoretically, if there was a comprehensive accounting for all of the elements of personal competency (and the more than 80 indicators identified in CHC Theory provide a good start), there would be no need for disability categories or labels. People could be described in terms of their profile of relative strengths and weaknesses.

The final point to be made about the “big picture” approach to personal competency is that if it were to be fully embraced, it would shift assessment activities from what is largely a search for deficits (in order to meet diagnostic criteria) to a search for relative strengths and limitations in order to capture an accurate understanding of a person’s competency profile. Limitations in personal competency have important implications for planning teams working to address a person’s needs. With that said, limitations and deficits are only part of the profile. Identifying strengths, whether the strengths are relative to the rest of the population’s competencies or are relative only to the person’s profile of competencies, is just as important for purposes of planning supports and informing decision making.

For example, a person with strengths in both maximal and typical performance in the Social Competency factor (e.g., the person is likable, trustworthy, conscientious, and has an even temperament and charming disposition) is likely to be a person who can acquire considerable social capital if the correct supports are in place. Gotto, Calkins, Jackson, Walker, and Beckman (2010) explain that “social capital refers to a set of relationships and social ties, with organizations and to individuals, that can expand one’s choice-making opportunities, increase one’s options, and lead to a more enriched quality of life” (p. 1). If a person with a disability has strengths in certain areas of Social Competency and Emotional Competency, developing extensive connections/social ties with others and arranging a network of informal supports (i.e., accumulating social capital) is readily achievable. If these are not areas of strength, then supports can be built around the person that enable the development of social networks. Considering personal competency in a holistic, “big picture” manner will logically lead to planning processes where a person’s unique array of relative strengths are capitalized upon, relative weaknesses are accounted for, and personal nuances are thoughtfully considered.

Environmental Demands

Returning to Figure 3.1, a social-ecological understanding of disability calls for personal competency to be considered in the context of environmental demands. The environment refers to the settings and activities in which people are engaged during the course of their daily lives. Every child and adult must
function in a variety of environments, and when combining all of the environments in which a person participates over the course of a day, month, or year, it is clear that no two people operate in exactly the same environments. That is, each person has his or her own unique environment, and therefore, each person experiences unique environmental demands that create specific needs for support.

Despite this uniqueness, there is much commonality in the environmental demands that people encounter. For example, consider transportation by school bus. Although some school systems may have quite idiosyncratic bus transportation practices, these would be outliers. The vast majority of communities providing bus transportation to school have the same environmental demands. Namely, children must be able to make it to their bus stop in the morning, successfully interact with other children who are waiting at the bus stop, wait for the bus to arrive, board the bus, find an empty seat, behave in a manner during transport that does not pose any safety concerns or other difficulties for fellow riders on the bus (e.g., remain in the seat throughout the trip), know when and how to interact with the bus driver or bus monitor if experiencing a problem, successfully exit the bus when it arrives at school, and finally, locate and travel to the classroom they are supposed to attend at the start of the school day. Whether a school bus is operating in upstate New York, southern Alabama, or western Arizona, the environmental demands involved in “riding the school bus” are very similar.

In this chapter we focus on environmental demands that are common to many children and adults with intellectual disability (Chapter 6 provides guidance about assessing and addressing environmental demands that are unique to an individual). Although there are countless ways to categorize various environments for consideration, we have organized our discussion around school and nonschool environments.

**School Environments**

**Curricular Demands**

The word *curriculum* refers to the content that is taught in a school or in a specific course or program of study. Curricular content (and thus curricular demands) have changed in important ways over the past 60 years since children with intellectual disability first entered public schools in the United States on a widespread basis during the 1950 and 1960s. Historically (as described in Chapter 1) IQ-based approaches to classifying students with intellectual disability drove educators’ expectations for achievement ceilings, which in turn drove the curriculum. This led to limitations in the expectations held for students: The focus was on learning basic skills associated with early-childhood learning milestones (e.g., communicating essential wants and needs, naming colors and body parts, and learning self-care skills such as dressing and toileting; see Scheerenberger, 1983 for an historical overview, as well as classic special education textbooks by Gearheart & Litton, 1975 and MacMillan, 1977 that describe curricular approaches for different populations). Regardless of the classification designation, prior to the “mainstreaming” movement of the late 1960s and early 1970s (see Dunn, 1968), efforts to provide children with intellectual disability access to general education classrooms were not a priority because it was assumed that the curricular content taught to typically developing children was beyond the capacity of children with intellectual disability to understand.

