Footsteps Toward the Future

*Implementing a Real-World Curriculum
for Students With Developmental Disabilities*

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Chapter 1

An Overview of Real-World Curricular Approaches

A *real-word curriculum*—synonymous with a functional or life skills curriculum—represents one type of curriculum that teachers can use to educate students with intellectual disability and other developmental disabilities (Bigge, 1988). A real-world curriculum represents one answer to the age-old question of *what* to teach students with disabilities. The question of what to teach and what curriculum to use when educating students with disabilities is an important one and one that is subject to much discussion and debate.

Real-World Curriculum

A real-world curriculum is designed to prepare students with disabilities to learn useful skills that may benefit them after leaving school and to be as independent as possible in completing these activities in real-world settings (Storey & Miner, 2011; Wehman, Renzaglia, & Bates, 1985). In other words, a real-world curriculum focuses on skills that allow students to participate in all facets of life in an inclusive society: living, working, and having fun (Brown, Branston, Hamre-Nietupski, Pumpian, Certo, & Gruenewald, 1979). Important within the understanding of a real-world curriculum is that the skills being targeted must be ones that actually translate into real activities that an individual may perform in society. A real-world curriculum does not involve artificial tasks for students to perform.

A real-world curriculum incorporates a variety of components and is defined in different ways. Some suggest a real-world curriculum contains skills related to functional academics (e.g., mathematics, literacy), vocational education, community access, daily living, finances, independent living, transportation, social relationships, and self-determination (see Table 1.1; Patton, Cronin, & Jairrels, 1997). Others categorize the components of a real-world curriculum as career education and work; community living and participation; personal health and safety; self-determination; travel and mobility; home living; functional academics and postsecondary education; financial planning and management; and socialization, recreation, and leisure (Wehman, Targett, & Richardson, 2012). Regardless of the specific component names, the aim of a real-world curricular approach is to prepare students to successfully and independently complete real-world activities in the home, work, learning, and community environments.

Table 1.1
*Functional Curriculum Components and Examples of Instruction*

Functional curriculum components (Wehman et al, 2012)	Functional curriculum components (Patton et al., 1997)	Examples of instruction
Functional academics and postsecondary education	Functional academics: Literacy	Sight word recognition; reading for pleasure/leisure; writing or signing one's name
	Functional academics: Mathematics	Time management; number recognition (e.g., phone numbers); money skills
Career education and work	Vocational education	Career exploration; job shadowing
Financial planning and management	Financial	Keeping a budget, using an ATM, cashing a check
Community living and participation	Community access	Use of laundromats, grocery stores, restaurants
	Independent living	Obtaining and maintaining a household
Personal health and safety	Daily living	Food preparation; housekeeping; personal maintenance or hygiene
Home living		
Travel and mobility	Transportation	Walking, riding a bus, driving a car
Self-determination	Self-determination	Problem solving, making one's own decisions
Socialization, recreation, and leisure	Social/relationships	Developing friendships, appropriate interacting with others in various settings (e.g., when working)
	Leisure and recreation	Hobbies, recreation (e.g., bowling)

Note. See also Browder & Snell (1993); Cronin & Patton (1993); Dattilo & Hoge, 1999; Gajar, Goodman, & McAfee (1993); Retish, Hitchings, Horvath, & Schmalle (1991); Sands & Doll (1996); Snell & Browder (1987); Storey & Miner (2011); Wehmeyer, Sands, Knowlton, & Kozleski, (2002); Westling & Fox (2000).

When implementing a real-world approach and curriculum, teachers focus on preparing students for life beyond school. Their goal is to equip students with the skills necessary for autonomous functioning in community, employment, domestic, and recreational/leisure domains (Brown et al., 1979; Ford, Davern, & Schnorr, 2001). Thus, a real-world curricular approach encompasses the skills required for successful integration and functioning within natural environments and includes social, communication, behavioral, academic, and motor skills. Figure 1.1 illustrates the connection between real-world instructional domains and their embedded skills. Consideration for instructional content and focus within a real-world curricular approach should always ensure meaningful student participation leading to target outcomes, increasing student independence, the incorporation of various instructional strategies that enhance student strengths, the use of natural materials, and multiple opportunities to develop age-appropriate social skills in integrated settings (Collins, Karl, Riggs, Galloway, & Hager, 2010).

Bender, Valletutti, and Baglin (2008) described the difference between an approach and a curriculum when preparing students for real-world participation. A real-world *approach* describes the manner in which skills are taught, whereas a real-world *curriculum* identifies the specific elements and skills to be taught to students. A real-world curriculum provides students with disabilities instruction in the skills necessary for greater independence in current and potential settings—regardless of the setting in which they are taught. For example, an elementary student with a disability who is served in an inclusive third-grade class may participate in instructional activities in which a real-world approach is used. While accessing the general education curriculum and participating in traditional instructional activities, the student may also receive additional instruction for using mathematics to measure, applying science to identify temperature and cooking time when preparing a snack, or reading specific instructions to independently operate a video game. A secondary student who may

Figure 1.1
Real-World Instructional Domains and Embedded Skills
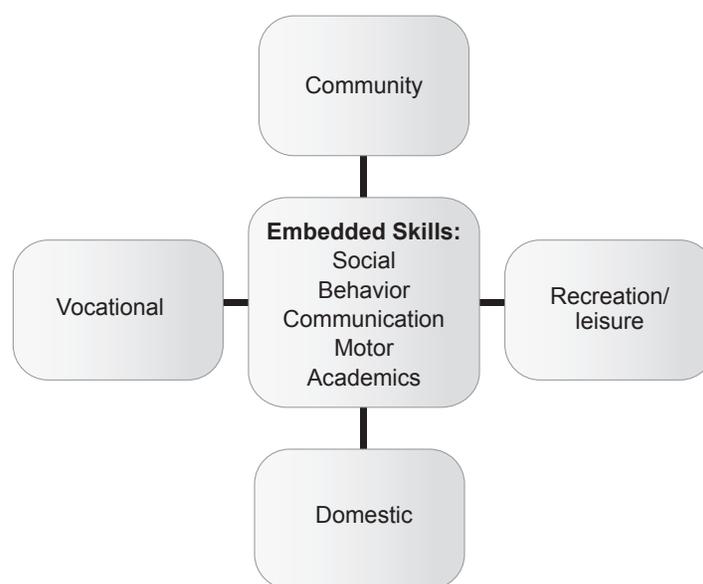
spend the majority of her day outside the general education setting, particularly in community settings, may participate entirely in a real-world curriculum in which all instructional activities involve acquiring, maintaining, and generalizing the skills necessary for independent functioning across all settings. For example, she may learn to use money to purchase a snack from a vending machine during her break at a vocational training site, read pictures and words to complete a shopping list at a farmer's market, and understand the pedestrian skills for crossing a busy parking lot safely.

Students receiving instruction using a real-world approach or curriculum include any student who requires instruction in those skills that will enable him or her to more fully and independently participate in real-world settings. Traditionally, these individuals included students with intellectual disability with more extensive support needs, autism spectrum disorder (ASD), or other developmental disabilities. More recently, as the curricular focus shifted to preparing individuals for their postsecondary transition, students with more high-incidence disabilities (e.g., students with intellectual disability with less intensive support needs, emotional-behavior disorders, learning disabilities; Alwell & Cobb, 2009) were included in this instruction. Although a "functional" curricular focus is the goal for individuals with more severe disabilities, an applied curriculum and approach directed towards vocational and consumer life skills with an emphasis on academic skills within practical contexts is the target for students in general education (Hamill & Everington, 2002). However, Schloss and Sedlak (1986) noted that a real-world approach or curriculum is appropriate for a student with a disability when he or she demonstrates significant difficulty learning new skills, has not kept pace with the total skills acquired as compared to his or her peers, is engaged in instructional activities for a small portion of the day, and is approaching graduation. Thus, any student demonstrating these characteristics should receive instruction in real-world skills leading to postsecondary outcomes.

