

A KINDERGARTEN FOR THE 21ST CENTURY

KINDERGARTEN POSITION STATEMENT
NEBRASKA DEPARTMENT OF EDUCATION
OFFICE OF EARLY CHILDHOOD
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INTRODUCTION TO THE STATEMENT

Called to action by parents, teachers, administrators, and other early childhood professionals in Nebraska, the Nebraska Department of Education (NDE), Office of Early Childhood began the process of revising the Kindergarten Position Statement in 2007. NDE's previous Kindergarten Position Statement was written in 1984 and was a landmark document in the world of kindergarten, not only in Nebraska, but nationwide. The revision of this statement reinforces the expectation of providing high quality experiences for all children to help them reach their full potential, regardless of individual circumstances. The intent of this document is to provide a summary of information about kindergarten that is deeply grounded in years of research, early childhood science, and best practices for young children.

"Inclusion" is the term most commonly used to describe the integration of children with disabilities into the regular education environment. Inclusion represents the right of all children, regardless of their individual abilities and learning needs, to participate in the broad range of their school district's curriculum, activities, and community. For too long, the assumption has been that children who have diverse learning needs require separate curricula, teaching practices, and approaches, which ultimately leads to segregation. This Kindergarten Position Statement reinforces the expectation of high quality experiences for all children to reach their full potential, regardless of individual circumstances.

The Picture of a Successful Child

The crowd is gathered in the auditorium. The band is playing, and the excitement grows as Pomp and Circumstance begins and the graduates enter the auditorium. Surrounding Ava, Jake, and the others are all of those who worked so hard to get them to this day; parents, grandparents, friends, teachers and administrators. Decisions made by all of these people along the way have had subtle but long-lasting impacts on each child's success.

Thirteen years ago Jake turned five years of age on July 15th of his kindergarten year. His mother was concerned that he would not be successful in kindergarten and in later schooling, and considered holding him out of kindergarten for another year. She worried that his active, creative personality would not be a good match for the expectations of the kindergarten curriculum. Jake's mother was also concerned that he would graduate from high school at 17 and be unprepared for college.

Ava turned five in July before her kindergarten year. At that time she lived in a stable home, but since her removal from her biological mother at age two she had been in six different foster families. As a result of the instability in her living arrangements and early neglect by her biological mother, she had been identified as having a developmental delay. For Ava, staying out of kindergarten was not a choice because her IEP team decided that kindergarten was the best placement for her.

For Consideration: What types of early school experiences should children like Ava and Jake have to give them tools for later success in life and school? What does research tell us about how young children learn and develop? What materials should children have access to in kindergarten to prepare them for later schooling, and what is the role of play in the kindergarten classroom? Who should attend kindergarten, and when?

KINDERGARTEN: THE CONTEXT

SETTINGS AND STATUTES

Nebraska law requires that all school districts offer kindergarten and states that children are entitled to attend school if they meet the age eligibility requirement. However, children are not required to attend kindergarten or enroll in school until the school year in which the child will turn six before January 1 (§79-201B). In the 2007-2008 school year, nearly 89% of school districts offered all-day, every-day kindergarten. Only 1.14% offered half-day kindergarten every day, and another 2.28% of schools offered kindergarten all day, every other day. The number of all-day kindergarten programs has risen steadily since the 1997-1998 school year, from 6.41% to 88.97% in the 2007-2008 school year.

Kindergarten serves as a training ground for social and academic skills where children learn how to interact with others and become familiar with school routines and the school environment (Burkham, LoGerfo, Ready, & Lee, 2007). In this setting, children are helped to develop basic academic skills through a variety of experiences including teacher directed instruction, small group work, creative play and social interaction with peers. Children attend kindergarten to learn the language and vocabulary of early writing and reading, mathematics, science, and social studies. They develop skills in communication and play and learn skills to appropriately interact with others. Kindergarteners also develop skills in the areas of physical education, music, art, and technology.

FACTS AND FIGURES

STUDENT DIVERSITY

According to the 2008-2009 Nebraska State of the Schools Report, 22,792 children in Nebraska were enrolled in kindergarten. The diversity of abilities among Nebraska's 292,030 students is great. High ability learners make up 13.41% of the school population, or 37,641 students in the K-12 system. Students with Special Education verification make up 15.21% of students statewide. In addition, the state's population of English Language Learners remains above six percent. Nebraska schools also continue to see increased ethnic and racial diversity. The largest populations served are White, not Hispanic, followed by Black, not Hispanic, and Hispanic. Asian/Pacific Islander and American Indian/Alaska Native populations are also continuing to grow.

Of the 292,030 school-aged children in Nebraska, 38.35% lived in low income homes (measured by qualification for free and reduced lunch). However, in some counties the free and reduced lunch rate can reach as high as 67.0%. Data from the US Census Bureau show that nationally, 31% of families with a female head of household with children less than 18 years of age fall below the poverty level. Of the estimated 6,718 female headed households in Nebraska with no husband present and children under 5 years of age, 44.9% fell below the poverty level. To further complicate matters, many of these children do not have health insurance. The National Center for Children in Poverty (2007) reported that ten percent of all children in Nebraska are without health insurance. For children living in poverty, this number increases to 19 percent. This means that a large number of our state's children who are already at risk because of socio-economic factors become even more at risk because they may not be getting proper medical, dental, and developmental attention.

It is clear that multiple outside stresses and pressures exist for kindergarten children today. Schools must take into account the diverse needs that children bring to the classroom when developing curriculum and planning effective instructional opportunities for children. Research shows that positive experiences, exposure to a variety of materials that promote development, and nurturing relationships with adults can counteract many of these outside pressures (National Research Council and Institute of Medicine, 2000; NICHD Early Child Care Research Network, 2005; Watt, Ayoub, Bradley, Puma & LeBoeuf, 2006).

SOCIETAL FACTORS

In recent years, there has been an increase in the number of activities in which young children are engaged outside of school. Regardless of the activities, children are often scheduled by adults to the point of burnout. Much of this over-scheduling is due to societal pressures that equate extracurricular activities with academic superiority and later success. The prevalence of media, gaming, and television has also become quite pronounced in the lives of young children.

Research by Hofferth & Sandberg (2001) examined the schedules of 2,818 children from 0 to age 12, and found that children spend the majority of their free time (when not in school) watching television, playing, and participating in sports. When the time was averaged over the week, they found that children spent about 50% of time playing (15 hours) and watching television (12 hours). The amount of time spent playing decreased as children got older by as many as 25 hours per week for infants and toddlers to as few as nine hours for older elementary children. As children aged, television watching increased. After age three, television viewing remained stable at 13 hours per week, or slightly less than two hours each day. The 2,818 children in this study averaged only 34 minutes outside each week.

Alejandro's Kindergarten Classroom

As Alejandro's mother watches him cross the stage at his high school graduation, she reflects on his school experiences and thinks back to his kindergarten days. In Alejandro's kindergarten classroom, his teacher was aware that all children brought different skills, backgrounds, and experiences to the kindergarten classroom. Although the district had identified a packaged curriculum for use in kindergarten, his teacher took the extra time to teach concepts in ways that he found were most effective for five-year-old children by supplementing the curriculum with additional materials and activities.

In addition to making the necessary curriculum modifications, Alejandro's teacher understood the value of play for developing later skills in all domains. He also provided opportunities for the children in Alejandro's class to play in centers without interruption for at least 45 minutes each day. Because his teacher was an active participant with children during this center time, he was able to identify how students were making connections to the curricular concepts through their play. With this knowledge, he modified his lesson plans to extend the children's learning.

Alejandro's teacher believed strongly in the development of literacy and language skills. Children in his class spent time each day telling stories, acting them out, and practicing their writing skills by recording their ideas and drawing in journals. His teacher did not push children to master skills for which they were not ready, but rather he valued the emerging skills and abilities of all the children. Through close observation, Alejandro's teacher was able to identify where each child was in his or her development, and work with each child to maximize learning and growth. He planned activities and altered the environment to ensure multiple opportunities for Alejandro and his classmates to practice skills along the continuum of proficiency.

For consideration: How do young children learn? Do older students learn differently? How do specific elements in the kindergarten curriculum support development of the young brain? What experiences contribute to a young child's development? What role does curriculum, instruction, and assessment play in the kindergarten classroom?

KINDERGARTEN: HOW YOUNG CHILDREN LEARN

DEVELOPMENTAL DIRECTIONS

Organizations such as the National Governors Association (NGA), the National Association for the Education of Young Children (NAEYC), and the Division of Early Childhood (DEC) of the Council for Exceptional Children (CEC) have expressed their beliefs about how young children learn and strategies for promoting learning and development in the kindergarten classroom and beyond. The concept of developmental direction (see figure 1, next page) brought forth by Kostelnik, Whiren & Soderman (in press) illustrates the unique developmental level of kindergarten children. The developmental directions point to development as occurring from self to others, known to unknown, whole to part, concrete to abstract, enactive to symbolic, exploratory to goal directed, less accurate to more accurate, and simple to complex.

Children of preschool age are well known for their focus on self, concrete ideas, exploratory interactions, and less complex thinking. In contrast, older elementary children (around age eight) are able to perform at the highest level of these directions. They can think abstractly and symbolically, carry out steps to reach a goal, understand parts of a concept before they know the whole picture, can understand the feelings of others, and think more complexly than preschool children. The uniqueness of kindergarteners is that they are developmentally in the middle of each of these directions. They can think somewhat abstractly but still need concrete experiences, they can follow directions but they also like to explore their own ideas, and they can think complexly about some concepts but must think simplistically about others. Kindergarten children's developmental level requires a unique approach to teaching and learning that merges the teaching styles of preschool and the primary grades.

ESSENTIAL ELEMENTS FOR LEARNING

THE ROLE OF BRAIN STRUCTURE

Early childhood, professionally defined as the period of birth through age eight, is a stage of development unlike any other in the lifespan. Learning occurs differently during this period than in later years, and part of this difference is accounted for by the rapid changing of the brain and the influx of experiences that are new for children (National Research Council and Institute of Medicine, 2000). In 2000, a groundbreaking compilation of research on early childhood brain development was released (National Research Council and Institute of Medicine, 2000) and changed what was known about how children learn and develop, and what kind of experiences they need to have during their early years in order to be successful.

This research provided a biological perspective that had been missing in education research. In addition, this research substantiated much of what was believed to be effective practice for children and complemented the theories of Vygotsky (1986), Dewey (1938), Bruner (1960), Piaget (1954, 1969) and others. The wealth of new information has brought forth several theories of teaching and learning based on brain development, such as those of Kolb (1984) and Zull (2000). Knowledge of neuronal structures that are created in the brain indicate that new knowledge must build from children's prior knowledge (Zull, 2000). This is often referred to as assimilation (Piaget, 1969). Experiences must be connected to each other for the child to make sense of the experiences. Learning occurs in the context of other experiences in the child's life (Vygotsky, 1986, Bruner, 1960, Dewey, 1938, Jones-Branch, 2008; Kolb, 1984; and Zull, 2000).

The two most important parts of the brain for teaching and learning are the limbic system and the cerebral cortex. The limbic system is the most ancient and primal part of the brain. It is the area of the brain that controls children's motivations, emotions, affect, and feelings. Understanding the motivations and emotional states of children is essential for teaching them effectively. In 1984, a book titled *Experiential Learning* was published.