Throughout the 1970s and 1980s a new consensus regarding best practice emerged in regard to the curricular emphasis for children with intellectual disability. Based on a concern that time was not being well spent on teaching children prerequisite skills that had little relationship to their future lives, educators were called upon to make curricular decisions based on the “criterion of ultimate functioning” (Brown, Nietupsik, & Hamre-Nietupsik, 1976). The crux of the argument was that (a) it took students with intellectual disability a longer time to learn new skills compared to their peers; (b) instructional time in school was limited, and there were a multitude of useful skills that needed to be taught and learned; and therefore (c) it made little sense to squander instructional time by teaching...
things to children with intellectual disability that they were not going to use in their later lives, because doing so displaced instruction time in areas that were relevant to future life experiences. The curricular emphasis for children with intellectual disability shifted to teaching functional skills in authentic environments (e.g., grocery shopping taught in grocery stores).

In regard to academics, although efforts to develop basic literacy skills were sometimes targeted in the curriculum, the focus was on functional academic skills (e.g., teaching writing in regard to skills needed to complete a job application) instead of core content skills (e.g., decoding text). Further, a focus on content skills was limited to students with fewer support needs. A review of the professional literature of that time period reveals that functional curricula were more likely to be emphasized for students with moderate/severe levels of intellectual impairment, and developing core academic skills was perceived to be a more suitable goal for students with mild levels of intellectual impairment (Bouck & Satsangi, 2014).

Despite differences in the curricular focus for students with intellectual disability and students from the general population, calls for increased integration in general education classrooms became more forceful during the 1980s and 1990s. Two important educational reform movements were focused on increasing the amount of time children with intellectual disability were educated alongside same-aged peers without disabilities. The Regular Education Initiative (REI) was targeted to children with high-incidence disabilities, which included children with intellectual disability in the “mild” IQ range. For example, Wang and Birch (1984) proposed the Adaptive Learning Environment Model (ALEM) as a means to eliminate special education pull-out programs such as resource rooms in general educational schools through adapting instruction in the general education classroom. The Inclusive Education Movement was initially focused on students with low-incidence disabilities, specifically the inclusion of children with moderate to severe levels of intellectual impairment and children described as having multiple or severe disabilities in general education classrooms (e.g., see Lipsky & Gartner, 1991). REI and Inclusive Education proponents eventually came together, unified by a shared vision of general education classrooms with far greater capacity to educate children with special education needs than what was common in the public schools. There were diverse views, however, among those calling for inclusive education. For example, some argued for the complete elimination of a continuum of special education placements outside of the general education classroom. Others saw the value of preserving a continuum of options despite the fact that such options had been traditionally overused (see Stainback, Stainback, and Moravec’s 1992 critique of Brown et al.’s 1991 proposal for a system of inclusive education).

Central to the argument of REI and Inclusive Education was that general education classrooms offered a richer learning environment (e.g., higher expectations for student achievement, and access to more incidental learning opportunities to develop communication and social skills) than did segregated settings (see Brown et al., 1991; Wang & Birch, 1984). The importance of accessing grade-level content in the general education curriculum, however, was simply not emphasized until the amendments to the Individuals with Disabilities Education Act (IDEA) of 1997. This law required that curricula for children receiving special education services be grounded in the same curriculum taught to typically developing children.