To provide practitioners with an evidence base to support their use of a real-world approach or curriculum, this chapter will describe the what, when, and how for teaching real-world skills to students with disabilities who are served in their least restrictive environments. Throughout, the instructional objectives, contexts, interventions, embedded content that might be included in their instruction, and a plan for skill maintenance and generalization will be described. Supporting strategies for data collection are discussed, and evidence linking a real-world approach and curriculum to planning for postsecondary transition is provided. Last, practitioners tools are provided that include web links and resources to support teachers and other service providers in implementing a real-world approach and curriculum with their students.

Historical Perspective of Using Real-World Curriculum

A real-world curriculum represents just one type of educational curriculum for students with disabilities (Bigge, 1988). In fact, Bigge (1988) identified six options: (a) general education with accommodations, (b) modified general education (i.e., parallel curriculum), (c) lower grade level curriculum, (d) practical academic curriculum, (e) real-life curriculum, and (f) another curriculum. More simply, Polloway, Patton, and Serna (2008) discussed two approaches for a special education curriculum, with special education defined as alternatives to the general education curriculum: (a) academic remediation, and (b) adult life outcomes. Polloway et al. (2008) further divided adult life outcomes into real-world curriculum skills (e.g., functional academics, daily living skills) and vocational training.

Regardless of the different ways to conceptualize a special education curriculum, a real-world curricular approach is an option. A real-world curriculum is not new; a focus on real-world curricular approaches for students with disabilities extends back many decades. Since the 1930s, there has been evidence to suggest the necessity of real-world skills—or adult outcomes—in the teaching and learning of students with intellectual disability (Cronin & Patton, 1993; Kolstoe, 1970). Some believe a real-world curriculum for this population of students peaked in the late 1970s and early 1980s, with increasing attention being paid to academic skills and inclusion in the general education setting in contrast to daily living and employment skills (Billingsley & Albertson, 1999; Cronin & Patton, 1993).

Regardless of when this curriculum began or peaked, a real-world curricular approach did experience a shift in the late 1970s following the assertion by Brown and colleagues (1979) that such curricular attention should be chronological-age appropriate rather than developmentally appropriate and that curriculum decisions should be top-down (i.e., after school outcomes) rather than bottom-up (Cronin & Patton, 1993). With these changes came attention to what are truly real-world skills and not just arbitrary skills unconnected to the daily lives of individuals (Brown et al., 1979). Brown and colleagues (1979) also drew attention to the need to teach real-world skills in context, rather than in simulated settings, and with greater attention to the potential postsecondary environments students will experience.

Current Perspectives of Using Real-World Curriculum

Since the 1980s, a continued decline in attention to using a real-world curriculum has existed in research and practice. The decline coincided with increased attention to the participation of all students with disabilities in general education environments and general education curriculum (i.e., a more academic curriculum). The increased attention towards a general education (i.e., academic content) curriculum for students with intellectual disability, ASD, or other developmental disabilities followed the reauthorization of the Elementary and Secondary Education Act in 2002 (No Child Left Behind) and the Individuals With Disabilities Education Act in 2004 (the Individuals With Disabilities Education Improvement Act). These laws focused on *all* students being provided access to the general education curriculum and assessed on progress to meet state standards (Collins, 2013).

The dichotomy between a real-world curriculum and an academic curriculum has not gone unnoticed in the field. Nietupski, Hamre-Nietupski, Curtin, & Shrikanth (1997) discussed how a focus on participating and being included (e.g., time in the general education setting with general education content) might work to the potential detriment of acquiring real-world skills for students to be successful in their postsecondary environments, such as employment. Although much of the current perspective suggests a real-world curriculum and an academic curriculum (i.e., standards-based) are not and should not be mutually exclusive, there are many conversations about the privileging of one over the other and what provides the best educational and posteducational opportunities for students (Ayres, Lowrey, Douglas, & Sievers, 2011; Bouck, 2012; Collins, 2013; Courtade, Spooner, Browder & Jimenez, 2012).

Curriculum Decision Making

One of the first steps to implementing a real-world curriculum is actually to decide to implement it (see Figure 1.2 for a decision-making flow chart

for an academic curriculum or a real-world curriculum). Given the different curricular outcomes and the competing agenda for what should be the focus of education for students with disabilities—particularly at the secondary level—practitioners must make a conscious decision on what they are going to teach. Because special education was founded upon the idea of individualized education, we propose that a fundamental aspect of determining curriculum at the secondary level should be attention to the student and his or her goals. In other words, the student's future plans should be a starting point for teacher decision-making regarding curriculum (Bouck, 2012; Hunt, McDonnell, & Crockett, 2012). A focus on students' futures follows the idea of "subsequent environment as attitude" recommended by Cronin & Patton (1993, p. 7) and Polloway, Patton, Smith, and Roderique (1991; see Figures 1.3 and 1.4).

Figure 1.2
Decision-Making Flowchart for Academic and Real-World Curricula
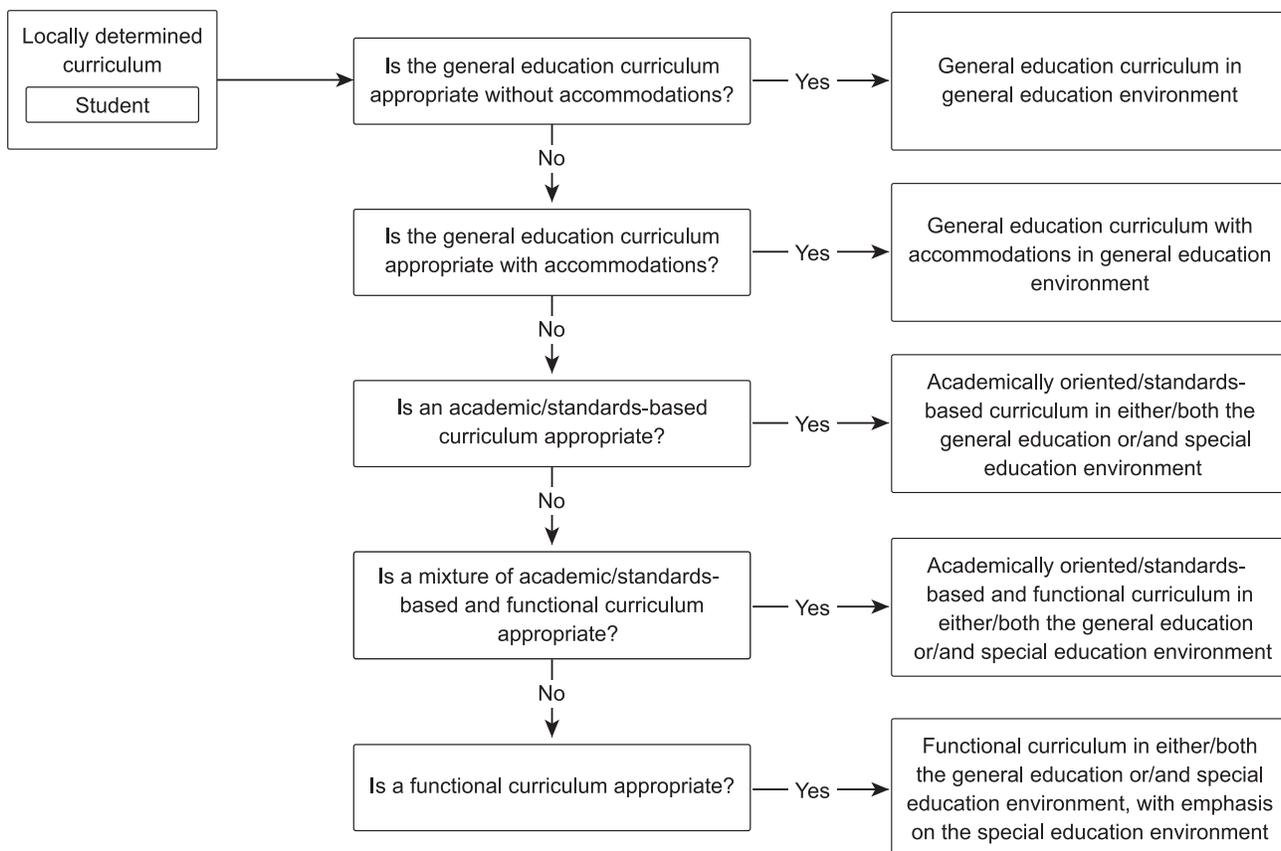
Note. Reprinted from "Secondary curriculum and transition," by E. C. Bouck, 2012. In P. Wehman (Eds.), *Life beyond the classroom: Transition strategies for young people with disabilities* (5th ed., pp. 215–233). Copyright 2012 by Brookes. Reprinted with permission.