Figure 1

<i>Developmental Direction</i>	<i>Example</i>
Known to Unknown	When trying to teach a concept, the teacher connects the concept to something familiar to the child and then builds a bridge from what the child knows to what the child does not know.
Self to Others	The child must understand how the concept relates to him before he can generalize his knowledge to understanding others. This is especially relevant in social situations.
Whole to Part	Children must understand the big picture before they can understand the small parts that make up the big picture. When teachers understand the whole-to-part needs of children, they provide repetition of activities, time for exploring concepts and ideas, and teach specific pieces rather than general ideas.
Concrete to Abstract	For young children, learning stems from concrete experiences where they can touch, taste, see, smell, and hear. Teachers utilize a variety of approaches to teaching a concept that include both concrete experiences and more abstract teaching strategies, such as bringing in real leaves before showing pictures of leaves.
Enactive to Symbolic	Enactive representation occurs when children act out situations in their lives (role play, quacking like a duck after they see a duck). Symbolic representation, on the other hand, refers to using words or symbols (writing) to interpret experiences. Children need time to explore concepts through all modes of representation instead of relying on symbolic representation alone.
Exploratory to Goal Directed	Children need time to explore materials (spaces, concepts) before they are given specific directions about how to use the material in the appropriate way. Children need time to explore paint before being able to focus on completing the task desired by the teacher that uses the paint. In the same way, children need time to explore the new books about leaves before they are expected to look closely at the books.
Less Accurate to More Accurate	Children utilize trial and error to learn about the world. Over time and with experience, children learn the accurate information. The role of the teacher is to provide experiences and supports that help children revisit their misconceptions about concepts and build more accurate knowledge.
Simple to Complex	Tasks are presented to children in the simplest manner possible. This makes the task easier for children to navigate and helps them understand the task. Tasks are simplified when they are closely tied to what children know, more focused on self than others, more focused on whole than the parts, more concrete than abstract, more enactive than symbolic, more exploratory than goal directed, and more tolerant of inaccuracies.

Within this book, David Kolb outlines his theory of teaching and learning that further expands the ideas of John Dewey (1938) and Jerome Bruner (1960) to provide the biological basis for teaching based on structures of the brain. Kolb presents a learning cycle that mimics how information is input, processed, and retrieved from the brain. The first step of Kolb’s learning cycle is the concrete experience. The back cortex is where sensing occurs. This part of the brain thrives on concrete experiences and reflection. Concrete experiences provide a jumping off point for all learning to occur. Concrete experiences include hands-on, sensory exposure to a concept or idea presented by the teacher. This is where teachers can “hook” the child, by linking this experience to what the child

already knows and is interested in. Doing this addresses their motivations for learning and makes the learning meaningful to children.

In Kolb's learning cycle, a reflective observation follows the concrete experience. For young children, this could be using materials to represent the concrete experience through multiple media such as writing, drawing, clay, paint, wire, or storytelling. The reflective process helps children internalize and process the information they learned during the concrete experience, and moves children's thinking from the back cortex to the front cortex where they begin to create and produce knowledge. Reflection helps children understand and integrate the concrete experience into what they already know about the concept (assimilation) and to formulate more complex ideas. The reflection process provides a "sense-making" opportunity for children.

From the reflective observation experience where children integrate the concrete experience into their existing knowledge structures (assimilation), children proceed to develop their own ideas about the concept. The front cortex is where new knowledge and understandings are produced. This part of the brain aids children in the development of abstract hypotheses, helps them to generate new ideas (theories) about a concept, and generates questions about concepts that are being taught.

Children need to be asked what they think about concepts and also given the opportunity to draw conclusions about the world based on what they have been learning. This process is referred to by Kolb as abstract conceptualization. Abstract conceptualization moves children into using more of the front cortex where they begin to think more critically about concepts. Another function of the front cortex is active testing of knowledge, ideas, and questions produced by the child. Active testing is the final step in the learning cycle. Active testing of ideas, theories, and understandings must occur for children to make sense of the information. It involves the seeking of answers and the investigating of children's questions. Active testing typically leads to another concrete experience based on the results of the active testing experience. Thus, learning follows a cyclical process that mimics how the brain processes information.

If we use the simplistic example of teaching the concept of "cat", the learning cycle would look something like this. The teacher wants the kindergarten children to learn about different animals, specifically cats. She knows that some children have cats at home and other children do not. In order to meet the diverse needs of the class and by understanding that not all children have the same prior knowledge of "catness," the teacher arranges a concrete experience focused on the concept of cat. She invites a child to bring his cat to school and the children touch it, learn the cat's name, discover who takes care of the cat, and identify the cat's color, habitat, eating, etc.

Following this activity, the teacher helps children reflect on the experience by asking prompting questions that help them to integrate the new information about "catness". The children could tell stories about the cat and draw the cat as they remember it. The next day the teacher could bring out the stories or drawings of the cat and help children recall the experience. Then he might ask what they learned about "catness" and what questions they still have about cats. As the teacher hears the children's ideas about cats, she may see that they still have misconceptions about "catness," and that they have generated many questions. This leads the teacher and children into an active testing of these questions and misconceptions. In active testing, the children may go to the library or to the Internet and look up information about cats. This exploration and active testing of the ideas that children have about "catness" will lead them into another concrete experience. This cycle would continue and eventually become more complex by comparing "catness" to "dogness" to "cowness" through building deeply connected knowledge structures. Although the previous example is highly simplistic, it is designed illustrate how this process might look in the classroom. Learning must be tied to what children already know and incorporate concrete experience, representation, idea development, and the testing of ideas in order for deep understanding to occur.

Understanding and valuing children’s emotional states and acknowledging their emotional needs is essential for teaching children effectively. In addition to the importance of understanding the function of the limbic system and cerebral cortex, it is also necessary to understand the role of the cerebellum. This area of the brain regulates movement, balance, and coordination, and is highly functional in children of kindergarten age. Children need movement associated with experience to drive learning in the kindergarten classroom.

THE ROLE OF RELATIONSHIPS

For many years, researchers have discussed the importance of attachment in early childhood (Ainsworth, 1973; Bowlby, 1969). It is also widely accepted that relationships are an important part of healthy developmental processes (Piaget, 1969; Vygotsky, 1986; National Research Council and Institute of Medicine, 2000; NICHD Early Child Care Research Network, 2005). In addition, a wealth of research supports the need for strong, safe, and secure teacher-child relationships (NICHD Early Child Care Research Network, 2005; National Research Council and Institute of Medicine, 2000). Relationships are essential to learning, and developmental achievements are the result of interactions with other people and with objects (Vygotsky, 1986). Forgoing attention to the quality of the teacher-child relationships is counter to evidence from brain research regarding effective practice. One of the functions of the limbic system is that of the “relationship center” of the brain. The limbic system drives children’s motivation, emotion, and feelings; therefore, a child who has a good relationship with his teacher will feel safer and is more motivated to learn (Zull, 2000; Pianta & Stuhlman, 2004).

The authors of *From Neurons to Neighborhoods: The Science of Early Childhood Development* (2000) say this about the role of relationships in the lives of young children:

“Despite their diversity, however, all young children seem to require certain things from early abiding relationships. These include, (a) reliable support that establishes confident security in the adult, (b) responsiveness that strengthens a young child’s sense of agency and self-efficacy, (c) protection from the harms that children fear and the threats of which they may be unaware, (d) affection by which young children develop self-esteem, (e) opportunities to experience and resolve human conflict cooperatively, (f) support for the growth of new skills and capabilities that are within the child’s reach, (g) reciprocal interaction by which children learn the mutual give and take of positive sociability, and (h) the experience of being respected by others and respecting them as human beings. In these ways, relationships shape the development of self-awareness, social competence, conscience, emotional growth and emotion regulation, learning and cognitive growth, and a variety of other foundational developmental accomplishments (pg. 264-265).”

THE ROLE OF CURRICULUM, INSTRUCTION, AND ASSESSMENT

Learning is highly interconnected for young children, and teaching needs to mimic the depth and complexity of these connections. A child cannot understand the word “cat” unless he/she has seen a cat, felt a cat, and heard a cat. The teacher needs to understand what the child knows about “catness” before the child can build new knowledge structures. The child may be able to repeat the word cat and identify the word cat by sight, but this does not demonstrate an understanding of cat. Educators should not segment children and focus only on the reading part of the child or the math part of the child. Rather, the focus must be enlarged in order to develop a science child, a reading child, a math child, an artistic and creative child, a problem-solving child, and a social child. The tightly connected triad of curriculum, instruction, and assessment are critical to the success of today’s kindergartener. Kindergarten teachers are constantly observing and assessing (formally and informally) their students to ensure that learning is occurring and the individual needs of their rapidly developing learners are being met.

STANDARDS

The newest version of the Nebraska State Standards (approved in 2009) in the areas of language arts (reading, writing, listening/speaking and digital literacy skills) and mathematics (number sense, geometry/measurement, algebra, and data analysis concepts) have, for the first time, addressed expectations for academic performance in kindergarten. The previous version of the standards outlined expected performance levels by the end of first grade, leaving kindergarten teachers guessing as to their role, and the level to which they should be guiding students to ensure success in meeting the end-of-first-grade expectations.

The Nebraska language arts standards state that by the end of kindergarten children should be learning and applying reading skills and strategies to help them understand text. This includes behaviors such as understanding that letters make up words and that words have meaning, identifying high frequency words, demonstrating beginning fluency, and knowing the sounds that letters made. The language arts standards set a goal to have children learning and applying writing skills and strategies to communicate for a variety of purposes and audiences. This standard includes behaviors including writing to communicate thoughts and ideas in journals or simple stories, creating representations of ideas and experiences through drawing, printing upper and lowercase letters, and writing letters to specific people (mom) or for specific purposes (labeling objects).

The third major component of the new language arts standards addresses the child's ability to speak and to listen. By the end of kindergarten children should be learning and applying speaking and listening skills to communicate. This includes behaviors such as sharing ideas orally in conversation, the ability to listen and complete a task after receiving the information, demonstrate conversation skills (listen while others are talking), and participate in collaborative work with others. The fourth standard addresses the means by which children communicate and engage in the gathering and exchanging of information. It lays the foundations of research skills as well as safe and responsible internet practices.

The kindergarten math standards state that children will communicate number sense in multiple ways such as counting, reading and writing numbers 0-20, matching numerals (5) to quantities (five stars), and beginning to use objects and words to explain basic concepts of addition and subtraction. Related to geometric and measurement concepts state standards expect children at the end of kindergarten to be able to identify two dimensional shapes, talk about location of objects in space (near, far, over, under), compare lengths, and tell time to the hour. Kindergarten children are also expected to have the beginning foundations of algebraic understanding such as being able to sort objects by color, shape, or size. In addition, students should be able to create their own rule for how they sort objects (i.e., all of the animals with spots).

By the end of kindergarten, children should also be able to model addition and subtraction of whole numbers using objects. The final area that the math standards address is data analysis concepts. To meet this standard children should be able to sort and classify objects using multiple characteristics (red and round objects), identify those attributes, and compare the attributes (most, least, same, biggest, smallest).

A Day in Mr. Wright's Classroom

The Morning

Mr. Wright is seated in a rocking chair on a woven circular rug surrounded by twenty wide-eyed kindergarteners listening raptly (LA 0.3.2.a) as he reads the tale of Bob the Snowman who dreams of traveling south to Florida. Undeterred by the obvious risks, Bob catches a train south to fulfill his dream and ends up melting en-route, becoming part of a cloud, drifting back north, and returns to the ground as snow, eventually being reconstructed as a snowman once again as the water cycle is completed and renews itself (Loretan, 1991).

Once he has read about Bob's desire to and reasons for travel to a warmer climate (LA 0.1.6.h), Mr. Wright stops to ask for and record student predictions (LA 0.1.6.l) about Bob's fate. After reading, the class revisits their charted predictions and discusses the cause and effect relationship that occurs in the book (LA 0.1.6.k). The students are also engaged in summarizing (LA 0.3.2.c) the book by discussing the main idea setting, main character, and events from the story (LA 0.1.6.b, LA 0.1.6.c, LA 0.1.6.e).

After reading the book, Mr. Wright shows the students a world map, pointing out the cardinal directions mentioned in the story (SS 1.3 and SS 1.4), and explains that the closer a person travels to the equator, the warmer the weather will become (SC 1.1.3, SC 1.5.2).

Later during their literacy instruction time Mr. Wright returns to the text to record some of the sight words (LA 0.1.3.c, LA 0.1.3.e) found in the story and to go over the new vocabulary (LA 0.1.5.b, LA 0.1.5.c, LA 0.1.5.e) from the story that is likely to be unfamiliar to some, if not all students. He then models for the students how to decode the words (LA 0.1.2, LA 0.1.3-multiple indicators from each), practices the words with his students several times (LA 0.1.4.a, LA 0.1.4.b), and then asks them to read the words independently. He then introduces the learners to word strips he has created for these new vocabulary words found in the story to add to the classroom word wall. These strips contain the word, printed clearly in large, plain font as well as a picture to help the student better associate the printed word with a tangible image (Marzano, 2001).