IDEA 1997, the No Child Left Behind Act of 2001, and IDEA 2004 significantly challenged expectations for what students with intellectual disability were expected to be taught and to learn while attending school. The regulatory language of these laws was explicit in requiring that all children who receive special education services be entitled to access to the general education curriculum, which was defined by the same academic standards and the same expectations that applied to all other students. Moreover, large-scale standardized testing that was aligned with general education curriculum needed to be completed in order to gauge educational success (i.e., to determine if students were making adequate yearly progress, or AYP), and students with intellectual disability needed to be included in standardized testing. Finally, the performance of these students on the tests (along with the performance of other students with Individualized Education Programs, or IEPs) constituted
a subgroup of students that had to, as a whole, meet criteria for AYP in order for a school and school district to be rated by the government as “successful.” Thus, unlike any other time in the history of educating children with intellectual disability, the achievement of these children had substantial ramifications for all educators, schools, and school districts. Although nothing in public policy prevented schools from teaching functional skills or any other type of content outside of the general education curriculum, progress on grade-level, general education content standards became fundamental driver of what was taught in US schools to students with intellectual disability.

Curricular decisions in the United States were traditionally the responsibility of local school districts (which were required to select textbooks and other materials, as well as offer courses, that were aligned with their state’s learning standards). Partly due to concerns with inconsistency in the scope and quality of learning standards between states, the National Governor’s Association launched the Common Core State Standards Initiative (CCSSI) in 2009. According to the National Governors Association (2011), the CCSSI is an “effort to establish a single set of clear educational standards for English-language arts and mathematics that states can share and voluntarily adopt. . . . Governors and state commissioners of education from 48 states, 2 territories and the District of Columbia committed to developing these standards. They are informed by the best available evidence and the highest state standards across the country and globe and developed in collaboration with teachers, parents, school administrators and experts” (para 1).

The CCSSI is intended to assure that students graduating from a high school are prepared to enter credit-earning (i.e., not remedial) courses at the college/university level or enter the workforce. Although learning standards are not the same as the curriculum, learning standards most certainly set the parameters (i.e., scope and breath) for what is going to be taught in schools. Therefore, the school environment for today’s students with intellectual disability includes the expectation that they will learn grade-level content that is aligned with the general education curriculum.

Children with intellectual disability often experience a gap (or mismatch) between the learning demands of general education content and the teaching approaches and achievement expectations associated with general education classrooms. To bridge the gap, students with intellectual disability need supports that modify the curriculum (while still maintaining the essence of the content that is being taught) and modify the teaching strategies and options for demonstrating learning and achievement.

Informal Curricular Demands

Not everything a child needs to know and/or learn in school is taught through the general education or formal curriculum. Participation in school entails participating in a complex and diverse community outside of structured course lessons. This community has a multitude of informal rules and processes, social expectations and norms, and social taboos (some of which are applicable across different people and environments, and some of which are not). It is not unusual for children with intellectual and related developmental disabilities to have support needs in the informal curriculum, as well as in the formal or academic curriculum (Carter, Hughes, Guth, & Copeland, 2005; Hughes et al., 1999; Scheard, Clegg, Standen, & Cromby, 2001).

The informal curriculum includes understanding social and behavioral expectations (e.g., knowing what to do during lunchtime, including how to secure food, where and with whom to sit, and transitioning to the activity following lunch), problems that are encountered (e.g., how to handle oneself when targeted by a bully), as well as situations involving expressing preferences and choices (e.g., how to express interest and become involved in a sports team or musical group). It is important to acknowledge that many of the best opportunities for establishing friendships arise during the “unstructured” times before, during, and after school. Students must be able to navigate the challenges associated with the informal curriculum in order to take advantage of such opportunities.
It is important that students have the opportunity to fully participate in the less formal portions of the school day in order to fully benefit from their schooling. Higher levels of Social Competency have been found among students with intellectual disability who were provided more opportunities to spend time with peers in unstructured, social activities compared to those who had fewer opportunities (Brooks, Floyd, Robins, & Cahn, 2015). In addition, participation in structured co-curricular activities has been shown to help students form positive social relationships and become socially accepted (Siperstein, Glick, & Parker, 2009). As is the case with students from the general population, students with intellectual disability who have an array of positive social relationships with others at school are less likely to be lonely and less likely to display challenging behavior (Wiener & Tardif, 2004).