Figure 1.3
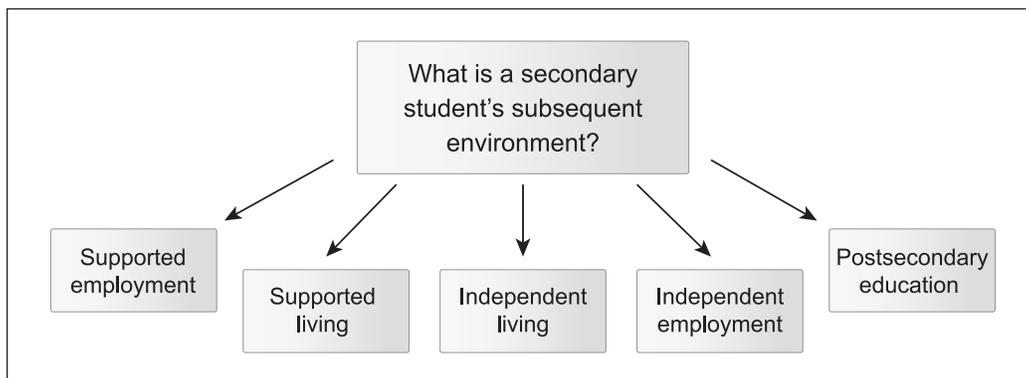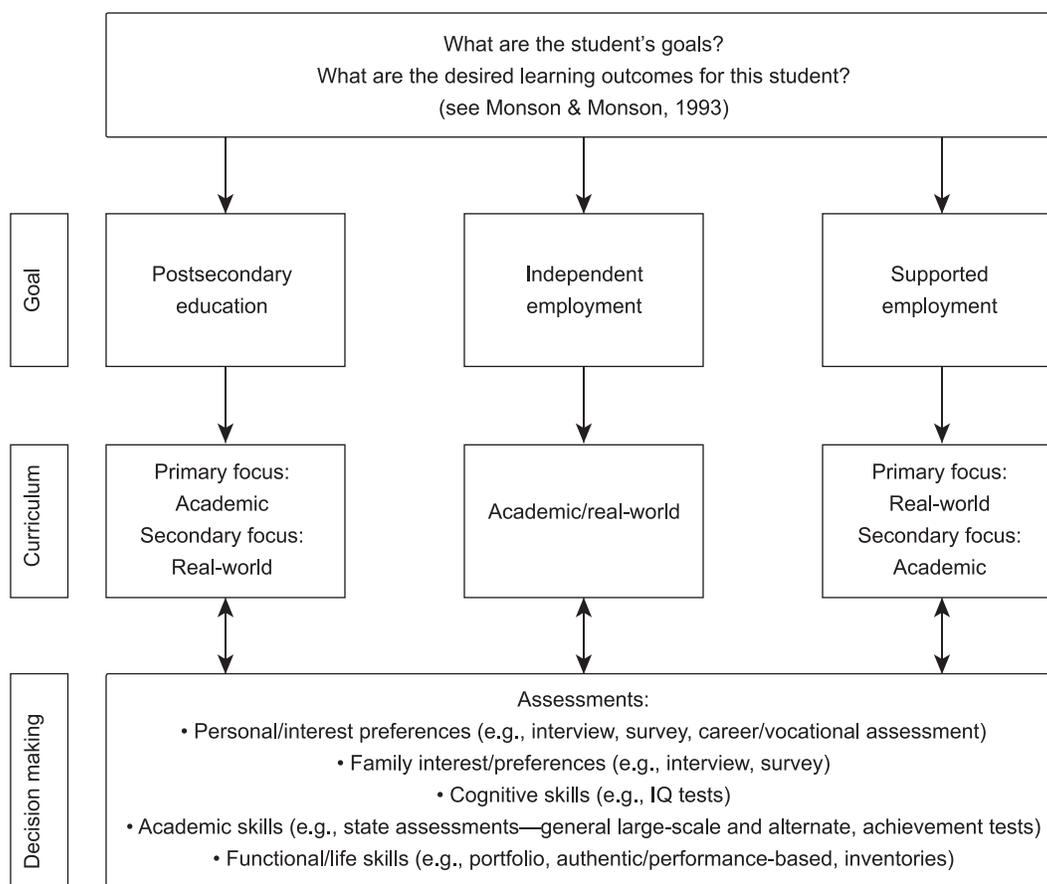*Subsequent Environment Decision-Making*

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                    ┌─────────────────────┐
                    │ What is a secondary │
                    │ student's subsequent│
                    │    environment?     │
                    └─────────────────────┘
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Supported employment

Supported living

Independent living

Independent employment

Postsecondary education

Figure 1.4
Curriculum Planning Based on Postsecondary Goals

What are the student's goals?
What are the desired learning outcomes for this student?
(see Monson & Monson, 1993)

Goal

Postsecondary education

Independent employment

Supported employment

Curriculum

Primary focus:
Academic
Secondary focus:
Real-world

Academic/real-world

Primary focus:
Real-world
Secondary focus:
Academic

Decision making

Assessments:
• Personal/interest preferences (e.g., interview, survey, career/vocational assessment)
• Family interest/preferences (e.g., interview, survey)
• Cognitive skills (e.g., IQ tests)
• Academic skills (e.g., state assessments—general large-scale and alternate, achievement tests)
• Functional/life skills (e.g., portfolio, authentic/performance-based, inventories)

Note. Reprinted from "Secondary curriculum and transition," by E. C. Bouck, 2012. In P. Wehman (Eds.), *Life beyond the classroom: Transition strategies for young people with disabilities* (5th ed., pp. 215–233). Copyright 2012 by Brookes. Reprinted with permission.

