

Preparing Young Children for a Lifetime of Learning



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TECH & LEARNING

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Introduction

When young children enter the classroom, they need a safe and structured environment that allows them to develop emerging social, cognitive, and motor skills. They need to be engaged and encouraged, and a teacher should be able to adapt the curriculum to suit varied learning styles.

Today's child is not threatened by technology. For many, it's integral to their experience with music, images, story telling, game playing, and communicating with their peers. So it's not surprising that using technology is one of the best ways to teach a child.

This eBook will discuss the importance of a successful early education and how teachers can deliver meaningful lessons for all types of learners. It will also introduce the SMART Table™ interactive learning centre, an exciting new technology that can help teachers encourage ongoing skills development in young learners and in children with special needs.

T&L Editors



The Importance of Early Childhood Education

Early-childhood education is key to academic success. The habits young children learn, the skills they acquire, and the patterns they form in the early grades are the foundation of future learning.

What's more, the first few years of elementary school can determine a child's overall educational path. According to Rebecca A. Palacios, vice-chair of the National Board for Professional Teaching Standards (NBPTS), "What we do in the formative years has a profound effect on children's performance in the upper grades."

It's been well documented that high-quality early-childhood programs have a positive impact on children's success in school and beyond. During the last 40 years, numerous studies have shown that a solid early-childhood education increases the likelihood that children—particularly those from disadvantaged backgrounds—will become accomplished students and citizens. In the early years, children acquire language skills, learn how to work in groups, and develop basic academic and social skills. All of this helps prepare them for a lifetime of learning.



Key Components of a Quality Early Education (K-3)

What children learn in kindergarten through grade three lays the groundwork for higher grades, when they are expected to grasp the complexities of advanced mathematics and literacy.

As they develop their cognitive abilities, young children also hone their social, emotional, physical, and linguistic skills. They fine-tune their curiosity and motivation. To help foster this growth, teachers must continue to introduce new activities and interactions.

According to the National Association of Elementary School Principals, the key principles of a high-quality early-education program are:

- Supportive interactions between teachers and children;
- Physically and emotionally safe, supportive, and engaging learning environments;
- Language development, literacy, mathematics, science, creative arts, physical health and development, and social and emotional development;
- Meaningful learning for the individual child; and
- A culture of authentic assessment and continuous learning that pays attention to all aspects of children's development.

Technology also should be present in the early elementary school years. It is already an integral part of their lives (most of them have cell phones, iPods, laptops, and video games), and having them engage with technology in their classrooms will prepare them well for the upper grades, post-secondary school, and the workforce. In addition, technology enables teachers to excite young students about learning and to challenge them to develop the skills and mental discipline necessary to succeed.



Universal Design for Learning (UDL)

Children today learn in different ways. Students come to classrooms with a variety of skills, abilities, needs, interests, backgrounds, and learning styles.

Universal design for learning (UDL) is a flexible approach to teaching that addresses the problems with one-size-fits-all curricula. It offers all students full and equal opportunities to learn.

UDL provides strategies for teachers to help them rework the curriculum so that every learner can access appropriate material. Grounded in research, UDL shows educators how to present information, concepts, and ideas (the “what” of learning), to plan and execute learning tasks (the “how” of learning), and to motivate students to learn (the “why” of learning).

When curriculum is fixed, it requires children to make their styles fit into a prescribed agenda, an approach that often results in alienated and frustrated students. Students may become disenchanted with learning, their performance can suffer, and it could set a negative tone for the balance of their education.

UDL turns this around with its customizable and accessible methods.

What Does UDL Mean?

Education is supposed to produce individuals who know how to learn, who want to learn, and who—in their own ways—are well prepared for a lifetime of learning.

UDL asks educators to do the following:

1. Provide multiple means of representation (the “what” of learning), as students differ in the ways they understand information. For example, a hearing-impaired child or English language learner may need to hear information as well as see it.
2. Provide multiple means of expression (the “how” of learning). Students differ in how they express what they know. Children with Attention Deficit Hyperactivity Disorder (ADHD), for example, may express themselves better through speech than writing.
3. Provide multiple means of engagement (the “why” of learning). Students are motivated by different things. A child with emotional issues may prefer a strict routine; advanced learners may respond better to spontaneity.



Skills Early Learners Must Develop to Succeed

UDL puts forth the belief that all young children need to develop core cognitive, social, and motor skills that will help them grow into capable, contributing adults.

Cognitive Skills

We use our cognitive skills to think, study, and learn. They include a wide variety of mental processes used to analyze sounds and images, recall information from memory, make associations, and concentrate.

Here are some examples of cognitive skills:

- Visual processing
- Memory
- Logic and reasoning
- Paying attention

Reading and writing rely on a specific set of cognitive skills such as attention, memory, symbolic thinking, and self-regulation. As children learn to read and write, they continue to improve these skills, such as when they deduce the meaning of an unfamiliar word from the sentence's context.