Unfortunately, the unstated rules and customs that many students learn incidentally may not be readily apparent to some students with intellectual disability. Limitations in experience, knowledge, Social Competency, and executive functioning skills all contribute to creating needs for support in social situations. A student’s success and the supports that he or she is provided in navigating the informal curriculum will have a profound impact on his or her happiness and satisfaction with schooling (Wiener & Tardif, 2004), and therefore any mismatch between personal competency and the demands of the informal curriculum need to be identified and addressed.

**Outside-of-School Environments**

Environments outside of schools can be classified in many ways. Adaptive behavior scales have often been organized around environmental domains. The Checklist of Adaptive Living Skills (Morreau & Bruininks, 1991), for example, is organized around the domains of Personal Living, Home Living, Community Living, and Employment. Dever (1988) embarked on an ambitious project to identify a taxonomy of skills needed for participation in community life, and he classified skill indicators within five broad domains: Personal Maintenance and Development, Travel, Leisure, Vocational, and Home-making and Community Life. Thompson, McGrew, Johnson, and Bruininks (2000) took an empirical approach to identifying domains of community adjustment by analyzing postschool follow-up data from nearly 400 former students who had been out of school for one to five years. Using confirmatory factor analytic procedures they identified five domains: Employment–Economic Integration, Recreation–Leisure Integration, Community Assimilation and Acceptance, Social Network Integration, and Residential Integration. Two other factors that were not related to community adjustment also emerged from their analyses of postschool outcome data. One pertained to a psychological construct (i.e., need for support) and the other to a quality-of-life factor (i.e., personal satisfaction). Because the five dimensions of community adjustment presented by Thompson et al. (2000) have empirical support, we choose their structure to guide our discussion of environmental demands encountered outside of school settings.

Table 3.1 shows the five domains of community adjustment (employment–economic integration, recreation–leisure integration, community assimilation and acceptance, social network integration, and residential integration) and provides descriptions of each dimension. The descriptions were drawn from the work of Thompson et al. (1999) as well as earlier work from McGrew and Bruininks (1994). Corresponding to each dimension are examples of environmental demands that people must navigate in order to fully participate in the settings and activities associated with the dimension. No pretense is made that these examples are comprehensive; listing all potential environmental demands for any of the domains would be exhaustive, if not impossible, to create. Rather, the examples are merely intended to highlight the complexity inherent in navigating community environments.

As Table 3.1 makes clear, any attempt to delineate all of the competencies needed to successfully adjust to community life would be an enormous, if not impossible, undertaking. The vast majority of people from the general population require some mentoring and/or guidance, as well as a fair amount of time, before they are fully competent in each domain. Further, the specific demands that
Table 3.1 Domains of community adjustment and corresponding environmental demands