However, teachers do not make decisions about curriculum for students with disabilities in a vacuum; many other factors are at play when teachers decide to implement a particular curriculum that is appropriate for an individual student or for his or her class. Curricular decisions are also impacted by federal, state, and district policies, including standards, school factors (e.g., geographical location), community factors (e.g., resources, supports, opportunities), curricular material factors, and teacher factors (e.g., knowledge about a curriculum; Bouck, 2008; Hunt et al., 2012). Curricular decision-making should also involve considerations of family preferences in addition to the individual's (Hunt et al., 2012).

Besides determining what to teach, curriculum decision-making involves where and how to teach it. There is more than one way to teach a real-world curriculum. Cronin and Patton (1993) suggested three options for teaching a real-world curriculum: infusion, augmentation, and coursework. *Infusion* involves integrating real-world curriculum content into existing instructional content; this could be the general education—or academic—curriculum (see Chapter 3 for additional information regarding the intersection between real-world and academic curricula). *Augmentation* involves dedicating a portion of the course or class time to teaching real-world curricular skills and activities. Last, the *coursework*, or programmatic approach, can involve a general real-world skills course, a topical real-world skills course, or a comprehensive package of real-world skills courses (Cronin & Patton, 1993). The coursework or programmatic approach is what one would likely think of if a student is receiving a "life skills" program or enrolled in a "life skills class."

Although the basis of a real-word curriculum is that it can be applicable to all students across the PK–12 continuum, not all approaches to implementation may be appropriate. For example, although the infusion and augmentation approaches can be used in both elementary and secondary settings, coursework or a program is more appropriate at the secondary level (Cronin & Patton, 1993). This is not unlike the premise that elementary school is about learning to function and secondary education about functioning to learn—not unlike the balanced literacy approach to reading (see Duke, Bennett-Armistead, & Roberts, 2003); in other words, a real-world curriculum moves along a continuum from performance to cognitive apprenticeship as a student ages (Bouck, 2008).

As previously indicated, a real-world curricular approach is not just a high school or even secondary education concern; a real-world curricular approach can be transparent through all of a student's education (Cronin & Patton, 1993; Polloway et al., 1991). Consideration of a real-world curricular approach for students in elementary and middle school is important when considering the "subsequent environment as attitude" as suggested by Polloway et al. (1991). In other words, if high school teachers of students with intellectual disability, ASD, or other developmental disabilities maintain a curricular focus on postsecondary outcomes and opportunities, middle school teachers need to maintain a focus on preparing students to be successful in the high school curriculum, and elementary teachers in turn focused on preparing students for middle school (Polloway et al., 1991; see Figure 1.5).

Figure 1.5
Real-World Curriculum Component Progress/Completion Chart

Real-world curricular components (Wehman et al, 2012)	Real-world curriculum components (Patton et al., 1997)	When covered	Where covered	How covered (notes)	Mastered or in progress
Functional academics and postsecondary education	Functional academics	☐ Elementary	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ Middle	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ High	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
	Literacy	☐ Elementary	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ Middle	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ High	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
	Mathematics	☐ Elementary	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ Middle	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ High	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*

Figure 1.5 (cont'd)
Real-World Curriculum Component Progress/Completion Chart

Real-world curricular components (Wehman et al, 2012)	Real-world curriculum components (Patton et al., 1997)	When covered	Where covered	How covered (notes)	Mastered or in progress
Career education and work	Vocational education	☐ Elementary	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ Middle	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ High	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
Financial planning and management	Financial	☐ Elementary	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ Middle	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ High	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*

Figure 1.5 (cont'd)
Real-World Curriculum Component Progress/Completion Chart

Real-world curricular components (Wehman et al, 2012)	Real-world curriculum components (Patton et al., 1997)	When covered	Where covered	How covered (notes)	Mastered or in progress
Community living and participation	Community access	☐ Elementary	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ Middle	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ High	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
	Independent living	☐ Elementary	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ Middle	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ High	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
Personal health and safety	Daily living	☐ Elementary	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ Middle	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
Home living		☐ High	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*

Real-world curricular components (Wehman et al, 2012)	Real-world curriculum components (Patton et al., 1997)	When covered	Where covered	How covered (notes)	Mastered or in progress
Travel and mobility	Transportation	☐ Elementary	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ Middle	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ High	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
Self-determination	Self-determination	☐ Elementary	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ Middle	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ High	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*

Figure 1.5 (cont'd)
Real-World Curriculum Component Progress/Completion Chart

Real-world curricular components (Wehman et al, 2012)	Real-world curriculum components (Patton et al., 1997)	When covered	Where covered	How covered (notes)	Mastered or in progress
Socialization, recreation, and leisure	Social/relationships	☐ Elementary	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ Middle	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ High	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
	Leisure & recreation	☐ Elementary	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ Middle	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*
		☐ High	☐ General education ☐ Special education ☐ Community ☐ Other		☐ Mastered ☐ In progress *Notes:*

When an educator decides that a student or class would benefit from a real-world curriculum, the next decision that needs to be made is how to implement such a curriculum. A real-world curriculum can be constructed by drawing from a variety of sources, although there are also packaged real-world curricula (e.g., *Life Centered Education,* LCE, Wandry, Wehmeyer, & Glor-Scheib, 2013; formerly *Life Centered Career Education,* Brolin, 2004; see Table 1.2). Both approaches have advantages and limitations. With a packaged curriculum, the teacher does not need to deliver the curriculum piecemeal, which can be time-consuming and suffer from a lack of resources (Bouck, 2008).

In comparison, general education teachers typically implement a packaged curriculum model for their content area domains, such as mathematics or science. Yet, outside of LCE (Wandry et al., 2013), few comprehensive real-world curriculum models exist (Bouck, 2009). On the other hand, developing a targeted curriculum can allow for more individualization as well as teaching the specific real-world skills an individual student needs. However, it is time consuming and resource draining, and it is possible not everyone involved in the classroom (e.g., paraprofessional) will understand what is being implemented and implement with fidelity (Bouck, 2008).

Table 1.2
Real-World Curriculum Models

Curriculum model	Target population	Materials	Focus	Cost	Adult life subdomains (*n* = 26)	Functional curriculum components (*n* = 11)
A Functional Curriculum for Teaching Students with Disabilities (Bender, Valletutti, Baglin, & Hoffnung, 1996)	Early childhood through secondary	Three manuals	Interventions for school and home	$125.00	9.5	7
Adaptive Living Skills Curriculum (Anderson, Bruinlinks, Morreau, & Gilman, 1991)	Early childhood through adults	Four books	Personal living, home living, community living, and employment skills	$457.50	12	6
Community-Based Curriculum (Falvey, 1989)	Severe disabilities	Book	Community-based instruction, real-world and age-appropriate skills, inclusive settings	$30.00	14	9
Everyday Life Skills (American Guidance Service, 2001)	Secondary students with disabilities	Textbook (student and teacher editions)	Life after school (e.g., independent living, career development)	$114.97 (without extras) $519.93 (with extras)	15	6
Functional Curriculum for Elementary and Secondary Students with Special Needs (Wehman & Kregel [Eds.], 2004, 2012)	Elementary, middle and high school students with disabilities	Book	Real-world curriculum (e.g., self-determination, functional academics, social skills)	$71.00	17 (Wehman & Kregel, 2004)	10 (Wehman & Kregel, 2004)
Functional Independence Skills Handbook (Killion, 2003)	Developmental disabilities	Book	Independent living skills, including cognitive, social, and vocational	$62.00	6	9