The students gain confidence in their reading as they continue to master sight words from the story, as well as some of the new vocabulary, knowing that they will begin to be able to recognize the words in future readings of the story as well as being able to pull the story from the browsing basket and read the words that are quickly becoming a part of their reading repertoire.

A Day in Mr. Wright's Classroom The Afternoon

During the children's center time the children have opportunities to play and experiment with materials in a variety of learning centers. On this day Mr. Wright shows the children the tubs of snow that have been brought in from outside. He invites the children to participate in building their very own snowmen in their learning centers. Mr. Wright gives the learners simple directions for the activity (LA 0.3.2.b), and then encourages them to be creative when constructing their snowmen. At the discovery center he provides them with a range of materials for giving personality to their creations. As the young artists/engineers begin their work, they must use decide how many snowballs to use, how to balance the snowballs (learning that the snowballs must be stacked from largest up to smallest to keep them from toppling over) (SC1.1.2), and how their snowman's appearance will take shape.

This center based learning time is intended as an opportunity for children to engage with materials in a purposeful way. The teacher sets up the environment in such a way that it communicates the structure and expectations for children's engagement in this part of the kindergarten day. During this exploration at the discovery center, a trained adult's (teacher, paraprofessional, or classroom volunteer) presence is essential to help students articulate what they are discovering and to help them arrive at the desired learning targets (Marzano, 2001). The adult may discuss ideas (LA 0.3.3.c) with the students such as why they think their snowman won't balance on a base the size of a ping-pong ball when the top piece of the snowman is the size of an orange (SC 1.1.1).

The adult recognizes opportunities to help facilitate discussions amongst students about the learning objectives and be looking for opportunities to extend children's explorations. The tuned in adult will see opportunities to help children make and record predictions in written or pictorial form(LA 0.1.6.i) about what will happen to their snowman over the course of the day (SC 1.1.3, 1.3.1), and perhaps measure the height and mass of the snowman (MA 0.2.5.c). Throughout the course of the day children have opportunities to observe their snow creation, re-measure it, and/or chart the changes in height and weight (MA 0.2.5.c). Later in the day, Mr. Wright gathers the class as a large group to discuss the changes in their snowmen and to reinforce the concepts and vocabulary of the water cycle, discussing the fact that their snowmen will soon be floating in the classroom as water vapor (SC 1.1.3, 1.3.1).

As a result of Mr. Wright's engagement with the children during these activities and his skill in intentionally planning learning opportunities for children, the students spent the next few days using center time to measure and chart the depth of the water remaining on the trays where their snowmen once stood, noting that the water was evaporating quickly. They also took note of the debris that remained, demonstrating how dirt, rocks, and grass can become part of the snowpack. Mr. Wright also designed opportunities for the children to talk with their classmates to compare results, write about the water cycle and their experience with it, as well as writing their own version of Bob's story (LA 0.1.6.m, LA 0.2.1a, LA 0.2.1.c, LA 0.2.2.a), employing problem-solving strategies to help Bob make his trip without melting. Children also had the opportunity during their center times to look online at weather maps that show the average snowfall for various places in the world (SS 1.2, SS 1.3, SS 1.4), thus giving them the opportunity to apply their newfound knowledge to a larger context and to make connections between the book they are reading and the world at-large (LA 0.1.6.k).

This snapshot of pieces of the day in Mr. Wright's classroom provide the picture of a truly balanced kindergarten environment where the students are engaged in a multitude of activities that allow opportunities for the child to experience a blend of teacher-led instruction and self or peer-led inquiry-based activities in both structured and

unstructured formats. Throughout this learning experience the teacher seamlessly incorporated many of the Nebraska state standards and collected information about the student’s progress that could easily be used for assessment purposes, added to a child’s portfolio, or used to inform future lessons.

<p><i>Throughout this lesson, the teacher designed opportunities for the students to:</i></p>	<p><i>Incorporating Nebraska Language Arts (LA), Math (MA), Science (SC), and Social Studies (SS) Standard(s)/Indicator(s):</i></p>
<p>Read and be read to, including following directions after the reading to complete a task.</p>	<p>LA 0.3.2.a, LA0.3.2.b, (listening skills)</p>
<p>Learn to decode words through strategic phonological and word analysis instruction.</p>	<p>LA 0.1.2 (multiple indicators for phonological awareness), LA 0.1.3 (multiple indicators for word analysis)</p>
<p>Talk with teachers and peers and write about the details of the story, construct new stories, and describe (orally and graphically) their processes and findings.</p>	<p>LA 0.1.6.b, LA 0.1.6.c, LA 0.1.6.e, LA 0.1.6.h, LA 0.1.6.i, LA 0.1.6.k, LA 0.1.6.l, LA 0.1.6.m comprehension skills), LA 0.2.1.a, LA 0.2.1.c (writing process skills), LA 0.2.2.a (writing genre skill), LA 0.3.2.a, LA 0.3.2.b, LA 0.3.2.c (listening skills), LA 0.3.3.b, LA 0.3.3.c (reciprocal communication skills)</p>
<p>Engage in meaningful conversations with peers surrounding the process and outcomes of class activities.</p>	<p>LA 0.3.1.a (speaking skill), LA 0.3.2.a (listening skill), LA 0.3.3.b, LA 0.3.3.c (reciprocal communication skills),</p>
<p>Create a model snowman in response to the reading. (bonus- creativity and fine motor skills).</p>	<p>LA 0.1.6.m (artistic response to reading), SC 1.1.2 (understanding of evidence, models, and explanation)</p>
<p>Use math, reading, science, and social studies skills in a meaningful and authentic setting including active measurement and a purposeful exploration of geography and meteorology with related vocabulary.</p>	<p>LA 0.1.5.b, LA 0.1.5.c, LA 0.1.5.e, (vocabulary skills) LA 0.4.1.a, LA 0.4.1.e (multiple literacy skills- finding and sharing information utilizing multiple resources) MA 0.2.4.a (demonstrating positional words- involved in snowman building), MA 0.2.5.c (measurement) SC 1.1.1 (using senses for observation), SC 1.1.3 (understanding of change, constancy, and measurement), SC 1.3.1 (differences between solids, liquids, and gasses). SC 1.5.2 (characteristics of the sun), SC 1.5.3 (changes in weather) SS 1.3 (locations of places, using globes, maps, etc.), and SS 1.4 (relationship between climate and location)</p>

INSTRUCTION

The method of meeting these standards can be varied based upon a district or school's chosen curriculum or instructional methods. However the developmental strengths and needs of the kindergarteners are the driving force in the planning of daily instruction. While kindergarten is traditionally considered the beginning of formal academic instruction, the instruction and practice of new skills occurs in teacher-led and child-led activities and within an engaging, inquiry-based environment.

Regardless of the curriculum or instructional method chosen by a district, the socio-economic makeup of the class, or the quantity and types of instructional materials (including technology), the most important factor in the success of the students is a highly-skilled teacher with a strong understanding of both the needs of young learners as well as the curriculum and instructional strategies being utilized in the classroom. Additionally, teachers of this foundational grade level need to understand the importance of their role in imparting skills and dispositions for lifelong learning (Neuman, Copple, & Bredekamp, 2000).

Teachers must be prepared to use a wide range of learning formats and teaching strategies to meet the learning needs of all children. They make intentional decisions about classroom activities, routines, and interactions based on what would be most effective for both the classroom as a whole and the individual children. Factors to consider for decision making include what the child needs to learn, what materials are needed, and which teaching strategies and formats will be most effective to promote children's learning. In order to promote diverse learning needs, teachers need to consider the use of adaptations to the environment, activities, or materials that allow all children to participate successfully.

The RtI model offers a framework for ensuring the delivery of high quality education and care at the universal level to support the development of all children and a process for determining how to identify and assist young children in need of additional intervention to ensure their developmental progress. RtI occurs within a framework that emphasizes three tiers of intervention. Primary tier prevention involves all students being exposed to a core curriculum to prevent later problems. Regular screening identifies students who are unsuccessful in response to instruction with only the core curriculum. Secondary tier prevention is targeted to at-risk students who need some additional instructional support beyond the core curriculum. Tertiary tier prevention that is generally more intensive and individualized and is carried out to remediate academic performance or reduce complications or severity of problem behavior (Fox et al., 2009).

In early childhood, the Pyramid Model (Fox et al., 2003) has been identified as a tiered intervention model that provides guidance for the design and delivery of evidence-based interventions to promote the social development of young children and provide more intensive intervention for children who have social-emotional delays or behavioral challenges (Fox et. al., 2009). The Pyramid Model provides a tiered intervention framework of evidence-based interventions for promoting the social, emotional, and behavioral development of young children (Fox et al., 2003; Hemmeter, Ostrosky, & Fox, 2006). The model describes three tiers of intervention practice: universal promotion for all children; secondary preventions to address the intervention needs for children at risk of social emotional delays, and tertiary interventions needed for children with persistent challenges.

Tiered models, such as the Pyramid Model (Fox, Dunlap, Hemmeter, Joseph, and Strain, 2003) and Response to Intervention (RtI) provide guidance for teachers to organize, scaffold, and individualize assessment and instruction. RtI is a systematic decision-making process designed as a preventative framework (International Reading Association, 2009) which provides a structure for early and effective responses to children's learning and behavioral difficulties and provides children with a level of instructional intensity matched to their level of need and then provides a data-based method for evaluating the effectiveness of instructional approaches (Fox, Carta, Strain, Dunlap, & Hemmeter, 2009). Fox and her colleagues cite numerous studies that have been carried out to

validate the specific features of RtI, the evidence base establishing the effectiveness of various models or approaches to RtI is still emerging (Hughes & Dexter, 2008; VanDerHeyden, Witt, & Gilbertson, 2007). Evidence indicates that use of RtI models can improve the academic performance of at-risk students most notably in the area of early reading skills (e.g., O'Connor, Harty & Fulmer, 2005; Vaughn, Linan-Thompson, & Hickman, 2003, International Reading Association, 2009). Other studies have shown that students who were involved in programs employing RtI models had reduced rates of special education referral and/or placement (Bollman, Silbergliitt & Gibbons, 2007; Marston, Muyskens, Lau & Canter, 2003; O'Conner et al., 2005), or performed better on academic behaviors such as time-on task and task completion (Kovaleski, Gickling, Morrow, & Swank, 1999).

ASSESSMENT

Accountability through assessment is necessary for continuous improvement and to inform classroom instruction. Assessment data used in an ongoing manner and analyzed by teachers to help them understand children's developmental levels and zones of proximal development promotes learning in the kindergarten classroom (Vygotsky, 1978; Bodrova & Leong, 2007). When teachers have identified the child's current skill level through formative assessment they can design their instruction to meet the needs of children. Unfortunately, in some cases, assessment comes only as a capstone event, gauging what the child has learned too late and too infrequently for dynamic changes in instruction to make an impact. Ideally, ongoing assessment will not only find areas where students need improvement, but also confirm that appropriate levels of challenge are being provided for all students. For it is as much a disservice to not provide adequate rigor for a student, as it would be to not provide support for a struggling student. According to noted gifted education expert Sylvia Rimm, "The surest path to high self-esteem is to be successful at something the learner has perceived to be difficult. Each time we steal a student's struggle, we steal the opportunity for him or her to feel capable by stretching to reach worthwhile goals" (Winebrenner, 2001).

Various assessments are currently in use in kindergarten classrooms statewide depending upon the instructional programs chosen by the district. Districts may be utilizing child assessments such as the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) and Academic Improvement Monitoring System (AIMSweb). They also may be completing program assessments such as the Assessment of Practices in Early Elementary Classroom (APEEC) and the Classroom Assessment Scoring System (CLASS K-3). Additional screening, benchmarking, progress-monitoring, and a variety of formative and summative assessments are also being used. In addition to informing instruction, the information derived from such assessments can help teachers and administrators decide upon the kind of staff development and curriculum needed to help students hit their learning targets as outlined by local, state, and national standards and frameworks.