<table>
<thead>
<tr>
<th>Community Adjustment Domains and Descriptions</th>
<th>Examples of Environmental Demands Inherent to the Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment-Economic Integration—the extent to which people are involved in stable and integrated daily work or related activities and are economically self-sufficient</td>
<td>Employment requires that one embark on a job search and obtain gainful employment. To keep a job one must perform duties acceptably (e.g., display proper work speed and quality), maintain good relationships with supervisors and coworkers (e.g., regular attendance and punctuality at work; working in a manner that does not jeopardize the safety of oneself or others). Economic self-sufficiency requires using money to purchase goods and services, and managing money effectively.</td>
</tr>
<tr>
<td>Recreation/Leisure Integration—the extent to which people are actively involved in formal and informal recreation-leisure activities</td>
<td>Participating in recreation activities in the community requires that one understands how to participate in an activity (e.g., knows rules and etiquette of the sport/game) and can get to and from activities. Participating in informal leisure activities in the community (e.g., walking in the park) or at home (e.g., hobby, such as knitting) demands that one has developed preferences to spend free time and understands how to occupy oneself during that time.</td>
</tr>
<tr>
<td>Community Assimilation and Acceptance—the extent of engagement with neighbors and others in the community</td>
<td>Engaging with others in the neighborhood or community requires that one understands and is able to maintain boundaries (e.g., respect for others’ privacy, culturally accepted physical proximity including touching) as well as recognize potentially dangerous situations (e.g., interactions with strangers who may attempt to exploit).</td>
</tr>
<tr>
<td>Social Network Integration—the extent to which individuals have a social support network</td>
<td>Establishing and maintaining a social network requires expressing oneself respectfully and maintaining meaningful communication/conversation with others. Additionally, understanding the reciprocity involved in maintaining close relationships is essential.</td>
</tr>
<tr>
<td>Residential Integration—the extent of independent living and integration into the community</td>
<td>Residential integration demands that one know how to safely operate technology and equipment in the home. Additionally, taking care of oneself (personal hygiene, grooming, dressing) and preparing food are critical requirements.</td>
</tr>
</tbody>
</table>

Each person encounters in each domain will vary based on the specific environments that the person encounters. Thus, while students with intellectual disability will likely have support needs based on the environmental demands they encounter in each of these domains, the specific supports needed will vary based on their environment.

It is important to note that the domains in Table 3.1 originated from data on the life experiences of young adults with disabilities; however, it is not difficult to envision how each domain aligns with the life experiences of children. While children are not expected to work on paid jobs, age-appropriate expectations for completing chores at home as well as managing small amounts of money point to the applicability of the Employment-Economic Integration domain for all age groups. In terms of
Recreation/Leisure Integration, children (many more so than adults) participate in many organizations outside of school. Examples are scouting organizations, religious groups (e.g., Sunday school, worship-affiliated youth groups), or a nonschool related sports club. Community Assimilation and Acceptance is aligned with integration in local neighborhoods and could also include local children’s activities such as day camps and swim lessons. Moreover, children have considerable unstructured free time, and as they get older they are expected to keep themselves occupied and entertained during times of the day when adults are not supervising or directing their activities. Social Network Integration is certainly as applicable to childhood as adulthood, and friendships (or lack of friendships) become increasingly important to children as they age. Also, it can be argued that children with intellectual disability are even more vulnerable than adults in terms of being potential targets for exploitation or harm. Finally, Residential Integration is centered around life in the family home for most children. The need for services to support families with children with intellectual disability has been well documented (see Turnbull, Turnbull, Erwin, Soodak, & Shogren, 2015) and the formal service system has been involved in efforts to support families for many years.

This brief overview of outside-of-school environmental demands only scratches the surface of the complexity of issues faced by children and adults with intellectual disability in modern society. Participating in the real world presents major challenges for all people, and therefore highlights the need to adopt a supports model for identifying, creating, and evaluating systems of support for students with intellectual disability to enable them to meaningfully access community settings and participate across environmental domains. Understanding people by means of their support needs and identifying and arranging supports to address their needs is the hallmark of a social-ecological conceptualization of intellectual disability, and is the focus of the supports model that is described in the next section. Systems of support that address the demands of the official school curricula, the informal curriculum, and non-school school settings will be discussed.

The Supports Model: Bridging the Gap between Personal Competency and Environmental Demands

Fundamental to a social-ecological understanding of people with intellectual disability is that intellectual disability is a state of functioning, not a deficit trait. People with intellectual disability are distinct from others in the general population in that they experience a chronic mismatch between their personal competency and what is expected of them in school and community activities and settings (i.e., environments). A contextual understanding of disability as a “state of being” instead of a “personal trait” is applicable to any disability population, not just people with intellectual disability.