Table 1.2 (cont'd)
Real-World Curriculum Models

Curriculum model	Target population	Materials	Focus	Cost	Adult life subdomains (*n* = 26)	Functional curriculum components (*n* = 11)
Impact: A Functional Curriculum Handbook (Neel & Billingsley, 1989)	Moderate and severe disabilities	Book	Real-world skills	Out of print	.5	2.5
Life Centered Career Education (Brolin, 2004)	Students with disabilities	Educational system	Daily living, personal-social skills, occupational guidance and preparation	$519.93	Not assessed	Not assessed
Life Centered Education (Wandry et al., 2013)	Students with disabilities (high-incidence and low-incidence)	Online	Daily living skills, self-determination and interpersonal skills, and employment skills	$599.00 for one teacher license (30 students for Council for Exceptional Children members)	Not assessed	Not assessed
Life Skills Activities for Secondary Students with Special Needs (Mannix, 1995)	Secondary students with disabilities	Book (reproducible pages)	Self-awareness, people skills, academic and school skills, practical living skills, vocational skills, and problem-solving skills	$29.95	11.5	9
Life Skills Instruction for All Students with Special Needs (Cronin & Patton, 1993)	Students with disabilities	Book (guide)	Suggestions for teachers on implementing real-world curriculum components	$39.00	23	9.5
The Syracuse Community-Referenced Guide (Ford et al., 1989)	Moderate and severe disabilities	Textbook/ guide book	Research-based for the inclusion of real-world components	$59.00	15.5	8.5

Note: The analysis for the adult life subdomains focused on the six domains of adulthood by Cronin and Patton (1993; i.e., employment/ education, home and family, leisure pursuits, personal responsibilities and relationships, community involvement, and physical/emotional health), and then the 26 subdomains that fell within these six domains (e.g., goal setting, family life, general job skills, and travel). The analysis of aspects of a functional curriculum examined for the following components: (a) functional academics, (b) vocational education, (c) daily living, (d) social/relationships, (e) independent living, (f) community access or skills, (g) transportation, (h) financial, (i) self-determination, (j) leisure and recreation, and (k) communication skills (Patton et al., 1997). Adapted from "Functional Curriculum Models for Secondary Students with Mild Mental Impairment," by E.C. Bouck, 2009, *Education and Training in Developmental Disabilities, 44*, 435–443. Copyright 2009 by Division on Autism and Developmental Disabilities of the Council for Exceptional Children. Adapted with permission. Adapted from "Secondary Curriculum and Transition," by E.C. Bouck, 2012, in P. Wehman (Ed.), *Life Beyond the Classroom: Transition Strategies for Young People With Disabilities* (5th ed., pp. 215–233). Copyright 2012 by Brookes. Adapted with permission.

Ecological Inventories and Assessments

If curriculum options are considered and use of a real-world curricular approach is determined appropriate, assessments need to be conducted to identify the curriculum best suited for the current and future environments of students (Snell & Brown, 2006). *Environmental assessments* are individualized assessments that identify the functional activities and routines required across environments (Hamill & Everington, 2002; Snell & Brown, 2006). Environmental assessments are different from curriculum-based assessments in that they assess students' need across environments that go beyond generating norms for the classroom (Hamill & Everington, 2002).

An essential assessment tool available to teachers (as well as all individuals who work with students) to assist in creating and delivering a real-world curricular approach is an ecological inventory. An *ecological inventory* identifies priority skills for a student through examining the environments the student currently accesses as well as those in the future (Brown et al., 1979). Similar to the factors that influence curriculum decision making, an ecological approach involves considering the current and future environments in which the student participates or will participate and then addresses the skills and activities needed to live, work, and have fun in those environments (e.g., an elementary student focusing on learning to function in the current environment as well as skills needed to function in the future setting of a middle school; Polloway et al., 1991). In other words, an ecological approach involves the use of an ecological inventory. The purpose of an ecological inventory is to gather individualized information about the demands of a student's environments and use that information to drive instruction to promote success in the student's life (Snell & Brown, 2006). An advantage an ecological inventory has over curriculum options that are commercially available (e.g., *Functional Independence Skills Handbook—Assessment and*

Curriculum for Individuals With Developmental Disabilities, Killion, 2003) is that an ecological inventory is dependent on an individual's life circumstances (Brown et al., 1979). This is an important benefit for students because educators do not want to teach a student to ride the city bus if that student does not currently have access to a city bus and it is not anticipated he or she will in future environments.

An ecological inventory starts with determining major areas of instruction for a student (e.g., community, vocational) and follows a series of steps that break those instructional areas down into the skills the student performs. In other words, an ecological inventory uses a top-down approach by starting with the "big picture" of an area of instruction and then breaking it down into smaller components (Brown et al., 1979). The ecological inventory process includes a total of five steps (see Figure 1.6).

Step 1: Identify the Curriculum Domain

Curriculum domains are topics of major instructional concern for students (Brown et al., 1979). Separating total instruction into domains can help develop areas that are more manageable for assessment purposes as well as help teachers understand the focus of their instruction. A practitioner can justify an endless number of curriculum domains for their students (e.g., school, career, community, mathematics, history, behavior). However, in 1979, Brown and colleagues identified four major life domains as representing the curriculum domains for students with more severe disabilities: domestic, vocational, community, and recreation and leisure. The major life domains proposed by Brown and colleagues are different from traditional content domains upon which students without disabilities typically focus (e.g., mathematics, English, science) and they represent the skills that students will need in their postschool lives; focusing on these

domains leads to the selection of practical skills, and emphasizes functional goals (Snell & Brown, 2006). In regards to a real-world curriculum, the specific domains teachers choose to make a part of student learning should tie directly into skills needed to function in major living environments. Important skill developments in areas of learning (e.g., communication, motor, functional academics) are not forgotten when breaking down instructional areas into domains (i.e., domestic, vocational, community, and recreation and leisure), but rather are embedded into domains chosen for instruction (see Figure 1.1; Brown et al., 1979). For example, ordering food at a restaurant is a communication skill embedded in the community domain of daily living. Figure 1.7 provides examples of skills across instructional areas for students engaging in a real-world curriculum (Wehman & Kregel, 2012).