Additionally, districts may elect to use other forms of authentic assessment, documentation, portfolio assessment, and dynamic assessment to help create a better picture of a student's needs and progress. Authentic assessment uses strategies that permit the child to demonstrate her understanding of a concept or mastery of a skill through conversation, games, or other activities related to the concept being assessed (Wortham, 2005). This type of assessment easily occurs in a discovery-based kindergarten classroom. Dynamic assessment is a concept brought forth by Bodrova & Leong (2007) which identifies the most accurate assessment as one that measures both what the child can do independently, and also measures what the child knows and can do with support from others.

Documentation is the process of collecting artifacts and children's dialogue about a concept or moment in time and compiling it into a finished product. One of the most important elements of documentation is the teacher's interpretation of what the moment means or what the teacher learned about the child's knowledge from the experience. Documentation provides a concrete experience for young children and serves as a jump-off point for the child to build new knowledge. It also provides teachers with a tool for continuous improvement and renewal of

instructional strategies (Edwards, Gandini, & Forman, 1998). Portfolios can be compiled using samples of student work, and these can be used to report progress that is compatible with other types of outcome-based assessments (checklists) (Wortham, 2005).

PLAY

One piece of educational support for children is the use of purposeful play in the kindergarten classroom. The characteristics of play are that it is physically and mentally active, enjoyable, flexible and changing and focused on the process not the product or the result. For an action to qualify as play, children must have some ability to decide what to do, when to do it, and how to do it (Bergen, 2007). The November 2009 issue of *The School Administrator* featured an article entitled “Reimagining Kindergarten.” This article discusses the changing kindergarten culture and the role of play in the classroom. The author says the following about play:

“Two kinds of play are useful in kindergarten—free play initiated by children and teacher-initiated learning experiences guided by an adult. Through its less formal structure, play provides children with chances (1) to choose their own level of challenge and (2) to be stretched by others in a low-stress opportunity. This is truly differentiation in action (Graue, p. 15).”

Research collected as part of the report, *Crisis in the Kindergarten: Why Children Need to Play in School* (2009) shows that children are spending fewer than 30 minutes a day in purposeful play or choice time in the kindergarten classroom. The authors found that four to six times this amount is spent in math and reading instruction (Miller & Almon, 2009). Within the framework of appropriate curriculum and instruction are opportunities for children to manipulate materials and gain deeper understanding of academic concepts through play experiences. Classrooms that provide these opportunities often call play center time, choice time, or work time, regardless of its name, it is a time reserved for child-initiated play activities.

Although play experiences are led by children, the teacher and other adults play a major role in the learning that occurs within the children’s center time explorations. The teacher sets up the environment to provide structure to the play experiences such as setting out new materials in interest areas that will help children further explore academic concepts. The teacher and paraprofessionals engage with children during their play experiences and infuse vocabulary into children’s play and peer conversations. In addition, the adults support and foster the children’s use of problem solving skills during these activities.

PLAY IN THE KINDERGARTEN CLASSROOM

Play in learning or interest centers provides an opportunity for children try out their ideas and theories and make sense of the academic concepts they are learning through more highly structured, teacher led instruction. Copple and Bredekamp (2009) in their revised, third edition of *Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8* call for teachers to allocate “extended periods of time in learning centers (60 minutes or more in full-day and at least 45 minutes in half-day kindergarten) so that children are able to get deeply involved in an activity at a complex level.”

During child-initiated experiences the teacher is engaged with children to ensure that structure and learning are occurring. This is one of the best ways for the teacher to observe and understand what children know and can do. Providing time for play does not mean that “anything goes” in the classroom and it also does not mean that the teacher prescribes how children will play during the child led portion of the day. Classrooms that are disproportionately teacher directed have been shown to be counterproductive to the development of self-regulation because children change rapidly from one task to another, often at the direction of the teacher, and are not allowed to engage deeply with one material for a long period of time (Miller & Almon, 2009).

A Picture of Purposeful Play in the Kindergarten

Jack returned to school from winter vacation with his new bottle of bubbles. Addison, his friend, said “You can’t blow bubbles in the wintertime, it’s too cold! They will freeze.” “They will NOT freeze” Jack exclaimed. Several children expressed their agreement with Jack. Some also agreed with Addison. The teacher, noticing a great learning opportunity said, “How do you think we could find out?” Several children shouted, “Let’s go outside and see what happens!!” The wind chill was very low that day so the children didn’t go out but the classroom paraprofessional had an idea, “I will go out and you can come to the window and see what happens.” The children gathered around the classroom window, making predictions (LA 0.3.1.a., SC 1.2.1) about what would happen to the bubbles. As the students were making their predictions, the teacher was writing their ideas down (LA 0.1.1.b). The paraprofessional blew the bubbles and they popped on the windows of the classroom and froze. This provided a canvas of bubbles of various sizes and shapes for the children to investigate (SC 1.1.1).

The next day, the teacher modified the pre-existing lesson plans to follow the children’s interests and created opportunities to enhance the students’ excitement. The students listened to a shared reading (LA0.3.2.a) then reviewed their predictions from the chart from the day before (LA0,2.1.a). In preparation for the day the teacher placed a number of new stations around the room for children to use during center time. The center time experiences allowed for children to select where they would play each day. Students had the option to move from center to center or to stay at one center for many days. The regular work centers (housekeeping, dramatic play, reading, block, manipulatives) continued to be available to children as well. The teacher set up the learning environment and during center time circulated throughout the room engaging with children, observing, documenting and supporting their learning.

Center Time Options

- A tub of bubble solution with wands for students to blow bubbles (SC 1.2.1).
- There is paper and paint, along with bubbles for students to “bubble paint”. Along with these materials the teacher has provided writing tools for the students, who are ready or interested in writing or labeling their bubble picture (LA 0.2.1.a, LA 0.2.1.b, LA 0.2.1.c, LA 0.2.2.a)
- There are pipe cleaners and bendable wire at another station for kids to try to create bubbles of different shapes. There is a clipboard present for students to make their plans or represent their ideas (LA0.2.1.b, LA 0.2.1.c, SC1.1.4, SC 1.2.1).
- At another station different liquids are available for students to make their own bubbles. Students who would like may write their bubble recipe on a card to add to the class’ bubble book (LA 02.2.a, SC 1.2.1, SC 1.3.1)

A few of the children were so interested in bubbles that they continued to return to the bubble activities for several days, exploring in many different ways—catching them, naming colors within the bubbles, measuring the size of the bubbles (SC 1.1.3), talking about what bubbles are made of (SC1.3.1), seeing how high the bubbles would go, and designing bubble representations in the art center (LA 0.2.1c). The children’s questions continued, “Our bubbles are round; could we make square bubbles (MA 0.2.1, SC1.1.4)?” Small groups of children had new experiences with bubbles where they were able to use and extend their new skills. Through these experiences children developed skills in predicting and making hypotheses (SC 1.2.1), sharing information and ideas (LA 0.3.1.a), listening (LA 0.3.2.a), comparing and contrasting, understanding size and shape (MA 0.2.1), and understanding quantities by graphing the number of bubbles each child was able to create (MA 0.1.1.a, MA 0.1.1.b). Children also had to employ their problem solving skills during their center time experiences with the bubbles (LA 0.3.3.c).

<i>Throughout this lesson, the teacher designed opportunities for the students to:</i>	<i>Incorporating Nebraska Language Arts (LA), Math (MA), and Science (SC), Standard(s)/Indicator(s):</i>
Read and be read to and engage in the writing process.	LA 0.3.2.a (listening skills) LA 0.1.1.b (purpose of print) LA 0.1.5.c (awareness of context clues) LA 0.2.1.a, LA 0.2.1.c (writing process skills)
Talk with teachers and peers and write about their predictions, construct new ideas and theories, and describe (orally and graphically) their processes and findings.	LA 0.3.1.a (communicate ideas orally) LA 0.3.3.b & LA 0.3.3.c (reciprocal communication) LA 0.2.2.a (writing genre skill) LA 0.3.2.a, LA 0.3.2.b, LA 0.3.2.c (listening skills) SC 1.2.1 (Scientific Inquiry)
Engage in meaningful conversations with peers surrounding the process and outcomes of their work during center time.	LA 0.3.1.a (speaking skill) LA 0.3.2.a (listening skill), LA 0.3.3.b, LA 0.3.3.c (reciprocal communication skills)
Draw representations of bubbles and represent their process for creating and using bubbles.	LA 0.2.1.c (representations of ideas) SC 1.2.1 (Scientific Inquiry)
Use math and science skills in a meaningful and authentic setting including active measurement and engagement in the scientific process.	MA 0.1.1a, MA 0.1.1.b (counting) MA 0.2.1 (name two dimensional objects) SC 1.1.1 (using senses for observation) SC1.1.4 (understanding form and function) SC 1.2.1 (Scientific Inquiry) SC 1.3.1 (differences between solids, liquids, and gasses)

THE BIOLOGICAL NEED TO PLAY

The American Association of Pediatrics (2007) released a report about the importance of play in the early years. It is the position of the AAP that play needs to be encouraged as an essential part of children’s healthy development and that active child-centered play is a time-tested way of producing healthy, fit young bodies. Starting from birth, play serves to strengthen the synaptic connections in the brain. During the age range of three to eight years, the synaptic connections in motor and sensory areas of the brain are well established and are starting to become more organized.

Due to the rapid growth of the frontal cortex (cognitive thinking, logic skills, problem solving skills) during this age range, children’s play is at its most elaborate and complex. Through their play, children demonstrate their increasing ability to think symbolically and their abilities to self-regulate and explain their thinking (Bergen, 2007; Bodrova & Leong, 2007). A wide variety of play experiences is necessary to develop a complex and integrated

brain. Play is important not only for enhancing children’s physical skills, but also for the development of self-regulation, cognition, executive functions, language, social skills, emotional regulation, and creativity (Bergen, 2007; Diamond, Barnett, Thomas & Munro, 2007; Kostelnik & Grady, 2009). Play that integrates sensory, motor, cognitive, and social-emotional experiences provides an ideal setting for developing the brains of young children.

THE ROLE OF OUTDOOR EXPERIENCES

For a variety of reasons, children are spending increasing amounts of time inside the house watching television and playing video games and many schools are cutting recess times or eliminating recess all together in favor of spending more time during the day focusing on academic skills (Clements, 2007). However, daily experiences in the out of doors promote and strengthen many aspects of learning and development (Louv, 2005).

EXPERIENCES IN NATURE AFFECT LEARNING AND DEVELOPMENT

Within the last decade, a large body of research has emerged which examines how the natural world influences development and learning. This research has linked several health and learning issues to a deficiency of nature experiences. Two of every ten children in the United States are clinically obese, and these rates continue to climb at the rate of a fourfold increase in three decades (Perrin et. al., 2007). There has also been a large increase in the use of behavioral medications for young children, with the largest increase (66%) in the use of anti-depressants for preschoolers (Louv, 2005). Prescription drug use for the treatment of Attention Deficit Hyperactivity Disorder (ADHD) is also skyrocketing (Centers for Disease Control, 2005). In the last decade, the appearance of socially inappropriate behaviors in children and their difficulty in relating to others has become glaringly apparent (Louv, 2005).

Children who present symptoms of ADHD can also benefit from time in nature and, in fact, some believe that a deficiency in nature exposure leads to the need for prescription drugs (Louv, 2005). Wells (2000) found that being close to nature helped to boost children’s attention spans, which is one of the most prominent symptoms of an ADHD diagnosis. Taylor, Kuo, and Sullivan (2001) found that exposure to green outdoor spaces fosters creative play, improves children’s access to positive adult interaction, and relieves the symptoms of attention deficit disorders. Research has shown that children who are un-medicated but diagnosed with ADHD are more able to pay attention after a simple 20-minute walk in a park than they were after a walk through either well kept downtown or residential areas. Natural environments have a calming effect on children and help them to be more focused and less distracted (Louv, 2005).