Figure 3.1 provides an overview of the supports model. The chronic mismatch that people with intellectual disability experience between their personal competency and the demands of the environments they encounter in their daily lives creates extraordinary support needs. Support needs are addressed by providing a person with supports. Therefore, the purpose of supports is to bridge the gap between personal competency and environmental demands. Supports should compensate for skill limitations, build on personal strengths, and account for environmental expectations and conditions.

Schalock et al. (2010) provide formal definitions of supports and support needs. According to these authors, supports are “resources and strategies that aim to promote the development education, interests and personal well-being of a person and that enhance individual functioning” (p. 224) and support needs are “a psychological construct referring to the pattern and intensity of support necessary for a person to participate in activities linked with normative human functioning” (p. 224). It is most certainly true that each person has unique support needs because each person has unique strengths and limitations in personal competency and no two environments are exactly the same. There are, however, many commonalities between the support needs of different people. Therefore, resources and strategies that have proven to be useful in addressing the support needs of many people in the past...
will likely have application for many people in the future. Of course, it is the application of strategies and resources that need to be tailored to meet individual needs. The classes of support resources and strategies described next have been used to promote success in the general education curriculum, the informal curriculum, and the community.

**People as Supports**

In one sense, it is difficult to think of a support that does not involve people to some extent. In order for a support to be put into place somebody must envision the support, implement the support, and evaluate the support to see how useful it is. But the focus of this section is on using people to provide hands-on support to a child or adult with intellectual disability.

One approach is to use people who are already in the environment as supports: such individuals are referred to as natural supports (Cimera, 2007). In a general education classroom, this would include peers (peer supports) who provide assistance to a student with a disability that is qualitatively and/or quantitatively different than support that would be provided to most other peers. The most researched form of peer support is peer tutoring. Utley and Mortweet (1997) defined peer tutoring as “a class of practices and strategies that employ peers as one-on-one teachers to provide individualized instruction, practice, repetition, and clarification of concepts” (p. 9). Peer tutoring has shown positive outcomes across a wide range of instructional settings, ages, and content areas (Okilwa & Shelby, 2010), and the model is certainly as applicable in the informal curriculum as it is for structured courses where academic content is taught. In employment settings, coworkers have often been sought out as sources of natural supports with positive results. Cimera (2001) reported that supported employees who were trained by coworkers had longer tenures at their jobs than those trained by a job coach employed by a service provider agency.

People supports also include those who are part of the educational environment and provide support, including teachers, paraprofessionals, and related service personnel. There has been an ongoing concern that paraprofessionals are overused in today’s schools. A paraprofessional who oversupports a child can unwittingly interfere with meaningful inclusion (e.g., in situations where the paraprofessional closely supervises a child throughout the day, the paraprofessional and child become their own classroom within a classroom). Concerns that paraprofessionals are overused is supported by data pertaining to hiring trends in special education. For example, Suter and Giangreco (2009) found that between 1990 and 2005 there was a 300% increase in paraprofessionals in one state. The use of paraprofessionals versus special education teachers or related service professionals to implement teaching and support strategies has been questionable in terms of the lack of use of expert and highly trained personnel in supporting students.

**Technology Supports**

Distinguishing between instructional technology and assistive technology is useful when considering the use of technology to support people with intellectual disability. Instructional technology is focused on facilitating student progress in a content area. An example would be a mathematics software program that is intended to develop a child’s basic computational skills (i.e., addition, subtraction, multiplication, division). In contrast, assistive technology is not intended to expand the user’s skills. Rather, it is intended to enable users to participate in settings and activities in ways that they otherwise could not. An example would be an augmentative communication device that enables a child to participate in conversations and class discussions more efficiently than if he or she had to rely on spoken communication. Increasingly, technology can serve both purposes, particularly if technology is universally designed and as apps and other technology advances create more universal access to devices and technologies that support all people.