Figure 1.6
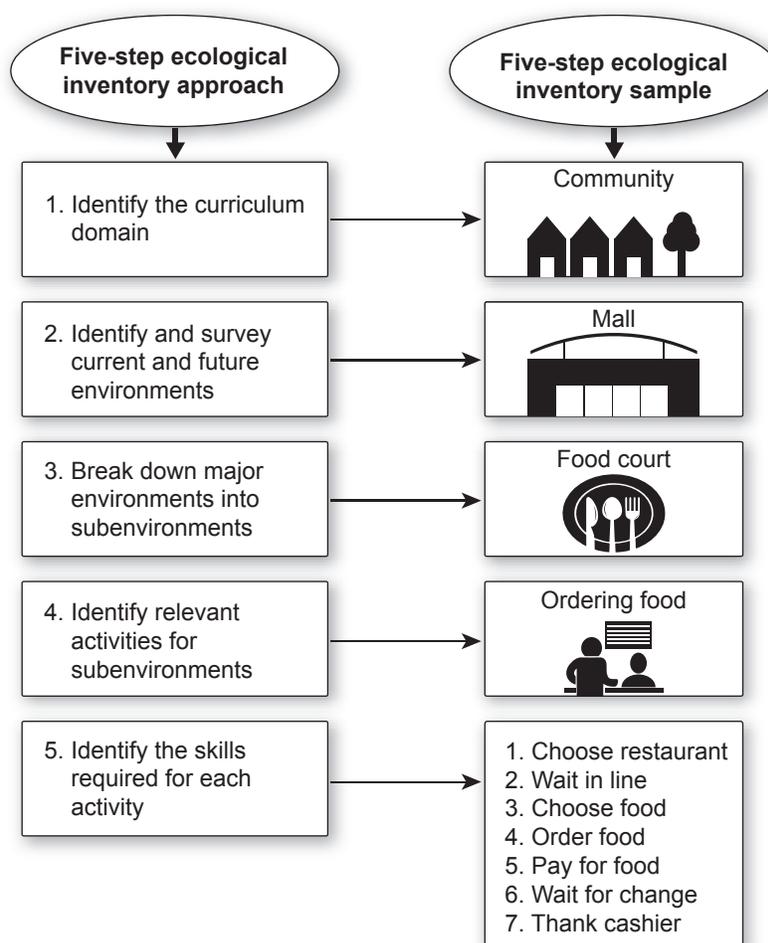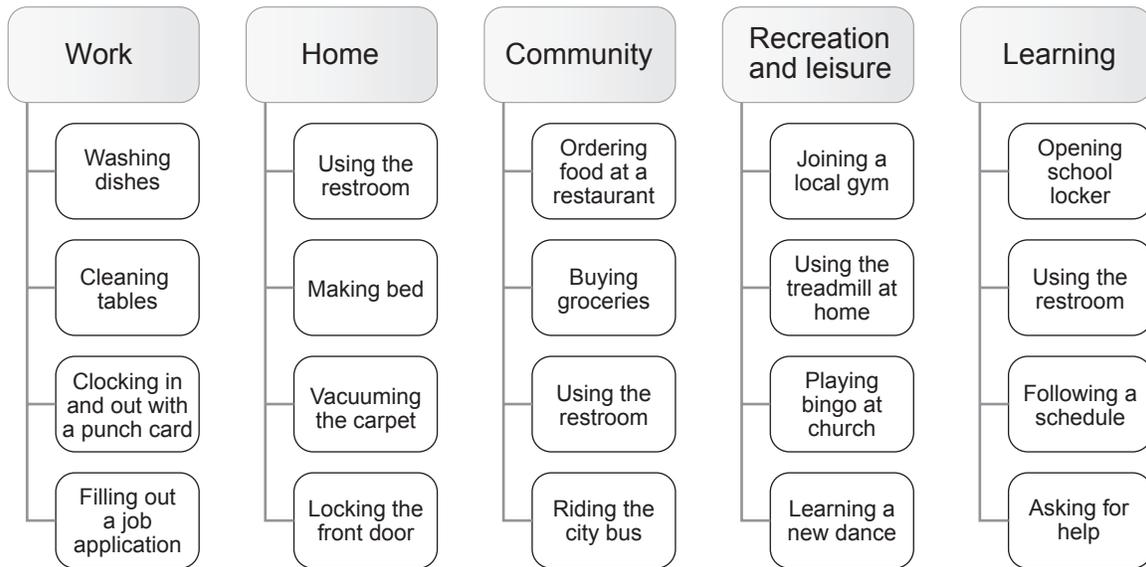*Five-Step Ecological Inventory Process and Sample*

Figure 1.7
Skills Across Real-World Curriculum Instructional Areas

Work	Home	Community	Recreation and leisure	Learning
Washing dishes	Using the restroom	Ordering food at a restaurant	Joining a local gym	Opening school locker
Cleaning tables	Making bed	Buying groceries	Using the treadmill at home	Using the restroom
Clocking in and out with a punch card	Vacuuming the carpet	Using the restroom	Playing bingo at church	Following a schedule
Filling out a job application	Locking the front door	Riding the city bus	Learning a new dance	Asking for help

Step 2: Identify and Survey Current and Future Environments

After identifying important curriculum domains for the student, the next step is assessing the student's current and future environments under each of the curriculum domains (Brown et al., 1979; Hamill & Everington, 2002). The student's individualized education program (IEP) team should determine both the typical environments in which the student will participate during the school day, and the typical environments outside of school. Common current environments to consider may include grocery stores, the mall, restaurants, school, and parks, whereas future environments to consider may include independent or supported living apartments, job sites, and public transportation (Snell & Brown, 2006).

Ecological inventories focus on current and future environments the student may need to access (i.e., subsequent environments; Polloway et al., 1991). For example, if a 5-year-old preschool student will transition to an elementary school setting the following school year, it is important to teach skills required in the elementary school environment to assist the student in functioning in the new setting (e.g., raising hand to answer a question, using the restroom independently). These skills will be different from the skills taught to a 17-year-old who is going to transition to independent employment following graduation. The 17-year-old will focus on age-appropriate skills required for the future environment, such as work (e.g., stocking shelves, operating a dishwasher). Identifying these future environments early on allows for increased preparation and practice for students to be successful in the future environments.

Step 3: Divide Major Environments Into Subenvironments

In an environment, there are generally several subenvironments that affect curriculum decisions (Brown et al., 1979). For example, a major environment such as the mall can be divided into smaller subenvironments like stores,

bathrooms, and food courts. This division is important because the range of skills needed for activities in one subenvironment may be completely different compared to another subenvironment (e.g., skills needed to use the restroom are independent of skills needed to order food in a food court). Students are in the same environment (e.g., the mall) but the subenvironments (e.g., restroom and food court) require separate activities and a specific set of skills for students to learn.

Step 4: Identify Relevant Activities for Subenvironments

Once priority subenvironments are identified, activities can be targeted for learning (Brown et al., 1979; Hamill & Everington, 2002). This step can seem daunting, as there are numerous activities that can take place in a subenvironment. However, the following considerations may help prioritize the most important activities for students (Snell & Brown, 2006):

- mandatory activities for successful participation,
- the frequency the activity occurs within other subenvironments,
- current skills students possess,
- student preferences and interests,
- family preferences,
- physical demands of the subenvironment, and
- potential for meaningful participation, belonging, and relationships.

These considerations keep the process of creating an ecological inventory person-centered by asking for student and family preferences. Practitioners can use a rating scale with these considerations to determine high priority activities for students. Practitioners should also collaborate with students, family

members, and other IEP team members to determine high priority activities for environments in each domain (Wehman & Kregel, 2012).

Step 5: Identify Skills Required by Activities

Once priority activities are targeted, the skills required for the activities should be identified (Brown et al., 1979; Hamill & Everington, 2002). A common approach for identifying skills needed to perform an activity is a task analysis, which breaks down activities into individual steps or teachable units (Snell & Brown, 2006). In other words, every action required to accomplish the activity is listed in the sequence they occur. By breaking down tasks into teachable units, each action can be learned and then chained together with the end goal of performing the entire activity.

When a task analysis is used to instruct learning, it can increase the likelihood that teachers understand the activity; data collection can be recorded with ease by assessing performance on each skill listed in the task analysis (Storey & Miner, 2011). When creating a task analysis, guidelines are available that increase the likelihood of successful skill acquisition for students. The individual developing the task analysis should (a) perform the task before developing the task analysis, (b) keep the skills in the task analysis in the same sequential order they need to be performed, (c) be the person who teaches the task analysis to the student, and (d) review steps to make sure they are broken down appropriately for the student (Storey & Miner, 2011; Wehman & Kregel, 2012). It is important to note that a task analysis for the same activity can look different from one student to the next. A student's abilities will determine the number of steps used in the analysis (Wehman & Kregel, 2012). For example, an activity that occurs frequently

Figure 1.8
Task Analysis for Ordering Food

Mary	Tate
1. Choose restaurant	1. Choose restaurant
2. Wait in line	2. Wait in line
3. Move food items wanted into output screen	3. Order food
4. Play prerecorded phrase "I'm Mary and I am ready to order"	4. Pay for food
5. Play output of wanted food items	5. Wait for change
6. Take money out of wallet	6. Thank cashier
7. Pay for food	
8. Wait for change	
9. Put change in wallet	
10. Play prerecorded phrase "thank you" for cashier	

across numerous subenvironments is ordering food. This is an activity that may need to be broken down into a few reminder steps for some students or more detailed steps for other students. Figure 1.8 illustrates this for two students, Mary and Tate. Mary is a 7-year-old student with a severe intellectual disability. Mary is nonverbal, but she is learning to use a speech generating application on her iPad. Tate is a 14-year-old student with a mild intellectual disability who is able to complete the task with fewer steps in the task analysis than Mary.