Social Skills

Social skills—also referred to as character education and social/emotional learning—allow children to participate in school, get along with others, work in groups, and develop a sense of self.

Here are some examples of social skills:

- Communication
- Listening
- Collaboration
- Interaction
- Following steps and rules
- Asking for help
- Taking turns
- Being responsible
- Compassion/consideration

Some researchers believe that social skills and positive character development are the most important factors in a child's personal and professional success. Social skills don't make kids smarter; they make children better equipped to learn.

Motor Skills

Motor skills are actions that involve moving muscles. They are broken down into gross motor skills and fine motor skills. A gross motor skill such as running involves large movements of the arms, legs, feet, or entire body. Fine motor skills comprise the smaller actions, such as holding an object between your thumb and finger, and develop over time. They require hand-eye coordination and the ability to manipulate the fingers accurately.

Motor skills typically develop together since many activities depend on both. School-age children are generally good at a wide variety of physical activities, although abilities vary from child to child.



How Can Teachers Promote These Skills in Young Learners?

One successful way proven to help children acquire these vital skills is through the use of technology in the classroom. When integrated properly, technology can transform how teachers teach and students learn. It can help meet the unique needs of all students—including emerging learners, gifted and talented students, students with special needs, and students with language disabilities.

Today's students, with their diverse range of abilities, backgrounds, interests, learning styles, and modalities, are difficult to reach. All too often, a teacher must teach to a loosely defined common denominator instead of trying to target each student. Technology, however, allows each student to work at his or her own pace. It can make the lessons interactive, and address various learning styles at the same time.



How the SMART Table Can Assist Teachers in Encouraging These Skills in Young Learners

Today's classrooms require a flexible set of tools to promote extraordinary learning experiences and improve learning results. That is why SMART has developed the SMART Table™ interactive learning center, a tool that lets groups of students work together on its surface. The SMART Table is the world's first multitouch, multiuser interactive learning center for primary education.

The SMART Table lets a group of students explore everything from puzzles to people and places in their community. Students can manipulate images with their hands, turning learning into a tangible, engaging experience. The table's horizontal surface makes it easy and fun for children to collaborate from all sides, and even the shyest children feel comfortable participating in the group. The 360-degree nature of the Table lends itself to face-to-face interaction and the discussion that naturally occurs.

Students touch the SMART Table's surface to move objects by pinching, grabbing, sliding, and tapping. They can use it for a variety of activities, such as identifying parts of diagrams, sorting items, or solving math problems. And because of the SMART Table's size, its entire surface is accessible to any student in the group.

The applications for the SMART Table require students to work together to solve problems and come to a consensus before giving their answer. The Table was developed in consultation with experts in collaborative learning. Even in the decision to change activities, the students must all agree by

each touching the “X” closest them to exit. These types of collaborative activities help students develop:

- Cognitive skills. The SMART Table activities help students learn to read, write, and solve problems.
- Social skills. The SMART Table helps students learn to communicate and listen to others.
- Motor skills. Even students with limited motor skills are able to move objects on the SMART Table.

The Table supports pre-literate and literate learners. A teacher can create an activity completely with video, images, and audio files for non-readers. In a Montessori classroom, a teacher may use a combination of both pre-literate and literate materials in which the younger students can still work through the activity but the presence of text presents an opportunity for older students to provide some teaching and guidance.

The SMART Table comes with a collection of eight applications that teachers can customize to suit their curriculum needs. Teachers can also download and customize new applications and ready-made lesson activities from SMART’s online community for educators—the [SMART Exchange](#). Thanks to the SMART Table Toolkit, teachers can create an almost limitless supply of activities on their own personal computers, which they can transfer to the SMART Table and use in class.

Supplemental Notebook lesson activities area also available to download from the SMART Exchange™ [online community](#).

Sarah Rhyne, the instructional technology facilitator at Davie County Schools in Mocksville, North Carolina, says the SMART Table “naturally fosters collaboration and consensus building with the students.” When her second-graders use the SMART Table, they work on their communication and compromise skills.

Beth Sullivan, a teacher and technology mentor at Horace Mann Elementary School in Binghamton, New York, agrees that the SMART Table helps students become better communicators and collaborators. As she says, “This collaborative work has led to conversations about how to convince someone. Just stating the correct answer again only louder is much less effective than giving a valid reason why it is right. This carries over into other learning as well. Proving to yourself and others that an answer is correct is where the real learning comes from. I am never happier than when I see a student pull out a notebook and start drawing a demonstration of why the answer is the correct one.”





