# The Universal Design of Early Education
## Moving Forward for All Children

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**A French television commercial shows typically abled people trying to function and participate in a world designed for people with disabilities. Speaking persons approach receptionists, who respond only in sign language; walkers slip down wet inclines navigated by people in wheelchairs; a sighted individual looks for books in a library but finds them all printed in Braille. Graphic images communicate a strong message: the world is harder when it is not conceived with your abilities in mind.**

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Cluster illustrations throughout by Sandi Collins.

This commercial reflects a French utility company's commitment to recognizing the diverse needs of its employees and customers—"May the world be made for you. Access for everyone" (EDF Group 2005). Images like this spur thoughtful reflection. How well have we conceived early education programs to support and respond to all young children? Do they welcome and include every child? Are activity areas and materials physically accessible to each child? Do all families have opportunities to be involved in their children's education? Is every child engaged and learning? Answering yes to these questions has become more challenging as the population of children in the United States has become increasingly diverse in ability levels, cultural and linguistic backgrounds, and economic status (West, Denton, & Germino-Hausken 2000).

## Reaching all children

Specially designed programs, including Head Start, early childhood special education, Title III programs for English-language learners, and Title I compensatory education, identify successful strategies for educating children who may struggle to learn because of health or other medical needs, emotional or behavioral problems, and/or disabilities. Children facing language barriers or growing up in poverty may have additional learning challenges. But the goal for educators is to design early education programs that meet the needs of all learners within a common setting and begin to move away from specialized programs. Moreover, as educators we need to accomplish this goal while also focusing on standards and program accountability.

A framework for supporting all young learners is *universal design*. The universal design of early learning "suggests that instead of creating a curriculum and then adapting it to meet the needs of individual children in the program, it is better to start off with an instructional design which provides learners with a variety of ways to access and process information and demonstrate what they have learned" (Blagojevic, Twomey, & Labas 2002). This framework calls for early educators to value from the beginning the importance of planning learning environments and activities for a diverse population—creating universally designed settings in which all children and their families can participate and learn.

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## A design idea from architecture

Universal design principles were first introduced in the field of architecture to address the economic, functional, and aesthetic challenges associated with designing physical spaces for all people, including individuals with physical and cognitive disabilities. Originators defined the principle of universal design as the "design of products and environments to be usable to the greatest extent possible by people of all ages and abilities" without the need for adaptation or specialized design (Story, Mueller, & Mace 1998, 2).

The Center for Universal Design at North Carolina State University (1997) collaborated with a national consortium of universal design researchers and practitioners to develop seven core design principles—equitable use, flexibility in use, simple and intuitive, perceptible information, tolerance for error, low physical effort, and size and space for approach and use—for guiding the planning of buildings, physical spaces, and materials. The influence of these design principles is evident throughout our communities: curb cuts and entrance ramps, elevators with voice announcements, and automatic doors at store entrances.

At first these design applications may seem solely intended for people with disabilities. But developers of the universal design framework recognized that usability would increase as special needs features began to serve all. People who use wheelchairs benefit from curb cuts and ramps, but so do bicycle riders, parents pushing strollers, and travelers pulling wheeled luggage. Elevators that announce floor numbers assist individuals with impaired sight along with shorter people who may not be able to see the light indicators when the elevator is crowded with riders. Doors that open automatically aid those not strong enough to open them as well as individuals whose arms hold packages or young children.
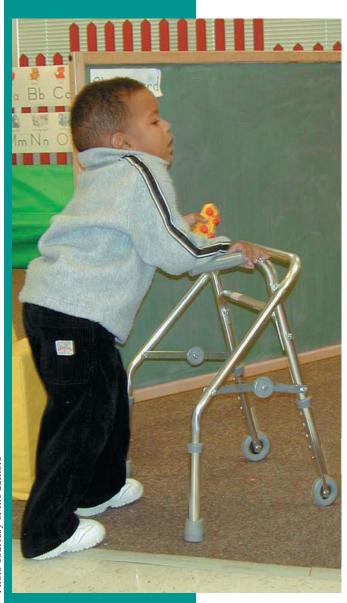
Photo courtesy of the authors