Once a task analysis is created for a student, review the entire ecological inventory to check for objectivity across the steps (Snell & Brown, 2006). This is important because teachers may be comfortable with some activities but not others that may be important for a student to participate in. For example, a teacher who does not have training in communication may not address the communication skills required in an activity as comprehensively as a teacher who is trained in communication skills and intervention—or may skip over this activity completely (e.g.,

performing the communication part of an activity for the student, focusing on using the restroom in a mall instead of ordering food). After the ecological inventory is reviewed by its developer and checked for objectivity by others, it is ready to use to assess student performance. Figure 1.9 provides an example of a completed ecological inventory for the activity of ordering food; Figure 1.10 is a blank ecological inventory form for teacher use.

Assessing Student Performance

Once the ecological inventory is complete, teachers should identify the student's ability to complete the skills required for activities. Assessing student performance across skills is a critical component to using an ecological inventory because this information will determine the amount of instruction required to learn each skill for task completion (Hamill & Everington, 2002). The initial assessment, also known as collecting baseline information, will help verify whether the activity is appropriate

for the student and identify possible problem areas in the task completion process for students (Wehman & Kregel, 2012). When assessing student performance, educators should conduct assessments in the environment in which the task will occur as well as conduct assessments at the same time of day the task will typically occur (Wehman & Kregel, 2012). Individuals assessing student performance should keep records of such assessments for decision making and comparison across time of task performance; Figure 1.11 provides a blank task analysis assessment form.

The assessment form indicates each step of the ecological inventory; allows the teacher to track progress across time for a single activity, including level of independence and assistance needed for each skill in the task analysis; and gives space to record notes. When the level of independence or prompting needed is recorded, teachers can track student performance in order to determine if more assistance should be provided or if the student has reached criterion for success and assistance should be lessened (Westling & Fox, 2009). This includes recording more than just whether or not the student can do the skill because there are many levels of assistance a student can receive (i.e., prompts) when learning a skill.

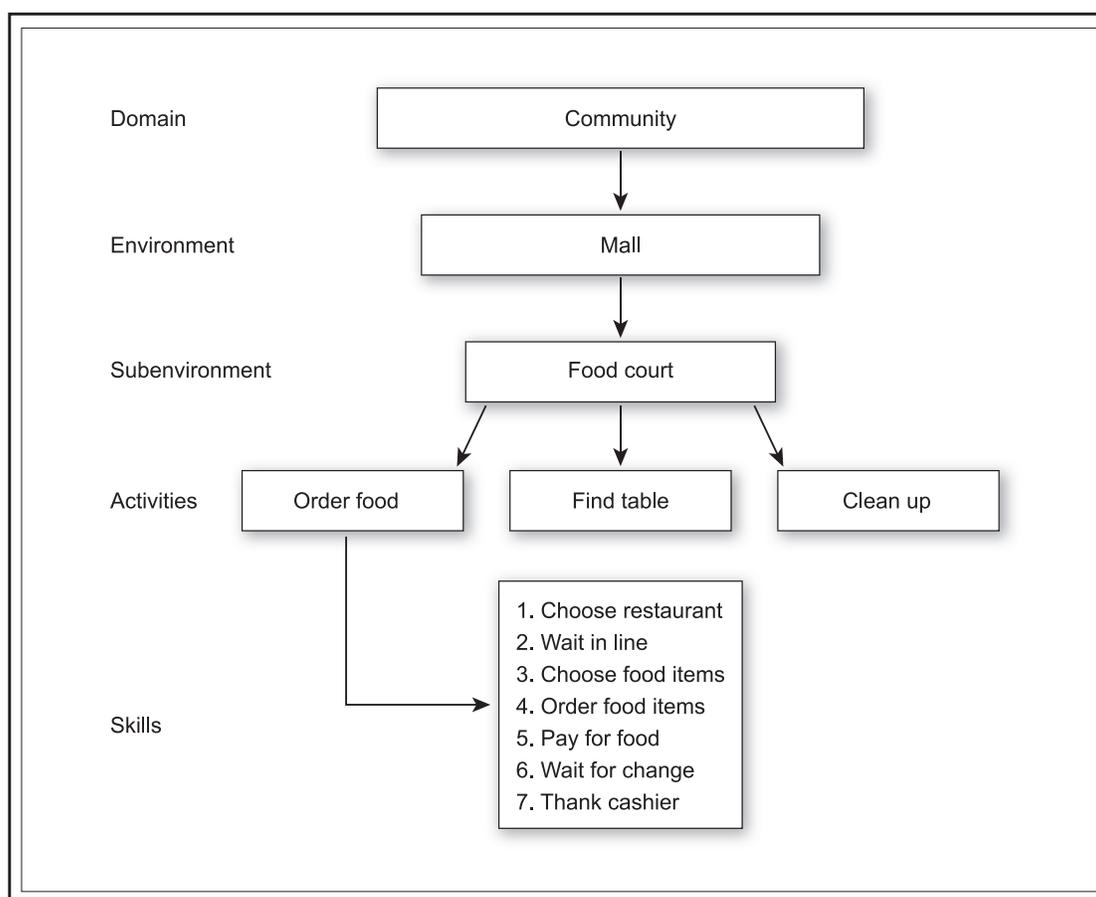**Figure 1.9**
Sample Ecological Inventory

Figure 1.10
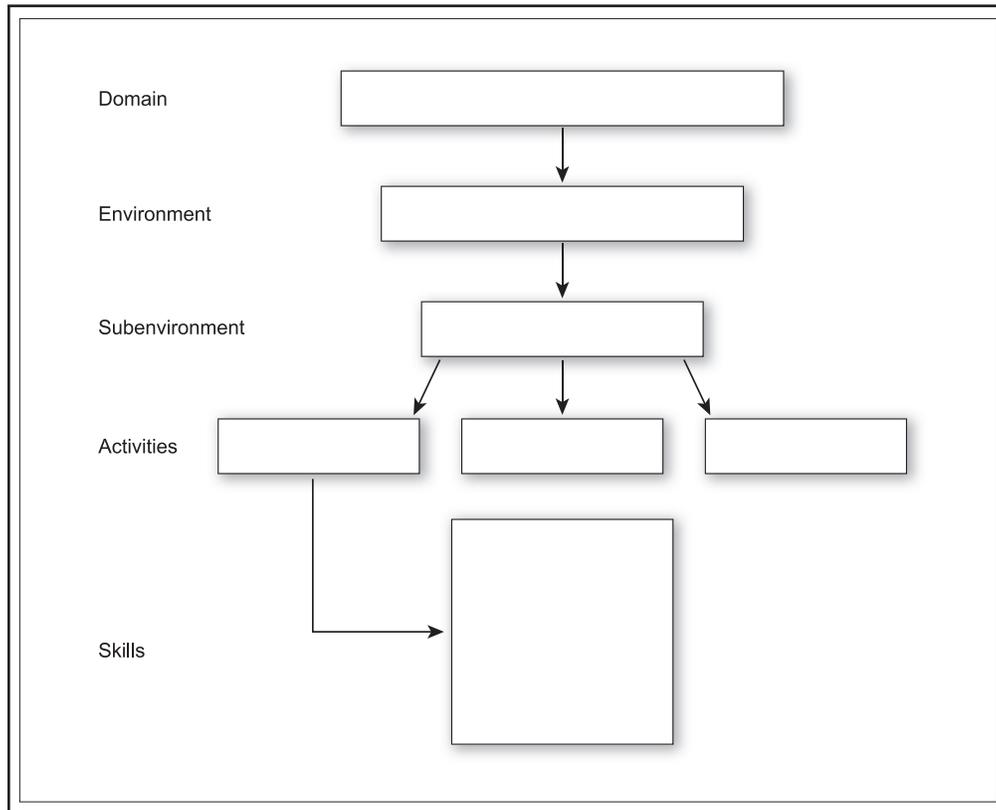*Blank Ecological Inventory Form*