A survey of the families of children ages 7-12 with diagnoses of ADHD asked parents to identify activities in the evenings and on weekends that seemed have an influence on the positive and appropriate functioning of the child. The researchers found that greenery in a child’s environment, even through windows, had a significant impact on the reduction of symptoms associated with ADHD. They also concluded that while any outdoor space or activity seemed to help reduce the symptoms, those environments which included trees and grass were the most beneficial in the reduction of symptoms.

THE NATURE EFFECT: BENEFITS FOR CHILDREN

The benefits of spending time in nature have been widely documented in recent years. Research has shown that nature benefits children (and adults) in their cognitive growth, ability to handle negative stress, creativity, resistance to depression, and symptoms of ADHD (Louv, 2005). For children living in high stress families and households, nature provides an outlet, often offers healing, and allows children time to make sense of their world (Louv, 2005). Researchers from Cornell University (2003) found that a room with a view of nature can help buffer children from stress and that nature, either in or around the home, appears to be a strong factor in protecting the psychological well being of children in rural areas. Peter Kahn, in his book *The Human Relationship with Nature*, combines results from over 100 studies that provide strong evidence that one of the main benefits of spending

time in nature is stress reduction. Stressful life situations appear to be buffered by exposure to environments where natural surroundings and experience in nature are easily accessible. According to a study published by Nancy Wells (2000), the psychological distress of children who lived in high nature conditions was much lower than it was for children who lived in low nature conditions but experienced the same life stresses.

Exposure to nature has been linked to several positive learning outcomes. Cross national studies have found that children who played in green areas showed more creativity. Creativity is a necessary skill for learning and producing knowledge and ideas (Robinson, 2001). To be successful in the 21st century, children will need to become generators of knowledge and ideas requiring the ability to think creatively. Time spent in nature has been linked to an increase in social skill development and competence (Louv, 2005). In one study, children who lived near parks or similar environments received lower ratings than peers on measures of negative behavioral conduct, anxiety, and depression (Wells & Evans, 2003). In addition, these same children rated themselves higher on measures of self-worth. Researchers have also found that when children play in spaces dominated by natural elements and landscapes, they are likely to use more fantasy play, and their social standing was based more on their language skills, creativity and inventiveness rather than on their physical competence.

Research overwhelmingly supports the need for children to experience natural environments often and in a variety of ways. Although the implications may seem more relevant to parents than to schools, schools do have a responsibility to provide these experiences for children. With increasing behavior problems, social skill development problems, and an increase in attention issues, more outdoor opportunities should be offered at school.

THE ROLE OF TECHNOLOGY

With the constant changes in technology come new challenges and opportunities for teachers and schools. Often one thinks only about computers when referring to technology and learning. However, there are other technological tools such as digital cameras, MP3 players, electronic books, and other “smart” teaching devices that can be utilized along with traditional technology such as the overhead projector. Using technology to allow access to or augment learning for children who have disabilities is defined in federal and state law as “assistive technology.” Any item, piece of equipment, or product that is commercially available or fabricated can be considered assistive technology. This technology has the potential to enhance the learning experiences of all young children if introduced and guided by the teacher such that all children have access.

USING TECHNOLOGY EFFECTIVELY IN KINDERGARTEN

There are several ways to effectively incorporate technology into the kindergarten classroom. Technology is not used to replace teaching but rather as a supplement to the curriculum and instructional strategies. Computers are the most widely used technology in the classroom. Guidance from the Assessment of Practices in Early Elementary Classrooms (APEEC) says that at least two computers should be available to children in the classroom, and that computers should be used for at least three different purposes (i.e. writing, educational games, and research). Computers in the classroom can also be used for accessing the Internet with appropriate adult support and supervision. Children in the kindergarten classroom use computers both individually and in small groups for research purposes. If children go to a computer specialist, the specialist should incorporate classroom content into the computer lab activities. Remember that for children to learn content, it needs to be connected to other experiences the children have had.

Teachers incorporate technology into the classroom through the use of MP3 players. This device can be used to support language and literacy development and also to aid in assessment. A microphone can be purchased for some MP3 players that can record children’s stories, ideas, and theories. These recordings can be played back for future recall or for listening and reflection by the teacher and children. In addition, children can listen to their

stories and add to or change the plot, problem, characters, or solution. As they listen to their story being played on the MP3 player they visualize how the story would look and may begin to act it out in the classroom. An MP3 player with a recording attachment, such as a digital voice recorder, could also be used to aid in assessment. Adults can record conversations with children about concepts that come up during child led experiences and utilize these conversations as evidence of learning for checklists and other types of assessment. This is an effective form of authentic assessment that allows children to share what they know in a naturally-occurring learning opportunity.

Ava's Kindergarten Classroom

As Ava entered kindergarten, her teacher, Ms. Jones, was concerned with her overall development and her ability to be successful in the kindergarten classroom. Ms. Jones had conducted home visits prior to the start of school and this allowed her to gain a lot of information about Ava and her situation. The information that Ms. Jones learned through the home visits helped her to provide the right support from the first day of school to help Ava become a successful learner.

Ms. Jones recognized that to aid the development of Ava and the other children, a variety of experiences and activities needed to be present each day. Children in her class had access to many materials and were provided time to play freely in the classroom in addition to the more structured teacher led parts of the day. During child-initiated center time, Ms. Jones moved around the classroom and interacted with the children. She used this time as a tool for informing her instruction by collecting observational notes about the children's language, ideas, theories, and interests. As an active participant in center time, Ms. Jones was able to utilize the child-led experiences to infuse academic concepts. Ava thrived during this part of each day and Ms. Jones was able to push Ava's learning forward by interacting with her during her play. In addition, the speech language pathologist worked with Ava during this time and helped to build her language and social skills in this natural setting.

For consideration: What factors in the kindergarten classroom environment contribute to successful learning experiences? What types of materials facilitate the development of the whole child? What is the role of the teacher in a kindergarten classroom?

KINDERGARTEN: THE CLASSROOM

MATERIALS AND ENVIRONMENTS THAT PROMOTE LEARNING

Children need a variety of materials available to them daily that provide both challenge and success. They also need daily exposure to music, art, and movement activities. Universal Design for Learning (UDL) extends the principles of universal design, which was first identified in architecture and materials design, by removing any structural or physical barriers to accommodate the broadest range of learners possible. Universal Design for Learning promotes multiple and varied materials, formats, and environments such that children who have disabilities are included along the continuum of learner diversity. The principals of UDL suggest that any object or material used should be of a size and shape to allow for physical access by any child (CAST, 2008).

There are several measures that can be used to assess the kindergarten classroom environment and materials. One of these measures is the Classroom Assessment Scoring System (CLASS, K-3) and another is the Assessment of

Practices in Early Elementary Classrooms (APEEC). To assess the language and literacy environment specifically, the most commonly used scale is the Early Language and Literacy Classroom Observation (ELLCO PK-3). These assessments provide guidance for the types of materials, experiences, and interactions children should have in the kindergarten classroom. In addition to the types of materials, there also should be adequate numbers of materials. The teacher will select large quantities of some materials and a select few of other types of materials. For example, when displaying blocks in the classroom, a variety of sizes, shapes, and styles need to be available. There also should be enough of the blocks for several children to build complicated structures at the same time. In contrast, the teacher might select a few types of board games to have available for children.

SOCIAL AND EMOTIONAL LEARNING

Learning social skills, emotion identification, and coping skills are some of the most important factors influencing the ability to learn academic concepts and generate new ideas. Children must feel safe, connected to others, and valued in a classroom in order to learn. Part of this learning can be aided by intentionally placing materials in the classroom that foster development of social-emotional skills. Some ideas are:

- Set up a dramatic play center where children can act out several different roles (construction workers, store owner, princess, parents, doctor, etc). The dramatic play center is an extension of the content being taught and changes bi-weekly or monthly. New materials are added to the dramatic play center as children begin to have new ideas. Perhaps they think that the store should become a pizza parlor. The same concepts (money, writing down orders, sorting, etc.) can be taught through the pizza parlor.
- Provide materials such as blocks, board games and card games that encourage children to work together. These materials also teach math, science, and reading concepts.
- Arrange the physical environment to promote peer interactions. Rotating centers periodically increases the chances that children will interact with one another. Using materials that promote cooperation and sharing, such as rocking boats, large pieces of paper for many children to draw on, and dramatic play props, has been shown to increase social development.
- Provide a private space where children can work alone or with one other person. Private space is easy to incorporate in a reading or listening center where the space is intentionally designed for one or two children. Include cozy materials such as a rug, couch, curtains, stuffed animals, and blankets.
- Respectful language is encouraged in the classroom at all times and children are encouraged to work through disagreements with their peers (and the teacher) by coming up with their own solutions. For some children, the teacher must be an active participant in these discussions. Other children can negotiate these conflicts on their own.

PHYSICAL LEARNING

Children need a variety of movement experiences and materials to practice both large and fine motor skills. Some ideas to help foster children's physical development are:

- Provide daily access to and use of an outdoor space. This time is equally important as instructional time indoors. The outdoor environment provides a wealth of opportunity for engagement with science, math, and even literacy as well as experiences and equipment that promote motor development of the whole body, i.e. swings, slides, riding equipment.
- On rainy or cold days, children have access to materials indoors that promote the same skills as they would be developing outside. During indoor large motor times, children have access to balance beams, hopscotch, hula hoops, balls, etc.

- Incorporate music and movement times into the kindergarten day. It is not enough for children to have music specials once a week. Provide musical props (streamers, shakers, etc.) and a variety of music genres for dancing and singing.
- A variety of materials are provided that encourage development of both fine and gross motor skills. Fine motor materials include beads for stringing, lacing cards, scissors, pencils, paintbrushes, and clay.

LANGUAGE AND LITERACY LEARNING

Language and literacy development are essential skills for future academic success. There are materials that can be infused into all areas of the classroom that support these skills and supplement the language arts curriculum.

Some ideas to support language and literacy in the kindergarten classroom are:

- Children can make labels for items in the classroom. Underneath these labels the teacher could also type the name.
- A variety of books, including different genres and types, are thoughtfully stored and easily accessed by children at all times. Include the following in the library:
 - Books that demonstrate diverse cultures, genders, and abilities.
 - Both fiction and non-fiction books
 - Poetry books
 - Books/stories that are written by children
 - Books without words
 - Book for content-learning (these relate to the concepts and vocabulary of the week)
 - Books for buddy and group reading
 - Books for individual reading
 - Books on tape
 - Photograph albums
 - Books with props
- Materials for writing and drawing are infused into all learning areas. There are journals in the science center, shopping lists in the dramatic play grocery store, white boards in the writing center, and blank preassembled books for writing new stories.
- There is a designated place to store the children’s works in progress. These materials are be available to children so they can return to and add to their projects as they have time.

COGNITIVE LEARNING

Cognitive learning can mean many things. This section focuses on materials for encouraging science, math, and problem-solving skills. All of these concepts can be integrated into multiple experiences that cross learning domains.

MATH

Several materials can be used to support math learning and can be integrated into many different areas of the kindergarten classroom such as the dramatic play center, on rugs in the classroom, or in the game center. Some materials that support math learning are:

- Cards for identifying colors, shapes, and patterns. Look for patterns in children’s clothing (stripes) to incorporate patterns into everyday experiences and to make the patterns meaningful to children.
- Real and pretend money to help children begin to understand the value of money and practice basic addition and subtraction.
- Board games as tools for counting, adding and subtracting. Games such as Chutes and Ladders® and Connect Four® are wonderful for supporting math learning and social learning as well.

- Card games to help children identify numbers and figure out which numbers represent more or less than other numbers (10 is higher than 4).
- Non-standard as well as standard units of measurement (sticks, string, rulers and yard sticks) can be used to facilitate concepts of tall, short, big, small, etc.
- A scale for weighing objects in the classroom can be an especially powerful tool near the sensory/discovery area. Children can weigh the materials in the sensory table and begin to understand weight and balance.
- Dramatic play centers that incorporate math concepts (grocery store) are a great way to extend math concepts in other areas.
- Collections of materials are available throughout the classroom (for sorting and counting).