# Educational Applications of the Seven Principles of Universal Design for Learning

| Physical principle | Educational application |
| --- | --- |
| 1. **Equitable use**—The design allows all users equal access and avoids segregating or stigmatizing anyone. | **Equitable curriculum**—Instruction uses a single curriculum that is accessible to students with widely diverse abilities; curriculum does not unnecessarily segregate students or call undue attention to their "differences." Curriculum is designed to engage all students. |
| 2. **Flexibility in use**—The design accommodates a wide range of individual preferences and abilities. | **Flexible curriculum**—The curriculum is designed to be presented flexibly to accommodate a range of individual abilities and preferences; it considers physical and sensory-motor disabilities as well as varied learning preferences and paces. |
| 3. **Simple and intuitive**—The design is easy to understand. | **Simple and intuitive instruction**—Instruction is straightforward, provided in the mode most accessible to students; language, learning levels, and complexity of presentation can be adjusted; student progress is monitored on an ongoing basis to reset goals and instructional methods as needed. |
| 4. **Perceptible information**—The design communicates necessary information effectively to the user, through different modes (pictorial, verbal, tactile), regardless of the user's sensory abilities. | **Multiple means of presentation**—Curriculum provides multiple means of presentation to teach students in ways that will most effectively reach them, regardless of sensory ability, level of understanding or attention; presentation can be altered to meet recognition patterns of individual students. |
| 5. **Tolerance for error**—The design minimizes hazards and the adverse consequences of accidental or unintended actions. | **Success-oriented curriculum**—The teacher encourages engagement with curriculum by eliminating unnecessary barriers to engagement; the teacher provides a supportive learning environment through ongoing assistance, applying principles of effective curriculum design as needed: e.g., teaching Big Ideas, priming background knowledge, scaffolding instruction, and so on. |
| 6. **Low physical effort**—The design can be used efficiently and comfortably and with a minimum of fatigue. | **Appropriate level of student effort**—The overall classroom environment provides ease of access to curricular materials, promotes comfort, addresses motivation, and encourages student engagement by accommodating varied means of student response; assessment is ongoing, measuring performance; instruction may change based on results of assessment. |
| 7. **Size and space for approach and use**—Appropriate size and space is provided for approach, reach, manipulation, and use, regardless of user's body size, posture, or mobility. | **Appropriate environment for learning**—Classroom environment and the organization of curricular materials allow for variations in physical and cognitive access by students as well as for variations in instructional methods; classroom environment allows for varied student groupings; classroom space *encourages* learning. |

## Universal design in education

The work of the Center for Universal Design inspired educators and authors working in the fields of special education and assistive technology. Many groups (including the National Center on Accessing the General Curriculum, the Council for Exceptional Children, and the Center for Applied Special Technology) are applying universal design principles to the design of general education. The result is "the design of instructional materials and activities that allows the learning goals to be achievable by individuals with wide differences in their abilities to see, hear, speak, move, read, write, understand English, attend, organize, engage, and remember" (Orkwis & McLane 1998, 9).

Understanding of the principles and their role in education continues to evolve. Mason, Orkwis, and Scott (2005) apply the same seven principles put forth by the Center for Universal Design to illustrate their use in learning and curriculum design (see "Educational Applications of the Seven Principles of Universal Design for Learning"). The work of Rose and Meyer at the Center for Applied Special Technology (CAST) furthers educators' understanding. The CAST (n.d.) Web site states that the universal design for learning framework promotes access to learning through

- multiple means of representation to give learners various ways of acquiring information and knowledge,
- multiple means of expression to provide learners alternatives for demonstrating what they know, and
- multiple means of engagement to tap into learners' interests, offer appropriate challenges, and increase motivation.

Much of the current literature on universal design for learning has focused on elementary and secondary education. However, these approaches to universal design open doors to increased educational possibilities for children of all ages.

### Moving the idea to early education

The principles of universal design for learning are clearly applicable to early childhood education. They can guide professionals in designing programs in which all children and their families have full and equitable access to learning and social opportunities. One premise is that "UDL

> **Children with disabilities fall along a continuum of learner differences rather than constituting a separate category.**



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## What Is Universal Design of Early Learning?

It is designing early education settings so all children, as equal and valued members of the program, may access and engage in all learning opportunities, learn from a common curriculum according to their individual strengths and abilities, and demonstrate their learning in multiple ways.

[universal design for learning] shifts old assumptions about teaching and learning in four fundamental ways" (CAST 2003). CAST suggests that

• children with disabilities fall along a continuum of learner differences rather than constituting a separate category;

• teachers adjust for learner differences for all children, not just those with disabilities;

• curriculum materials should be varied and diverse, including digital and online resources, not merely a single resource; and

• rather than following a set curriculum, teachers allow for flexibility to accommodate learner differences.

A universal design approach for learning follows principles of good practice in early education: (1) recognizing that a one-size-fits-all approach to education simply will not work; (2) understanding the need to design curricula to meet the needs of diverse classroom populations; and (3) declaring that *all* children who attend early education programs will be successful in their development and learning.

A universal design framework parallels what early educators plan for from the start in thinking about the physical, social-emotional, health, and teaching dimensions of their environments to assure that every child

• feels welcomed as a full and equal member;

• accesses and engages in all learning opportunities;

• learns according to his or her individual strengths and interests; and

• demonstrates his or her learning in ways that reflect the individual's strengths.

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## Principles guiding the universal design of early education

How can universal design in early learning help early childhood professionals to further assure that all children learn? As support, we offer the following framework for the universal design of effective early education programs.

**The physical environment** enables all children to have access and equitable opportunities for full participation in all program activities. This includes structures, permanent and movable equipment and furnishings, storage, and materials.

**Health and safety components** promote wellness and minimize risks and hazards for all children. All children, regardless of health status or conditions, have ongoing access to learning without interruptions due to illness and injury.

**The social-emotional environment** offers all children equitable access to and full membership in the social-emotional life of the group, and it supports their social-emotional development.

**The teaching environment** gives all children equitable access to learning opportunities through information and activities in multiple formats and multiple means for engagement, expression, and learning. This includes the curriculum, teaching practices, materials, and activities.