Figure 1.11 indicates seven levels of prompting, from none (the student performs the task independently) to full physical assistance, that can be given to the student during performance of a skill and coded on the assessment form. Independence indicates that the skill was done without any additional assistance from an external source. A **nonspecific verbal prompt** indicates that the student was given a broad verbal statement (e.g., step one is next) without telling the student exactly what that step involves. A **specific verbal prompt** (e.g., "pour the milk into the empty cup") gives specific verbal details of the step to the student. A **verbal prompt along with a gesture** indicates that the student received a specific verbal prompt in addition to the teacher directing the student towards what is needed to complete the skill (e.g.,

pointing to the blender if the skill requires use of a blender for the step, pointing to the correct folder needed to do math work). A **modeling prompt** involves the teacher performing the skill for the student to observe, followed by the student performing that skill. The most intrusive prompts given to students are physical prompts (Westling & Fox, 2009). A **partial physical prompt** indicates that the student was given some physical guidance towards completing the skill. For example, the teacher may begin the process of peeling an orange for the student then place the student's hand on the orange to continue, or the teacher may place a student's hand on the lid of a blender to indicate that the student needs to take the lid off. A **full physical prompt**, the most invasive, involves hand-over-hand assistance from the teacher to complete

Figure 1.11
Task Analysis Assessment Form

Student:				Person completing form:				
Domain:				Environment:				
Subenvironment:				Activity:				

Use codes listed at the bottom of the sheet during observation of activity to document student performance.

Task Analysis: Date:								
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

I = independent   NVP = nonspecific verbal prompt

VP = specific verbal prompt   VG = verbal prompt and gesture

M = modeling prompt   PPP = partial physical prompt

FPP = full physical prompt

Anecdotal notes:

the skill (e.g., the teacher puts a toothbrush in the student's hand, closes the student's hand, and closes his or her own hand around the student's hand in order to help brush the student's teeth).

When using ecological inventories to assess student performance across time, teachers hope to see the level of independence for student skill performance move away from students requiring physical prompting towards less intrusive prompting (e.g., verbal prompting) and eventually independence. Through this direct measurement of skills, ecological inventories can provide the foundation for curriculum objectives for students participating in a real-world curriculum (Wehman & Kregel, 2012). Use of ecological inventories provides the match between curriculum and individualized instruction students with intellectual disability, ASD, or other developmental disabilities need to increase chances for success in current and future environments. Because time is spent teaching students the skills they will be using now and in the future when using an ecological approach, students are better prepared to perform the skills they will need to succeed in their environments.

Case Study

Mary

Mary is a 7-year-old, second-grade student identified with ASD. Mary does not speak and also has sensory processing difficulties. Mary lives at home with her parents and one younger sibling in an urban area. Mary enjoys drawing, swimming, and swinging at the playground. Mary is having a difficult time relating to her peers, specifically in the area of communication. For example, Mary hits her peers' arms when she wants to get their attention. Mary also has a difficult time in loud environments, often reacting by screaming, covering her ears, and rocking.

Mary spends the morning hours in a general education classroom and the afternoon hours in a self-contained setting. Mary also attends a weekly community outing with her life skills class. She receives support from paraeducators throughout the school day. Mary's morning includes participating in circle time, specials with her same-aged peers, and math instruction. Her afternoons focus on functional academics, community, domestic, and recreation skills. Mary can identify numbers 1 through 20, some letters of the alphabet, and can write her first name when given a visual model. Mary uses gestures (e.g., shakes her head no) and pointing to express her needs and wants but is learning to use a new augmentative and alternative communication device for communication exchanges. Mary's IEP goals relate to increasing her independence during the school day, teaching appropriate ways to interact with peers, increasing number of communication exchanges with adults and peers, and improving her math skills.

Tate

Tate is a 14-year old, eighth-grade student identified with a mild intellectual disability (IQ of 62); next year he will transition from middle school to high school. Tate lives at home with his parents and a sibling in high school in a suburban area. In particular, his town contains a medium-sized state university. Tate enjoys living near the university because he likes to attend sporting events. Although Tate does not play sports on his middle school team, he enjoys playing for fun at home and around his neighborhood. Tate is generally a happy-go-lucky young man, although as he aged he increasingly struggled with being accepted by his peers. Tate is sometimes teased or picked on for attending the special education room for his real-world instruction, and he takes it hard. Tate receives bi-weekly social work services to

help him deal with his emotions regarding his peers and to learn strategies to make friends.

Tate takes classes in both the general education setting as well as a self-contained setting that applies a real-world curriculum. For example, Tate takes social studies, science, and all his electives (e.g., physical education, art) in general education settings. Tate's mathematics and English/language arts classes occur in a special education setting taught by a special education teacher. He also has one period of the day devoted to Life Skills, a course taught by his special education teacher. Tate can read, although he struggles with reading grade-level material fluently and comprehending all that he reads, particularly expository textbooks. In addition, Tate struggles with remembering all the steps in multistep mathematics problems. In particular, Tate's IEP goals relate to increasing his independence in the community and daily living skills, increasing his vocational training, and improving his reading and mathematics skills.

Robert

Robert is a 16-year-old high school student identified with severe intellectual disability (IQ of 41). He just began his third year as a high school student, and his teachers and parents began preparing for his eventual transition from secondary to postsecondary settings when he began the secondary programming. Although not required by law to develop a transition plan until a student reaches age 16, Robert's teachers and parents felt that additional planning time would benefit his educational program. Robert lives at home on a large dairy farm with his parents and two siblings (he is the middle child). He attends the county high school with his older sister and younger brother, and he receives educational services in general education and self-contained settings as well as the community.

Robert loves athletics! He is an active participant in Special Olympics basketball, track and field, and equestrian activities. He previously volunteered at the equestrian center, where he learned to groom and feed horses as well as clean stalls. On his family's dairy farm, his outside chores include cleaning stalls and feeding animals as well as working in the family vegetable garden, watering plants, and picking ripe vegetables. Inside, he helps with cleaning bathrooms, making his bed, cooking using a microwave, and unloading the dishwasher.

Academically, Robert can read a few basic sight words, sort by colors, and count to 20. He is also able to follow one- and two-step directions without additional prompting. Although he has limited use of his left hand, it has never been a limitation and he is able to easily make accommodations. In his future, Robert wants to continue his relationships with his schoolmates. He wants to have access to a gym where he can work out and play basketball. He also wants to continue competing in Special Olympics and eventually would like a job working with horses.