SCIENCE

Like math materials, science materials can be infused into many areas of the classroom. Doing so helps children to generalize knowledge from one area to the next. Ideas for supporting science learning in the classroom are:

- Include living things in the classroom. These could be plants that the children help take care of or a class pet that children observe, care for, and learn about.
- Collections of natural materials are placed throughout the classroom. Some materials that could be included are corn, wheat, rocks, sticks, leaves, feathers, and seeds.
- Tools for measurement, dumping, pouring, and scooping are made available to children in informal (sensory table) and formal (baking experiments) settings.
- Non-fiction books and field guides about birds, trees, plants, and lifecycles, are placed throughout the classroom for children access when they have a question or are searching for an answer.
- Journals for children to record predictions and draw the growth of plants, flowers, and other objects that interest them. Children can use journals to make predictions about color mixing, cooking, and other scientific experiments.
- Magnifying glasses that are easily accessible by children and are taken outside to examine insects, trees, and other objects of interest.

PROBLEM-SOLVING

Any material that encourages children to work together will encourage the development of problem-solving skills. Building problem-solving skills helps children develop self-regulation skills, independence, and confidence in their social interactions, as well as developing higher cognitive functioning. Some materials that promote problem solving are:

- Blocks and other building materials are available to children to build complicated structures. Many blocks of a variety of types and sizes are available to children in this area of the classroom.
- Puzzles are available for children to use, either independently or with the help of another child or adult. Not all children are at the same challenge level with puzzles, so it is important to have puzzles appropriate for several ability levels.
- Use recycled materials such as tubes, lids, boxes, and egg cartons for building. These unusually shaped materials force children to think creatively and devise new strategies for building.

FINE ARTS LEARNING

According to the Assessment of Practices in Early Elementary Classrooms (APEEC), children should have exposure to several types of fine arts experiences at least two times per week. Working with art materials supports the development of fine motor skills which have a large impact on a child's ability to write. In addition, music is important because it provides opportunities for movement which stimulates the brain. Music also helps children

self-regulate and learn patterns. Many academic concepts such as counting, syllables, and rhymes can be taught through music. Some opportunities to incorporate fine arts learning into the kindergarten classroom are:

- Include a variety of papers from which children may choose (construction, tissue, lined, blank). Each type of paper lends itself to a different use, so having many types available broadens the spectrum of what children can do with the paper.
- Offer a wide variety of writing/drawing/painting utensils, such as sticks, pencils, crayons, markers, and paintbrushes. Locate in places where they can be used naturally.
- Provide collage materials for children to use, such as feathers, tissue paper, and magazine cutouts.
- Have scissors and glue available and accessible to children.
- Keep a variety of music in the classroom for the children to access at both structured and unstructured times. Use music as a cue for transitions (clean up, finish writing, five more minutes). Often children attend to musical cues more than they do to verbal directions given by adults.
- Allow kindergarteners to access the music center during center time. This helps children gain more experience with music, rhythms, beats, and patterns.
- Display and organize several types of musical instruments, such as drums, shakers, streamers, and rhythm sticks that children can use during center times.

THE PHYSICAL SPACE FOR LEARNING

The arrangement of the physical environment can have a big impact on teaching and learning. The physical environment needs to incorporate natural materials and objects. Having materials in the classroom that are made of natural materials (wood, living plants, natural lighting and windows) has an impact on the atmosphere of learning. Given what is known about the amount of time (or lack thereof, as it may be) that children spend outside in natural environments educators need to be intentional in bringing the natural world indoors or in providing learning opportunities outdoors.

The physical environment can promote language development and socialization as well as cognitive learning if it is set up intentionally to foster these skills. One of the best ways to do this is for children to sit at tables rather than at individual desks. Another option would be to group three or four individual desks into pods. Ensure that the tables and chairs are appropriately sized for all children in the classroom. This may mean that children of differing abilities or sizes need to have different chairs or tables to meet their needs. Incorporating children's work into the classroom ensures that children and their families feel represented in the space. Pictures of children and their families are displayed throughout the classroom, and a respect for the child's culture is communicated through the physical space of the classroom. In addition, stories that children tell to adults can be written and displayed and open-ended artwork can be displayed throughout the classroom as a validation of children's work and creativity.

Another element of an environment that promotes language and social development is the inclusion of centers within the classroom. Children should have access to a variety of different types of materials within the classroom each day. Time in the kindergarten classroom is devoted each day to unstructured play in centers. Child-initiated and teacher supported play in centers greatly fosters language and social development and helps children develop greater understanding of academic concepts. Center time opportunities for children to interact with the teacher and other children are essential to healthy development and outcomes.

Nebraska licensing requirements for child care centers allow no more than 15 school-age children per adult. In contrast, kindergarten classrooms of 20 or more children and one adult are routine. Adult support through individual and small group interactions is crucial to long-term success and in-depth learning, but these interactions are few and far between with such large class sizes. A second adult is essential for high quality learning experiences

to occur in kindergarten classrooms. The second adult is engaged in interactions with children and not assigned to photocopying or other administrative tasks while the children are present.

THE MANY ROLES OF THE TEACHER

Because of the developmental level and uniqueness of children in kindergarten, teaching kindergarten requires an approach characterized by merging the teaching styles typically found in preschool classrooms with strategies found in most primary grades. Kindergarten teachers' roles are additionally unique from their colleagues' roles since teachers in the kindergarten, in addition to teaching academics, also employ an intricate fusion of roles that are inclusive of those held by parents, nurses, conflict managers, instructors, and supporters.

THE TEACHER IS A PROVIDER OF OPPORTUNITIES AND EXPERIENCES

The kindergarten teacher provides academic experiences that stimulate children's senses and engage them in the learning process. The kindergarten teacher also provides opportunities for children to practice social interaction skills and intentionally teaches social skills in the classroom. The teacher engages children in conversation about what they are doing by prompting them to elaborate on their initial statements and asking them to explain their ideas and theories. Discussion and activities that encourage reasoning occur often and conversation and dialogue with peers is encouraged throughout the day in the kindergarten classroom.

The teacher encourages children to share their ideas with each other, and asks open-ended questions to extend the children's thinking. The teacher takes the lead in providing new experiences to children that build on what they already know. This includes delivering academic instruction in a variety of ways. The teacher provides opportunities for children to lead and is flexible enough to let children create opportunities and experiences based on their developing ideas and theories. In addition, the teacher sets up the physical classroom environment in a way that supports children and helps to facilitate learning and provide structure. The teacher provides a rich variety of hands-on materials in an inviting environment for children to explore during center time each day.

THE TEACHER IS AN ACADEMIC AND EMOTIONAL SUPPORTER

Intellectually, teachers support children using knowledge about the child's developmental level and what the child can do both independently and with support. This allows the teacher to teach the child in the zone of proximal development (Bodrova & Leong, 2007) where teaching is most effective. In addition, the teacher finds out about children's prior knowledge of concepts in order to teach the concept more effectively. The kindergarten teacher is tuned in to children's interests and incorporates them into academic instruction as often as possible. In addition, the kindergarten teacher recognizes the important role that child-led experiences play in academic learning and concept development.

The kindergarten teacher supports children's emotional and social development in addition to their cognitive skills. The teacher supports children by helping them navigate conflicts with peers, easing the transition from home to school each day, and helping children identify their feelings and needs. A teacher who is responsive to the emotional needs of children will have children who want to learn and are excited to be in school. In kindergarten, the development of appropriate social behaviors is a large focus, and this role of the teacher is crucial.

Kindergarten teachers encourage and support positive interactions among children and also encourage children to negotiate their own solutions to problems. The teacher also helps to support children's relationships with their peers, parents, and with the teacher herself. Attention is given to the development of relationships in the kindergarten classroom and value is placed on the quality of relationships and interactions between the teacher and children.

THE TEACHER IS A PARTICIPANT IN CHILD-LED EXPERIENCES

In the kindergarten classroom the teacher is engaged with children in their learning. During center time experiences and other child-led experiences, the teacher is on the floor with children, reading to them, and asking intentional questions and introducing appropriate vocabulary into children's play. The teacher is able to identify where learning is occurring during play and utilize this as data necessary to complete required assessments of child progress. The teacher is highly involved with children during their play experiences. Teachers in kindergartens where children are provided opportunities to initiate their own learning observe children closely and extend their thoughts and ideas by introducing new materials and ideas in appropriate ways. These teachers also focus on the development of relationships with children in their class through play and other child-led experiences.

KINDERGARTEN: PRACTICES AND PERCEPTIONS

PARTNERING WITH FAMILIES

The first connection that a child has in his life is with his family. This connection develops into a relationship, either positive or negative, that influences the experiences that the child has and the way he views the world. Families know more about their children than anyone else. During the years from birth to five, families are typically very connected with the setting in which their child spends the day, whether it is in family child care, center-based child care, or preschool. In these settings, parents see the teacher and are typically in the classroom each day. They talk and share information with the teacher and the teacher shares information with the parents as well. As children enter kindergarten, parents are more disconnected with what is happening in the classroom. Children may get dropped off in front of the school, ride the bus, or ride in a carpool. This sometimes leaves parents feeling overwhelmed and uncertain about their role in the educational process.

The element of culture also plays a role in a family's involvement in the kindergarten classroom. Parents (and children) from other cultures will interact differently with the teacher. During input sessions held across the state, teachers reported that they needed more training about cultural influences on learning in order for them to better serve children and families from other cultural backgrounds. In addition to providing training for teachers, it is important for the cultures of families to be represented in the classroom through materials, displays, and books.

Teachers can work to partner with families by communicating with each family at least once a month about the child's progress. This could be done in the form of a note sent home, a formal checklist, a phone call, or an informal meeting at pick up or drop off time. Communicating with families about progress will help the parents to feel more connected to what is happening in the classroom. Parents can become partners in developing skills at home through the use of literacy backpacks and other traveling learning tools. The kindergarten teacher provides several different types of activities to engage families and recognizes that not all parents can be involved in the same way. Teachers ask parents how they want to be involved in the classroom and then determine how to best partner with parents. In this way, teachers are differentiating for families in the same way that they do for children.

SUPPORTING THE TRANSITIONS OF CHILDREN AND FAMILIES

Transitioning to kindergarten is a time of great change for the individual child and the family (Ramey & Ramey, 1994). Even the most prepared parents generally feel overwhelmed with the new routines and expectations and children often feel uncertain about being thrust into a new situation. Research shows that children entering formal schooling are investing the majority of their cognitive energy trying to adjust to the new expectations of the school environment (Seung Lam & Pollard, 2006) rather than on academic skills and concepts. It is essential to take an ecological approach (Early, Pianta & Cox, 1999) to the transition process in which the child is considered as only

one piece of the transition puzzle. One must move from the mindset that the child needs to be ready for school to the mindset that parents, educators, and communities must be prepared to welcome the child into the learning environment (Ramey & Ramey, 1994).

TRANSITION INTO KINDERGARTEN

Research clearly demonstrates the need for schools and communities to have a more comprehensive view of the transition from home to kindergarten (Seung Lam & Pollard, 2006; Pianta, Kraft-Sayre, Rimm-Kaufmann, Gercke & Higgins, 2001; Sink, Edwards, and Weir, 2007; Nelson, 2004; LoCasale-Crouch, Mashburn, Downer & Pianta, 2008). Recent research about transition practices calls for individualized transition practices that are initiated earlier and focused on both vertical and horizontal connections. Horizontal transitions are completed within the current context (pre-kindergarten teacher and parent, pre-kindergarten teacher and child), whereas vertical transitions are best thought of as reaching up and down to make connections for children. An example of a vertical transition practice is the kindergarten teacher reaching to the pre-kindergarten teacher to find out about curriculum, and the pre-kindergarten teacher reaching to the kindergarten teacher to find out about expectations for kindergarten.