**Individual assessment and program evaluation practices** provide multiple approaches to finding out what children know and can do in order to equitably assess individual learning, development, and educational progress.

**Family involvement practices** support the equitable access and engagement of all families in the full range of experiences. This includes ongoing communication, learning opportunities, and program involvement activities.

This framework strives to promote flexible settings and activities that respond to young children's diverse strengths and needs. Programs offer children multiple avenues for receiving information, multiple ways for engaging in activities, and multiple means for demonstrating what they know. The program incorporates the universal design of the physical, social-emotional, and teaching environment before children step into the setting, and it balances the needs of all children in delivering education for the whole class.

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## Universal design in action

To consider what universal design of early education activities might look like, teachers may start with a general classroom routine such as class meeting time. The following questions can help teachers reflect on how to implement universal design principles. (See examples of practice in "Applications of Universal Design Principles to Class Meetings.")

### Physical environment

- How can the space be arranged to accommodate everyone?
- How will children be seated to accommodate different motor abilities and activity levels so that everyone can move about or attend as needed?
- What materials are needed to allow for the range of motor abilities?

### Health and safety practices

- How should the physical space be arranged to ensure that all children can safely move around?
- Is the flooring safe for all children to move about and be seated?

# Applications of Universal Design Principles to Class Meetings

**Physical environment**

- Expand the group meeting area so that all children can be present and focus their attention on the activities.

- Provide varied seating options so each child may lie on the floor, sit on a mat or chair, or use specialized seating.

- Use other materials of different sizes, textures, and shapes to help each child actively manipulate the objects for learning.

**Health and safety practices**

- Provide clear, wide paths throughout the classroom so each child may safely and easily reach the meeting area.

- Ensure safe floor covering for safe passage for any child, including for example a child who is in a hurry, has visual impairments, or uses a wheeled stander.

- Consider each child's energy level and health conditions in planning activities.

**Social-emotional environment**

- Invite and encourage all children to join in, using multiple means of communication (e.g., speaking English and/or children's home language, signing, displaying symbols).

- Give simple directions using multiple means (e.g., verbally, signed, in print, modeled) so each child may see, hear, and understand any rules and expectations.

- Use books, songs, and communication that involve and represent all children, regardless of cultural predominance or linguistic and skill levels.

**Teaching environment**

- Vary your expectations for participation and performance. If children are listening to a story and are asked to recall events, some may attend to and repeat back key words; others may recall the names of characters by pointing to pictures or using signs and gestures; and even others may predict what will happen next using complete sentences in English.

- Present content in multiple formats, including verbal, print, video, or concrete objects, repeating key words/phrases in children's home language and using simple sentences with gestures.

- Use physical cues to focus children's attention, such as pointing to the picture in the book, giving verbal prompts to help children begin a response, offering language models for children to imitate, and encouraging children to keep thinking and trying.

**Individual assessment and program evaluation**

- Request information or action in various ways including complex questions, simple phrases, and emphasis and repetition of key words or phrases.

- Identify the multiple ways children can show what they learn during activities. For example, the child who waits for another child to respond to a teacher's request, to handle a show-and-tell object being passed around, or to choose the song demonstrates turn taking. Some children, as in the example above, may respond to the request using complete and accurate sentences spoken in English, while others may need to point, sign, or use words in their home language. Others may point to the object or event in the book in response to simple questions.

**Family involvement practices**

- Share information with families through a newsletter written at an appropriate level. Have key phrases translated into families' home languages, and include photographs of children engaged in an activity.

- Provide multiple opportunities for families to be involved. Bilingual parents might be willing to translate the information for monolingual families. Families could support their child's involvement by asking specific questions about the activity and/or the book read to the group.

- Do the planned activities accommodate all individual energy levels and health conditions?

### Social-emotional environment

- What strategies will ensure that all children are included, eliminating any barriers that might segregate or stigmatize a child?
- How will I communicate necessary rules and expectations for behavior so that all children can understand?
- How can I support children in interacting with, learning from, and helping one another?

### Teaching environment

- What goals do I have for the activity so that all children are engaged and learning?
- What different ways do I need to present information so that everyone understands and is engaged?
- What kinds of support or encouragement will be needed to engage and ensure learning among all children?

### Individual assessment and program evaluation

- What are some different ways to assess what all children are learning from the activity?
- What are some different ways children can demonstrate their engagement and learning?

### Family involvement

- What information will I share with families about this activity, and what forms of communication will I use?
- What reading levels and languages should I keep in mind?
- What opportunities for involvement can I provide that accommodate varied work demands and time constraints?

**What are some different ways to assess what all children are learning from the activity?**

**What are some different ways children can demonstrate their engagement and learning?**



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### Conclusion

The population of children in U.S. communities will continue to grow more diverse, not less. Thus, the challenges of educating a diverse population will not diminish. The universal design of early education is an appropriate framework for addressing these challenges. Without a doubt, high-quality early education benefits children (Peisner-Feinberg et al. 1999). Our work now is to conceive early education programs that engage and support learning for all children.

Photo courtesy of the author

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