How the SMART Table Can Help Young Children with Special Needs Develop Skills

The SMART Table has also made a significant impact on special education. According to Lisa deRoy, one of SMART's senior education consultants and a former special-education teacher, SMART incorporates UDL principles into its design process, which lets teachers easily implement the appropriate accommodations and adaptations in student IEPs (individual education programs). She says SMART's products are developed for a wide range of individual abilities, are intuitive to use, and have shapes and sizes that allow users to approach, reach, and manipulate content, regardless of their height or mobility.

The Isobel Mair School in East Renfrewshire, Scotland, is a school for students aged 5–18 with a wide range of special-education needs. When the school brought in a SMART Table, the students were immediately engaged. “By the time we were ready to switch the Table on, the students had already started it up and were working on activities. They knew what to do intuitively,” says deputy head teacher Sara Clark.

At the Spaulding Youth Center in Tilton, New Hampshire, which provides therapeutic and educational care for children with autism and other emotional and behavioral disorders, the SMART Table has “the potential to do amazing things for the special-ed population,” says Randy Welch, chief program officer. Welch says he watched two autistic students with very poor communication skills work at the table. “They watched what the other did,” he says. “They waited for their turn. There was an understanding occurring between them. This kind of happening is phenomenally significant in this population.”

These scenarios highlight the SMART Table's strengths—it's adaptive, accessible, and collaborative. Students learn cognitively at their own pace, apply their motor skills to interact with content on the SMART Table, and develop a social sense of cooperation and helping each other to learn.



Funding

For schools or districts eager to purchase a SMART Table, two funding programs can help: Title 1 grants or funding through IDEA.

Title 1

Title 1 funds bridge the gap between low-income students and other students. The U.S. Department of Education provides Title 1 funding to school districts to raise academic achievement levels among at-risk students. Teacher training and professional development in integrating technology for school reform is also a funding priority.

Schools can use Title I funds to buy technology-related equipment, materials and supplies to improve teaching and learning and to ensure that students know how to use technology to communicate, solve problems, and become self-directed learners.

Using Title 1 funds for technology, such as the SMART Table, is a way to ensure that children attending less affluent schools have the same access to technology as their peers.

Teachers can use the SMART Table to create a rich learning environment that encourages cooperative learning, improves skill sets, and reinforces positive behavior. In addition, the SMART Table helps support reading and math achievement—critical skills essential for academic success for all students.



IDEA

[The American Recovery and Reinvestment Act of 2009](#) (ARRA) provides approximately 100 billion dollars to reform education through various funding streams, including Part B of the Individuals with Disabilities Education Act (IDEA Part B).

Local educational agencies (LEAs) may use up to 15 percent of their IDEA Part B funds for early intervention to assist students in grades K through 12 (with an emphasis on K-3) who are not currently identified as needing special education and related services but who need additional academic and behavioral support to succeed in a general education environment.

LEAs can use IDEA Part B ARRA funds to support the use of UDL approaches and strategies. Schools can use a SMART Table and provide professional development related to UDL, helping teachers reach early learners with disabilities.

Additionally, schools can use the SMART Table towards behavior intervention; IDEA funds can help teachers learn how to use the SMART Table to come up with a strategy or program to address behavioral challenges.

Schools may also want to apply for IDEA funding to purchase a SMART Table that will help with the social and emotional development of their students, both at the primary levels and for those children with special needs.

For more ideas on how to fund technology through IDEA, go to [American Recovery and Reinvestment Act of 2009: Using ARRA Funds Provided Through Part B of the Individuals with Disabilities Education Act \(IDEA\) to Drive School Reform and Improvement](#).





For more information on the SMART Table

www.smarttech.com/table

To find out how the SMART Table can help your students develop new skills through collaboration, check out the new [product demo](#) or visit our [website](#).

Special Report

For more information on how the SMART Table is making learning fun and collaborative for early education students, read the [SMART Table Special Report](#).

To learn more about the SMART Table, register for the SMART Table [Webinar](#), *All Hands On: Promoting Collaborative Learning in Primary Classrooms*, on Thursday, March 25, 2010 from 3:00-4:00pm EST.

If you miss the webinar, on March 26 you can [replay](#) the broadcast.

Resources

[Core Knowledge for PK-3 Teaching: Ten Components of Effective Instruction](#), Foundation for Child Development.

[National Center on Universal Design for Learning](#)

[Leading Early Childhood Learning Communities: What Principals Should Know and Be Able to Do](#)
National Association of Elementary School Principals.

[U.S. Department of Education: Improving Basic Programs Operated by Local Educational Agencies \(Title 1, Part A\)](#)

[American Recovery and Reinvestment Act of 2009: Using ARRA Funds Provided Through Part B of the Individuals with Disabilities Education Act \(IDEA\) to Drive School Reform and Improvement](#)

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