In one study (LoCasale-Crouch et. al., 2008), researchers found that the most common practice reported by pre-kindergarten teachers was sharing written records with the kindergarten teacher (78% of respondents). The least frequent practice was kindergarten teachers visiting pre-kindergarten classrooms. In this research, kindergarten teachers' perceptions of children's skills were consistently and positively associated with contact between the pre-kindergarten teacher and kindergarten teacher about curriculum and specific children. However, the transition strategy of establishing contact between kindergarten and pre-kindergarten teachers to discuss specific children and curriculum was the least often used. Another study (Pianta et. al., 2001) found that pre-kindergarten teachers engaged most often in the transition practice of taking children to visit kindergarten classrooms; this was also the most frequent transition activity in which kindergarten teachers engaged.

The number and type of transition practices that pre-kindergarten teachers plan for preschool children has a significant effect on the kindergarten teachers' perceptions of the children's adjustment to kindergarten (LoCasale-Crouch et. al, 2008). This was true especially for children who were socially and economically at risk. Head Start programs are required by federal standards to develop transition plans and to implement strategies that address both vertical and horizontal connections. Where Head Start and school partnerships are formalized, the transition planning process may be streamlined and less cumbersome. For children at risk, transition experiences that directly involved the child (visiting the kindergarten classroom vs. getting information by mail) were credited with stronger benefits and greater adjustment to kindergarten.

In Nebraska, educators are *beginning* to make vertical connections, especially in preschool programs operated by school districts and Educational Service Units which are required to outline a transition plan and have written partnership agreements with community agencies, child care programs, preschools, and the public school system. Although the number of early childhood (birth to five) programs operated by schools and ESUs has increased rapidly over recent years, these programs are relatively few in proportion to the number of other pre-kindergarten programs across the state. The majority of Nebraska's early childhood classrooms are not involved in these kinds of transition experiences with the public school system.

During input sessions prior to the completion of this statement, participants expressed several barriers to effective transitions in their schools. One of these barriers was that class lists are developed so late that it is nearly impossible to arrange home visits and make personal connections with children and families prior to the start of school. Although the majority of teachers articulated positive options for transition support (visiting preschools, home visits, communication with child care and parents), some teachers articulated less desirable activities such as using transition gatherings (such as kindergarten roundup) as an avenue for screening children by using readiness

tests. The transition practices most commonly reported by teachers in input sessions held across the state (kindergarten roundup and sending information home) are not shown to be effective in transitioning children and families to kindergarten.

Marcia Kraft-Sayre and Robert Pianta (2000) have identified several effective transition practices through years of research as part of the NCEDL Kindergarten Transition Project. The authors developed a menu of transition practices and a framework for strengthening the kindergarten transition process to encourage positive outcomes for children, families, and schools. These practices are outlined in *Enhancing the Transition to Kindergarten*, available on the Web site of the National Center for Early Development and Learning (NCEDL) at <http://www.fpg.unc.edu/ncedl/>.

The transition practices outlined are based on four guiding principles: family-school connections, child-school connections, peer connections, and community connections. Family-school connections are highly important in the experience of transition because the family and school are likely to be the two most influencing agents in the child's life (Ramey & Ramey, 1994). Examples of family-school connections are assessments of family needs, connecting families to community resources, and encouraging family participation in home-learning activities.

Child-school connections are practices such as having preschool children practice the kindergarten routine, connecting preschool children from the community with the elementary school for special school functions and having former preschool teachers visit children in the kindergarten classroom. In addition to child-school connections, another important element is the formation of peer connections. Activities to help form peer connections include grouping the same children together from preschool to kindergarten if possible, and holding pre-kindergarten camps at the school so that children can get to know others in their class prior to the first day of school.

An often overlooked element in the transition process is the involvement and support of the community. Connections between the school and broader community agencies are important to ensure successful transitions for children. Including the broader community adds another layer of complexity, coordination, and collaboration to the transition system. Examples of community connections include having staff from the preschools and community child care facilities and the elementary school collaborate on placement and class assignment practices (keeping children from preschool together as they enter kindergarten), and coordinate community services with the public school system. The transition to kindergarten is a complex process that involves coordination and collaboration on many levels. Incorporating this level of transition practices will require restructuring and rethinking of our schools' traditional transition practices and policies including traditional staffing patterns.

TRANSITIONS INTO FIRST GRADE

The transition from kindergarten to first grade is often overlooked as an important moment in the child and family's life. This transition marks a significant change in teaching style, curriculum content, and learning environment, moving from a child-centered kindergarten into a classroom that involves more teacher-directed activity and a less child-focused environment. In preparation for first grade there is a subtle transition that happens throughout the year in the kindergarten classroom. As children in the kindergarten classroom develop academically, socially, and behaviorally throughout the school year, the structure of activities may change in response to the students' increased abilities. Kindergarten classrooms evolve along with the children throughout the year and the instructional strategies may become more structured as the year progresses to match the developmental level of the children. However, the same variety of teaching strategies (small group instruction, whole group instruction, exploration and experimentation, and child led play experiences) should continue to be present throughout the kindergarten year. As children gain knowledge and greater understanding they continue

to use purposeful play in centers to refine what they know. Their ideas become increasingly complex and are executed through this opportunity for exploration and experimentation with their ideas.

The change in expectations from kindergarten to first grade can be quite powerful for all children, but it seems to have greater effects for children in racial/ethnic minority groups. For children who are struggling in kindergarten and are already “behind” according to school expectations, the facilitation of a smooth transition to first grade is extremely important. Research shows that there is substantially less focus on the transition from kindergarten to first grade than was placed on the transition to kindergarten. In a nationally representative sample of teachers, researchers found that although 95% of kindergarten teachers use at least one kindergarten transition practice, only 56% of public school teachers used the most frequently occurring first grade transition practice (meeting between teachers to discuss curriculum and arranging for children to visit a first grade classroom). Public schools with higher percentages of minority families or families below the poverty line used first grade transition practices less often. Teachers reported using mostly child-focused transition activities and very few first grade transition practices that involved families (LaParo, Pianta, Cox, 2001). In *Transitions to Kindergarten in American Schools* (Love et. al., 1992) researchers found that over 75% of teachers in public and private schools indicated that they did not send parents any information about first grade placements, and over 60% of the teachers indicated that they did not send any information home about first grade in general.

Research suggests that schools take an ecological approach to first grade transition rather than focusing only on the current academic skill set of the child (Downer, Driscoll, & Pianta, 2006). When teachers focus only on the current skills of the child (number of letters she can write, how high he can count) they leave out a large portion of what makes that child a learner. In contrast, an ecological approach considers all elements that affect the child’s learning and acknowledges that young children learn in episodic and uneven ways, sometimes demonstrating a skill one day and not the next, or demonstrating a skill at home that the child does not display at school. The ecological approach considers not only the child’s readiness for first grade, but also the school’s readiness to meet the needs of the individual child as a unique learner (Copple & Bredekamp, 2009).

The responsibility of creating a successful transition experience to first grade is shared by the kindergarten and first grade teachers. Kindergarten teachers can host family nights where the teachers talk to parents about the upcoming year, and first grade teachers can be present to answer questions. In addition, kindergarten and first grade teachers can collaborate in placement decisions and share relevant information about specific children. The first grade teacher can share the routines of first grade with the kindergarten teacher so he can begin to incorporate these routines into the kindergarten classroom toward the end of the school year.

PERCEPTIONS OF AGE AND ELIGIBILITY

In Nebraska, the definition of an early childhood program is any program serving children birth to kindergarten entrance age (§79-101(4)) and the mandatory age of attendance in Nebraska is age 6 by January 1 of the school year (§79-201B). Attendance in kindergarten is an entitlement to all children who meet the age eligibility criteria. Children have a right to attend kindergarten, and schools have an obligation to meet the needs of individual learners. If age-eligible children are held out of kindergarten for a year, these children must enter school during the year in which they will turn 6 by January 1st.

THE PRACTICE OF “RED-SHIRTING”

Academic redshirting is the practice of holding back a child who is age eligible to attend kindergarten (Marshall, 2003; Katz, 2000; March, 2005). Parents may rightfully make the choice to hold their children out of kindergarten for several reasons such as the child’s current age, maturity, size, gender, and how old the child will be at his/her high school graduation. Social and emotional development and behaviors that facilitate participation in peer relations and classroom communities are critical for all children and are often the reason children are deemed “not

ready” for kindergarten. An unintended consequence of academic redshirting is that it creates a cycle of increasing curriculum and behavioral expectations in the kindergarten classroom (Crosser, 1998). If a child is held back for a year and is six when he enters kindergarten, he is likely developmentally ready for experiences for which young five year olds are not. As more children are held back, the curriculum becomes more focused on teaching to the six-year-olds and less to the five-year-old child for whom kindergarten is intended.

Research that compares children who spent another year outside of kindergarten (and aged one more year) to those who entered when first age-eligible (and were relatively young) shows greater growth outcomes for the children who spent the year in kindergarten (Stipek, 2003; Marshall, 2003). When children are compared at the end of kindergarten, those who are oldest in their class perform only modestly better than those who are the youngest (Stipek, 2003). In fact, Cahan and Cohen (1994) found that a year of schooling had twice the effect on learning as did a year of age. Research indicates that while achievement differences were found in children held back from kindergarten for a year (redshirted), the differences diminished by the third grade, and as students entered high school, the children who started kindergarten at a younger age actually outperformed those students who had been redshirted (Graue & DiPerna, 2000). The diminishing effects of age by third grade show that children who enter kindergarten younger actually learn more and catch up with their peers by the end of third grade (Stipek, 2003). Often times at third grade children with summer birthdays are indistinguishable from others in the third grade population (Graue & DiPerna, 2000).

Several federal and state agencies serving low income families require the child, if eligible, to attend kindergarten. This is mostly due to economic viability of the programs serving these families and the need to provide services to as many children as possible. For these families, paying for another year of preschool or child care is not an option. Public preschool programs are not universally available in Nebraska, even to children who are at the greatest risk for school failure. Research shows that middle class Caucasian children are the most likely to be held out of kindergarten for an extra year (Brent, May & Kundert, 1996; Graue & DiPerna, 2000) and the decision to redshirt is typically made by those families who can afford the extra year of payments to preschool and/or child care (Stipek, 2003), or those for whom child care is not needed. Research clearly shows that even young children benefit more from a year of school than they do from a year of age. These benefits can be attributed to better test scores in high school and greater wages in later years of life (May et. al., 1995).

RETENTION AND DEVELOPMENTAL KINDERGARTEN

Case studies indicate that both retention and academic redshirting are strongly influenced by community notions of child development and the role of the adult in supporting this development (Graue & DiPerna, 2000). It is highly unlikely that the actual readiness of children varies so greatly from community to community, but rather that the community’s standards of readiness, and their interpretation based on these standards of readiness, are what influences this practice.

Another phenomenon that is becoming increasingly popular is the use of the developmental kindergarten or transitional kindergarten, where children deemed “not ready” for kindergarten attend a scaled back version of kindergarten the first year, and “real” kindergarten the second year. The same type of program can occur for children placed in a transitional class between kindergarten and first grade. Research does not support the use of these programs for children and in fact, these programs show similar outcomes for children as are seen when children are retained (Carlson, 1995; Pipitone, 1986; Prohaska, 1991; Phillips, 1992; Golant & Golant, 1990; & Ostrowski, 1994). Developmental and transitional programs will not be addressed separately, but the discussion of retention research is applicable to developmental/transitional programs as well.

RETENTION IN THE KINDERGARTEN CLASSROOM

Data gathered at NDE shows that the average rate of kindergarten retention statewide is three percent. However, some districts present kindergarten retention numbers as high as 30-50% of all enrolled children. The variance in these rates fit what research is showing us; retention rates are highly variable nationally, state-wide, and at times even within school districts.

In a meta-analysis of 20 studies chosen for their methodological rigor, 80% of the studies concluded that retention was ineffective as an academic and socioemotional intervention (Jimerson, 2001). Risk of retention is historically linked to several factors including gender, race/ethnicity, socioeconomic background, and age at school entry (Burkam, LoGerfo, Ready & Lee, 2007). Because there are several factors influencing children's success in school, it seems unlikely that one intervention (retention) would be the solution to the problem. In fact, research shows that simply having a child repeat a grade does nothing to address the multiple individual and experiential differences that have influenced the child's poor achievement and/or adjustment in school.