Technologies can be high tech (e.g., an electric wheelchair for people who have difficulty getting from place to place in their environments), mid tech (a mobile word processor for students who have
difficulty writing their notes in class), and low tech (a timer to remind an employee to complete a task by a certain time). For the purpose of our discussion, the critical consideration is that technology that is used as a support should enhance a person's participation and achievement in an important way.

An ongoing challenge in identifying and using technologies to support people with intellectual disability has been the tendency for planning team members to focus too much on device features and too little on how technology might be actually be used by a person or how to teach a person to use a technology effectively. With any new technology there is typically a learning curve, and users must anticipate a learning process. The issue of technological abandonment (i.e., buying a device for a person that he or she never uses) continues to be a major concern among educators and other professionals (Lauer, Longenecker-Rust, & Smith, 2006), and reflects the need to consider and promote the use of universal design and cognitive accessibility in all technologies that are developed.

Several processes for assessing technology needs, selecting technology, and implementing technological solutions have been proposed. One such process that aligns very well with a social-ecological understanding of a person with intellectual disability is Zabala’s (2016) SETT (Student-Environment-Task-Tools) Framework. The SETT process calls for a planning team to explore the student’s relative strengths and limitations, analyze the environments in which the student needs to use the technology, identify the tasks (i.e., what the student needs to do in the environments), and as a final step make decisions on choosing which tools might provide the best technological support.

Adaptations, Modifications, and Accommodations as Supports

Adaptations, accommodations, and modifications refer to changes in the environment to make it more accessible, meaningful, or engaging to students with intellectual disability. Examples include changes to instructional delivery, learning materials, classroom processes, or performance expectations that provide an opportunity for a student with a disability to more fully participate and/or find success in the school or community (e.g., work). Technically, the three terms have different meanings.

Adaptations is most often used as an umbrella term that includes both accommodations and modifications. Janney and Snell (2006) drew distinctions between curricular adaptations (where instructional content is changed by adding supplementary goals, simplifying goals, or introducing alternative goals), instructional adaptations (where different content is taught and/or learning is demonstrated differently), and alternative adaptations (where alternative/parallel learning activities are used). The term adaptations is also used to refer to adapted equipment (e.g., a special seat that a child with a physical disability may use to sit upright) or adapted materials (e.g., books on tape used by a child who has difficulty reading; Pisha & Stahl, 2005).

Modifications typically refers to changes in what is being taught to or expected from a student. For example, changing an assignment so the student with intellectual disability is not doing work that is as difficult/advanced as most other students is an example of a modification. Accommodations refers to changes that provide students with access to content taught in the curriculum, but do not change the difficulty level or the performance expectations. Allowing a student who has difficulty writing to orally give his answers to essay questions on a history test is an example of an accommodation.

For the purpose of this chapter, the distinctions between terminology (i.e., adaptations, modifications, accommodations) is not nearly as important as the concept that the school environment includes what and how students are taught, and what is expected of students in terms of performance. When there is a mismatch between a student’s competency and the demands of a school environment, changes in the environment through adaptations, modifications, and accommodations are critical supports to offer. These supports can allow a student access to their school and the general education curriculum, and provide opportunities for success that otherwise would not be possible. The same principles apply to life in the community. A public bus driver (e.g., natural support) who is willing to remind a student with intellectual disability that this is the stop where
he or she needs to exit the bus has made an important modification to the environment. Instead of being required to recognize one’s bus stop by reading street signs or noting a landmark, the rider now is required only to pay attention when the bus driver informs him or her of the bus stop. Further, GPS technologies remove the need for relying on people supports and create more opportunities for navigation around the community. Just like in school, an accommodation or modification in the community may not always be required. When people’s support needs change (in time, the person may be able to recognize his or her bus stop) they no longer need the extraordinary support.

Conclusion

Strength-based models of intellectual disability shift the focus from what students cannot do because of their deficits to what they can do with the right supports. This chapter focused on understanding people holistically in terms of their relative strengths and limitations, understanding the demands of environments in which people need to function, and understanding the array of support strategies that can be helpful to bridge any person–environment gaps that exist.

References