Children are generally retained in kindergarten for one of two reasons. Some children are retained because they are unable to meet the curriculum demands. Other children are retained in order to have an additional year to practice social-behavioral skills. As kindergarten becomes more academic in nature, the expectations for children increase and many children experience early failure in school and will likely be retained (Burkham et. al., 2007). A study conducted by Hong & Raudenbush (2005) found that children who were retained in kindergarten would have learned more if they had been promoted to first grade along with their classmates. After one year of retention these students showed an academic loss that was equivalent to half a year's academic growth in both math and reading. These effects were diminished for children who were the most at-risk for grade retention, but even for these high risk children, retention showed no immediate benefit on academic success. Research by Shepard & Smith (1988, 1989) indicates that promoting a child to first grade and providing remedial services is a more appropriate and effective intervention than grade retention in kindergarten.

Several research studies have also shown that children who are retained during elementary school are much more likely to drop out of high school. Although findings vary from study to study about the amount of influence retention has on dropping out, there is a clear link between retention and later school dropout (Jimerson, Ferguson, Whipple, Anderson & Dalton, 2002; Davenport, Delgado, Meisels, & Moore, 1998). To further perpetuate this problem, the child who was retained has one year less of schooling at the time that she drops out. If this same child had not been retained, she would have been more advanced in her academic career which would have provided her with more knowledge and skills and would have made it easier for her to finish high school at a later date. Kindergarten retention shows no benefit for children's later achievement or likelihood of staying in school until graduation (Burkham et. al., 2007). A 21-year longitudinal study in Minnesota found that at sixth grade and at age 16, students who were retained in kindergarten did not differ academically from their promoted classmates. However, there were negative effects for these students in other areas of life. The retained students were less likely to have earned a high school diploma by age 20 or to have attended college. They were also paid less per hour and held lower status jobs than their promoted peers (Jimerson, 1999; Jimerson, et. al., 2002).

In addition to utilizing kindergarten retention as an academic intervention, it is also often utilized as social-behavioral intervention. In a study conducted by Burkham et. al. (2007), first time kindergarteners who were promoted to first grade demonstrated better approaches to learning, more self-control, and better interpersonal skills than kindergarten repeaters. These children also consistently displayed more appropriate behaviors and less externalized and internalized problematic behavior. In several cases, researchers found that there were little academic benefits of retention, but there were stronger negative outcomes related to social emotional development of these children. Retained children have shown more maladjusted behaviors, more negative emotional health, and worse attendance than promoted peers (Jimerson et. al., 1997). Other studies (Holmes,

1989; NCES, 2000) found that retained students were more likely to have negative self concepts and negative attitudes about school. These students were also more likely to receive negative behavioral reports from their teachers. First graders who had been retained in kindergarten were more likely to disrupt the class, act out, have more problems sharing and taking turns, and experience concentration problems. Retention also appears to have strong negative effects on children's sense of self and self-concept. Children who were retained in elementary school reported less popularity, greater stress, and problems with the social stigma associated with retention (Byrnes & Yamamoto, 1986). Teaching appropriate behaviors and utilizing positive behavior supports is a proactive approach which eliminates the need for retention, thereby preventing negative consequences for the child.

ALTERNATIVES TO KINDERGARTEN RETENTION

The Center for Early Education and Development (CEED) presented several alternatives to kindergarten retention and transitional programs in 2000. One of the alternatives to kindergarten retention is to implement a curriculum that is appropriate to both the age of the children (in kindergarten this would be age five) and the developmental level of the children. This ensures that the content is appropriate for the child's skill level and developmental level. In addition, schools need to value the differences among children rather than striving for children to do the same thing, in the same way, at the same time. Kindergarten classrooms value the mixed age group that they occupy and recognize that mixed age grouping provides a wonderful opportunity for children to teach each other and to learn from their peers.

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A CALL TO ACTION FOR NEBRASKA

FOR EDUCATORS

CONNECT TO FAMILIES AND THE COMMUNITY

Use multiple strategies to engage families in your classroom. Recognize that parents are the child's first teacher and approach families using a strengths-based framework. Respect that all children are unique and live in diverse families and communities and that families have valuable knowledge about their children. Take note of each child's strengths and seek multiple ways to gain information from families and also to share information with them.

Engage with preschool programs and community agencies to promote continuity through a comprehensive approach to kindergarten transition, including bridging from preschool experiences to kindergarten, and then from kindergarten to first grade. Arrange visits to preschool classrooms and have preschool children and families visit your classroom. In addition, be sure to engage with first grade teachers to support smooth, successful transitions for all children and their families.

PROVIDE MANY AND VARIED CLASSROOM EXPERIENCES

Balance child-initiated and teacher-led activities, as well as structured and unstructured time. Implement curriculum and teaching methods that engage and appropriately challenge children's thinking and that allow them to try out their ideas in a variety of teaching contexts - whole group, small group and learning centers. Set aside time each day to engage with children in child-initiated play and support children's deep engagement in their play experiences. Utilize this time to build important relationships with children and to appropriately assess child learning and growth through observing and recording children's behavior. In addition, incorporate movement, music, and creative experiences into calendar time, transitions, and other daily routines.

SELECT EFFECTIVE CURRICULUM

Continually examine the links between state standards and your curriculum. If possible, select a curriculum aligned with state standards. If working with an existing curriculum, choose the pieces of that curriculum that fit the goals of the standards. Select a curriculum that is thoughtfully planned, engaging, and culturally and linguistically responsive. Remember that effective curriculum builds on children's prior learning, knowledge, and experiences. Regularly review your curriculum and assess its effectiveness based upon evidence obtained from your observations and assessments of student progress. Know the strengths as well as the gaps in the curriculum you use so that you are able to find/request supplemental resources as needed. Do not assume that any program is complete and meets the educational needs of all students.

To effectively meet the state standards in your classroom, engage children in a variety of activities that incorporate multiple senses and ensure the child is an active participant in learning. Work from the physical world toward more abstract principles of learning by incorporating rich materials and problem solving activities into educational experiences. Provide opportunities for children to collaborate and work through ideas together and build social skills. Connect children to the natural world by spending learning time outdoors and bringing natural materials into your classroom.

UTILIZE APPROPRIATE ASSESSMENT

Assessment in the kindergarten setting is an ongoing process blending academic and developmental measures and tied to children's daily activities. Formal benchmarking, universal screening, formative and summative assessments based upon the academic standards, are all critical pieces necessary to evaluate the development of the child as a whole person and to provide a clear picture of the child's strengths and needs. Administration of these

assessments needs t be done in the least intrusive matter possible and each assessment should be evaluated to determine if it provides adequate information. If necessary, advocate for additional staffing or flexible time to adequately assess children. Information from these assessments is most effectively used to inform instruction and allow the teacher to differentiate the curriculum to fit the needs of each learner.

FOR ADMINISTRATORS

SUPPORT AND ORGANIZE PROFESSIONAL DEVELOPMENT

Provide professional development experiences for kindergarten and primary grade teachers that address the unique developmental level of children in these grades. Utilize a professional development plan that is intentional and focused and meets the individual needs of each teacher and the students he/she serves while also addressing school wide priorities. Provide professional development in meaningful ways that include follow up training and consultation, such as coaching, to ensure that growth is occurring and that new methods and materials are being used effectively. School administrators should also be engaging in professional development experiences that increase their understanding of child development, early childhood education, curriculum selection, effective, age-appropriate assessment, and the diversity of learners.

PROMOTE LEARNING FOR ALL CHILDREN

Welcome all age-eligible children into your school and if needed, connect children and families with appropriate community and interagency supports to ensure success for the child and family. Support a mixed age kindergarten classroom that values the individuality of each child and engages each child in a process of growth and development. Recognize that developmental differences exist among children and work with kindergarten, prekindergarten, and first grade teachers to devise strategies to maximize teaching and learning.

SUPPORT COMPREHENSIVE TRANSITIONS

Support a comprehensive view of transitions to and from kindergarten. Recognize that multiple partners are needed to develop an effective transition system that meets the needs of children and their families. In your local decision making, consider policy changes that provide contracted release time and possible compensation for teachers to engage in effective transition practices such as home visits and ongoing community outreach.

SELECT EFFECTIVE CURRICULUM

Continually examine the links between state standards and your curriculum. If working with an existing curriculum choose the pieces of that curriculum that fit the goals of state standards. Regularly review your curriculum and assess its effectiveness based upon evidence obtained from your observations and assessments of student progress. Do not assume that any program is complete and meets the educational needs of all students. Encourage teachers to use multiple strategies and supplemental materials to strengthen the curriculum in needed areas and to meet the diverse needs of learners. Support teachers in providing a variety of learning experiences that incorporate multiple senses and ensure the child is an active participant in learning.

FOR POLICY MAKERS, LOCAL SCHOOL BOARD MEMBERS, AND COMMUNITY LEADERS

SUPPORT A COMPREHENSIVE TRANSITION SYSTEM

Support a more comprehensive view of transitions to and from kindergarten. Recognize the multiple players that must be engaged in a comprehensive transition system that is effective for children and their families. Engage various community agencies in this process and connect children and families with community resources that can benefit them. Support policy changes that provide flexible scheduling for teachers such as contracted release time and compensation for their involvement in effective transition practices.

PROVIDE RESOURCES TO SUPPORT KINDERGARTEN CLASSROOMS

Seek opportunities to support and strengthen early childhood programs in the school and broader community, including kindergarten, through adequate financial and personnel allocations. Budget appropriately and adequately for increased adult support in the kindergarten classroom. Provide funds and resources for hands-on classroom materials that will enrich the learning environment. Provide resources, including meaningful staff development opportunities with structured follow-up, to ensure that new initiatives and ideas are implemented with fidelity.

PROMOTE THE COMMUNITY AS A LEARNING PLACE

Throughout the community, provide access to rich learning opportunities for children and their families, before and after children enter school. Ensure that families have the supports they need to provide optimum health care, nutrition, and safety for their children. Promote a highly collaborative network of service agencies that can serve as resources and supports for families. Support high quality early childhood experiences in multiple community settings (in-home childcare, preschool, center-based childcare and community resource centers) especially for those children and families who are most at risk.

FOR PARENTS

SUPPORT YOUR CHILD AT HOME

Ensure that your child has daily experiences outdoors and indoors. Encourage your child to engage in activities such as drawing, reading, and building with blocks or other safe, household materials. Monitor the amount of time your child spends watching television, movies, and playing video games and involve your child in routine activities that can be completed together (making dinner or folding laundry). Talk about ordinary things you see and do and expand your child's world through books and conversation. If your family speaks a language other than English at home, help your child to maintain this language by speaking to your child in his/her first language as often as possible.

Keep a routine with consistent sleeping times and behavioral expectations. This helps children know expectations and ensures they are rested, ready and able to learn during the day. Provide healthy meals and nutritious snacks whenever possible for your child. Be sure to have your child's medical and dental needs addressed. If necessary, work with the school or other community agencies to access local resources that can assist you in meeting your child's needs.

FORM A RELATIONSHIP WITH THE SCHOOL

You know your child better than anyone and your voice is critical in the school process. Talk about your child's strengths and needs with the school staff. Ask how the school will meet those needs and support the strengths of your child. Become familiar with the rules and expectations regarding school, including entrance and enrollment.

Talk to your child's teacher about including a variety of learning experiences into the kindergarten curriculum. Your child should experience teacher led and child led activities each day. Children use opportunities for purposeful play to expand on the academic concepts they are learning. Multiple types of learning opportunities are a part of effective and appropriate instruction for young children.

SEEK INFORMATION ABOUT GROWTH AND DEVELOPMENT

Learn more about how young children grow and develop in the early years. Be familiar with the social and emotional needs of your young child, along with typical development and milestones in language, movement, and thinking skills. There are great online resources such as learningfromdayone.org that support parents in understanding the development and needs of their children.

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